University of Washington
National Primate Research Center

Accession # 17-295
Submission Date 16 Nov 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z10052
Species Mn Requester's Phone

Date of Death 9 Nov 17 Date of Necropsy 9 Nov 17 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 19 Dec 17 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

5 year old, 5.2 kg female was part of SPF-3 breeding colony at NIRC. Presented for chronic weight loss (weight listed as 6.7 kg in Jul '17), did not respond to treatment, and euthanized 9 Nov. Gross findings were marginal body condition and alopecia.

Histological Findings:

Sections of adipose exhibit multicentric, moderate depletion/atrophy.

GI tract is moderately autolyzed, but sections of stomach, small and large intestine have moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered to moderate numbers of Mott cells, macrophages and eosinophils. There is villar blunting and fusion estimated as moderate.

Sections of lymph nodes, spleen, kidneys (minor multicentric interstitial lymphohistiocytic aggregates and diffuse membranoproliferative change of glomeruli), liver (minor lymphohistiocytic aggregates), heart, lungs (minimal peribronchial, peribronchiolar and perivascular lymphohistiocytic aggregates and penumoconiosis), pancreas, muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis with enteric villar blunting and fusion
2. Moderate, multicentric adipose depletion

Histology Comments:

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof (including weight loss), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #2 reflects chronic weight loss.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession #___17-296_
Submission Date_16 Nov 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z17320
Species_____Mn____ Requester's Phone_____

Date of Death__12 Nov 17_ Date of Necropsy_12 Nov 17_Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _20 Dec 17___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam A11185 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have moderate to moderately extensive, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, lymph nodes, adipose (adequate), liver, gall bladder, heart, kidneys, pancreas, and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to moderately extensive, multifocal, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and non-inflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM___

University of Washington
National Primate Research Center

Accession # 17-315
Submission Date 15 Dec 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16367
Species Mn Requester's Phone _____

Date of Death 19 Nov 17 Date of Necropsy 19 Nov 17 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 26 Jan 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

11 month old, 1.15 kg female was part of SPF-3 breeding colony at NIRC. Being treated for lethargy and diarrhea and clinically declined and was euthanized. Body weight in Aug '17 listed as 1.55 kg, and body weight at necropsy was 1.15 kg. Significant gross finding was poor body condition.

Histological Findings:

Sections of adipose throughout the body (including epicardial adipose) exhibit extensive depletion/atrophy. Pancreas has moderate, diffuse zymogen depletion. Lymph nodes and spleen have moderate lymphoid hypoplasia/atrophy to slight follicular activity, and spleen also has reactive endothelium.

Sections of stomach, small and large intestine have mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Small intestine has moderate villar blunting and fusion and goblet cell hyperplasia, and scattered tortuous crypts. Esophagus is unremarkable.

Sections of kidneys, liver (mild lymphohistiocytic aggregates and lobular collapse), heart, lungs, muscle and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Extensive, disseminated, adipose depletion with moderate, diffuse pancreatic zymogen depletion and splenic and lymph node lymphoid depletion
2. Mild to moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Diagnosis #1 suggests inanition particularly with a history of extensive weight loss in a young animal that should be gaining weight. In this age of animal, the lymphoid depletion could be either atrophy or hypoplasia though the distinction at this stage is academic. This change suggests the possibility of immunosuppression.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 17-316
Submission Date 15 Dec 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z17313
Species Mn Requester's Phone

Date of Death 22 Nov 17 Date of Necropsy 22 Nov 17 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 26 Jan 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

5 day old, 400 g male was part of SPF-3 breeding colony at NIRC. Born 17 Nov 17 from dam Z10176. Animal was found dead in cage. Significant gross finding was small amount of ingesta in stomach.

Histological Findings:

Sections of adipose throughout the body (including epicardial adipose) exhibit extensive depletion/atrophy. Pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, thymus, spleen, kidneys, liver, heart, aorta, lungs (mild, multifocal deep aspiration of amniotic cells/debris), muscle, skin with mammary gland, and GI tract (autolyzed) are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Extensive, disseminated, adipose depletion with moderate, diffuse pancreatic zymogen depletion

Histology Comments:

Lack of ingesta (mild curds) in stomach and histologic changes suggest lack of adequate nursing and resultant inanition/hypoglycemia as the cause of demise.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 17-317
Submission Date 15 Dec 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # L06242
Species Mn Requester's Phone

Date of Death 28 Nov 17 Date of Necropsy 28 Nov 17 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 26 Jan 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

11 year old, 5.5 kg female was part of the SPF breeding colony at NIRC. Animal was unresponsive to therapy for diarrhea and hepatomegaly. Euthanized and significant gross findings were marginal body condition (low muscle mass and scant adipose stores), and massively enlarged and mottled liver. Gross diagnoses of hepatopathy and enteritis.

Histological Findings:

Liver has extensive, diffuse-sinusoidal amyloid deposition with moderate effacement of parenchyma. There also are minimal, multifocal lymphohistiocytic aggregates. Spleen has moderate, multifocal, sinusoidal amyloid deposition.

GI tract has autolysis impeding evaluation. However GI tract has mild to moderately extensive, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with moderate numbers of Mott cells, macrophages and eosinophils. Small intestine moderate villar blunting and fusion, and large intestine has scattered crypt abscesses. Large and small intestine have moderate increase in mucosal cell turnover. Fundic stomach has moderate gastric spiral bacteria infection.

Sections of lymph nodes, heart (focal mild lymphohistiocytic aggregate), lungs (mild pneumoconiosis), kidneys (focal minor lymphohistiocytic infiltrate), pancreas, muscle, and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Extensive, diffuse-hepatic sinusoidal, and moderate, multifocal-splenic sinusoidal amyloid deposition: **Systemic secondary amyloidosis**

2. Mild to moderately extensive, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and moderate, gastric-fundic spiral bacteria infection

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was likely the GI tract. Moderate to moderately extensive hepatic compromise would have been predicted currently, and these lesions are progressive.

The GI inflammation in diagnosis #2, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The gastric spiral bacteria should be considered commensals that can be opportunistic pathogens.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 17-318
Submission Date 15 Dec 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A12238
Species Mn Requester's Phone _____

Date of Death 30 Nov 17 Date of Necropsy 30 Nov 17 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 29 Jan 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Part of SPF colony at NIRC. Animal presented 28 Nov with hemorrhagic enteritis and weak. Did not respond to therapy and was euthanized 30 Nov. Significant gross findings was pale, tan and mottled kidneys that bulged on section.

Histological Findings:

Kidneys have extensive, diffuse, vacuolar change of proximal convoluted tubules, with loss of nuclei in many tubules, and similar changes in some distal convoluted tubules. There are scattered protein tubular casts with or without flattened tubular epithelium, and mild to moderate membranoproliferative change of glomeruli diffusely, and scattered, small, interstitial lymphohistiocytic aggregates.

Liver has moderate, generally periportal to midzonal but sometimes random, vacuolar degeneration of hepatocytes, and also mild lobular collapse and scattered lymphohistiocytic aggregates. Pancreas has moderate, diffuse zymogen depletion. Adipose is abundant throughout tissues/organs.

GI tract has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. Small intestine moderate villar blunting and fusion, and large intestine has scattered to moderate numbers of crypt abscesses. Large and small intestine have moderate increase in mucosal cell turnover. One section of stomach has an encysted nematode in the serosal adipose.

Sections of lymph nodes, spleen, heart (minimal megalo- and dyskaryosis and lipofuscinosis and mild to moderate steatosis multifocally), lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and moderate pneumoconiosis, and one section has a moderate-sized, focal region of alveolar histiocytosis), skin with mammary gland, and skeletal muscle are unremarkable besides autolysis and stated minor changes.

Final Principal Diagnosis(es):

1. Severe, diffuse, vacuolar degeneration and necrosis of proximal convoluted tubular epithelium, with moderate vacuolar degeneration of distal convoluted tubular epithelium
2. Moderate, periportal to midzonal to random, vacuolar hepatocellular degeneration, and with moderate pancreatic zymogen depletion and exuberant adipose with moderate cardiac steatosis
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and moderate, multifocal, large intestinal crypt abscessation

Histology Comments:

The findings of an animal with abundant adipose in the face of pancreatic zymogen depletion indicating recent hypoalimentation and with hepatic and renal changes seen are consistent with clinical demise due to “Fatal fasting syndrome”. This syndrome occurs when an animal in good nutritional condition with abundant adipose has a sudden, severe bout of anorexia.

The disseminated GI inflammation in diagnosis #2, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

The large intestinal crypt abscesses suggest an infectious agent such as *Campylobacter, Salmonella, Yersinia, Shigella* sp or other, and the enteritis noted clinically could have been due to a colonic infection.

Please contact me with any questions, comments, or concerns.

Pathologist_____RM_____

University of Washington
National Primate Research Center

Accession #___17-319_
Submission Date_15 Dec 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z17343
Species_____Mn____ Requester's Phone_____

Date of Death_7 Dec 17_ Date of Necropsy_7 Dec 17_Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _29 Jan 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam M05054 from SPF colony at NIRC. No gross abnormalities.

Histological Findings:

Tissues/organs have extensive autolysis precluding accurate evaluation. Lungs appear to be uninflated and appear to have deep aspiration of amniotic cells and debris. Sections of spleen, thymus, adipose (adequate), heart, and kidneys are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Autolyzed tissues/organs
2. Suspect deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Degree of autolysis precludes accurate evaluation. However, suspect amniotic cells and debris within alveoli without inflammation and non-inflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress. As such, stillbirth due to dystocia is suspect.

Please contact me with any questions, comments or concerns.

Pathologist _____RM___

University of Washington
National Primate Research Center

Accession #___17-320_
Submission Date_19 Dec 17

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester_____Colony_____ Investigator_Colony___ Animal ID # _L05115 & Z17319

Species_____MN____ Requester's Phone___56031__

Date of Death___12/8/17_ Date of Necropsy___12/8/17___Time___1230hrs_____Pathologist ____PB____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _30 Jan 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

NHP presented at AM rounds by ATs, dull and lethargic with vaginal bleeding, in breeder group housing. Animal care staff caught animal out of enclosure, NHP was stressed and became dull and non-responsive. Animal taken to procedure room for Vet staff to assess, IV cath placement, gum color pale, no reading on pulse-ox, severely in shock, Veterinarian indicated shock was severe and presence of blood clots removed from vaginal area during exam; endpoint was elected. No ultrasound was taken, Veterinarian indicated infant was non-viable at this point 1cc sodium pentobarbital given IV; confirmation animal deceased by Veterinarian PB.
This dams scheduled pregnancy due date was 12/7/2017.
NHP positive for valley fever since 2014, on treatment till April 2017 ended due to valley fever negative, 3 previous natural viable births- no clinical difficulties all healthy births, no other previous clinical history, good body condition.

Gross Description:

Examined is a 9.85kg, 12yr.6mo adult female pig-tail macaque
And infant Z17319, sex and weight unknown
Tissue samples of both dam/stillborn in same tissue jar

Gross Diagnosis(es):

Euthanasia

Gross Comments:

The cause of death in this case is euthanasia.

Dystocia/placenta previa/Valley Fever?
Histopathology pending

Histological Findings:

Large intestine and stomach have mild to moderate infiltrate of/increase in lamina propria lymphocytes, plasma cells, macrophages and eosinophils.

Sections of spleen, liver (mild fatty degeneration, lobular collapse and multifocal lymphohistiocytic aggregates), heart (mild steatosis), kidneys (moderate diffuse proliferative glomerulonephritis), lungs (mild pneumoconiosis), placenta with uterus (typical term changes) are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Vaginal hemorrhage (gross diagnosis)
2. Mild to moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastritis and colitis
3. Moderate, diffuse, proliferative glomerulonephritis

Histology Comments:

A cause of the clinical demise is not identified histologically. As per gross report, hemorrhage from placenta previa or other cause is a possible cause of the clinical findings.

Histologic changes identified in diagnoses #2 and 3 are typical for the species (diagnosis #2 representing IBD) and age (glomerulonephritis), and the changes were currently clinically insignificant.

Please contact RM with any questions, comments or concerns.

Pathologist ___PB_____

University of Washington
National Primate Research Center

Accession # 18-004
Submission Date 4 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16290
Species MN Requester's Phone

Date of Death 12/28/17 Date of Necropsy 12/28/17 Time 1830hrs Pathologist CM/TH

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 30 Jan 18 ☐ Preliminary Gross ☐ Amended

Clinical History:

The NHP presented in June 2017 with campylobacter BW 1.12kg, BW was slowly trending up Sept 2017 1.39kg and stabilizing, then October 2017 1.19kg soon as treatment ended recurrence of campylobacter and fecal inconsistency, weight would fluctuate fluid therapy needed, antibiotics, nutritional supplementation was provided continuously to sustain a stable weight, despite this, significant weight gain and improvement in body condition score was not achieved. This animal was tested for valley fever Dec 2017-negative. Due to animal's failure to gain weight, inappropriate weight for age, poor body condition and frequent need for antibiotics to sustain, euthanasia as a humane endpoint was elected after case consultation with Seattle.

Gross Description:

Examined is a 1.42kg, 1yr.2mo male pig-tail macaque in poor body condition as evidenced by generalized and diffuse decreased muscle mass. Minimal deposits of fat within the subcutaneous layer and minimal adipose tissue internally within the omentum and mesentery. GI tract contained moderate amounts of digesta. The mesenteric lymph nodes appeared moderately enlarged diffusely and the cecum was mild to moderate distended. The liver appeared slightly small weight 50 grams in its entirety with gallbladder. The lung lobes were mottled in appearance with all lobes affected with no exudate present on cut cross section. The lungs appeared light pink with irregular patches of dark pink. The trachea and major bronchi appear normal. The liver lobes mild to moderate friable to touch. Heart and lung lobes weighed 25 grams combined. Brain removed weighed 75 grams and appears normal in color and consistency. The pituitary gland and cerebellum were removed and both appear normal in color, moderately friable.

Gross Diagnosis(es):

1. Euthanasia

Gross Comments:

The cause of death in this case is euthanasia. Weight, body conditions were unresponsive to supportive treatment and the animals alkaline phosphates were continuing to increase while the albumin was trending downwards. Gross necropsy includes enlarged mesenteric lymph nodes, friable liver and irregular lung tissue. The enlarged mesenteric lymph nodes and mild detention of the cecum are compatible with inflammatory conditions and possible amyloidosis and histopathology on these organs is pending.

Histological Findings:

Sections of stomach, small and large intestine have moderate to moderately extensive, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Small intestine has moderately extensive villar blunting and fusion and scattered tortuous crypts, stomach has scattered crypt abscesses, large intestine has moderate crypt loss, and small and large intestine have moderate increase in mucosal cell turnover.

Sections of brain, lymph nodes (moderate follicular activity), spleen (moderate follicular activity and reactive endothelium), kidneys, liver (mild to moderate, diffuse hydropic degeneration, mild lobular collapse, and minor lymphohistiocytic aggregates), gall bladder, heart, lungs (minimal peribronchial, peribronchiolar and perivascular lymphohistiocytic aggregates, and agonal congestion and edema), pancreas, muscle, and skin are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate to moderately extensive, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis with enteric villar blunting and fusion
2. Poor body condition (gross diagnosis)

Histology Comments:

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof (including weight loss), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. Additionally, the gastric crypt abscesses and colonic crypt loss suggest ongoing low level infection and/or past infection such as with *Campylobacter* (identified periodically as per history), *Shigella, Salmonella, Yersinia* sp or other bacterial infection.

Please contact any of us with any questions, comments or concerns.

Pathologist ___CM/TH (gross) RM (histo)___

University of Washington
National Primate Research Center

Accession # 18-009
Submission Date 18 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16027
Species MN Requester's Phone 206-685-6031

Date of Death 1/10/2018 Date of Necropsy 1/10/2018 Time 1735hrs Pathologist CM/TH

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☐ Final 1 Feb 18 ☐ Preliminary Gross ☒ Amended 7 Feb 18

Clinical History:

The NHP tested positive for Valley Fever on December 7th 2017 (IgG 1:64 and IgM 1:4), started oral fluconazole treatment. Despite oral treatment, her BW was slowly trending downwards and showing decreased activity. A repeated cocci titer was done on January 8th, 2018 showing no change in the IgG and IgM levels. During AM observations January 10th animal presented with no utilization of right hind leg, pelvic limb flexor is absent on right side, no digit stimulation with hemostats, limb cool to touch, left side superficial sensation when touched with hemostats; euthanasia as a humane endpoint was elected.

Gross Description:

Examined is a 2.36kg, 1yr.11mo female pig-tail macaque in lean body condition, cross section of left thigh muscle submitted and appears normal on gross observation. There are moderate deposits of fat within the subcutaneous layer and mild amounts of adipose tissue internally within the omentum and mesentery. A string was used to tie off the cranial aspect of the stomach and the caudal end of the colon. The GI tract contained moderate amounts of digesta and included some bedding material. A moderate to marked amount of gas was present in the cecum. Incision into the stomach and sections of the GI tract did not reveal any areas of edema nor erosions or ulcers. A fecal culture was obtained from this section of colon and submitted. The liver appeared smooth and regular in texture and weighed 113gr (including gallbladder). The liver appeared normal in color, anterior segment of the right liver lobe appeared discolored, but the gallbladder was visible through small window in the liver lobe. The pancreas, spleen, kidneys, adrenal glands, bladder and reproductive tract were removed and appeared normal in gross inspection. The left kidney/adrenal gland weighed 13gr, and right kidney/adrenal gland weighed 12gr, spleen weighed 8gr.
The lung lobes were mottled in appearance with all lobes affected with frothy white exudate present on the cut cross-section and within the major bronchi and trachea. The left lung lobes were more severely affected than the right. The lung tissue appeared faint pink with irregular patches of whiter to light cream color which were palpably thicker and denser than the normal lung tissue. There was no free fluid within the thoracic cavity notated when lungs were removed and multiply thick adhesions of the left cranial lung lobe to the thoracic wall. The adhesions were so tough in some areas that they could not be manually

broken down and had to be excised with scalpel blade. The diaphragm was intact and normal. The heart and lungs lobes weighed 84gr. There didn't appear to be any free fluid trapped in the pericardial sac. A palpable swelling that was firm but slightly fluctuate was noted on the right lateral aspect of one of the thoracic vertebrae in the region of T6-T7. This vertebrae was removed and submitted. All other vertabrae was inspected and no other abnormalities found.
The brain was removed and weighed 83gr and appeared normal in consistency, but had neovascularization on the outer surface in both hemispheres. The abnormalities was noted in both the rostral and caudal portions of the cerebrum. The pituitary gland and cerebellum removed and submitted. Approximately 0.25mL cerebral spinal fluid was collected from the posterior arch (after brain removed).

Gross Diagnosis(es):

1. Euthanasia

Gross Comments:

The cause of death in this case is euthanasia. Abnormalities of the lung lobes are consistent with valley fever. Since coccidioidomycosis can also infect bone and nervous tissue, paralysis secondary to fungal infection is suspected. However, histopathology on any abnormalities of tissues submitted is pending.

Histological Findings:

Sections of lungs and pulmonary hilar lymph nodes have moderate sized to large, moderate to effacing pyogranulomas and granulomas with moderate to robust fibrosis, and moderate numbers of giant cells and intra- and extracellular organisms consistent with *Coccidiodes* sp. Both lungs and hilar nodes have regions of extensive effacement of parenchyma, affected regions of lungs have multifocal type II pneumocyte hyperplasia, and hilar nodes have fibrous adhesions to trachea. Spleen has a focal, moderate sized pyogranuloma.

Throughout the GI tract there is moderate inflammation consistent with IBD/food allergy/hypersensitivity/dietary intolerance (lymphocytes, plasma cells, macrophages and eosinophils) throughout the lamina propria. Small intestine also has moderate villar blunting and fusion. One section of large intestine has focal, extensive mucosal suppuration with crypt abscesses and crypt loss, moderate submucosal granulomatous inflammation with vasculitis, and an adjacent lymph node has moderate peri-nodal fibrosis.

Sections of brain, liver, gall bladder, heart, aorta, other lymph nodes, kidneys, esophagus, pancreas and skeletal muscle are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Chronic, moderate to severe and effacing, multicentric, granulomas and pyogranulomas associated with *Coccidiodes* sp organisms: lungs, hilar lymph nodes, and spleen: **Disseminated coccidiodomycosis**
2. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc enterocolitis with enteric villar blunting and fusion
3. Severe, focal, suppurative colitis

Histology Comments:

Severe Valley Fever is confirmed with lesions in lungs, hilar lymph nodes and spleen. The spinal lesion grossly described also likely is due to Valley Fever; decalcified sections are pending and an addendum will follow.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

The focal suppurative colitis (diagnosis #3) was likely bacterial origin (such as from *Campylobacter, Salmonella, Yersinia, Shigella* sp or other), the colitis was probably secondary to debilitation from Valley Fever, and probably the colitis was present at other regions that were not sampled.

Please contact any of us with any comments, questions or concerns.

Pathologist ___CM/TH (gross) RM (histo)_____

ADDENDUM 7 FEB 18 RM

A decalcified section of spine reveals inflammation as previously described in hilar nodes and lungs, and with rare organisms consistent with *Coccidiodes* sp, and with extensive bone necrosis and effacement, remodeling and new bone production and reactive to robust fibrosis. There also is compression of the spinal cord with mild to moderate, multifocal, demyelination and axonal loss.

AMENDED DIAGNOSIS #1:

Chronis, moderate to severe and effacing, multicentric, granulomas and pyogranulomas associated with *Coccidiodes* sp organisms: lungs, hilar lymph nodes, spine, and spleen: **Disseminated coccidiodomycosis**

University of Washington
National Primate Research Center

Accession #___18-014_
Submission Date_25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z17344
Species_____Mn____ Requester's Phone_____

Date of Death__11 Dec 17_ Date of Necropsy_____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _14 Mar 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam Z11103 from SPF colony at NIRC.

Histological Findings:

Lungs are only multifocally slightly inflated and have mild to moderate, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, adipose (adequate), liver, heart, kidneys, skin, and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Mild to moderate, multifocal, deep aspiration of amniotic cells and debris with mostly uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and only minimal inflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 18-015
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z10048
Species Mn Requester's Phone _____

Date of Death 18 Dec 17 Date of Necropsy 18 Dec 17 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 14 Mar 18 ☐ Preliminary ____ Gross ____ ☐ Amended _____

Clinical History:

This female, 7 year old, 5.5 kg animal was part of the SPF colony at NIRC. During a PE a markedly enlarged liver was noted along with reduced musculature. Significant gross finding was a markedly enlarged, pale, meaty liver.

Histological Findings:

Liver has severe, diffuse, sinusoidal amyloid deposition and there also are scattered lymphohistiocytic aggregates. Hepatic cords are markedly reduced in number and widely separated. Spleen also have marked follicular amyloid deposition.

Stomach and large and small intestine are autolyzed but have mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Sections of heart, lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates, and minimal pneumoconiosis), kidneys (mild membranoproliferative change of glomeruli and scattered interstitial lymphohistiocytic aggregates), lymph nodes, adipose (adequate), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Severe, diffuse, hepatic sinusoidal and splenic follicular amyloid deposition: **Systemic secondary amyloidosis**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the intestinal tract.

Diagnosis #2, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-016
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A10045
Species Mn Requester's Phone

Date of Death 18 Dec 17 Date of Necropsy 18 Dec 17 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 14 Mar 18 ☐ Preliminary Gross ☐ Amended

Clinical History and Gross Findings:

Male,11 year old, 9.5 kg pig-tailed macaque euthanized 18 Dec 2017 due to recurring chronic enteritis and weight loss. The animal is listed at 12.6 kg in Nov '17. Gross exam was suggestive of colitis.

Histological Findings:

Sections of stomach, small and large intestine have moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Small intestine probably has villar blunting and fusion although autolysis precludes definitive assessment and impedes evaluation of GI tract.

Sections of lymph nodes, spleen, adipose (adequate), kidneys (mild membranoproliferative change of glomeruli), liver (mild lobular collapse and lymphohistiocytic aggregates), heart (mild megalo- and dyskaryosis), lungs (moderate, multifocal giant cells with eosinophilic material and refractile material and sometimes associated with type II pneumocyte hyperplasia, and also mild peribronchial, peribronchiolar and perivascular lymphohistiocytic aggregates and penumoconiosis), muscle (small focus of granulomatous and fibrosing myositis), and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis
2. Mild, multifocal, histiocytic pneumonia

Histology Comments:

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof (including weight loss and chronic diarrhea), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

The pulmonary lesions were clinically insignificant and suggest past infection including the possibility of Valley Fever.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-017
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z17334
Species Mn Requester's Phone

Date of Death 25 Dec 17 Date of Necropsy 25 Dec 17 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 12 Feb 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Eleven day old, 400 gm male infant found dead with no significant gross findings.

Histological Findings:

Sections of adipose throughout the body exhibit extensive depletion/atrophy including peri-renal adipose. Thymus, lymph nodes and spleen have no follicular activity and scant to no lymphoid development/maturation. Spleen has reactive endothelium. Pancreas has moderate zymogen depletion.

Two sections of large intestine have moderate, multifocal suppuration of the lamina propria and scattered to moderate numbers of crypt abscesses. GI tract is otherwise unremarkable besides autolysis.

Sections of liver (mild fatty change), kidneys, lungs, heart, esophagus, skin and muscle are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose depletion and lymphoid hypoplasia and with moderate pancreatic zymogen depletion
2. Moderate, multifocal, suppurative colitis

Histology Comments:

With a history of a infant animal that has adipose depletion, lack of lymphoid development, and with an otherwise unremarkable gross exam, inanition and hypoglycemia as cause of death are suspect. The

disseminated lymphoid hypoplasia, which likely occurred due to lack of sufficient caloric intake, suggests the possibility of immunosuppression, and the colitis is suspect as being secondary to such.

The colitis was probably bacterial, with common agents including *Shigella, Campylobacter, Salmonella, Yersinia* sp and others.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-018_
Submission Date_25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18010
Species_____Mn____ Requester's Phone_____

Date of Death__1 Jan 18_ Date of Necropsy_____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _14 Mar 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam Z13102 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have moderate, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, adipose (adequate), liver, heart, kidney, skin with umbilicus and muscle are unremarkable.

Final Principal Diagnosis(es):

1. Moderate, multifocal, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and noninflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM___

University of Washington
National Primate Research Center

Accession # 18-019
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16070
Species Mn Requester's Phone _____

Date of Death 3 Jan 18 Date of Necropsy 3 Jan 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 13 Feb 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 1.75 year old,1.9 kg animal was part of the SPF colony at NIRC. Animal was found dead 3 Jan '18. Gross exam did not have significant findings. The animal had lost 200 gm weight since the last weight on 20 Dec '17.

Histological Findings:

Stomach (mild to moderate), small intestine (moderate to extensive) and large intestine (mild to moderate) have multifocal to diffuse (in small intestine) lamina propria deposition of amyloid. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils and small intestine has moderate villar blunting and fusion.

Adipose has extensive, multicentric depletion/atrophy including epicardial and peri-renal adipose.

Lymph nodes and spleen have inactive follicles and moderate lymphoid depletion overall. The spleen also has moderate amyloid deposition in follicles.

Sections of heart, lungs, liver (minimal lymphohistiocytic aggregates, and mild lobular collapse), kidneys, pancreas, muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to extensive, near-diffuse, gastrointestinal and splenic follicular amyloid deposition: **Systemic secondary amyloidosis**
2. Extensive, multicentric adipose depletion with moderate, lymph node and splenic lymphoid depletion

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Amyloid deposition in the GI tract contributed to adipose depletion/inanition via malabsorption. This animal was very young to have such extensive amyloid deposition.

Diagnosis #2 represents inanition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-020
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z17324
Species Mn Requester's Phone

Date of Death 3 Jan 18 Date of Necropsy 3 Jan 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 16 Feb 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Twenty seven day old, 400 gm female infant found dead with no significant gross findings.

Histological Findings:

Sections of adipose throughout the body exhibit extensive depletion/atrophy including peri-renal adipose. Lymph nodes and spleen have little to no follicular activity and scant to no lymphoid development/maturation. Pancreas has moderate zymogen depletion.

Degree of autolysis impedes evaluation of the GI tract. Large intestine has moderate numbers of multifocal dilated crypts with cellular debris, some of which are degenerate neutrophils. GI tract is otherwise unremarkable besides autolysis.

Sections of liver, kidneys, lungs, heart, esophagus, skin with mammary gland and muscle are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose depletion and lymphoid hypoplasia and with moderate pancreatic zymogen depletion
2. Moderate, multifocal, colonic crypt dilation/abscessation

Histology Comments:

With a history of a infant animal that has adipose depletion, lack of lymphoid development, and with an otherwise unremarkable gross exam, inanition and hypoglycemia as cause of death are suspect. The disseminated lymphoid hypoplasia, which likely occurred due to lack of sufficient caloric intake, suggests the possibility of immunosuppression, and the colonic crypt changes are suspect as being secondary to such.

The crypt abscesses were probably bacterial in origin, with common agents including *Shigella, Campylobacter, Salmonella, Yersinia* sp and others.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-021
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16132
Species Mn Requester's Phone

Date of Death 4 Jan 18 Date of Necropsy 4 Jan 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 16 Feb 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Female, 1.7 year old,1.75 kg animal was part of the SPF colony at NIRC. Animal presented 3 Jan lethargic, treatment was initiated, and animal was found dead 4 Jan '18. Gross exam had foul smelling intestines, animal was *Shigella* sp positive with increase in *Balantidium* sp at postmortem, and tentative gross diagnosis was shigella enteritis. The animal weighed 2.1 kg 20 Dec '17.

Histological Findings:

Stomach (mild to moderate), small intestine (extensive) and large intestine (mild to moderate) have multifocal to diffuse (in small intestine) lamina propria deposition of amyloid. GI tract also has mild, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils and small intestine has moderate villar blunting and fusion. Large intestine has scattered crypt abscesses.

Adipose has extensive, multicentric depletion/atrophy including epicardial and peri-renal adipose.

Lymph nodes and spleen have inactive to moderately active follicles and moderate to moderately extensive (particularly spleen) lymphoid depletion overall. The spleen also has extensive amyloid deposition in follicles, and some lymph node follicles have moderate amyloid deposition.

Sections of heart, lungs, liver (mild lymphohistiocytic aggregates and lobular collapse), kidneys, pancreas (mild to moderate zymogen depletion), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, near-diffuse, gastrointestinal and splenic and lymph node follicular amyloid deposition: **Systemic secondary amyloidosis**

2. Extensive, multicentric adipose depletion with moderate to moderately extensive, lymph node and splenic lymphoid depletion
3. Mild, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and scattered colonic crypt abscessation

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Amyloid deposition in the GI tract contributed to adipose depletion/inanition via malabsorption. This animal was very young to have such extensive amyloid deposition, much like another recent case 18-019.

Diagnosis #2 represents inanition, and the lymphoid hypoplasia/depletion suggests immunosuppression.

The disseminated inflammation represented in diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The crypt abscesses were probably bacterial in origin, with common agents including *Shigella, Campylobacter, Salmonella, Yersinia* sp and others, nad *Shigella* sp is suspect in this case as per history of isolation of the organism. The crypt abscesses are speculated as being secondary to immunosuppression and/or generalized debilitation.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-022
Submission Date 25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z13050
Species Mn Requester's Phone

Date of Death 13 Jan 18 Date of Necropsy 13 Jan 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 14 Mar 18 ☐ Preliminary Gross ☐ Amended

Clinical History and Gross Findings:

Female, 4 year old, 4.2 kg pig-tailed macaque had a previous surgically repaired rectal prolapse. The animal had a second, severe rectal prolapse and was euthanized 13 Jan. Gross exam identified a severe rectal prolapse involving large amount of distal colon with hemorrhage and degradation of prolapsed tissue.

Histological Findings:

Sections of prolapsed tissue reveal multifocal, severe hemorrhage, necrosis and suppuration of large intestinal mucosa, submucosa and with some mural involvement as well. Also, sections of stomach, small and large intestine have mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Small intestine probably has villar blunting and fusion although autolysis precludes definitive assessment and impedes evaluation of GI tract.

Sections of lymph nodes, spleen, adipose (adequate), kidneys (mild membranoproliferative change of glomeruli), liver (minimal lobular collapse and lymphohistiocytic aggregates), heart, lungs (minimal peribronchial, peribronchiolar and perivascular lymphohistiocytic aggregates), muscle, pancreas, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Recurrent, severe rectal prolapse with regional, necrohemorrhagic and suppurative colitis and proctitis
2. Mild to moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis

Histology Comments:

Histology supports gross findings and interpretations.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including chronic diarrhea which can predispose an animal to a rectal prolapse), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-023_
Submission Date_25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18011
Species_____Mn____ Requester's Phone_____

Date of Death__16 Jan 18_ Date of Necropsy_____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _15 Mar 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam Z13071 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have moderate to extensive, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, adipose (adequate), thymus, liver, heart, kidney, and skin with umbilicus are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to extensive, multifocal, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and noninflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession #___18-024_
Submission Date_25 Jan 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18012
Species_____Mn____ Requester's Phone_____

Date of Death__16 Jan 18_ Date of Necropsy_____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _15 Mar 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam Z11040 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have moderate to extensive, near-diffuse, deep aspiration of amniotic cells and debris.

Sections of spleen, adipose (adequate), thymus, liver, heart, kidney, skin with umbilicus, and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to extensive, near-diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and noninflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
Regional Primate Research Center

Accession # 18-027
Submission Date 1 Feb 18

DIAGNOSTIC LABORATORY BIOPSY REPORT

Requester Colony Investigator Colony Animal ID # A11250
Species Mn Requester's Phone _____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 8 Feb 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History:

Signalment: 11 year old, 11.9 kg female Mn assigned to Timed Mating.

History: The animal has had chronic diarrhea and past *Campylobacter* sp isolated from feces. The animal is otherwise normal with unremarkable bloodwork. Upper and lower GI endoscopy and biopsies were collected from the duodenum/proximal jejunum, stomach, and colon.

Histological Findings:

Samples obtained are processed in total and 2 serial sections are examined. They are multiple pinch biopsies from each site and are overall good quality pinch biopsies labelled as #1 stomach, #2 duodenum, and #3 colon.

Samples have mild (stomach) to mild to moderate (small and large intestine) lamina propria infiltrate of/increase in plasma cells with rare Mott cells, eosinophils, lymphocytes, macrophages, and rare neutrophils. Small intestinal samples have moderate enteric villar blunting and fusion, and there is moderate gastric spiral bacteria infection of the fundic stomach.

Final Principal Diagnosis(es):

1. Mild to moderate, plasmacytic, eosinophilic, and lymphohistiocytc gastro-entero-coitis with enteric villar blunting and fusion and moderate, fundic, gastric spiral bacteria infection

Histology Comments:

With the history and presentation, the most common cause of the inflammatory changes seen in indoor-housed, captive monkeys that are on appropriate group-health preventative medicine protocols is IBD/food allergy/hypersensitivity/dietary intolerance. Other causes are possible. This “syndrome” is

consistently seen in most captive macaque populations, it is common at the WaNPRC, and has been discussed in detail previously. The gastric spiral bacteria should be considered commensals that could be opportunistic pathogens.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist___RM_____

University of Washington
Regional Primate Research Center

Accession #___18-028_
Submission Date_1 Feb 18

DIAGNOSTIC LABORATORY BIOPSY REPORT

Requester____Colony_____ Investigator___Colony_ Animal ID #___A12275
Species_____Mn____ Requester's Phone_____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __8 Feb 18____ ☐ Preliminary _____ ☐ Amended _____

Clinical History:

Signalment: 8 year old, 6.5 kg female Mn assigned to Breeding.

History: The animal has had chronic diarrhea and past adenovirus PCR positive and *Cryptosporidium* sp oocytes in feces. The animal is otherwise normal with unremarkable bloodwork. Upper and lower GI endoscopy and biopsies were collected from the duodenum/proximal jejunum, stomach, and colon.

Histological Findings:

Samples obtained are processed in total and 2 serial sections are examined. They are multiple pinch biopsies from each site and are overall good quality pinch biopsies labelled as #1 stomach, #2 duodenum, and #3 colon.

Samples have mild (stomach) to mild to moderate (small and large intestine) lamina propria infiltrate of/increase in plasma cells, eosinophils, lymphocytes, and macrophages. Small intestinal samples have moderate enteric villar blunting and fusion and increase in mucosal cell turnover, and there is extensive gastric spiral bacteria infection of the fundic stomach.

Final Principal Diagnosis(es):

1. Mild to moderate, plasmacytic, eosinophilic, and lymphohistiocytc gastro-entero-coitis with enteric villar blunting and fusion and extensive, fundic, gastric spiral bacteria infection

Histology Comments:

With the history and presentation, the most common cause of the inflammatory changes seen in indoor-housed, captive monkeys that are on appropriate group-health preventative medicine protocols is IBD/food allergy/hypersensitivity/dietary intolerance. Other causes are possible. This “syndrome” is

consistently seen in most captive macaque populations, it is common at the WaNPRC, and has been discussed in detail previously. The gastric spiral bacteria should be considered commensals that could be opportunistic pathogens.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist___RM_____

University of Washington
National Primate Research Center

Accession #___18-038
Submission Date_22 Feb 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18044
Species_____MN____ Requester's Phone___(206) 685-6031_____

Date of Death__2/14/18_ Date of Necropsy_2/14/18_Time_____10:00am_____Pathologist ____CM/TH_

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __20 Mar 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

Full term stillbirth was delivered overnight. This was the dams (A09110) 2rd infant in the last year (large full-term infant), the 3 previous were delivered and raised without complication. The dam was positive for valley fever and on treatment, but recently September 2017 valley fever negative off treatment.

Gross Description:

Examined is a full term 0.71kg, female pig-tail macaque in adequate body condition with the placenta detached from umbilical cord, with minimal postmortem changes. Two thirds of the lung field sinks in formalin and the other one third floats. The stomach is empty and the intestine, cecum and colon contain meconium. Both kidneys weigh together 5g, liver/spleen 41g, lungs/heart 24g, brain, 65g and full placenta 286g. The remainder of the exam is unremarkable.

Gross Diagnosis(es):

1. Stillbirth/Abortion

Gross Comments:

The cause of the stillbirth/abortion in this is not determined by gross examination. The dam's valley fever history could be contributing factors to the fetal demise, but the dam is clinically healthy at this time. The presence of meconium in the GI tract is suggestive that there was not fetal stress, but doesn't rule it out. Histopathology on any abnormalities of tissues submitted is pending.

Histological Findings:

Lungs are partially/slightly inflated and have extensive, diffuse, deep aspiration of amniotic cells and debris.

Sections of brain, spleen, adipose (adequate), liver, gall bladder, heart, kidneys, pancreas, stomach, placenta (typical term changes of multifocal necrosis and calcification), and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Extensive, diffuse, deep aspiration of amniotic cells and debris with slightly inflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and only slight inflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored. This infant was extremely large (710 gms) which likely predisposed to dystocia.

Please contact any of us with any questions, comments or concerns.

Pathologist CM/TH (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession #___18-041_
Submission Date_28 Feb 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18065
Species_____MN____ Requester's Phone___(206) 685-6031_____

Date of Death__2/21/2018_ Date of Necropsy_2/21/2018_Time__1500hrs_____Pathologist ____CM/TH_

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __20 Mar 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

The fetus presented during PM health check in dystocia (footling breech), dam (Z12072) laying down in cage. The dam was sedated, given oxytocin and the fetus removed by abdominal palpation during contraction and the fetus extracted with immediate passage of the placenta. The fetus demised earlier during attempt of delivery. Dam's last infant stillborn 6/2017 and viable birth 4/2016, dam never tested positive for valley fever.

Gross Description:

Examined is a 0.57kg. male pig-tail macaque in adequate body condition with the placenta detached from umbilical cord, with minimal postmortem changes the placenta. The body is edematous with sunken eyes and misshaped cranium. The body is elongated and anatomy displaced and hemorrhagic in abdominal area by the pressure of the cervix on the dystocia and traction of delivery. The placenta is intact and complete.

The stomach is empty and the intestine, cecum and colon contain meconium. Both kidneys weigh together 3g, spleen 24g, liver 77g, lungs/heart 14g, brain, 45g (cerebellar hemorrhage, possible intracranial pressure with difficult birth) and full placenta 149g. The remainder of the exam is unremarkable

Gross Diagnosis(es):

1. dystocia/abortion

Gross Comments:

The fetus was dystocia/abortion. The changes seen grossly suggest fetal demise in utero that resulted in the abortion. The fetus and placenta are submitted in formalin and selected tissues. Histopathology on any abnormalities of tissues submitted is pending

Histological Findings:

Lungs are uninflated and have moderate to extensive, diffuse, deep aspiration of amniotic cells and debris.

Sections of brain, spleen, adipose (adequate), liver, gall bladder, heart, kidneys, stomach, pancreas, placenta (typical term change of focal necrosis), and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to extensive, diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and noninflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist CM/TH (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession #___18-047_
Submission Date_6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___R05071
Species_____Mn____ Requester's Phone_____

Date of Death__18 Jan 18_ Date of Necropsy__18 Jan 18____Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _14 May 18____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

Male, 12 year old, 9.2 kg animal was part of the SPF colony at NIRC. The animal was on treatment for enteritis, did not respond to therapy, had an enlarged liver, was losing weight rapidly, and was euthanized. Significant gross findings were an enlarged, pale, firm liver, thickened cecal wall and poor body condition.

Histological Findings:

Liver has severe, diffuse, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation. Hepatic cords are markedly reduced in number and widely separated.

Throughout the small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion. Large intestine also has multifocal regions of erosion to ulceration of mucosa with superficial fibrinosuppurative crusts, and with underlying pyogranulomatous to granulomatous and fibrosing infiltrate with lymphofollicular formation and submucosal fibrosis. There are occasional mural lymphofollicular aggregates.

Adipose throughout the body has extensive depletion/atrophy, including pericardial and perirenal adipose. Pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen, heart (mild lipofuscinosis), kidneys (moderate diffuse membranoproliferative change of glomeruli and scattered dilated protein filled tubules), lungs (moderate pneumoconiosis and alveolar emphysema), muscle, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

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1. Extensive, diffuse, hepatic sinusoidal amyloid deposition: **"Systemic secondary amyloidosis"**
2. Moderate, multifocal, ulcerative and mural, fibrinosuppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc enterocolitis with enteric villar blunting and fusion
4. Multicentric, extensive adipose depletion and moderate, diffuse pancreatic zymogen depletion

Histology Comments:

Demise was due to multiple factors, mostly related to the GI tract

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #4 reflects inanition secondary to the above processes.

Please contact me with any questions, comments, concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-048
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16001
Species Mn Requester's Phone

Date of Death 18 Jan 18 Date of Necropsy 18 Jan 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 15 May 18 ☐ Preliminary Gross ☐ Amended

Clinical History:

Male, 2 year old, 1.9 kg animal was part of the SPF colony at NIRC. The animal had a minor rectal prolapse 17 Jan that was reduced with a purse string, but then developed a severe prolapse the next day with edema and apparent sloughing of tissue, and was euthanized. Significant gross findings were marginal body condition and large prolapse of distal colon and rectum with edema and degradation of prolapsed tissue.

Histological Findings:

Evaluation of GI tract is moderately impeded due to autolysis. Throughout the GI tract there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion. Large intestine in one section has diffuse degeneration of mucosa (probably combination of autolysis and degradation from the prolapse).

Adipose where present has moderate depletion/atrophy. Pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen, heart, kidneys, and lungs are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Recurrent, severe, rectal and distal colonic prolapse: gross diagnosis
2. Mild, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc enterocolitis with enteric villar blunting and fusion
3. Multicentric, moderate adipose and diffuse pancreatic zymogen depletion

Histology Comments:

As per gross findings, euthanasia was elected due to recurrent and terminally severe rectal/colonic prolapse.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 reflects marginal nutritional condition.

Please contact me with any questions, comments, concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-049
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # M05054
Species Mn Requester's Phone

Date of Death 20 Jan 18 Date of Necropsy 20 Jan 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 22 Mar 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Female, 12 year old, 7.5 kg pig tailed macaque in NIRC SPF colony presented 19 Jan with a rectal prolapse that was reduced. Animal was found dead the next day. Signficant gross finding was necrosis of distal 3cm of colon.

Histological Findings:

A section of distal colon (and presumptive rectum) has moderate to extensive, multifocal ulceration of mucosa with fibrinosuppurative crusts with mixed bacteria, and mural to transmural pyogranulomatous and fibrosing to sclerosing inflammation with extensive mural tract formation with tracts containing debris and mixed bacteria. Peripherally there is sclerosing and granulomatous serositis and vasculitis. Other sections of GI tract are moderately autolyzed impeding evaluation, though there is mild to moderate, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Liver has moderate, periportal to midzonal, vacuolar hepatocellular degeneration, and also mild lobular collapse and scattered lymphohistiocytic aggregates.

Sections of lymph nodes, spleen, kidneys (mild membranoproliferative change of glomeruli diffusely), lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), heart, pancreas, skin with mammary gland and muscle are unremarkable besides autolysis and stated minor changes.

Final Principal Diagnosis(es):

1. Rectal prolapse with secondary extensive, transmural, necroulcerative to pyogranulomatous and fibrosing colitis and proctitis with mural tract formation
2. Moderate, periportal to midzonal, vacuolar hepatocellular degeneration
3. Mild to moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis

Histology Comments:

Demise most likely was from toxemia/septicemia secondary to the transmural colitis/proctitis, and these lesions were a consequence of the rectal prolapse. The hepatic degeneration likely was secondary to septicemia/toxemia. A cause of the rectal prolapse is not evident.

Diagnosis #3, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-050
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z09118
Species Mn Requester's Phone

Date of Death 1 Feb 18 Date of Necropsy 1 Feb 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 18 May 18 ☐ Preliminary Gross ☐ Amended

Clinical History:

Female, 8 year old, 4.2 kg animal was part of the SPF colony at NIRC. The animal was on treatment for enteritis, did not respond to therapy, was losing weight, and was euthanized. The animal has a listed weight of 7 kg in Jul '17. Significant gross findings were poor body condition and gross suspicion of enterocolitis.

Histological Findings:

The stomach, small and large intestine have moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Small and large intestine have increase in mucosal cell turnover (apoptosis). The small intestine also has moderate villar blunting and fusion. Large intestine also has scattered crypt abscesses.

Adipose throughout the body has moderate to moderately extensive depletion/atrophy.

Sections of lymph nodes, spleen (mild multifocal follicular deposition of protein compatible with amyloid), heart, kidneys (mild diffuse membranoproliferative change of glomeruli), lungs (mild pneumoconiosis), muscle, pancreas, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc enterocolitis with enteric villar blunting and fusion, and with scattered colonic crypt abscessation
2. Multicentric, moderate to moderately extensive adipose depletion

Histology Comments:

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. Additionally, the colonic crypt abscesses suggest ongoing low level infection and/or past infection such as with *Campylobacter*, *Shigella, Salmonella, Yersinia* sp or other bacterial infection.

Diagnosis #2 reflects deteriorating body condition as delineated grossly.

Please contact me with any questions, comments, concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-051
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # M04274
Species Mn Requester's Phone

Date of Death 3 Feb 18 Date of Necropsy 3 Feb 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 22 Mar 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Female, 13 year old, 9.8 kg pig-tailed macaque found dead 3 Feb. Gross findings were limited to postmortem changes.

Histological Findings:

Sections of adipose throughout the body exhibit extensive depletion/atrophy including peri-cardial adipose.

Degree of autolysis impedes evaluation of the GI tract. However, there is mild to moderate, diffuse, lamina propria increase in/infiltrate of lymphocytes, plasma cells, macrophages and eosinophils.

Sections of lymph nodes, spleen, liver (mild lobular collapse and lymphohistiocytic aggregates with scattered neutrophils), kidneys (mild to moderate membranoproliferative change of glomeruli, mild multifocal interstitial lymphohistiocytic aggregates and fibrosis, and scattered tubules with protein), lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis, and agonal congestion, edema, hemorrhage and aspiration), heart (mild megalo- and dyskaryosis), skin with mammary gland, pancreas and muscle are unremarkable besides autolysis and stated changes.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose depletion
2. Mild to moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis

Histology Comments:

Multicentric adipose depletion indicates inanition.

Diagnosis #2, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-052
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18075
Species Mn Requester's Phone _____

Date of Death 6 Feb 18 Date of Necropsy 6 Feb 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 18 May 18 ☐ Preliminary Gross ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus from dam Z11356 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have mild to moderate, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, adipose (adequate), liver, heart, kidneys, and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Mild to moderate, multifocal, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and only noninflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist RM

University of Washington
National Primate Research Center

Accession # 18-053
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z09122
Species Mn Requester's Phone

Date of Death 16 Feb 18 Date of Necropsy 16 Feb 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 18 May 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Female, 8 year old, 4.6 kg animal was part of the SPF colony at NIRC. Animal was on treatment for a traumatic wound and marginal body condition. Animal's weight dropped rapidly and was euthanized. Significant gross finding besides traumatic wound was poor body condition.

Histological Findings:

GI tract is autolyzed impeding evaluation. However, small intestine has multifocal, mild to moderate, lamina propria deposition of amyloid. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

The spleen has moderately extensive amyloid deposition in follicles, and liver has mild to occasionally moderate sinusoidal amyloid deposition.

Adipose has extensive, multicentric depletion/atrophy including epicardial adipose.

The right ventricular freewall has mild to moderate, multifocal, granulomatous infiltrate with associated myocellular degeneration. Other regions of heart are unremarkable besides adipose depletion noted.

Sections of lungs (mild lymphohistiocytic aggregates and pneumoconiosis), kidneys (scattered/low numbers of calcium and suppurative tubular casts, and mild membranoproliferative change of glomeruli diffusely), pancreas, and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to moderate, multifocal, enteric, hepatic and splenic follicular amyloid deposition: **Systemic secondary amyloidosis**

2. Extensive, multicentric adipose depletion
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis
4. Mild to moderate, multifocal, granulomatous myocarditis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract with cardiac inflammation also possibly contributing.

Diagnosis #2 represents inanition/deteriorating body condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

The myocarditis was likely subclinical unless critical conduction fibers were affected. Cause is speculative although trypanosomiasis or previous bacterial sepsis are possible causes.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-054_
Submission Date_6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester_____Colony_____ Investigator_Colony___ Animal ID #___Z18076
Species_____Mn____ Requester's Phone_____

Date of Death__18 Feb 18_ Date of Necropsy__18 Feb 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _18 May 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus, 300 gm, from dam Z12368 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have extensive, near-diffuse, deep aspiration of amniotic cells and debris.

Sections of spleen, adipose (adequate), thymus, liver, heart, kidney, and skin with umbilicus are unremarkable.

Final Principal Diagnosis(es):

1. Extensive, near-diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and noninflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM___

University of Washington
National Primate Research Center

Accession #___18-055_
Submission Date_6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester_____Colony_____ Investigator_Colony___ Animal ID #___Z18069
Species_____Mn____ Requester's Phone_____

Date of Death__19 Feb 18_ Date of Necropsy__19 Feb 18____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _18 May 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term fetus, 500 gm, from dam Z11110 from SPF colony at NIRC.

Histological Findings:

Lungs are mostly uninflated and have moderate, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, lymph nodes, thymus, liver, heart, kidney, GI tract and pancreas, muscle, and skin are unremarkable.

Final Principal Diagnosis(es):

1. Moderate, multifocal, deep aspiration of amniotic cells and debris with mostly uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and very little inflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist _____RM___

University of Washington
National Primate Research Center

Accession #___18-056_
Submission Date_6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18047
Species_____Mn____ Requester's Phone_____

Date of Death_21 Feb 18_ Date of Necropsy__21 Feb 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _21 May 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Four week old, 600 gm, female, from dam Z13123 from SPF colony at NIRC. Found dead in cage, and necropsy findings were good body condition, and severe, multicentric (head, chest, abdomen) trauma.

Histological Findings:

Lungs have massive, multicentric, acute hemorrhage.

Sections of spleen, lymph nodes, thymus, liver with gall bladder, heart, kidneys, GI tract and pancreas, muscle, and skin are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Massive, multicentric, acute trauma/hemorrhage

Histology Comments:

Demise was due to conspecific trauma as per gross and histological findings.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 18-057
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z15062
Species Mn Requester's Phone

Date of Death 21 Feb 18 Date of Necropsy 21 Feb 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 21 Mar 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Two year old, 2.7 kg, female from SPF colony at NIRC was under recurrent treatment for enteritis, did not respond to therapy, found recumbent in cage with severe rectal prolapse and was euthanized. Weight listed as 3.2 kg in Dec '17. Necropsy findings included poor body condition, and prolapsed colon/rectum with edematous and degenerated prolapsed tissue.

Histological Findings:

Sections of adipose throughout the body exhibit extensive depletion/atrophy including peri-cardial adipose. Pancreas has moderate, diffuse zymogen depletion.

Large intestines have moderate, multifocal suppuration of the lamina propria. GI tract is otherwise unremarkable besides autolysis and mild changes consistend with IBD/food allergy/hyerpsensitivity/dietary intolerance.

Sections of lymph nodes, spleen, liver, kidneys, lungs, heart, skin with mammary gland, and muscle are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose depletion with moderate, diffuse pancreatic zymogen depletion
2. Moderate, multifocal, suppurative colitis

Histology Comments:

Diagnosis #1 is consistent with inanition, particularly with a history of a young animal that should be growing and is losing weight, and the colitis is suspect as being secondary to inanition. The rectal prolapse could have occurred secondary to chronic, recurring diarrhea.

The colitis was probably bacterial, with common agents including *Shigella, Campylobacter, Salmonella, Yersinia* sp and others.

Please contact me with any questions, comments or concerns.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-058
Submission Date 6 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18077
Species Mn Requester's Phone

Date of Death 25 Feb 18 Date of Necropsy 26 Feb 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 21 May 18 ☐ Preliminary Gross ☐ Amended

Clinical History and Gross Findings:

Stillborn term fetus, female, from dam Z12353 from SPF colony at NIRC. No significant gross findings.

Histological Findings:

Lungs are mostly uninflated and have moderate to extensive, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, lymph nodes, thymus, liver, gall bladder, adipose (adequate), heart, kidneys, and skin at umbilicus (moderate acute subcutaneous hemorrhage) are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to extensive, multifocal, deep aspiration of amniotic cells and debris with mostly uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and partial inflation of the lungs, and lack of other overt lesions, are consistent with agonal aspiration due to fetal distress during delivery. As such, stillbirth due to dystocia is favored.

Please contact me with any questions, comments or concerns.

Pathologist RM

University of Washington
National Primate Research Center

Accession #___18-067_
Submission Date_13 Mar 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18072
Species_____MN____ Requester's Phone___(206) 685-6031_____

Date of Death_3/4/2018_ Date of Necropsy_3/4/2018_Time____1600hrs_____Pathologist ____CM/TH_

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _17 Apr 18_____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

The fetus presented as an abortion/stillbirth approximately 2 months premature at PM rounds. The dam (L08144) is being treated for valley fever, since 2/2016. Dam has had viable infanst 2014, 2016 and 2017.

Gross Description:

Examined is a two month premature fetal female pig-tail macaque that is 0.28kg.
The stomach is empty and the intestine, cecum and colon contain meconium. Both kidneys weigh together and spleen 3g, liver 11g, lungs/heart 9g, brain, 38g (cerebellar hemorrhage-trauma, possible from dropping when trying to separate infant from dam). The remainder of the exam is unremarkable.

Gross Diagnosis(es):

1. Stillbirth/Abortion

Gross Comments:

The fetus was a stillbirth. The changes seen grossly suggest fetal demise in utero that resulted in the abortion. The dam has been on treatment for valley fever with fluconazole. Histopathology on any abnormalities of tissues submitted is pending

Histological Findings:

Lungs are only multifocally minimally inflated and have moderate to moderately extensive, multifocal, deep aspiration of amniotic cells and debris.

Sections of brain, spleen, thymus, adipose (adequate), liver, gall bladder, heart, kidneys, thyroid glands and muscle are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to moderately extensive, multifocal, deep aspiration of amniotic cells and debris with mostly uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and only minimal inflation of the lungs are consistent with agonal aspiration due to fetal distress. A cause of the premature stillbirth is not identified histologically, though an infectious agent is unlikely considering lack of other lesions.

Please contact any of us with any questions, comments or concerns.

Pathologist CM/TH (gross)/RM (histo)_

University of Washington
National Primate Research Center

Accession #___18-074_
Submission Date_4 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18086
Species_____MN____ Requester's Phone___(206) 685-6031_____

Date of Death_3/25/18_ Date of Necropsy_3/25/18_Time_____18:50__Pathologist ___TH____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _22 May 18____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

Preterm stillbirth (estimated due date 04/15/18) was delivered this morning around 09:40 hours. This was the dams (K11143) 2rd infant. The previous infant was born on 10/8/16 and was delivered and raised without complication. The dam has a history of valley fever and is in a fluconazole treatment group. (Culture swab results 3/26/18: No Salmonella or Shigella isolated. No Campylobacter species isolated. No Aeromonas isolated).

Gross Description:

Examined is a preterm 0.49 kg,female pig-tail macaque in adequate body condition with the placenta detached from umbilical cord, with mild postmortem changes noted in the stomach and intestines. The head was severely misshapen with the bones of the cranium easily removed. A mild to moderate amount of bruising was noted over the temporal region. The underlying brain and nervous tissue was difficult to remove from the skull due to its broken egg yoke-like consistency.

Both kidneys weigh together 2g, spleen 4g, liver 9g, lungs/heart 12g, brain 25g and full placenta 192g. The kidneys were both slightly friable but otherwise normal. The remaining organs were of normal consistency and appearance given the stage of development. There was mild tearing of the skin noted over the distal right thigh region. The remainder of the exam is unremarkable.

Gross Diagnosis(es):

1. Stillbirth/Abortion

Gross Comments:

The cause of the stillbirth/abortion is not determined by gross examination but the severe deformation of the head and skull suggest congenital abnormalities. The dam's valley fever history and treatment is

considered a potential contributing factor to the fetal demise. Histopathology on any abnormalities of tissues submitted is pending.

Histological Findings:

Sections of placenta have multiple, large regions of acute necrosis that contain multifocal large aggregates of neutrophils.

Sections of brain, liver, gall bladder, kidneys, heart, lungs and umbilical cord are extensively autolyzed impeding evaluation, but have no overt lesions.

Final Principal Diagnosis(es):

1. Severe, multifocal, acute placental necrosis with multifocal, moderate, suppurative placentitis

Histology Comments:

The degree of degeneration of the fetal tissues/organs indicates in-utero death and resultant degradation before expulsion. The degree of placental necrosis (with detachment) with only moderate suppuration/placentitis suggests placental abruption with resultant necrosis and suppuration. However, there may also have been a bacterial placentitis that predisposed to/caused abruption.

Please contact either of us with any questions, comments or concerns.

Pathologist TH (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession #___18-075_
Submission Date_10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z16350
Species_____MN____ Requester's Phone___(206) 685-6031_____

Date of Death_4/6/18_ Date of Necropsy_4/6/18_Time_14:35__Pathologist ____TH____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _13 Apr 18____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

Z16350 underwent surgery for a left radius fracture repair on 4/6/18. The initial injury occurred on March 7th, 2018 (unknown trauma, inciting injury was not witnessed) and she was sedated for radiographs and a splint to be placed. She was moved from her group at that time into paired housing. The splint slipped distally on March 11th, 2018, at which point a cast was placed on the left arm. The cast remained on until March 20th, 2018, when she was found in her cage using the limb without the cast. She was sedated and repeat radiographs showed poor alignment of the radius. Surgical intervention was necessary and scheduled for April 6th, 2018. A temporary second cast was placed while waiting for surgery to minimize any further injury to the left arm.

On the morning of the surgery, she was sedated with ketamine and attempts were made to intubate her, however, the smallest available ET tubes (3.0) were too large for her airway and mask anesthesia was utilized instead. During anesthesia, she maintained an appropriate anesthestic depth for the surgery and did not require ventilation. The fracture repair took about one hour and she was gradually tapered off isoflurane and remained on oxygen. She was disconnected briefly from the anesthetic machine for post-surgical radiographs to be taken and was observed breathing on her own during this time. After the radiographs were taken, she was moved back to the surgery table and hooked back up to the anesthetic machine to receive oxygen and to begin recovery. It was at this point it was noted she was not taking a breath on her own. She was immediately ausculted and no heartbeat was detected. CPR was performed but she did not respond to repeated atropine or epinephrine doses.

The dam has a history of valley fever and is in a fluconazole treatment group. She was on this feed during the entirety of her pregnancy with Z16350. From the time Z16350 was born until the radius fracture injury on March 7th of 2018, she was on the fluconazole feed. After the injury, she was placed on a high-protein monkey chow. She had not been tested for valley fever and was not showing any clinical symptoms associated with the disease while she was in paired housing.

Gross Description:

Examined is a 2.12 kg, 1 year old, female pig-tail macaque in adequate body condition with rigor mortis noted (necropsy performed about 2.5 hours after time of death). The stomach was empty of contents, compatible with a fasted animal, and there was scant to mild digesta in the small intestines and moderate amounts of digesta and formed stool in the large intestine. A portion of the ileum (about 3-5 cm) appeared more translucent compared to the rest of the GI tract and was moderately distended with fluid digesta. A portion of this section of ileum along with the associated mesenteric lymph nodes was submitted for pathology. The pancreas appeared of normal size, color, and consistency. The gallbladder was moderately filled and patent and the liver was of normal to slightly enlarged size but normal color and texture. Multiple, very thin adhesions were noted along the liver's cranial aspect, connecting it to the diaphragm. The adhesions were easily broken down manually and were present along both the right and left sides. The diaphragm was smooth and intact. The spleen was normal in color and consistency and was somewhat small in size. The kidneys and adrenal glands appeared grossly normal and were of normal size, color, and consistency. The right kidney was cut longitudinally to assess the renal cortex and from gross visualization appeared normal. The urinary bladder was patent and moderately concentrated urine was easily expressed manually. The appearance of the bladder and the reproductive tract were unremarkable.

The lungs were underinflated but compatible with a post-anesthestic death. The color, however, of the lungs was very mottled and irregular throughout all of the lung lobes bilaterally. It ranged in color from patches that were a deep, dark red to areas that appeared light bubble-gum pink. No free fluid was noted in the thoracic cavity and the heart appeared of normal size. No perforations of the esophagus were noted and there was no fluid observed within the trachea when cut. Due to rigor mortis, only the distal half of the tongue could be easily removed.

The left radius was submitted for histology and included the bone plate and 8 screws placed during the fracture repair. A full thickness section of skin around the left mammary gland was included as well as a section of the sternum. The brain and pituitary gland were removed from the skull and submitted for histopathology and appeared normal on gross visualization. The left eye was also removed and submitted.

The thyroid and parathyroid glands could not be distinguished well in this patient and so a section of the proximal airway including larynx was removed and submitted for analysis.

Organ weights were as follows: all liver lobes and gallbladder 67 g, left kidney 7 g, spleen 7 g, right kidney 7 g, stomach 13 g, pancreas 3 g, all lung lobes with heart and thymus 55 g, brain and pituitary gland 98 g, left eye 5 g. The remainder of the exam is unremarkable.

Gross Diagnosis(es):

Post-anesthetic cardiopulmonary arrest

Gross Comments:

The cause of the sudden arrest while recovering from anesthesia in this case is not determined definitively by gross examination but the irregular coloring of the lungs suggest a pulmonary component. The adhesions of the liver lobes in conjunction with the abnormal lungs may indicate underlying and subclinical valley fever. While the initial radius fracture on radiographs did not appear consistent with a pathological bone fracture secondary to fungal infection, the animal had been off of fluconazole feed for just over one month at the time of death. Histopathology on tissue samples submitted is pending.

Histological Findings:

Stomach, small intestine and large intestine have mild to moderate lamina propria infiltrate of/increase in eosinophils, lymphocytes, plasma cells, and macrophages. The small intestine has moderate villar blunting and fusion. GALT is unremarkable.

Sections of brain, spleen (reactive endothelium and moderate follicular activity), lymph nodes (moderate follicular activity), liver (mild fatty change and scattered lymphohistiocytic aggregates), gall bladder, heart, kidneys, urinary bladder, lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and agonal congestion and edema), pancreas, muscle, and skin with mammary gland are unremarkable besides stated minor changes.

Final Principal Diagnosis(es):

1. Mild to moderate, diffuse, eosinophilic, lymphoplasmacytic and histiocytic gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Changes of profound significance are not identified histologically.

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with IBD/food allergy/hypersensitivity/dietary intolerance. Please contact me if you wish to discuss these changes further.

Please contact either or us with any questions, comments, concerns or desired changes/additions.

Pathologist TH (gross)/RM (histo)____

University of Washington
National Primate Research Center

Accession # 18-076
Submission Date 10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A07074
Species Mn Requester's Phone _____

Date of Death 6 Mar 18 Date of Necropsy 6 Mar 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 22 May 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

17 year old, 14.9 kg male was part of the SPF breeding colony at NIRC. Animal presented for weight loss, did not respond to therapy, and was euthanized. Significant gross finding was a firm liver.

Histological Findings:

Liver has moderate to moderately extensive, multifocal, sinusoidal, moderately effacing amyloid deposition. There also is mild to moderate, hydropic and vacuolar hepatocellular degeneration and pigment deposition, and mild, multifocal lymphohistiocytic aggregates.

Small intestine has mild to moderate, multifocal, lamina propria deposition of amyloid. GI tract also has moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils, small intestine has villar blunting and fusion, and large intestine has rare crypt abscesses.

Kidneys have diffuse, moderate to moderately extensive, membranoproliferative change of glomeruli, and also scattered, dilated, protein filled tubules and rare interstitial fibrosis with granulomatous inflammation.

Sections of lymph nodes, spleen, heart (mild to moderate megalo- and dyskaryosis, lipofuscinosis and steatosis), lungs (mild to moderate, alveolar emphysema and pneumoconiosis), air sac, muscle, pancreas, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate to moderately extensive, multifocal-hepatic sinusoidal, and small intestinal amyloid deposition: **Systemic secondary amyloidosis**
2. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

3. Moderately extensive, diffuse, membranoproliferative glomerulonephritis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. Moderate hepatic compromise would have been predicted currently, and mild to moderate malabsorption would have been predicted due to the small intestinal amyloid deposition, and these lesions are progressive.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

The subclinical glomerulonephritis was likely immune-mediated.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession #___18-077_
Submission Date_10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18104
Species_____Mn____ Requester's Phone_____

Date of Death__8 Mar 18_ Date of Necropsy__8 Mar 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _22 May 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term male fetus, 800 gm, from dam Z11021 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have moderate, near-diffuse, deep aspiration of amniotic cells and debris.

Sections of spleen, lymph nodes, thymus, liver, heart, kidneys, adipose (adequate), placenta (typical term changes) and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Moderate, near-diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation, non inflation of the lungs, very large fetal size, and lack of other overt lesions are consistent with stillbirth due to dystocia.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 18-078
Submission Date 10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z12424
Species Mn Requester's Phone

Date of Death 19 Mar 18 Date of Necropsy 19 Mar 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 18 Apr 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Female, 5 year old, 3.0 kg animal was part of the SPF colony at NIRC. Animal was on treatment for enteritis and was found dead 19 Mar '18. Gross exam did not have significant findings. The animal weighed 5.5 kg in May '17.

Histological Findings:

Stomach (moderate) and small intestine (extensive) have multifocal to more often diffuse lamina propria deposition of amyloid, and small intestine has extensive villar blunting and fusion. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. Large intestine has multifocal, mild to moderate areas of submucosal to occasionally mural lymphoid aggregates with follicle formation and areas of granulomatous inflammation.

Adipose has extensive, multicentric depletion/atrophy including epicardial adipose. Pancreas has moderate, diffuse zymogen depletion.

The spleen also has mild amyloid deposition in follicles, one lymph node has extensive amyloid deposition, and other nodes are unremarkable.

Sections of heart, lungs, liver (mild lymphohistiocytic aggregates, and mild lobular collapse), kidneys, muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, multifocal, gastrointestinal, lymphoid and splenic follicular amyloid deposition: **Systemic secondary amyloidosis**
2. Extensive, multicentric adipose depletion with moderate, diffuse, pancreatic zymogen depletion

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion
4. Multifocal, moderate, granulomatous mural colitis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Amyloid deposition in the GI tract contributed to adipose depletion/inanition via malabsorption.

Diagnosis #2 represents inanition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #4 likely represents the syndrome “Ulcerative cicatrizing colitis” of macaques (with areas of microscopic ulceration not being present in sections examined), and the favored etiology is a chronic, ulcerative, bacterial colitis.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-079_
Submission Date_10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18105
Species_____Mn____ Requester's Phone_____

Date of Death_20 Mar 18_ Date of Necropsy__20 Mar 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _24 May 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term female fetus, 500 gm, from dam A12266 from SPF colony at NIRC. Significant gross finding was lungs sinking in formalin.

Histological Findings:

Lungs are uninflated and have moderate to extensive, near-diffuse, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, liver, heart, kidneys, adipose (adequate), muscle, and skin with umbilicus are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, near-diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation, non inflation of the lungs, and lack of other overt lesions are consistent with stillbirth due to dystocia.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession #___18-080_
Submission Date_10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z11400
Species_____Mn____ Requester's Phone_____

Date of Death_28 Mar 18_ Date of Necropsy_28 Mar 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☐ Adequate ☒Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _24 May 18____ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 6 year old, 4.3 kg animal was part of the SPF colony at NIRC. Animal was on treatment for enteritis and weight loss, did not respond to therapy, and was euthanized 28 Mar. Significant gross findings were marginal body condition and suspiscion of colitis.

Histological Findings:

Stomach (mild and multifocal) and small intestine (extensive and diffuse) and large intestine (mild and multifocal) have lamina propria deposition of amyloid, and small intestine has moderate villar blunting and fusion. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Adipose has moderate, multicentric depletion/atrophy including epicardial adipose. Pancreas has moderate, diffuse zymogen depletion.

The spleen also has extensive amyloid deposition in follicles.

Sections of lymph nodes, heart (mild multifocal lymphohistiocytic aggregates and megalo- and dyskaryosis), lungs (mild pneumoconiosis and perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates), liver (mild lymphohistiocytic aggregates, and mild lobular collapse), kidneys (mild membranoproliferative change of glomeruli), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, multifocal, gastrointestinal, and splenic follicular amyloid deposition: **Systemic secondary amyloidosis**
2. Moderate, multicentric adipose and pancreatic zymogen depletion

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Amyloid deposition in the GI tract contributed to adipose depletion via malabsorption.

Diagnosis #2 represents deteriorating body condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-081_
Submission Date_10 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z13269
Species_____Mn____ Requester's Phone_____

Date of Death__2 Apr 18_ Date of Necropsy_2 Apr 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☐ Final __18 Apr 18_____ ☐ Preliminary _____ ☒ Amended __14 May 18___

Clinical History and Gross Findings:

4 year old, 3.8 kg female was part of the SPF breeding colony at NIRC. Animal was found dead 2 Apr 18. Significant gross findings were poor body condition and firm, meaty liver. Weight was 5.2 kg in Dec '17.

Histological Findings:

Liver has massive, diffuse-sinusoidal, effacing amyloid deposition. There also are mild, multifocal lymphohistiocytic aggregates.

Adipose throughout the body, including epicardial adipose, has extensive depletion. Pancreas has diffuse, extensive zymogen depletion.

Stomach (moderate, multifocal) and small intestine (moderate to extensive and diffuse) have lamina propria deposition of amyloid, and small intestine also has moderate villar blunting and fusion. Duodenum has extensive granulomatous to pyogranulomatous inflammation of the Brunner's glands. GI tract also has moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils, and one section of large intestine has moderate *Balantidium* sp overgrowth.

Sections of lymph nodes, spleen (moderate hemosiderosis), heart, lungs (mild to moderate, multifocal, peripheral and subpleural, alveolar aggregates of foamy histiocytes with mild suppuration and lymphoid infiltration as well), kidneys, muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Massive, effacing, diffuse-hepatic sinusoidal, and moderate to extensive, gastric and small intestinal amyloid deposition: **Systemic secondary amyloidosis**
2. Extensive, multicentric adipose and diffuse pancreatic zymogen depletion
3. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis, with regional, moderate, large intestinal *Balantidium* sp overgrowth

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. Extensive hepatic compromise would have been predicted currently, malabsorption would have occurred due to the GI amyloid deposition, and these lesions are progressive.

Diagnosis #2 is consistent with inanition, secondary to amyloidosis.

The GI inflammation in diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The regional ciliate overgrowth in the large intestine indicates abnormal GI flora that can result in diarrhea and other consequences.

The subclinical pulmonary inflammation is suggestive of Pneumocystosis; a special stain is pending and an addendum will follow.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist _____RM__

ADDENDUM RM 14 MAY 18

A GMS stain of lung is equivocal; there is not enough evidence to support a diagnosis of “pneumocystis pneumonia” though there is the possibility of a low level, subclinical infection.

University of Washington
National Primate Research Center

Accession #___18-094_
Submission Date_27 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___A12242
Species_____Mn____ Requester's Phone___(206) 685-6031_____

Date of Death_4/27/18_ Date of Necropsy_4/27/18_Time_____1300___Pathologist ___RM____

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __21 Jun 18__ ☐ Preliminary ____30 Apr 18_____ ☐ Amended _____

Clinical History:

Part of SPF colony in AZ, history of Valley Fever titer positivity, periodic diarrhea, fluctuating body weight, and no pregnancies since 2016.

Gross Description:

A 10 year old, approximately 6 kg, intact female with active reproductive tract, pig tailed macaque is presented euthanized in good postmortem and marginal nutritional (moderately reduced musculature and scant adipose stores) condition. There is mild to moderate tartar deposition on the teeth. Otherwise there are no significant external lesions and the integumentary system is grossly unremarkable.

There are moderate numbers of mesenteric lymph nodes (paracolonic, duodenal and jejunal) that are firm, bright white and 3-7 mm diameter. The colon has a few 1-2 cm length regions with mild fibrosis of the serosa and possible reduction of lumen diameter. Otherwise, the hemic lymphatic, nervous, cardiovascular, respiratory, digestive, urogenitial, endocrine and musculoskeletal systems are grossly unremarkable.

Gross Diagnosis(es):

1. Mild to moderate, multifocal, fibrosing, mesenteric lymphadenitis
2. Mild, multifocal, fibrosing serositis: colon

Gross Comments:

The mesenteric lymphadenitis was a sublincial finding that most often will occur subsequent to chronic GI infections. The colonic changes suggest also past colitis and possibly early “cicatrizing colitis”. Histopathology should further elucidate and is pending.

Histological Findings:

Small intestine has mild to extensive lamina propria deposition of amyloid. Also, throughout the stomach, small and large intestine there is moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion and scattered tortuous crypts. Large intestine also has focal ulceration of mucosa with superficial fibrinosuppurative crusts, and with transmural lymphocytic to granulomatous and fibrosing infiltrate with lymphofollicular formation and submucosal fibrosis. There are occasional mural lymphofollicular aggregates, and also fibrosis or serosa with lymphofollicular aggregates. Liver has mild to moderate, multifocal, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation and lobular collapse. Gall bladder is unremarkable. Spleen has extensive follicular amyloid deposition.

Sections of brain, lymph nodes, heart (mild megalo- and dyskaryosis), kidneys (mild diffuse membranoproliferative change of glomeruli), lungs (moderate pneumoconiosis and minimal lymphohistiocytic aggregates), pancreas, muscle, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Mild to extensive, multicentric, enteric, hepatic, and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Moderate, regional, ulcerative and transmural, fibrinosuppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**
3. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Demise was due to multiple factors, mostly related to the GI tract

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-095
Submission Date 27 Apr 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # T06226
Species Mn Requester's Phone (206) 685-6031

Date of Death 4/27/18 Date of Necropsy 4/27/18 Time 1400 Pathologist RM

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 21 Jun 18 ☐ Preliminary 30 Apr 18 ☐ Amended

Clinical History:

Part of SPF colony in AZ, history of Valley Fever titer positivity, fluctuating body weight, and no pregnancies since 2017.

Gross Description:

A 11 year old, approximately 6.5 kg, intact female with active reproductive tract, pig tailed macaque is presented euthanized in good postmortem and marginal nutritional (moderately reduced musculature and scant adipose stores) condition. There is mild to moderate kyphosis of the lumbosacral lesion, and mild to moderate tartar deposition on the teeth. Otherwise there are no significant external lesions and the integumentary and musculoskeletal systems are grossly unremarkable.

The liver is slightly enlarged with slightly rounded edges, and with some regions that are slightly pale. Otherwise, the hemic lymphatic, nervous, cardiovascular, respiratory, digestive, urogenitial, and endocrine systems are grossly unremarkable.

Gross Diagnosis(es):

1. Mild hepatomegaly with discoloration

Gross Comments:

The liver changes suggest the possibility of amyloidosis, though other causes are possible. Histopathology should further elucidate and is pending.

Histological Findings:

Stomach, small intestine and large intestine have moderate lamina propria infiltrate of/increase in eosinophils, lymphocytes, plasma cells with rare Mott cells, and macrophages. The small intestine has moderate villar blunting and fusion, and increase in mucosal cell turnover (apoptosis). Esophagus is unremarkable. GALT is unremarkable.

Sections of brain, lymph nodes, spleen, liver (mild lobular collapse, periportal to random lymphohistiocytic aggregates, and mild fatty change), kidneys (mild membranoproliferative change of glomeruli), lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and moderate pneumoconiosis), pancreas, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate, diffuse, eosinophilic, lymphoplasmacytic and histiocytic gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. Changes present are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. Please contact me if you wish to discuss these changes further.

The mild fatty liver noted histologically probably led to the gross appearance of the liver.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-113
Submission Date 17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # W05135
Species Mn Requester's Phone _____

Date of Death 12 Apr 18 Date of Necropsy 12 Apr 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 24 May 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Indonesian orgin, male, 13+ year old, 14 kg animal was part of the SPF colony at NIRC. Animal had a PE 11 Apr and was found dead the next day. Significant gross findings were adequate body condition and moderate (estimated as 150 ml) hemorrhage in retroperitoneal/inguinal region.

Histological Findings:

Tissues/organs have moderate to extensive (GI tract) autolysis impeding evaluation. GI tract has estimated mild to moderate inflammation consistent with IBD/food allergy/hyerpsensitivity/dietary intolerance.

Sections of lymph nodes, spleen, adipose (adequate to abundant), pancreas, thyroid gland (moderate lipofuscinosis), parathyroid gland, heart (moderate megalo- and dyskaryosis and lipofuscinosis), liver (mild lymphohistiocytic aggregates, and mild lobular collapse), kidneys (mild membranoproliferative change of glomeruli), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Autolyzed tissues/organs – undetermined cause of death
2. Mild to moderate (estimated), diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Degree of autolysis impedes evaluation of tissues/organs. A cause of demise is not identified. The degree of hemorrhage described grossly would not have been life threatening.

Diagnosis #2, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-114_
Submission Date_17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z12354
Species_____Mn____ Requester's Phone_____

Date of Death__11 Apr 18_ Date of Necropsy__12 Apr 18____Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _17 Jul 18____ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 5 year old, 4.3 kg animal was part of the SPF colony at NIRC. Animal was not responding to treatment for enteritis and weight loss and was euthanized. Significant gross finding was poor body condition.

Histological Findings:

Tissues/organs have moderate to extensive (GI tract) autolysis impeding evaluation, and meaningful evaluation of GI tract is not possible.

Adipose has multicentric, extensive depletion.

Sections of lymph nodes, spleen, pancreas, heart, lungs, liver (mild lymphohistiocytic aggregates, and mild lobular collapse), kidneys, muscle, pancrease (extensive autolysis) and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Autolyzed tissues/organs
2. Multicentric, extensive adipose depletion

Histology Comments:

Degree of autolysis impedes evaluation of tissues/organs, in particular meaningful evaluation of GI tract is not possible. Diagnosis #2 is consistent with inanition.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-115
Submission Date 17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A99188
Species Mn Requester's Phone _____

Date of Death 19 Apr 18 Date of Necropsy 19 Apr 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 17 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 21 year old, 7.4 kg animal was part of the SPF colony at NIRC. Did not respond to therapy for weight loss (weight in Jan '18 was 11 kg) and lethargy and was euthanized. Gross finding was small liver.

Histological Findings:

GI tract (small intestine, large intestine and stomach) has mild to moderate inflammation consistent with IBD/food allergy/hyerpsensitivity/dietary intolerance (lymphocytes, plasma cells, macrophages and eosinophils).

Sections of lymph nodes, spleen, adipose (adequate), pancreas, heart (mild megalo- and dyskaryosis and lipofuscinosis), liver (moderate periportal to bridging hepatocellular vacuolar degeneration, and mild lymphohistiocytic aggregates and lobular collapse), kidneys (mild to moderate membranoproliferative change of glomeruli, interstitial lymphohistiocytic infiltrates, and tubular cysts or dilated tubules sometimes containing protein), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

A cause of demise is not identified. Diagnosis #1, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The other changes noted were not clinically insignificant, the fatty liver likely was associated with weight loss, and the renal changes were age-related.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-116
Submission Date 17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A09117
Species Mn Requester's Phone _____

Date of Death 1 May 18 Date of Necropsy 1 May 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 17 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 11 year old, 6.5 kg animal was part of the SPF colony at NIRC. Animal presented with acute gastric bloat, treatment was unsuccessful, and animal was euthanized. Gross findings were consistent with bloat; stomach was dilated with food/water/gas slurry after antemortem evacuation.

Histological Findings:

GI tract (small intestine, large intestine and stomach) has mild to moderate inflammation consistent with IBD/food allergy/hyerpsensitivity/dietary intolerance (lymphocytes, plasma cells, macrophages and eosinophils), and there is also villar blunting and fusion.

Sections of lymph nodes, spleen, adipose (adequate), pancreas, heart (mild to moderate, multifocal, interstitial lymphohistiocytic infiltrates with occasional degenerate myocyte), liver (mild lymphohistiocytic aggregates and lobular collapse), kidneys (mild to moderate membranoproliferative change of glomeruli), lungs, muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Acute, severe gastric dilatation (gastric bloat): gross diagnosis
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion
3. Mild to moderate, multifocal, granulomatous myocarditis

Histology Comments:

AS per history and gross findings, demise was due to acute gastric bloat.

Diagnosis #2, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

The cardiac inflammation (diagnosis #3) suggests subclinical Chagas disease particularly as this animal spent significant time in Texas at SNBL.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-117
Submission Date 17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # W05120
Species Mn Requester's Phone _____

Date of Death 3 May 18 Date of Necropsy 3 May 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 17 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Male, 13+ year old (Indonesian origin), 11 kg animal was part of the SPF colony at NIRC. History of recurrent enteritis, with non-response to therapy with current case and also with loss of body weight, and was euthanized. Gross finding was marginal body condition.

Histological Findings:

GI tract (small intestine, large intestine and stomach) has mild to moderate inflammation consistent with IBD/food allergy/hyerpsensitivity/dietary intolerance (lymphocytes, plasma cells, macrophages and eosinophils), and there also is villar blunting and fusion.

Sections of lymph nodes, spleen, adipose (adequate overall), pancreas, heart (mild megalo- and dyskaryosis and lipofuscinosis), liver (minimal lymphohistiocytic aggregates and mild lobular collapse), kidneys (mild to moderate membranoproliferative change of glomeruli, focal minimal interstitial lymphohistiocytic infiltrate, and focal minimal infarct), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

A cause of demise is not identified. Diagnosis #1, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The other changes noted were not clinically insignificant.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-118_
Submission Date_17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z15264
Species_____Mn____ Requester's Phone_____

Date of Death_4 May 18_ Date of Necropsy_4 May 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☐ Adequate ☒Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _17 Jul 18____ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 2 year old, 3.0 kg animal was part of the SPF colony at NIRC. Animal was on treatment for enteritis and weight loss (weight in Dec '17 was 4.1 kg), did not respond to therapy, and was euthanized. Significant gross findings were marginal body condition and diarrhea.

Histological Findings:

Stomach and large intestine (mild and multifocal) and small intestine (mild to extensive and diffuse) and have lamina propria deposition of amyloid, and small intestine has moderate villar blunting and fusion. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Adipose has moderate to extensive, multicentric depletion/atrophy. Pancreas has moderately extensive, diffuse zymogen depletion.

The spleen and a lymph node also have mild to moderate amyloid deposition.

Sections of other lymph nodes, heart, lungs, liver (mild lymphohistiocytic aggregates, and mild lobular collapse), kidneys, muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to extensive, multifocal, gastrointestinal, lymph node, and splenic amyloid deposition: **Systemic secondary amyloidosis**
2. Moderate to extensive, multicentric adipose and diffuse pancreatic zymogen depletion
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Amyloid deposition in the small intestine contributed to adipose depletion via malabsorption.

Diagnosis #2 represents deteriorating body condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-119
Submission Date 17 May 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16305
Species Mn Requester's Phone _____

Date of Death 12 May 18 Date of Necropsy 13 May 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 17 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 1.7 year old, 1.4 kg animal was part of the SPF colony at NIRC. Animal presented in poor body condition (no weight gain since weight recorded in Dec '17) and dehydrated, and found dead in cage 12 May. Significant gross findings were poor body condition and diarrhea.

Histological Findings:

Stomach, small intestine, and large intestine have multifocal, mild to moderate lamina propria deposition of amyloid. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Adipose has extensive, multicentric depletion/atrophy including epicardial adipose. Pancreas has moderate, diffuse zymogen depletion.

The spleen also has mild, multifocal, follicular amyloid deposition. Spleen and lymph nodes have moderate lymphoid atrophy.

Sections of heart, lungs, liver, kidneys (focal mild interstitial fibrosis in cortex with entrapped atrophied tubules), muscle and skin with mammary gland are unremarkable besides stated minor change and autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose, moderate diffuse pancreatic zymogen, and multicentric lymphoid depletion
2. Mild, multifocal, gastrointestinal and splenic amyloid deposition: **Systemic secondary amyloidosis**

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

Diagnosis #1 represents inanition.

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract.

Diagnosis #3, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-123_
Submission Date 27 May 2018

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator___Colony_ Animal ID #___Z08105_____
Species_____Mm____ Requester's Phone_____

Date of Death__27 May 2018_ Date of Necropsy_____27 May 2018__Time__1pm___Pathologist _____CH/AB_

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __25 Jul 2018_ ☒ Preliminary _27 May 2018_____ ☐ Amended _____

Clinical History: this animal was assigned to "research reserve" and experienced clinical signs of bloat several days ago, with decompression and ensueing poor appetite and lethargy. There is hypoalbuminemia and monocytosis on CBC that on smear evaluation is more consistent with a toxic left shift. Euthanasia was elected.

Gross Description:
A 6.99 kg The abdomen was grossly distended. There was cloudy peritoneal fluid present (approx. 100 mls), and fibrinous adhesions covering the omentum and throughout the abdomen. Small abscesses were present in the omentum, and mesenteric lymph nodes were enlarged. The proximal colon was markedly distended with gas, and the distal colon was not distended and contained normal stool. Although there was a clear demarcation between the two regions, there was no physical obstruction. No perforation could be detected, but there were some small, old blood clots near the duodenal flexure. The liver was firm. There was some pericardial fluid present, but heart and lungs appeared normal.

Blood smears (collected at time of death): 90% mature neutrophils, 3% lymphocytes, 3% monocytes and 4% bands. Neutrophils have a few cytoplasmic vacuoles (mild toxic changes) and may have been counted as monocytes but overall a mature neutrophilia with slight left shift.

Gross Diagnosis(es):
Peritonitis, fibrinous, with mesenteric lymphadenopathy and proximal colonic gas distension.

Gross Comments:
Peritonitis may be secondary to the bloat and/or decompression.

Histological Findings:
Sections from a lymph node (unspecified site), spleen (mild fibrinous peritonitis, mild lymphoid hyperplasia), liver (mild fibrinous peritonitis, multifocal, moderate to severe amyloidosis with occasional random hepatocyte necrosis and mixed hepatitis), gall bladder, heart, kidneys (multifocal, mild membranous glomerulonephritis), lungs (multifocal, mild chronic pleuritis with fibrosis), adrenal glands, esophagus, aorta, skin with mammary glands, reproductive tract (multifocal fibrinous and suppurative peritonitis (ovaries/oviduct and uterus)) are examined.

Gastrointestinal tract: there is multifocal to coalescing moderate severe fibrinous peritonitis, with abundant neutrophils, macrophages and mixed inflammation. Inflammation is more severe surrounding the sections of colon, with mild peritonitis around the proximal gastrointestinal tract. Pustules sometimes surround embedded ingesta material and mixed bacterial organisms. Inflammation and edema extend minimally into the muscularis layers, and minimally around the serosa of the pancreas. There is mild (stomach) to moderate (small intestine, colon) mucosal chronic to mixed inflammation throughout the tract. Villi appear to be robust.

Mesenteric lymph nodes: there is diffuse, moderate to marked lymphoid follicular hyperplasia with fibrinous peritonitis, areas of necrosis and bacteria.

Final Principal Diagnosis(es):

1. Peritonitis, moderate to severe, neutrophilic to mixed, with mixed bacteria (septic), embedded ingesta, necrosis and mesenteric lymphoid hyperplasia.
2. Gastroenterocolitis, mild to moderate, diffuse, chronic to mixed.
3. Hepatic amyloidosis, multifocal to coalescing, moderate to severe, with random hepatocellular necrosis and mild fibrinous peritonitis.

Histology Comments: peritonitis with bacteria and ingesta material are consistent with perforation of the gastrointestinal tract, likely secondary to the previous bloat episode. Hepatic amyloidosis may be associated with chronic inflammation, possibly related to chronic gastroenterocolitis.

Pathologist_____CH/AB_____

University of Washington
National Primate Research Center

Accession # 18-125
Submission Date 7 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z15376
Species Mn Requester's Phone

Date of Death 18 May 18 Date of Necropsy 18 May 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 19 Jul 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Two year old, 1.4 kg, male part of SPF colony in NIRC, on treatment for enteritis and declining body condition, with no response to treatment and euthanized 18 May. Gross findings were poor body condition and evidence of enteritis.

Histological Findings:

Small intestine has extensive, diffuse lamina propria deposition of amyloid. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate to severe villar blunting and fusion and scattered tortuous crypts. Large intestine also has moderate overgrowth of *Balantidium* sp, and stomach has extensive spiral bacteria infection in fundic region. Liver has moderate to extensive and effacing, diffuse, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation. Spleen has extensive follicular amyloid deposition.

Adipose has multicentric, dessiminated atrophy/depletion. Pancreas has extensive, diffuse depletion of zymogen.

Sections of lymph nodes, heart, kidneys, muscle, and skin are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric, enteric, hepatic, and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Extensive, multicentric adipose depletion and diffuse, pancreatic zymogen depletion
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and with moderate, large intestinal *Balantidium* sp overgrowth and extensive, gastric fundic, spiral bacteria infection

Histology Comments:

Demise was due to multiple factors, mostly related to the GI tract.

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation probably inducing amyloidosis in this case was the GI tract. The degree of enteric amyloid deposition led to malabsorption contributing significantly to diagnosis #2 which represents inanition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The *Balantidium* sp overgrowth was probably secondary to treatments (antibiotics) and due to abnormal GI flora. The gastric spiral bacteria should be considered commensals.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-126
Submission Date 7 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16015
Species Mn Requester's Phone _____

Date of Death 18 May 18 Date of Necropsy 18 May 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 19 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Two year old, 1.9 kg, female part of SPF colony in NIRC, on treatment for enteritis and lumbar abscess, became depressed, and euthanized 18 May. Gross findings were marginal body condition and lumbar abscess has penetration into the abdomen with peritonitis and abscessation/tract formation involving GI tract.

Histological Findings:

Most abdominal organs/tissues have chronic-active inflammation with chronic abscessation and pyogranuloma and tract formation, with tracts containing foreign and plant material, giant cells, and often florid proliferation of mixed bacteria with Splendore-Hoeppli material. Involved organs/tissues include spleen, small and large intestine, mesenteric nodes, and body wall musculature. GI tract also has mild to moderate lamina propria infiltrate of/increase in lymphocytes, plasma cells and macrophages.

Sections of other lymph nodes, heart (focal adipose with degeneration, histiocytic infiltrate with giant cells and cholesterol clefts), kidneys, lungs, and liver (mild lobular collapse and scattered lymphohistiocytic aggregates) are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Penetrating abdominal wound with chronic-active cellulitis and peritonitis with tracts containing foreign and plant material and florid mixed bacteria
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

Demise was due to the penetrating abdominal wound that probably was a bite wound, and with subsequent cellulitis and profound peritonitis.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-127
Submission Date 7 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z11103
Species Mn Requester's Phone _____

Date of Death 19 May 18 Date of Necropsy 19 May 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 19 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 7 year old, 5.3 kg animal was part of the SPF colony at NIRC. Animal presented in poor body condition with enteritis and dehydrated, did not respond to therapy, and was euthanized 19 May. Significant gross findings were poor body condition, liver with accentuated lobular pattern, pale kidneys, evidence of enteritis, and gravid uterus.

Histological Findings:

Stomach (moderate), small intestine (moderate to extensive), and large intestine (mild) have multifocal to diffuse in the small intestine and stomach, lamina propria deposition of amyloid. GI tract also has mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils, and small intestine has moderate villar blunting and fusion with scattered tortuous crypts.

Adipose has extensive, multicentric depletion/atrophy including epicardial adipose, and epicardial adipose has multifocal degeneration with histiocytic infiltrate with giant cells and cholesterol cleft formation. Pancreas has moderate, diffuse zymogen depletion.

The spleen also has extensive, disseminated, follicular amyloid deposition. Some lymph nodes have moderate amyloid deposition.

Kidneys have moderate, multifocal, interstitial granulomatous and fibrosing inflammation with parenchymal effacement, there are multifocal degenerate and regenerative tubules, glomeruli diffusely have mild to moderate membranoproliferative change, and moderate numbers of tubules are protein-filled.

Uterus with placenta reveals multifocal, extensive regions of acute necrosis with apparent premature separation, and with scant, mixed inflammation.

Sections of heart, lungs, airsac, muscle and skin are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric, gastrointestinal, splenic, and lymph node amyloid deposition: **Systemic secondary amyloidosis**
2. Extensive, multicentric adipose, and moderate diffuse pancreatic zymogen depletion
3. Moderate, multifocal, chronic interstitial nephritis
4. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis
5. Multifocal, extensive, acute placental necrosis with apparent premature separation

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The sites of chronic inflammation potentially inducing amyloidosis in this case were the gastrointestinal tract and kidneys. The degree of enteric amyloid deposition led to malabsorption which contributed to inanition.

Diagnosis #2 represents inanition.

Chronic interstitial nephritis has a plethora of possible causes, and as is typical the cause in this case is not evident. Only mild to moderate renal compromise would have been predicted.

Diagnosis #4, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #5 is consistent with placental abruption.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-128
Submission Date 7 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # M03372
Species Mn Requester's Phone _____

Date of Death 1 Jun 18 Date of Necropsy 1 Jun 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 20 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Female, 14 year old, 7.9 kg animal was part of the SPF colony at NIRC. Animal was on treatment for enteritis and weight loss, did not respond to therapy, and was euthanized. Significant gross findings were firm liver with accentuated lobular pattern and suspicion of enterocolitis.

Histological Findings:

Stomach (mild and multifocal) and small intestine (mild to moderately extensive and diffuse) have lamina propria deposition of amyloid, and small intestine has moderate villar blunting and fusion. GI tract also has moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Large intestine has moderate increase in *Balantidium* sp.

Sections of lymph nodes, spleen, adipose (adequate), heart, lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), liver (mild lymphohistiocytic aggregates, and mild lobular collapse), kidneys (mild membranoproliferative change of glomeruli and multifocal interstitial lymphohistiocytic infiltrates and fibrosis), pancreas, muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to moderately extensive, multifocal, gastric and enteric amyloid deposition: **Systemic secondary amyloidosis**
2. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and with moderate large intestinal *Balantidium* sp overgrowth

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Amyloid deposition in the small intestine would eventually have led to malabsorption.

Diagnosis #2, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. Further, the ciliate overgrowth indicates imbalanced/abnormal GI flora.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-129
Submission Date 7 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A03169
Species Mn Requester's Phone _____

Date of Death 1 Jun 18 Date of Necropsy 1 Jun 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 20 Jul 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Nineteen year old, 6.5 kg, female part of SPF colony in NIRC, on treatment for recurrent enteritis and declining body condition, with no response to treatment and euthanized 1 Jun. Gross findings were poor body condition, hepatomegaly with pale mottling, and evidence of enteritis.

Histological Findings:

Liver has extensive and effacing, diffuse, sinusoidal amyloid deposition and there also is minimal, mulitfocal lymphohistiocytic inflammation.

Adipose has multicentric, dessiminated, extensive atrophy/depletion including epicardial adipose. Pancreas has moderate, diffuse depletion of zymogen.

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion.

Sections of lymph nodes, spleen (mild multifocal follicular amyloid deposition), heart (mild megalo- and dyskaryosis and lipofuscinosis), kidneys (Mild to moderate membranoproliferative change of glomeruli and mild medullary amyloid deposition), lungs (moderate pneumoconiosis and alveolar emphysema and mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates), muscle, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Mild to extensive, multicentric, hepatic, splenic and renal amyloid deposition: **"Systemic secondary amyloidosis"**
2. Extensive, multicentric adipose depletion and diffuse, moderate pancreatic zymogen depletion

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Demise was due to amyloidosis and consequences thereof.

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation probably inducing amyloidosis in this case was the GI tract. The degree of hepatic amyloid deposition likely resulted in moderate or more hepatic compromise.

Diagnosis #2 represents inanition secondary to advancing amyloidosis.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession #___18-130_
Submission Date_7 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___A11241
Species_____Mn____ Requester's Phone_____

Date of Death__3 Jun 18_ Date of Necropsy_3 Jun 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __20 Jul 18__ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Nine year old, 4.1 kg, female part of SPF colony in NIRC, presented with extensive weight loss, found recumbent and euthanized 3 Jun. Gross findings was poor body condition.

Histological Findings:

Adipose has multicentric, dessiminated, extensive atrophy/depletion including epicardial adipose. Pancreas has mild, diffuse depletion of zymogen.

Throughout the stomach, small and large intestine there is moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion. One section of large intestine has moderate granulomatous submucosal inflammation focally. Mucosa in this section has been artifactually removed precluding analysis. Fundic stomach has extensive spiral bacteria infection.

Sections of lymph nodes, spleen, heart (mild megalo- and dyskaryosis and minimal lipofuscinosis), kidneys (mild to moderate membranoproliferative change of glomeruli and minimal lymphohistiocytic aggregates), lungs (minimal pneumoconiosis and alveolar emphysema), muscle, and skin with mammary gland are unremarkable besides stated minor changes.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and with extensive gastric fundic spiral bacteria infection
2. Extensive, multicentric adipose depletion and diffuse, mild pancreatic zymogen depletion

Histology Comments:

Diagnosis #1, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The gastric spiral bacteria should be considered commensals.

Diagnosis #2 represents inanition.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-140
Submission Date 20 Jun 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18123
Species MN Requester's Phone 206.685.1842

Date of Death 6/15/18 Date of Necropsy 6/15/18 Time 1425-1505 hrs Pathologist TH

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final 23 Jul 18 ☐ Preliminary Gross ☐ Amended _____

Clinical History:

M11051 (dam) gave birth to Z18123 on June 10th without any apparent difficulty in a breeding group compound. This particular group has been on fluconazole treated feed since March 2016. During afternoon observations on June 15th, the dam was discovered holding the deceased infant. Prior to this time, no abnormal behaviors of either the dam or infant were noted and they appeared well bonded. The infant had previously been observed nursing and appeared alert. On June 14th, the dam came up to the front of the housing complex for treats and the infant was nursing and grasping very well at this time.

Gross Description:

Examined is a 0.44kg, 5 day old male pig-tail macaque in lean body condition (1.5/5). No fractures, bruising, or other signs of injury were identified. There were two very small abrasions on the right eyebrow and right forehead, measuring 2 x 1 mm and 4 x 2 mm, respectively with no swelling or bruising noted around the abrasions. It could not be definitively determined if these abrasions were ante or postmortem. The abrasions were not present on the June 14th visual inspection while the dam was taking treats. A single piece of moistened bedding was found in the oral cavity and measured about 11mm x 4 mm. There was no fluid present from either nasal passage. The distal tip (about 8 mm) of the tongue appeared dried out.

The thoracic cavity did not contain any free fluid, and the heart and pericardium appeared normal with the diaphragm intact. The lungs were slightly mottled in color, ranging from light to dark pink in color and no exudate was present on cross section. All portions of lung submitted for histopathology floated in formalin. A swab from the trachea was collected and submitted for analysis.

There were minimal deposits of fat within the subcutaneous layer and minimal adipose tissue internally within the omentum and mesentery. The stomach contained a moderate amount of fluid digesta and the GI tract contained mild to moderate amounts of digesta, predominantly in the small intestines. Several portions of the distal small intestine and proximal large intestine appeared lighter in color, almost translucent, relative to surrounding tissue with a moderate amount of gas present. No lymphadenopathy

was appreciated but multiple sections of gastrointestinal tract and lymph nodes were submitted for histopathology. A rectal swab was also collected and submitted. The adrenal glands appeared slightly enlarged and were submitted for histopathology along with sections from both kidneys, which appeared normal. The remaining internal organs appeared unremarkable.

Gross Diagnosis(es):

1. Spontaneous infant death

Gross Comments:

The cause of death in this case is unclear at this time. The lean body condition and low body weight in combination with the visual changes noted in the gastrointestinal tract suggest either malnutrition and/or malabsorption. While the appearance of the distal tongue may have been due to portmortem changes, mild dehydration cannot be ruled out and may have contributed to a hypovolemic state.

Histological Findings:

Lungs have severe, near diffuse, effacing suppurative to pyogranulomatous infiltrate of all airways.

Sections of brain, spleen, thymus, liver, heart, kidney, pancreas, salivary gland, muscle, skin, tongue, and GI tract (degree of autolysis of GI tract precludes accurate assessment but there are no overt lesions) are histologically unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Severe, diffuse, suppurative to pyogranulomatous pneumonia

Histology Comments:

Death was due to the pneumonia that almost certainly was of bacterial origin. Marginal nutritional condition (noted grossly)/inadequate nursing can predispose infants to pneumonia, and gross findings suggests this occurred in this case. The most common agent causing pneumonia in this age group is *Klebsiella* sp.

Please contact either of us with any questions, comments or concerns.

Pathologist ___TH (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession # 18-166
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # M11059
Species Mn Requester's Phone _____

Date of Death 11 Jun 18 Date of Necropsy 11 Jun 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 7 Sep 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Seven year old, 5.6 kg, female part of SPF colony in NIRC, previously treated for enteritis, continued to lose weight and abdomen developed increasing distension, and euthanized 11 Jun. Gross findings were fair body condition, enlarged liver with rounded edges and meaty texture, and colonic distension.

Histological Findings:

Liver has moderate to extensive and multifocally effacing, near-diffuse, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation. Spleen has extensive follicular amyloid deposition.

The stomach, small and large intestine have mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion and scattered tortuous crypts. Large intestine also has scattered crypt abscesses.

Sections of lymph nodes, heart, kidneys (mild multifocal interstitial deposition of amyloid and/or fibrosis), muscle, lungs, pancrease and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric, hepatic, and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and with scattered, large intestinal crypt abscesses

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation probably inducing amyloidosis in this case was the GI tract. The degree of hepatic amyloid deposition would have been predicted to cause moderate compromise, and this lesion is progressive.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The scattered colonic crypt abscesses suggest a low-level, bacterial colitis.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-167
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16369
Species Mn Requester's Phone

Date of Death 17 Jun 18 Date of Necropsy 17 Jun 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 7 Sep 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

1.5 year old, 1.2 kg, male part of SPF colony in NIRC, on treatment for weight loss (weight in Dec '17 listed at 1.6 kg) and diarrhea, found recumbent and euthanized 17 Jun. Gross findings were poor body condition and distended colon.

Histological Findings:

Adipose has multicentric, dessiminated, moderate to extensive atrophy/depletion and pancreas has extensive, diffuse depletion of zymogen.

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion and increase in mucosal cell turnover (apoptosis).

Sections of lymph nodes, spleen, heart, liver, kidneys, lungs, muscle, and skin with mammary gland are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric adipose depletion and diffuse, pancreatic zymogen depletion
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Diagnosis #1 represents developing inanition.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession #___18-168_
Submission Date_18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z12186
Species_____Mn____ Requester's Phone_____

Date of Death__21 Jun 18_ Date of Necropsy_21 Jun 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __7 Sep 18__ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Six year old, 5.2 kg, female part of SPF colony in NIRC, on treatment for diarrhea, hepatomegaly, and declining body condition, with no response to treatment and euthanized 21 Jun. Gross findings were poor body condition, and enlarged friable liver.

Histological Findings:

Liver has extensive and effacing, diffuse, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation. One section of jejunum has extensive, diffuse lamina propria deposition of amyloid. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion. Large intestine also has scattered crypt abscesses.

Adipose has multicentric, dessiminated, moderate to extensive atrophy/depletion. Pancreas has moderate, diffuse depletion of zymogen.

Sections of lymph nodes, spleen, heart, kidneys mild membranoproliferative change of glomeruli), lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), muscle, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Extensive, multicentric, jejunal and hepatic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Moderate to extensive, multicentric adipose depletion and diffuse, pancreatic zymogen depletion
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and with scattered large intestinal crypt abscesses

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation probably inducing amyloidosis in this case was the GI tract. The degree of enteric amyloid deposition may have led to malabsorption contributing significantly to diagnosis #2 which represents inanition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The scattered large intestinal crypt abscesses suggest a low-level bacterial colitis.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-169
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z11025
Species Mn Requester's Phone

Date of Death 22 Jun 18 Date of Necropsy 22 Jun 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 7 Sep 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Seven year old, 4.5 kg, female part of SPF colony in NIRC, presented with untreatable/severe, compromised rectal prolapse, and euthanized.

Histological Findings:

A section of rectum has massive, transmural, fibrinosuppurative and necrotizing proctitis with massive numbers of mixed bacteria.

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion.

Sections of lymph nodes, spleen, heart, kidneys (minimal membranoproliferative change of glomeruli), lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), pancreas, muscle, and skin with mammary gland are unremarkable besides autolysis and stated changes.

Final Principal Diagnosis(es):

1. Severe, compromised rectal prolapse (gross diagnosis) with transmural, severe, fibrinosuppurative and necrotizing proctitis
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

Histology of the rectum supports gross interpretations and clinical decisions.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-170
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # R11137
Species Mn Requester's Phone _____

Date of Death 26 Jun 18 Date of Necropsy 26 Jun 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 10 Sep 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Seven year old, 5.0 kg, female pig-tailed macaque part of SPF colony at NIRC presented with weight loss (weight listed at 6.7 kg in Dec '17) and diarrhea and did not respond to therapy. Found unresponsive 26 Jun and euthanized. Gross findings were poor body condition, accentuated lobular pattern of liver with yellow color, and evidence of colitis.

Histological Findings:

Liver has moderate to extensive and effacing, diffuse, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation. Spleen has moderate amyloid deposition.

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. One section of large intestine also has multifocal ulceration of mucosa with superficial fibrinosuppurative crusts, and with transmural lymphocytic to granulomatous and fibrosing infiltrate with lymphofollicular formation and submucosal fibrosis. There are occasional mural lymphofollicular aggregates.

Adipose throughout the body, including pericardial adipose, has extensive, diffuse depletion/atrophy. Pancreas has mild to moderate, diffuse zymogen depletion.

Kidneys have moderate, diffuse vacuolation of distal convoluted tubular epithelium.

Sections of lymph nodes, heart, lungs (minimal lymphohistiocytic aggregates), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric, hepatic and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Severe, regional, ulcerative and transmural, fibrinosuppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**
3. Extensive, multicentric and disseminated adipose depletion
4. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis
5. Moderate, diffuse, distal convoluted tubular vacuolation (degeneration)

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #3 reflects inanition.

Diagnosis #4, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #5 likely represents a subclincal form of "Fatal Fasting Syndrome", and probably resulted from sudden anorexia.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-171
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18140
Species Mn Requester's Phone

Date of Death 28 Jun 18 Date of Necropsy 28 Jun 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 10 Sep 18 ☐ Preliminary Gross ☐ Amended

Clinical History and Gross Findings:

Stillborn term male fetus, 300 gm, from dam Z11370 from SPF colony at NIRC. Significant gross finding was uninflated lungs.

Histological Findings:

Lungs are uninflated and have moderate, multifocal, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, liver, gall bladder, heart, kidneys, adipose (adequate), muscle, and skin with umbilicus are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Moderate, multifocal, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Moderate amounts of amniotic cells and debris within alveoli without inflammation, non inflation of the lungs, and lack of other overt lesions are consistent with agonal fetal distress. Despite that in this case the lesions were only moderate, there still is suspicion of dystocia as cause of demise.

Please contact me with any questions, comments or concerns.

Pathologist RM

University of Washington
National Primate Research Center

Accession # 18-172
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z16368
Species Mn Requester's Phone

Date of Death 28 Jun 18 Date of Necropsy 28 Jun 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 10 Sep 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

1.5 year old, 1.4 kg female was part of the SPF colony at NIRC. Animal was not responding to treatment for enteritis and was euthanized. Significant gross findings were marginal body condition (weight listed as 1.4 kg in Dec '17 – juvenile animal should be gaining weight) and evidence of colitis.

Histological Findings:

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Sections of lymph nodes, spleen, adipose (moderate multicentric depletion/atrophyt), pancreas, heart, liver (minimal lymphohistiocytic aggregates), kidneys, lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis
2. Mild to moderate, multicentric and disseminated adipose atrophy

Histology Comments:

A definitive cause of clinical deterioration is not identified.

Diagnosis #1, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. Diagnosis #2 reflects declining body condition.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession #___18-173_
Submission Date_18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z12431
Species_____Mn____ Requester's Phone_____

Date of Death__6 Jul 18_ Date of Necropsy_6 Jul 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __10 Sep 18__ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Five year old, 4.1 kg, female part of SPF colony in NIRC, on treatment for enteritis and declining body condition, with no response to treatment and euthanized 6 Jul. Gross findings were enlarged friable liver and evidence of enteritis.

Histological Findings:

Liver has extensive and effacing, diffuse, sinusoidal amyloid deposition and there also is mild, mulitfocal lymphohistiocytic inflammation. One section of duodenum has moderate, diffuse lamina propria deposition of amyloid. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. The small intestine also has moderate villar blunting and fusion.

Sections of lymph nodes, spleen, thymus, adipose (adequate), pancreas, heart, kidneys, lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), muscle, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric, duodenal and hepatic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation probably inducing amyloidosis in this case was the GI tract.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession #___18-174_
Submission Date_18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___A10220
Species_____Mn____ Requester's Phone_____

Date of Death_5 Jul 18_ Date of Necropsy_5 Jul 18____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _11 Sep 18____ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Nine year old, 5.5 kg female was part of the SPF colony at NIRC. Animal was not responding to treatment for deteriorating body condition and was euthanized. Significant gross finding was evidence of colitis.

Histological Findings:

Throughout the stomach, small and large intestine there is moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Sections of lymph nodes, spleen, adipose (adequate), pancreas, heart, liver (mild lymphohistiocytic aggregates and lobular collapse), kidneys, lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

A definitive cause of clinical deterioration is not identified.

Diagnosis #1, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-175
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z11013
Species Mn Requester's Phone

Date of Death 13 Jul 18 Date of Necropsy 14 Jul 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 11 Sep 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Seven year old, 5.3 kg, female pig-tailed macaque part of SPF colony at NIRC, and did not respond to therapy for enteritis and declining body condition. Euthanized, and gross findings were marginal body condition and evidence of colitis.

Histological Findings:

Small intesting has extensive, diffuse, lamina propria deposition of amyloid. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. One section of large intestine also has multifocal ulceration of mucosa with superficial fibrinosuppurative crusts, and with transmural lymphocytic to granulomatous and fibrosing infiltrate with lymphofollicular formation and serosal fibrosis. There are moderate numbers of mural and serosal lymphofollicular aggregates.

Spleen has extensive follicular amyloid deposition.

Sections of lymph nodes, adipose (adequate), heart, lungs (mild lymphohistiocytic aggregates and pneumoconiosis), liver (mild lobular collapse and lymphohistiocytic aggregates), kidneys (mild multifocal interstitial lymphohistiocytic aggregates and diffuse membranoproliferative glomerulonephritis), pancreas (mild diffuse zymogen depletion), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric, small intestinal and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Severe, regional, ulcerative and transmural, fibrinosuppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition was likely beginning to cause malabsorption.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-176
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z15412
Species Mn Requester's Phone

Date of Death 13 Jul 18 Date of Necropsy 14 Jul 18 Time Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 12 Sep 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Two year old, 2.0 kg female was part of the SPF colony at NIRC. Animal was not responding to treatment for enteritis and was euthanized. Significant gross finding was evidence of colitis.

Histological Findings:

Throughout the stomach, small and large intestine there is moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Sections of lymph nodes, spleen, adipose (adequate), pancreas, heart, liver (minimal lymphohistiocytic aggregates and lobular collapse), kidneys, lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates), muscle and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

A definitive cause of clinical deterioration is not identified.

Diagnosis #1, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony that are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns or desired changes/additions.

Pathologist ___RM___

University of Washington
National Primate Research Center

Accession # 18-177
Submission Date 18 Jul 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A11238
Species Mn Requester's Phone _____

Date of Death 15 Jul 18 Date of Necropsy 15 Jul 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 12 Sep 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Twelve year old, 7.2 kg, female pig-tailed macaque part of SPF colony at NIRC presented with weight loss (weight listed at 10.7 kg in Nov '17) and diarrhea and did not respond to therapy. Found depressed and was euthanized. Gross findings were adequate condition, pale kidneys, and evidence of colitis.

Histological Findings:

Liver has moderately extensive, periportal to midzonal, vacuolar hepatocellular degeneration (fatty liver) and also minimal lymphohistiocytic infiltrates. Kidneys has moderate to moderately extensive, diffuse, vacuolar degeneration of proximal convoluted tubular epithelium, and also mild, diffuse membranoproliferative change of kidneys.

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. One section of large intestine also has multifocal, moderate, transmural lymphocytic to granulomatous and fibrosing (fibrosis in the submucosa and on the serosa) infiltrate with multifocal, transmural lymphofollicular formation. Large intestine also has scattered crypt abscesses.

Sections of lymph nodes, spleen, adipose (adequate and with mild cardiac steatosis), heart, lungs (minimal lymphohistiocytic aggregates and mild pneumoconiosis), muscle, pancreasand skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderately extensive, periportal to midzonal, vacuolar hepatocellular degeneration (fatty liver) with diffuse, moderately extensive, vacuolar degeneration of proximal convoluted tubular epithelium

2. Moderate, regional, transmural, granulomatous and fibrosin colitis **("*probable* cicatrizing colitis")**
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

Demise was multifactorial from renal, hepatic and GI lesions.

The hepatic and renal changes suggest early, moderate "fatal fasting syndrome" which occurs when a macaque with abundant/excessive adipose stores (note that weight in Nov '17 was 10.7 kg which is quite heavy for a female pig-tailed macaque depending on her size) becomes suddenly anorectic resulting in fatty liver and fatty change of renal tubules, and then with in particular renal compromise.

Cicatrizing colitis is suspect as being present in this animal as well; even though ulceration was not seen in sections examined it likely was present elsewhere. This condition is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition, and the scattered colonic crypt abscesses suggest a low level bacterial colitis.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession #___18-199_
Submission Date_28 Aug 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18148
Species_____Mn____ Requester's Phone_____

Date of Death_23 Jul 18_ Date of Necropsy__23 Jul 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _1 Oct 18___ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term female, 300 gm, from dam Z14174 from SPF colony at NIRC.

Histological Findings:

Lungs are uninflated and have mild to moderate, near-diffuse, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, liver, heart, kidneys, adipose (adequate), muscle, placenta, and skin with umbilicus and umbilical cord are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Mild to moderate, near-diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation, non inflation of the lungs, and lack of other overt lesions are consistent with agonal fetal distress. Despite that in this case the lesions were only mild to moderate, there still is suspicion of dystocia as cause of demise.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession #___18-200_
Submission Date_28 Aug 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18148
Species_____Mn____ Requester's Phone_____

Date of Death__27 Jul 18_ Date of Necropsy__27 Jul 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _1 Oct 18___ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn term male, 600 gm, from dam Z11110 from SPF colony at NIRC. No significant gross findings.

Histological Findings:

Lungs are mostly uninflated and have moderate, diffuse, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, liver, heart, kidneys, adipose (adequate), umbilical cord are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Moderate, diffuse, deep aspiration of amniotic cells and debris with mostly uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation, mostly non inflation of the lungs, and lack of other overt lesions are consistent with agonal fetal distress. Despite that in this case the lesions were only moderate, because the fetus was so large (600 gm) dystocia is favored as cause of demise.

Please contact me with any questions, comments or concerns.

Pathologist _____RM___

University of Washington
National Primate Research Center

Accession #___18-201_
Submission Date_28 Aug 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18146
Species_____Mn____ Requester's Phone_____

Date of Death__27 Jul 18_ Date of Necropsy__27 Jul 18____Time_____Pathologist ___NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _1 Oct 18___ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Two day old, male, 470 gm, from dam Z14193 from SPF colony at NIRC. Animal presented 26 Jul dehydrated, animal was treated, and died overnight. No significant gross findings.

Histological Findings:

Sections of lymph nodes, spleen, thymus, liver, heart, kidneys, lungs, adipose (adequate), skin with muscle, pancreas and GI tract are unremarkable besides autolysis, and degree of autolysis precludes meaningful evaluation of the GI tract.

Final Principal Diagnosis(es):

1. Open – suspect hypoglycemia

Histology Comments:

Lack of overt lesions (noting that degree of autolysis precludes accurate evaluation of the GI tract) and presentation suggest hypoglycemia from inadequate nursing as the cause of death.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 18-202
Submission Date 28 Aug 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # L06094
Species Mn Requester's Phone _____

Date of Death 3 Aug 18 Date of Necropsy 3 Aug 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 1 Oct 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Twelve year old, 4.95 kg, female pig-tailed macaque part of SPF colony at NIRC, and did not respond to therapy for enteritis. Euthanized, and gross findings were marginal body condition and evidence of colitis.

Histological Findings:

Small intestine has moderate to extensive, diffuse, lamina propria deposition of amyloid and with villar blunting and fusion. Stomach and large intestine have multifocal, mild deposition of amyloid in lamina propria. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. One section of large intestine also has multifocal ulceration of mucosa with superficial fibrinosuppurative crusts, and with transmural lymphocytic to granulomatous and fibrosing infiltrate with lymphofollicular formation. There are also moderate numbers of large intestinal crypt abscesses. There are moderate numbers of mural and serosal lymphofollicular aggregates.

Spleen has extensive follicular amyloid deposition.

Adipose has multfocal, moderate to extensive depletion, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, heart, lungs (mild lymphohistiocytic aggregates and pneumoconiosis), liver (mild lobular collapse and lymphohistiocytic aggregates), kidneys (mild multifocal interstitial lymphohistiocytic aggregates and diffuse membranoproliferative glomerulonephritis), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

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1. Mild to extensive, multicentric, gastrointestinal and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Severe, regional, ulcerative and transmural, fibrinosuppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")** with moderate, multifocal, large intestinal crypt abscesses
3. Moderate to extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion
4. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition was likely beginning to cause malabsorption, and diagnosis #3 (developing inanition) is a consequence of malabsorption.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition. The large intestinal crypt abscesses also suggest a bacterial colitis.

Diagnosis #4, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-210
Submission Date 13 Sep 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18166
Species Mn Requester's Phone _____

Date of Death 13 Sep 18 Date of Necropsy 13 Sep 18 Time 0930 Pathologist RM

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 14 Sep 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History:

Animal part of breeding colony, stillborn from 7 year old dam M11123. Dam is doing well physically.

Gross Description:

A stillborn, 550 gm, male, full-term fetus is presented in good postmortem and nutritional (adequate adipose stores) condition. The umbilical cord is attached (no placenta), ductus venosus is open, lungs are purple and sink in formalin (uninflated). The nervous, cardiovascular, respiratory, digestive, urogenital, endocrine, hemic-lymphatic and integumentary systems are grossly unremarkable.

Gross Diagnosis(es):

1. Stillborn fetus, suspect dystocia

Gross Comments:

Due to the large size of the fetus, lack of pulmonary inflation, lack of significant gross findings besides uninflated lungs, and also as this is the first pregnancy for this female, demise is suspect as being due to dystocia. Representative tissues/organs preserved in formalin. Histology will not be performed unless the dam has medical issues.

Pathologist RM

University of Washington
National Primate Research Center

Accession # 18-222
Submission Date 2 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z14366
Species Mn Requester's Phone _____

Date of Death 24 Aug 18 Date of Necropsy 24 Aug 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 26 Nov 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Three year old, 3.2 kg, female pig-tailed macaque part of SPF colony at NIRC, and did not respond to therapy for enteritis and declining body condition. Euthanized, and gross findings were poor body condition and diarrhea.

Histological Findings:

Small intestine has moderate to moderately extensive, multifocal, lamina propria deposition of amyloid and with moderate villar blunting and fusion. Stomach has multifocal, mild deposition of amyloid in lamina propria. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with Mott cells, macrophages and eosinophils. One section of large intestine also has focal, extensive ulceration of mucosa with superficial suppuration, and with submucosal granulomatous and fibrosing infiltrate with lymphofollicular formation that is submucosal to mural; similar submucosal and mural changes are seen in another section of large intestine.

Spleen has extensive follicular amyloid deposition.

Adipose has multfocal, moderate to extensive depletion, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, heart, lungs, kidneys (mild multifocal interstitial lymphohistiocytic aggregates), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, multicentric, gastrointestinal and splenic amyloid deposition: **"Systemic secondary amyloidosis"**

2. Severe, focal-ulcerative and multifocal-mural, suppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion
4. Moderate to extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition was likely beginning to cause malabsorption, and diagnosis #4 (developing inanition) is a consequence of malabsorption.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-223
Submission Date 2 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18160
Species Mn Requester's Phone

Date of Death 24 Aug 18 Date of Necropsy 24 Aug 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 26 Nov 18 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Six day old, male, 450 gm, from dam Z11173 from SPF colony at NIRC. Animal presented 23 Aug lethargic, and was found dead the next day. No significant gross findings besides autolysis.

Histological Findings:

Sections of lymph nodes, spleen, thymus, liver, heart, kidneys, lungs, adipose (essential adipose is adequate), skin with mammary gland, and muscle are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Open – suspect hypoglycemia

Histology Comments:

A definitive cause of demise is not identified, however lack of overt lesions and lethargic presentation suggest hypoglycemia from inadequate nursing as the cause of death.

Please contact me with any questions, comments or concerns.

Pathologist RM

University of Washington
National Primate Research Center

Accession #___18-224_
Submission Date_2 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___K07317
Species_____Mn____ Requester's Phone_____

Date of Death_25 Sep 18_ Date of Necropsy_25 Sep 18_Time_____Pathologist ___NIRC__

Nutritional Condition: ☐ Adequate ☒ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __26 Nov 18__ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Ten year old, 8.5 kg, male pig-tailed macaque part of SPF colony at NIRC, that did not respond to therapy for enteritis and declining body condition (weight listed as 12 kg in Jun '18). Euthanized, and gross findings were marginal body condition and diarrhea.

Histological Findings:

One section of small intestine has moderate to moderately extensive, diffuse, lamina propria deposition of amyloid and with moderate villar blunting and fusion. Large intestine has multifocal, mild deposition of amyloid in lamina propria. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Adipose has multfocal, moderate to extensive depletion, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen, heart (mild megalo- and dyskaryosis, and focal small region of interstitial fibrosis), lungs, kidneys (mild diffuse membranoproliferative change of glomeruli), liver (mild lobular collapse and minimal multifocal lymphohistiocytic aggregates), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Mild to moderately extensive, enteric and colonic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

3. Moderate to extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. It is suspect the degree of small intestinal amyloid deposition was beginning to cause malabsorption (only 2 sections of small intestine are present and one is of the duodenum), and diagnosis #3 (developing inanition) is probably a consequence of malabsorption.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-228
Submission Date 11 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18182
Species MN Requester's Phone (206) 685-6031

Date of Death 10/4/18 Date of Necropsy 10/4/18 Time 1435 Pathologist TH

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 26 Nov 18 ☐ Preliminary Gross ☐ Amended

Clinical History:

Full term stillbirth that was discovered breach (dam is Z12028) when Animal Husbandry and Veterinary services staff arrived at the colony that morning. This was the dam's 3rd infant. She had a nonviable fetus in 2016 and a viable birth in 2017. She was sedated with ketamine on Monday, 10/1/18 for her semi-annual exam. At that time, the infant was positioned head down. The dam was sedated on 10/4/18 and the infant manipulated and removed manually from the dam. The infant was stuck in the birth canal at the level of the chest, arms were raised above the head. Once the infant was removed from the dam, the placenta was manually removed uneventfully. No excessive hemorrhage was noted. There was mild bruising of the perineum on the dam.

Gross Description:

Examined is a full term 0.56kg, female pig-tail macaque in adequate body condition with the placenta detached from umbilical cord, with minimal postmortem changes. The mouth was open very wide, rigor mortis had set in. The tongue had started to avulse from the bottom of the oral cavity with dried blood and moderate bruising noted. Moderate bruising was also noted along the caudal aspect of the skull (area approximately 3 cm by 2 cm) and there was moderate bruising noted of the right ear. All lung tissue samples sank in formalin. Organ samples submitted appeared grossly normal with exception of the brain, which was mild to moderately friable.

Gross Diagnosis(es):

1. Stillbirth/Abortion (dystocia)

Gross Comments:

Histopathology is pending.

Histological Findings:

Lungs are uninflated and have moderate to extensive, diffuse, deep aspiration of amniotic cells and debris.

Sections of brain, lymph node, spleen, liver, heart, kidneys, adipose (adequate), pancreas, placenta and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to extensive, diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation which are consistent with agonal fetal distress, and non inflation of the lungs, lack of other overt lesions, and in particular with the excellent history and gross findings provided, changes are diagnostic for death due to breach presentation (dystocia).

Please contact either of us with any questions, comments or concerns.

Pathologist TH (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession # 18-229
Submission Date 11 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18120
Species MN Requester's Phone 206-616-0501

Date of Death 10/10/18 Date of Necropsy 10/10/18 Time 1320hrs Pathologist CMM

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final 26 Nov 18 ☐ Preliminary Gross ☐ Amended _____

Clinical History:

A 4 month old, female pig-tail macaque presented on 10/9/18 for lethargy. That morning around 10:45 am, the husbandry and veterinary services staff observed the infant was not holding on to the dam (A10181) well and appeared ataxic with nystagmus. The pair are in an enclosure that has indoor/outdoor access. Bufo toads are present in this area but none were noted recently by the husbandry staff and the infant was not excessively salivating. The dam and infant were separated from the group and the dam sedated for the infant to be examined. The infant was stuporous with 10% dehydration, minimal response to manipulation, and hypothermic (97.1F). Therapy was started with 1.5mL 50% dextrose orally, heating blanket, oxygen supply, 100mL IV LRS bolus, 20 mL LRS SQ bolus with 0.03 mL vitamin B complex added, and 1 mg Dexamethasone IM and she was moved to an isolette. A blood sample could not be drawn immediately at that time but later that day, a CBC and serum chemistry were run and a cocci titer collected to check for valley fever. The CBC showed only slight decreases in MCV (59.1) and MCH (17.6) but was otherwise unremarkable. The serum chemistry revealed a hypoalbuminemia (2.4) but no other changes. Globulin was at 3.9 and glucose was at 59 (post oral dextrose). Survey radiographs showed poor serosal detail and radiopaque material in the small intestines. Initial clinical improvement (sitting up more, moving on her own) was noted following the injection of dexamethasone. At 1145, body temperature had improved to 100.2F, but by 1930 temperature had risen to 103.3 and tylenol (12 mg) was given. Feedings of 4 mL of Pedialyte and Enfamil mixed 50:50 were given q 2 hours overnight. Urination appeared normal and around 0130 on 10/10/18 she defecated several small, firm pellets. A sample was collected for a biofire. Overnight, the infant was not grasping or supporting herself well and mostly rested propped up on towels but at 0130 and 0330 she moved around in the isolette but was very unsteady. A neurological exam was done the morning of 10/10/18 and were indicative of a forebrain lesion. The infant was obtunded with flaccid/poor muscle tone, unable to hold head up or support herself. There was no menace response, no nasalcortical response, and no palepebral response but the infant was able to blink. PLRs were bilaterally normal (direct and consentual) and normal positional nystagmus was noted while spinning. While at rest, the infant did not appear to track well and seemed to glance over to the right side more often. No facial asymmetry or drooping was noted. Withdrawl response was present in both arms but questionable in the legs. Patellar response was present on the right side but absent on the left. Anal tone was present but tail tone was absent. The infant was noted to be 5% dehydrated on morning exam so a SQ bolus of LRS was given as well as

fluconazole suspension by gavage and an additional dose of Dexamethasone(1mg) IM was given. At about 1020, the vet techs observed the animal having seizures and in the post-ictal phase. Veterinanarians observed pronounced nystagmus to the right and facial movements consistent with focal seizures. Humane euthanasia was elected.

Gross Description:

Examined is a 1.18kg, 4 month old female pig-tail macaque in good body condition. Mild deposits of fat within the subcutaneous layer and minimal adipose tissue internally within the omentum and mesentery. The GI tract contained scant amounts of digesta and the cecum was mildly distended. No overt foreign bodies could be found. The lung lobes were mottled in appearance with all lobes affected with frothy exudate present on cut cross section. The lung sections floated in formalin. The left caudal lung fields appeared hyperinflated and indentations from the ribs were noted in the tissue. The trachea, major bronchi, and regional lymph nodes appear normal. The liver lobes were mildly mottled in appearance and both kidneys appeared pale and mottled. The brain had mild amounts of hemorrhage noted in the frontal lobes and moderate hemorrhage noted in the parietal and occipital lobes similar to coup contracoup lesions. The cerebellum appeared normal but was mildly friable.

Gross Diagnosis(es):

1. Euthanasia

Gross Comments:

The cause of death in this case is euthanasia; histopathology is pending.

Histological Findings:

Sections of brain exhibit severe, diffuse, suppurative to pyogranulomatous infiltrate of meninges, and there also is multifocal, moderate to severe, acute hemorrhage of parenchyma.

Sections of lymph nodes, spleen, adipose (adequate), liver, gall bladder, heart, kidneys, lungs (agonal congestion and edema), pancreas, GI tract (mild IBD-type infiltrate diffusely in lamina propria and moderate, multifocal spiral bacteria infection in fundic stomach), skin with mammary gland and muscle are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Severe, diffuse, suppurative to pyogranulomatous meningitis with multifocal, moderate to severe, parenchymal hemorrhage

Histology Comments:

Demise was due to the subacute meningitis, and the agent was likely bacterial and most likely, considering the age and species, due to *Streptococcus pneumoniae* infection. These types of cases most often are sporadic and relatively rare.

Please contact either of us with any questions, comments or concerns.

Pathologist ___CMM (gross)/RM (histo)___

University of Washington
National Primate Research Center

Accession #___18-233_
Submission Date_17 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18184
Species_____MN____ Requester's Phone___(206) 685-1842_____

Date of Death__10/14/18_ Date of Necropsy_10/14/18_Time____0900___Pathologist ____TH____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __27 Nov 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

Full term stillbirth was discovered in group enclosure when Animal Husbandry and Veterinary Services staff arrived at the colony that morning. This was the fifth infant from this dam (L06185). All previous births (2013, 2014, 2016, 2017) were unremarkable and had viable births. The dam had been sedated on September 18th for her semi-annual exam and, at that time, no abnormalities were detected on ultrasound. Her estimated due date was 10/8/18. The placenta was not found in the enclosure.

Gross Description:

Examined is a full term 0.46kg, female pig-tail macaque in adequate body condition with no external signs of trauma and rigor mortis present. About 4" of umbilical cord was attached to the infant and appeared normal. The lungs were dark and mottled in color with the exception of the left cranial lung lobe, which has some small nodules that were light yellow/cream. The right lung lobes all sank in formalin and clear fluid was noted from the bronchus when cut. The left lung lobes sank in formalin except for left cranial lobe which appeared partially inflated and released two bubbles of air when placed in formalin. No free fluid was found in the thoracic cavity and the heart appeared within normal limits and weighed 3 grams. The abdominal organs had no gross abnormalities noted and there appeared to be an adequate amount of adipose tissue. The brain was slightly friable but was otherwise unremarkable.

Gross Diagnosis(es):

1. Stillbirth/Abortion

Gross Comments:

Due to the majority of lung tissue sinking in formalin, suspect aspiration of amniotic fluid and agonal fetal distress. Histopathology is pending.

Histological Findings:

Lungs are uninflated and have moderate to extensive, diffuse, deep aspiration of amniotic cells and debris.

Sections of brain, spleen, liver, gall bladder, heart, kidneys, adipose (adequate), and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to extensive, diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation are consistent with agonal fetal distress, and this change in combination with non inflation of the lungs and lack of other overt lesions suggest demise due to dystocia.

Please contact either of us with any questions, comments or concerns.

Pathologist TH (gross)/RM (histo)___

University of Washington
National Primate Research Center

Accession # 18-246
Submission Date 31 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # T11135
Species MN Requester's Phone 206-616-0501

Date of Death 10/29/18 Date of Necropsy 10/29/18 Time 1345 hrs Pathologist CMM

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples FNA aspirate of hepatic abscess/slides, hemorrhagic abdominal fluid, pericardial fluid; aerobic microbiology of hepatic abscess aspirate performed at UW

Type of report: ☐ Final 7 Nov 18 ☐ Preliminary Gross ☒ Amended 20 Nov 18

Clinical History:

T11135 was a 7yr 4 mo old female pigtail macaque on treatment for valley fever. She was first diagnosed on December 2nd, 2014 and maintained a positive titer. She was on the fluconazole tablets from November 19th, 2014 until October 2nd, 2015 then began fluconazole added feed on March 8th, 2016. She remained on the feed until she was pulled from her group on September 7th, 2018 for weight loss. She was started on 75 mg fluconazole SID. A cocci titer from September 7th, 2018 was positive IgG 1:2, negative IgM. A cocci titer from today was taken and is currently pending.

When she was pulled from her group on September 7th, she was a body condition score of 1.5/5 (previously a 3/5 on June 25th, 2018) with normal vitals and thoracic auscultation and 10% dehydrated. Her body weight was 5.66 kg (in June had been at 7.22 kg) and she had a moderate to markedly enlarged liver and doughy intestinal loops. On her exam in June, she was in her first trimester of pregnancy but abdominal ultrasound on September 7th was negative for pregnancy. The ultrasound also showed enlarged liver lobes but no changes in overall echogenicity were appreciated. No free fluid was present and the gallbladder and intestines appeared normal. A serum chemistry from this day showed an elevated ALP (1378) and hypophosphatemia (2.2). Her ALT and GGT were normal. A complete blood cell count showed a mild anemia (31.7%) with a decreased Hgb (8.7) and MCH (17.2). She was given subcutaneous fluids with vitamin B complex added, IM injections of iron dextran and baytril and started on nutritional support, pepto bismol, and banatrol flakes.

On September 10th, she was noted for fluid feces and oral azithromycin was started. A fecal culture had been collected on September 7th but was still pending at this point and later came back negative. She was sedated on September 14th for follow up blood work and exam. Her weight at this time had increased to 5.96 kg but she was still a very lean body condition (1.5/5) and her liver was still moderately to markedly enlarged. She had normal vitals, normal thoracic auscultation, and was 8% dehydrated. She was given subcutaneous fluids with vitamin B added and another injection of iron dextran. Her chemistry from this day showed a hypercalcemia (11.1) and the phosphorous and ALP had normalized (4.3 and 744, respectively). Her ALT and GGT remained normal. The CBC showed a slight

improvement in hematocrit (33.7%) and a decreased MCH (17.2) and MCHC (26.7). The Hgb had improved but was still decreased (9).

A follow up exam and blood work were performed on September 19th. Her body weight had increased to 6.36 kg but body condition score still remained at 1.5/5. She was 3% dehydrated and had normal vitals and thoracic auscultation. There was no appreciable change in liver size. She was given subcutaneous fluids and continued on GI support and nutritional support. Her CBC showed further increase in hematocrit (35.2%) and improvements in Hgb (9.6) and MCH (17.7). Her serum chemistry on this day was normal. Clinically, she appeared to be doing better and was eating well and had not been showing any signs of valley fever (no coughing, normal respiratory pattern/rate/effort, no lameness, no neurological deficits). Her stools were a combination of formed and mounding.

Another follow up exam and blood work done on October 3rd showed a slight gain in body weight (6.47 kg). She was 3% dehydrated and had normal vitals and thoracic auscultation. The liver remained enlarged and similar to size noted back in September. She was given subcutaneous fluids and continued on GI support and nutritional support with a multivitamin added. Her stools were formed and another fecal culture was collected and negative for pathogens. Her blood work showed a normal Hgb and hematocrit (10.4 and 42.1%, respectively) and a mild decrease in MCH (16.7) and MCHC (24.7). The chemistry was unremarkable other than a slight increase in globulin (5.1). Follow up blood work and a cocci titer was planned for October 30th, when her semi-annual exam was to be performed.

On the morning of October 28th, she appeared to be slightly less active and was thought to be vocalizing on animal husbandry observations. She ate and took medications from the veterinary services staff without trouble that day. Urine and fecal output remained normal.

The following morning, she was found on morning observations to be pale, lethargic, and ataxic with a distended abdomen. Upon closer examination, her sclera and skin appeared jaundiced and there was petechiae on the ventral abdomen. She was sedated for a full physical exam and follow up blood work. Her body weight was 6.67 kg and she was profoundly hypothermic (94.4). Her mucous membranes were pale and a CRT could not be appreciated. The heart and lungs auscultated normally. Her liver was markedly enlarged and had increased ~50% from before; the abdomen was distended and firm. A fluid wave could not be appreciated and no free abdominal fluid was noted on ultrasound. Petechiae was noted on the ventral abdomen but not elsewhere. On abdominal ultrasound, the liver had multiple areas of hyperechogenicity and the vasculature appeared distended and tortuous. An abdominal mass that measured about 1.5 cm by 3 cm was noted in the caudal right quadrant of the abdomen. A fine needle aspirate of the mass revealed purulent discharge with blood clots. CBC: severe leukopenia and anemia, moderate thrombocytopenia. CHEM: profound hypoalbuminemia and hypoproteinemia, bilirubinemia, hypocalcemia, and elevated ALK Phos. and the serum was markedly icteric. Given her poor condition and the abnormalities found on both the CBC and abdominal ultrasound, she was considered endpoint criteria and euthanized. After euthanasia, ~5ml of clear fluid poured out of the nostrils.

Gross Description:

Examined is a 6.67 kg female pigtail macaque in poor body condition with a BCS of 1.5/5. The animal was jaundiced in appearance. The abdomen was markedly distended and firm with a ~2cm X 1.5cm area of petechia on the central caudal surface. There was no subcutaneous fat and subcutaneous tisues were yellow in appearance. There was a copious amount of red free fluid in the abdomen. The liver was markedly enlarged and firm. The edges of all lobes were yellow. The central lobe was covered in a jelly-like hemorrhagic film that could be peeled from the surface of the lobe. All lobes were extremely friable with a dark orange-red color. On cut surface the medial lobe had numerous multi-focal to coalescing encapsulated pockets containing a thick creamy pale yellow substance.

The entire mesentery was bright yellow and there was a normal amount of digesta present throughout the gastrointestinal tract. Both the right and left kidney were pale on cut section. The left adrenal gland was enlarged. The right adrenal gland could not be located.

All lung lobes were grossly abnormal. The right lung fields were pale pink with white edges that were full of tiny bubbles. The left lung fields were darker purple in color, with the distal caudal lobe affected most. When the lung lobes were incised, foamy bubbles were apparent and white foam came out of the nostrils.

The pericardium contained ~5ml of clear bright yellow clear fluid.

Gross Diagnosis(es):

1. Euthanasia

Gross Comments:

The cause of death in this case is euthanasia; histopathology is pending.

Histological Findings:

Sections of liver and gall bladder reveal massive, diffuse, sinusoidal amyloid deposition with marked effacement of parenchyma and only residual islands and cords of hepatocytes, and generally mild granulomatous inflammation (except adjacent to abscesses/tracts see below). There also are multifocal, extensive and effacing abscesses and tracts, some very large (1+ cm in sections examined), with surrounding fibrin deposition, granulomatous to pyogranulomatous inflammation that extends into adjacent parenchyma, and areas of early reactive fibrosis/granulation tissue surrounding some of the abscesses/tracts. Cocci to coccobacilli are present mutlifocally. Hepatic capsule has multifocal, early reactive fibrosis and mixed inflammation, and there are adhesions to the diaphragm with granulomatous inflammation, reactive fibrosis and reactive mesothelium, and bacteria are seen here as well.

Lungs have mild to moderate diffuse histiocytosis, edema and some areas of fibrin deposition. One section also has severe, vasculocentric suppurative to pyogranulomatous inflammation with transmural vasculitis, areas of transmural vascular necrosis, and also scattered fibrinous to “septic” (fibrin with mixed inflammation) thrombi in small to moderate sized vessels. Bacteria as per above are seen multifocally. Adjacent alveoli have moderate to extensive pyogranulomatous inflammation, and pleura multifocally has early reactive fibrosis and moderate, multifocal granulomatous inflammation.

Sections of stomach and large intestine have mild to moderate, diffuse, lamina propria increase in/infiltrate of lymphocytes, plasma cells, macrophages and eosinophils. There also are areas of mild to moderate, granulomatous serositis with early fibrosis and reactive mesothelium.

Spleen has extensive, follicle associated amyloid deposition. Lymph nodes are inactive and moderately depleted. Adipose has multicentric, moderate to extensive atrophy.

Kidneys have moderate, diffuse membranoproliferative change of glomeruli, and there also are mild, multifocal, interstitial aggregates of lymphocytes and macrophages.

Sections of brain, heart, skeletal muscle, pancreas, and skin with mammary gland are unremarkable.

Final Principal Diagnosis(es):

1. Massive, diffuse, hepatic and splenic amyloidosis: “**Secondary systemic amyloidosis**”
2. Massive, multifocal, subacute to chronic hepatic abscesses and tracts associated with bacteria

3. Severe, regional, vasculocentric, subacute to chronic and necrotizing pneumonia associated with bacteria
4. Moderate to extensive, multicentric adipose depletion
5. Moderate, diffuse, membranoproliferative glomerulonephritis
6. Mild to moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastritis and colitis

Histology Comments:

The scenario leading to demise is speculated as being generalized debilitation due to amyloidosis, with resultant inanition and immunosuppression, and finally a bacterial hepatitis with vascular dissemination to lungs. Special stains and aerobic microbiology are pending and may identify a specific etiologic agent causing the hepatic abscesses and pneumonia.

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the gastrointestinal tract. Diagnosis #4 represents inanition/deteriorating body condition secondary to amyloidosis.

As noted above, debilitation due to amyloidosis likely predisposed the animal to the bacterial hepatitis, and the character of the pneumonia suggests vascular spread of the infection to that site. The pneumonia and hepatitis are roughly about a week old or less based on the character of the lesions.

The glomerulonephritis was chronic/long-standing and likely immune-mediated. The changes were only of at most mild clinical significance currently.

Diagnosis #6, which can cause diarrhea and potentially other sequelae (such as secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact RM with any questions, comments, concerns or desired changes/additions.

Pathologist ___CMM (gross) RM (histo)___

ADDENDUM 20 NOV 18 RM

Gram stain of lung and liver identified low numbers to sometimes numerous gram negative rods, and GMS stain was negative. Microbiology of liver identified, from broth only, *Fusobacterium* sp., gram negative anaerobic rods, and coagulase negative *Staphylococcus* sp. These results indicate an opportunistic bacterial infection in a debilitated animal. The bacteris seen in gram stains could be *Fusobacterium* sp or the anaerobic rods identified from broth.

University of Washington
National Primate Research Center

Accession #___18-247_
Submission Date_31 Oct 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18198
Species_____MN____ Requester's Phone___(206) 616-0501_____

Date of Death__10/30/18_ Date of Necropsy_10/30/18_Time____0900___Pathologist ____CMM__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __10 Dec 18____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

1 day old male infant was discovered in group enclosure when Animal Husbandry and Veterinary Services staff arrived at the colony that morning. This was the fourth infant from this dam (K06192). All previous births (2014, 2015, 2016) were unremarkable and had viable births.

Gross Description:

Examined is a 0.41kg, male pig-tail macaque in adequate body condition. On external examination there was an ~1 mm puncture wound in the medial canthus area of the left eye with bruising visibible in the right eyelid, over the nasal bridge and under both eyes. The left eye appeared dark in color and neither the iris nor pupil were visible. The right eye appeared cloudy. There were superficial scratches present on the right cheek. An ~0.5 mm puncture was present in the hard palate immediately caudal to the front middle incisor area. The left maxilla was freely moveable between middle left incisor area and the left canine tooth area. No other external abnormalities were detected.

The organs of the abdominal cavity were autolyzed. No digesta was present in the stomach. The lungs were a pale tan color with red mottling. All lung fields floated when placed in formalin.

There was extensive subcutaneous hemorrhage over the entire skull and all skull plates were freely moveable. There was an ~2 mm fracture in the right frontal plate running diagonally from the fontanele area towards the temple area. There was extensive hemorrhage over all areas of the brain and the brain was friable.

Gross Diagnosis(es):

1. Trauma

Gross Comments:

Histopathology is pending.

Histological Findings:

Besides moderate to extensive autolysis (as noted grossly) sections of brain, thymus, spleen, lymph node, liver, gall bladder, heart, adipose (adequate), kidneys, lungs (inflated and with moderate, multifocal, deep aspiration of amniotic cells and debris), skin, muscle, and GI tract are unremarkable.

Final Principal Diagnosis(es):

1. Acute, severe, cranial trauma

Histology Comments:

As per gross findings, death was due to cagemate trauma. The pulmonary aspiration suggests dystocia which could have resulted in a relatively weak infant. There was no other evidence of disease in sections examined although autolysis impedes microscopic evaluation.

Please contact either of us with any questions, comments or concerns.

Pathologist CMM (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession #___18-256_
Submission Date 7 Nov 2018

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18202
Species_____MN____ Requester's Phone___(206) 616-0501_____

Date of Death__11/02/18_ Date of Necropsy__Time____Pathologist ____CMM___

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __10 Dec 18____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

Dam Z14066 was noted for a suspected abortion on 11/01/18 due to copious amounts of blood in her enclosure and dripping from her vagina. Her original due date was estimated for the end of December.

The animal was pulled and examined. The infant was found to be deceased and the cervix was slightly dilated on the dam. She was given a dose of oxytocin (5 untis IV). The next day (11/02/18) the dam had not passed the fetus and was continuing to bleed from her vagina. On examination, the fetus was in a head up orientation. The fetus was manipulated into a head-down position. The dam was slightly dialted (~1cm) and was given oxytocin (5 untis IV, 5 units IM) with no results. The dam was also found to be anemic with a hematocrit of 17%. She was taken to surgery for a c-section and blood transfusion. The uterus was found to be filled with copious amounts of clotted blood. The placenta was adhered to the uterus on all sides except the one facing the fetus. The adhesions could be easily separated digitally. The placenta and fetus were removed together and placed in formalin.

Gross Description:

0.16kg male pigtail macaque and placenta. No serious gross abnormalities were noted on the fetus.

Gross Diagnosis(es):

1. Deceased fetus

Gross Comments:

Histopathology is pending.

Histological Findings:

Placenta has severe, multifocal and coalescing fibrinosuppurative infiltrate with multifocal necrosis.

Lungs are uninflated and have severe, diffuse, deep aspiration of amniotic cells and debris.

Sections of brain, liver, kidneys and heart are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Severe, multifocal, fibrinosuppurative and necrotizing placentitis
2. Severe, diffuse, deep pulmonary aspiration of amniotic cells and debris with non-inflation

Histology Comments:

The placentitis suggests a bacterial infection led to demise of the fetus. If the dam shows any abnormal reproductive signs or signs of other disease, microbiology of uterus/cervix would be recommended.

Please contact either of us with any questions, comments or concerns.

Pathologist CMM (gross)/RM (gross)

University of Washington
National Primate Research Center

Accession #___18-258_
Submission Date_14 Nov 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18183
Species_____Mn____ Requester's Phone_____

Date of Death_29 Sep 18_ Date of Necropsy_30 Sep 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __11 Dec 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Full term female stillbirth was discovered 29 Sep 18 from dam Z13071. Gross findings limited to autolysis and uninflated lungs.

Histological Findings:

Lungs are uninflated and have moderate to moderately extensive, diffuse, deep aspiration of amniotic cells and debris.

Sections of thymus, lymph node, spleen, liver, gall bladder, heart, kidneys, adipose (adequate), and skin with umbilicus are unremarkable.

Final Principal Diagnosis(es):

1. Moderate to moderately extensive, diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation are consistent with agonal fetal distress, and this change in combination with non inflation of the lungs and lack of other overt lesions suggest demise due to dystocia.

Please contact me with any questions, comments or concerns.

Pathologist ____RM____

University of Washington
National Primate Research Center

Accession #___18-259_
Submission Date_14 Nov 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___M03268
Species_____Mn____ Requester's Phone_____

Date of Death__6 Nov 18_ Date of Necropsy_6 Nov 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __11 Dec 18__ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Fifteen year old, 4.5 kg, female pig-tailed macaque part of SPF colony at NIRC, that did not respond to therapy for diarrhea and declining body condition (weight listed as 8.3 kg in Jun '18). Euthanized, and gross finding was poor body condition.

Histological Findings:

Multiple sections of small intestine have moderate to extensive, diffuse, lamina propria deposition of amyloid and with moderate villar blunting and fusion. Stomach has multifocal, mild to moderate deposition of amyloid in lamina propria. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Spleen has extensive amyloid deposition in follicles.

Adipose has multfocal, extensive depletion, and pancreas has extensive, diffuse zymogen depletion.

Sections of lymph nodes, heart (mild megalo- and dyskaryosis), lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and moderate pneumoconiosis), kidneys (mild diffuse membranoproliferative change of glomeruli), liver (mild lobular collapse and diffuse lto cell vacuolation), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, enteric, gastric and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion
3. Extensive, multicentric adipose depletion with diffuse pancreatic zymogen depletion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition was causing malabsorption, and diagnosis #3 (inanition) is probably a consequence of malabsorption.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession #___18-260_
Submission Date_14 Nov 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18205
Species_____Mn____ Requester's Phone_____

Date of Death__7 Nov 18_ Date of Necropsy_7 Nov 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __11 Dec 18___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Four day old, 310 gm, female abandoned by dam (Z11356), sent to nursery, failed attempt at reuniting with dam, returned to nursery and found dead 7 Nov. Weight at delivery was 590 gm. No significant gross findings except small size.

Histological Findings:

Adipose has multicentric, extensive depletion including pericardial and perirenal adipose..

Sections of lymph nodes, thymus, spleen, liver, heart, kidneys, lungs (mild multifocal deep aspiration of amniotic cells and debris), muscle, GI tract (extensive autolysis) and skin with mammary gland are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose depletion

Histology Comments:

With the history provided and histologic changes, demise due to inanition and hypoglycemia (from lack of adequate nursing) is indicated.

Please contact me with any questions, comments or concerns.

Pathologist ____RM____

University of Washington
National Primate Research Center

Accession #___18-264_
Submission Date_4 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18197
Species_____MN____ Requester's Phone___(206) 616-0501_____

Date of Death__11/29/18_ Date of Necropsy_11/30/18_Time____0730___Pathologist ____CMM__

Nutritional Condition: X Adequate Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __9 Jan 19_____ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

~1 month old male Pigtail Macaque in adequate condition (BCS 2/5, 0.71kg at necropsy) was found dead at ~1845 on 11/29/18 in the ABC nursery.

At 2 days of age, the infant was pulled from the dam on 10/30/18 for for bilateral corneal ulcerations, bleeding gingival ulcers, and soft feces with frank blood. The animal was treated with fluids (LRS), dextrose, B vitamins, Azithromycin, Tylenol, and topical eye ointment (Neomycin). Biofire fecal results were positive for EPEC. Treatment was successful and the infant was returned to the Dam on 11/14/18. On 11/17/18, infant was noted to be lethargic and not grasping onto the dam well. The infant was pulled from the dam, returned to the nursery for further care, and received LRS, Tylenol, and B vitamins. On 11/19/18, while in the nursery, the infant was noted to be slightly dehydrated (5%) but otherwise doing well and received LRS, Tylenol, and B vitamins. On 11/26/18 the infant was returned to the dam and was noted to be grasping well and nursing. On 11/29/18, dehydration was noted in the infant. On further examination, the infant has lost 200g and was dehydrated (10%). The infant was pulled from the dam, treated with LRS, B vitamins, and bottle fed. A self-feeding bottle was provided in the infant enclosure along with a warming pad. The infant was BAR and active at the time. The infant was last checked at 1630 by an AHT and was slated for checks q4 hours overnight for formula changes and feeding.

The on call vet (CMM) received a call from the AHT at 1845 reporting that the infant was dead. Upon arrival, the on call vet discovered the infant has consumed 62ml of formula from the bottle. There was evidence of vomit and diarrhea in the enclosure and rigor mortis had set in. No obvious external causes of death were discernable.

Gross Description:

Examined is a 0.71kg, male pig-tail macaque in adequate body condition. On external examination there were pinpoint bilateral opacities in the central ventral portion of the cornea (previous corneal ulceration), perianal staining was present, formula was present in the mouth, the abdomen was bloated, and there was a purple discoloration to the ventral skin surface most likely from post-mortem blood pooling.

Internal examination revealed yellowish-white severely dialted and distended intestines affecting all segments (including cecum and colon). The liver was slightly pale and diffusely mottled. The lungs (all lobes) did not deflate and were a tan color with diffuse dark red/purple mottling. The dorsal surfaces of all lung lobes had rib imprints on them. On cut surface, creamy colored bubbles foamed from the bronchioles and the surface appeared meaty in texture. No other abnormalitied were detected.

Gross Diagnosis(es):

1. Suspect pneumonia

Gross Comments: Histopathology is pending.

Histological Findings:

Lungs have multifocal, severe, deep aspiration of foreign material (consistent with formula) and with moderate to severe alveolar suppuration and histiocytosis with phagocytosis of the foreign material, and there also are moderate numbers of mixed bacteria in the foreign material.

Pancreas has diffuse, severe, effacing granulomatous (lymphocytes, macrophages and plasma cells) and fibrosing (reactive and mature fibrosis though mostly mature) inflammation. Islets appear to be spared.

Sections of brain, lymph node, adipose (adequate), spleen, liver, gall bladder, heart, kidneys, skin with mammary gland, skeletal muscle and diaphragm, and GI tract are unremarkable besides autolysis.

Final Principal Diagnosis(es):

1. Severe, multifocal, acute-suppurative and histiocytic pneumonia associated with foreign material (formula) and mixed bacteria: Acute aspiration pneumonia
2. Severe, diffuse, granulomatous and fibrosing pancreatitis

Histology Comments:

Proximal cause of death was acute, severe aspiration pneumonia.

An unexpected finding is the pancreatitis, which would have been of at least moderate clinical significance. The lesion was chronic and active with the underlying cause no longer evident. However considering age, species, presentation and overall findings, a past adenoviral infection is suspect.

Please contact either of us with any questions, comments or concerns.

Pathologist CMM (gross)/RM (histo)

University of Washington
National Primate Research Center

Accession # 18-266
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A09176
Species Mn Requester's Phone _____

Date of Death 21 Nov 18 Date of Necropsy 21 Nov 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☐ Poor ☒ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 9 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Nineteen year old, 24.3 kg, intact, obese male pig-tailed macaque part of SPF colony at NIRC. Moist dermatitis present multifocally due to obesity/skin folds. Both stifles had decreased range of motion. Euthanized, and significant gross findings were obesity, dermatitis secondary to excessive skin folds (from obesity), chronic degenerative joint disease of stifles, and scarred and cystic kidneys.

Histological Findings:

Kidneys have moderate numbers of variably sized tubular cysts. There is one large cyst in one section with compression atrophy and necrosis of a thin rim of adjacent parenchyma. There also is diffuse, moderate, membranoproliferative change of glomeruli, and mild to moderate, multifocal, interstitial fibrosis with lymphohistiocytic infiltrates.

Pancreas has moderately cystic ducts multifocally, and moderate to severe steatosis.

Stomach has extensive, multifocal, “megabacteria” (*Macrorhabdus ornithogaster)* overgrowth.
The stomach, small and large intestine also have mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. Small intestine has moderate villar blunting and fusion.

Sections of lymph node (steatosis), heart (moderate megalo- and dyskaryosis and steatosis, mild lipofuscinosis, and mild multifocal degeneration and fibrosis and lymphohistiocytic inflammation), lungs (moderate multifocal alveolar emphysema, mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and moderate pneumoconiosis), liver (modeate lobular collapse and mild lymphohistiocytic aggregates), muscle (regional moderate granulomatous and fibrosing inflammation with degeneration and necrosis of myocytes, and steatosis), and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, multifocal, renal and pancreatic cysts: cystic kidneys and pancreas
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion, and with extensive gastric “megabacterial” overgrowth
3. Moderate, diffuse, membranoproliferative glomerulonephritis

Histology Comments:

The cystic kidneys and pancreas are most likely genetic in origin, and the lesions were clinically insignificant.

The inflammatory component of diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The gastric “megabacteria” (these organisms actually are a yeast *Macrorhabdus ornithogaster*) can occasionally be seen in clinically normal macaques, although more often are seen in immunosuppressed animals. In any case, their significance is likely minimal to none.

The glomerulonephritis was an age-related, immune-mediated, progressive lesion that was still clinically insignificant, and the change is very common in macaques.

Other geriatric lesions described but not diagnosed (as they were minor in degree) include the alveolar emphysema and cardiac lipofuscinosis and cardiac nuclear change. The steatosis seen at numerous sites was due to obesity. The skeletal muscle lesion suggests consequences of regional trauma, including an injection reaction. The cardiac inflammation suggests past Chagas disease that was subclinical as this animal spent time in Texas, although other casues are possible.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-267
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # K03066
Species Mn Requester's Phone _____

Date of Death 21 Nov 18 Date of Necropsy 21 Nov 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 10 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Fifteen year old, 11.6 kg, intact male pig-tailed macaque part of SPF colony at NIRC. History of multiple episodes of diarrhea and during routine PE marked hepatomegaly identified. Euthanized, and gross finding was marked hepatomegaly with meaty, mottled white liver.

Histological Findings:

Liver has massive, diffuse, effacing sinusoidal deposition of amyloid with only residual islands and cords of hepatocytes, and there also is mild to moderate lymphohistiocytic infiltrate multifocally.

Multiple sections of small intestine have moderate to extensive, diffuse, lamina propria deposition of amyloid and with moderate villar blunting and fusion. Stomach has multifocal, mild to moderate deposition of amyloid in lamina propria. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils.

Sections of lymph nodes, spleen, heart (mild to moderate megalo- and dyskaryosis and mild lipofuscinosis), lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and mild to moderate pneumoconiosis and alveolar emphysema), kidneys (mild to moderate, diffuse membranoproliferative change of glomeruli), pancreas, and muscle are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, hepatic, enteric, and gastric amyloid deposition: **"Systemic secondary amyloidosis"**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was likely the GI tract. The degree of small intestinal amyloid deposition was likely causing at least moderate malabsorption, and the degree of hepatic deposition was likely causing at least moderate hepatic compromise.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-268
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z14174
Species Mn Requester's Phone _____

Date of Death 21 Nov 18 Date of Necropsy 21 Nov 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 11 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Four year old, 2.9 kg, intact female pig-tailed macaque part of SPF colony at NIRC, and did not respond to therapy for enteritis and poor body condition. Euthanized, and gross findings were poor body condition and diarrhea.

Histological Findings:

Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with rare Mott cells, macrophages and rare eosinophils. One section of large intestine also has focal, extensive, submucosal granulomatous and fibrosing infiltrate with lymphofollicular formation that is submucosal to mural.

Adipose has multfocal, moderate (cardiac) to extensive (elsewhere) depletion, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen, heart, lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates), kidneys, liver (minimal lymphohistiocytic aggregates and lobular collapse), and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Severe, focal, mural, granulomatous and fibrosing colitis **("cicatrizing colitis")**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, and histiocytic gastro-entero-colitis with enteric villar blunting and fusion
3. Moderate to extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 reflects poor body condition/inanition.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-269
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # A10037
Species Mn Requester's Phone _____

Date of Death 21 Nov 18 Date of Necropsy 21 Nov 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 11 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Ten year old, 6.15 kg, intact female pig-tailed macaque part of SPF colony at NIRC. History of hepatomegaly and decreasing body condition. Euthanized, and gross finding was marked hepatomegaly with meaty, mottled white liver.

Histological Findings:

Liver has massive, diffuse, effacing sinusoidal deposition of amyloid with only residual islands and cords of hepatocytes, and there also is mild to moderate lymphohistiocytic infiltrate multifocally. Spleen also has massive, diffuse amyloid deposition, and one lymph node has moderate amyloid deposition.

The stomach, small and large intestine have mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. One section of large intestine has moderate increase in ciliates (probably *B. coli*).

Heart has moderate, multifocal, lymphocytic to granulomatous inflammation multifocally including affecting a ganglia, and there is scattered myocellular degeneration. There also is mild megalo- and dyskaryosis.

Sections of other lymph nodes, lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and agonal congestion and edema), kidneys (mild, diffuse membranoproliferative change of glomeruli and scattered mild lymphohistiocytic aggregates), pancreas, skin with mammary gland, and muscle are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, hepatic, splenic and lymph node amyloid deposition: **"Systemic secondary amyloidosis"**

2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis
3. Moderate, multifocal, granulomatous myocarditis

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was likely the GI tract, although chronic cardiac inflammation may have contributed as well. The degree hepatic amyloid deposition was likely causing at least moderate hepatic compromise.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 is favored as representing subclinical Chagas disease particularly as this animal spent significant time in Texas. Other causes of the lesion are possible.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-270
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z17297
Species Mn Requester's Phone _____

Date of Death 24 Nov 18 Date of Necropsy 24 Nov 18 Time _____ Pathologist NIRC

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 14 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

One year old, 1.8 kg, intact female pig-tailed macaque part of SPF colony at NIRC. Found dead and necropsy identified multicentric acute trauma; open lacerations of left leg and cranial abdomen. Animal was in good nutritional condition.

Histological Findings:

Sections of skin with mammary gland, skin, subcutis and muscle from another site, and a section of muscle separately all have areas of cutaneous, subcutaneous and muscular necrosis with scattered mixed bacteria and multifocal, mild to moderate suppuration. The non-mammary skin section also has a laceration/break in the skin with necrosis.

The stomach, small and large intestine have mild, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils. Fundic stomach also has extensive spiral bacterial infection.

Sections of lymph nodes, spleen, thymus, liver, heart, lungs, and kidneys are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Multicentric, severe, acute lacerations/trauma (gross diagnosis) with multicentric cutaneous, subcutaneous and muscular necrosis with mild to moderate suppuration

Histology Comments:

As per gross report and histologic findings, demise was due to severe, multicentric, acute cagemate trauma.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-271
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z12217
Species Mn Requester's Phone _____

Date of Death 28 Nov 18 Date of Necropsy 28 Nov 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 13 Dec 18 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Six year old, 4.1 kg, female pig-tailed macaque part of SPF colony at NIRC, presented 27 Nov recumbent and did not respond to therapy and was found dead 28 Nov. Gross findings were poor body condition (weight listed at 5.7 kg in May '18) and diarrhea.

Histological Findings:

GI tract is autolyzed impeding evaluation. However, small intestine has moderate to moderately extensive, diffuse, lamina propria deposition of amyloid. Large intestine has multifocal, moderate deposition of amyloid in lamina propria, and also extensive overgrowth of ciliates (probably *Balantidium coli* and others). Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and eosinophils, and presumptive (due to autolysis) small intestinal villar blunting and fusion. Spleen has extensive amyloid deposition in follicles. Liver has moderate to moderately extensive sinusoidal amyloid deposition, and also moderate lobular collapse and scattered lymphohistiocytic aggregates.

Adipose has multicentric, extensive depletion including of pericardial adipose, and pancreas has extensive, diffuse zymogen depletion.

Sections of lymph nodes, heart, lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), kidneys (mild diffuse membranoproliferative change of glomeruli), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate to extensive, gastrointestinal, hepatic and splenic amyloid deposition: **"Systemic secondary amyloidosis"**

2. Extensive, multicentric adipose depletion with diffuse pancreatic zymogen depletion
3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with extensive, large intestinal ciliate overgrowth

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition was causing malabsorption, and diagnosis #2 (inanition) is a consequence of malabsorption.

The inflammatory component of diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD. The large intestinal ciliate overgrowth indicates dysbiosis.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-272
Submission Date 6 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z12335
Species Mn Requester's Phone _____

Date of Death 4 Dec 18 Date of Necropsy 4 Dec 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 14 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Six year old, 4.0 kg, female pig-tailed macaque part of SPF colony at NIRC, presented 4 Dec with severe, 10 cm long, friable, rectal prolapse. Euthanized and gross findings were marginal body condition (weight listed at 7.4 kg in Aug '18), and friable large rectal prolapse with hemorrhage in adjacent colon.

Histological Findings:

One section of small intestine has moderate, diffuse, lamina propria deposition of amyloid. Throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with moderate numbers of Mott cells, macrophages and eosinophils. One section of large intestine has extensive congestion (likely adjacent to the prolapse). There also is small intestinal villar blunting and fusion and increase in mucosal cell turnover.

Adipose has multicentric, extensive depletion, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, heart, lungs (minimal perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), kidneys (mild diffuse membranoproliferative change of glomeruli), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Severe, acute, rectal prolapse (gross diagnosis)
2. Moderate, regional, small intestinal amyloid deposition: **"Systemic secondary amyloidosis"**
3. Extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion
4. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

As per gross report, the animal was euthanized due to the severe rectal prolapse.

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition may have been causing a degree of malabsorption, and diagnosis #3 (inanition) may have occurred in part due to malabsorption.

Diagnosis #4, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and the changes have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 18-273
Submission Date 7 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # R11007
Species MN Requester's Phone 206-616-0501

Date of Death 12/4/18 Date of Necropsy 12/4/18 Time 1030 hrs Pathologist CMM

Nutritional Condition: ☐ Adequate X Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final 13 Dec 18 ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History:

R11007 was an 7 year old female pigtail macaque housed in a breeding group (222) who died during routine sedation with Ketamine (1.0 ml). The animal was sedated at ~0915 in a squeeze cage. She was removed once sedated, weighed and placed on the table for a veterinary clinical exam. The Vet (CMM) collected a fecal sample, placed lubrication in the eyes, took a rectal temperature (101.0) and auscultated the chest, at which point a heart beat was not detected. The animal was oberseved for respirations (none), femoral pulses were felt (non palpable), a pulse oximeter was placed on the animal to aid with detection of a heart beat, and the heart was auscultated by the senior veterinary technician (CJM). At that point, the animal was moved to the surgical suite, placed on oxygen, and further auscultation was performed. No heart beat was detectable and the animal was declared deceased.

At the time of death, there were no open clinical veterinary cases. Previous clinical cases included weight loss and diarrhea. Of note, this is an animal that tested positive for *Vibro cholerae* in September.

Gross Description:

Examined is a 10.49 kg, 7 year old, female pigtail macaque in marginal body condition with a BCS of 2/5. Maximal turgescence of the sex skin was present with skin appearing pale/white in color with sporadic red/purple splotches. No other external abnormalities were detected.

On internal examination, the stomach and upper GIT were empty. Liquid contents were present in the cecum. The kidneys were mottled in appearance. No other internal abnormalities were detected.

Gross Diagnosis(es):

1. Open – anesthetic death

Gross Comments:

Histology is pending.

Histological Findings:

Sections of stomach, small intestine and large intestine have moderate, diffuse, lamina propria increase in/infiltrate of lymphocytes, plasma cells with scattered Mott cells, macrophages and eosinophils. Small intestine also has moderate villar blunting and fusion.

Sections of brain, lymph nodes, spleen, liver (mild lobular collapse and scattered minimal lymphohistiocytic aggregates), gall bladder, heart (mild to moderate megalo- and dyskaryosis), kidneys (minimal diffuse membranoproliferative change of glomeruli and scattered lymphohistiocytic aggregates), lungs (mild perivascular, peribronchial and peribronchiolar lymphohistiocytic aggregates and pneumoconiosis), skeletal muscle, pancreas, and skin with mammary gland are unremarkable besides stated minor changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, diffuse, lymphoplasmacytic, histiocytic and eosinophilic gastro-entero-colitis with enteric villar blunting and fusion

Histology Comments:

A cause of death is not identified. However, lack of morphologic changes in representative tissues/organs in concert with history implicates an idiosyncratic reaction to anesthesia as the cause of death.

Diagnosis #1, which can cause diarrhea and potentially other sequelae, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact RM with any questions, comments, concerns or desired changes/additions.

Pathologist ___CMM (gross)/RM (histo)___

University of Washington
National Primate Research Center

Accession # 18-274
Submission Date 7 Dec 18

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator _____ Animal ID # T11072
Species M nemestrina Requester's Phone 60501

Date of Death: 12/6/18 Date of Necropsy: 12/6/18 Time: 0820 Pathologist: CMM

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 14 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History:

Animal has a history or diarrhea, weight loss, and poor condition dating back to early 2016, all of which have been refractory to continuous treatment.

Gross Description:

An approximately 7.5 year old female pigtail macaque was presented euthanized for examination. Weight was 5.35 kg and body condition was poor (BCS 1.5/5). Perianal staining was noted externally, the animal was approximately 7% dehydrated by skin tent, and the abdomen was distended. No other gross abnormalities were detected externally

On internal examination there was minimal adipose tissue present. The liver was friable. The pancreas was granular in appearance and was friable. There was mild thickening present at the ileocecal junction and some of the mesenteric lymph nodes were enlarged. No other gross abnormalities were detected on internal examination.

Gross Diagnosis(es):

1. Euthanasia

Histological Findings:

Two sections of large intestine have moderate to extensive ulcerations with suppurative crusts and underlain by granulomatous and fibrosing inflammation. There also are moderate to extensive, transmural lymphohistiocytic aggregates with follicle formation in nearly all sections of large intestine, and also diffuse, extensive increase in ciliates (likely *B. coli* and others). Throughout the stomach, small and large intestine there is moderate lamina propria infiltrate of/increase in lymphocytes, plasma cells,

macrophages and eosinophils. Small intestine also has moderate villar blunting and fusion, scattered tortuous crypts, and increase in mucosal cell turnover.

Liver has moderate, diffuse, hydropic hepatocellular degeneration, and also mild lobular collapse and scattered lymphohistiocytic aggregates. Gall bladder is unremarkable.

Adipose has multicentric areas of mild to moderate atrophy. Pancreas has mild to moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen (mild probable amyloid deposition in some follicles), heart, kidneys (mild membranoproliferative change of glomeruli), lungs (minimal pneumoconiosis and lymphohistiocytic aggregates), muscle, and skin with mammary gland are unremarkable besides stated changes.

Final Principal Diagnosis(es):

1. Extensive, multifocal, ulcerative and transmural, suppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**, and with extensive, diffuse, large intestinal ciliate overgrowth
2. Moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion
3. Moderate, diffuse, hydropic hepatocellular degeneration
4. Mild to moderate, multicentric adipose depletion with diffuse, pancreatic, zymogen depletion

Histology Comments:

Demise was due to multiple factors, mostly related to the GI tract

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition. The ciliate overgrowth (most likely *B. coli* and other ciliates) indicates dysbiosis.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 is probably secondary to GI lesions, and diagnosis #4 indicates deteriorating body condition (noted grossly).

Please contact me with any questions, comments, concerns.

Pathologist_CMM (gross)/RM (histo)_____

University of Washington
National Primate Research Center

Accession #___18-275_
Submission Date 10 Dec 2018

DIAGNOSTIC LABORATORY BIOPSY REPORT

Requester_____Colony_____ Investigator___Colony_ Animal ID #___M04354_____
Species_____Mn____ Requester's Phone_____

Date of Death__ns_ Date of Necropsy__na____Time_____Pathologist ____AB____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final ___8 Jan 2019_____ ☐ Preliminary _____ ☐ Amended _____

Clinical History: This animal is assigned to the TDP program. Skin sections were removed from the penis.

Histological Findings: two specimens of tissue are examined. Both contain raised, exophytic papillomas, composed of fronds of squamous epithelium with acanthosis, mild hyperkeratosis, abundant epithelial keratohyalin granules. Few individual apoptotic cells are seen. Definitive inclusion bodies are not observed. There is mild to moderate chronic perivascular to interface or diffuse dermatitis.

Final Principal Diagnosis(es):

1. Exophytic papillomas with mild to moderate interface to perivascular chronic dermatitis; penis skin.

Histology Comments: these lesions are consistent with papillomas, possibly viral induced although no inclusion bodies are observed. No other sites appear affected.

Pathologist_____AB_____

University of Washington
National Primate Research Center

Accession #___18-277_
Submission Date 12 Dec 2018

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester_____Colony_____ Investigator___Colony_ Animal ID #___A07100_____
Species_____Mn____ Requester's Phone_____

Date of Death__12 Dec 2018_ Date of Necropsy_____12 Dec 2018__Time__1pm___Pathologist _____AB____

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __21 Feb 2019_ ☒ Preliminary __13 Dec 2018__ ☐ Amended _____

Clinical History: this animal was assigned to the "Colony / TDP" protocol. A firm liver lobe was palpated.

Gross Description: the entire liver is pale and moderately enlarged with waxy tecture upon sectioning.The spleen is mildly enlarged and congested. There is colonic dilation, mural edema, and mesenteric lymphoid hyperplasia. Representative sections were collected. Other organ systems are unremarkable.

Gross Diagnosis(es):
Hepatic amyloidosis and splenic congestion.

Gross Comments: gross liver changes are consistent with amyloidosis, as suspected clinically.

Histological Findings:

Sections from the spleen (diffuse congestion, mild lymphoid hyperplasia), liver (diffuse, severe amyloidosis, with occasional necrosis, focal capsular rupture with hemorrhage, mild mixed hepatitis), kidneys, colon (focal ulceration with mixed colitis and moderate to marked mural edema, and submucosal and mesenteric lymphoid hyperplasia) and examined.

Final Principal Diagnosis(es):

1. Hepatic amyloidosis, diffuse, severe, with hemorrhage and necrosis; liver.
2. Ulcerative colitis, focally extensive, mixed with lymphoid hyperplasia; colon.

Histology Comments: amyloidosis may be associated with chronic colitis / gastroenterocolitis. Other inflammatory processes may be playing a role.

Pathologist_____AB_____

University of Washington
National Primate Research Center

Accession # 19-002
Submission Date 8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z10022
Species Mn Requester's Phone _____

Date of Death 10 Dec 18 Date of Necropsy 10 Dec 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 31 Jan 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Eight year old, 8.3 kg, intact male pig-tailed macaque part of SPF colony at NIRC, and did not respond to therapy for diarrhea and poor body condition, and presented lethargic and with further weight loss 10 Dec. Euthanized, and gross findings were poor body condition and diarrhea.

Histological Findings:

Sections of large intestine has a focal, small ulceration with suppurative crust and with neutrophils extending into the submucosa, and also there is multifocal, moderate to extensive, submucosal granulomatous and fibrosing infiltrate with lymphofollicular formation that is submucosal to focally mural. Stomach and large intestine also have mild to moderate lamina propria suppuration multifocally, and moderate numbers of crypt abscesses. Also, throughout the stomach, small and large intestine there is moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and rare eosinophils, and with small intestinal villar blunting and fusion.

Adipose has multicentric, extensive depletion including of pericardial adipose, and pancreas has mild to moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen, heart, lungs (mild pneumoconiosis), kidneys (minimal membranoproliferative change of glomeruli diffusely), liver (minimal lymphohistiocytic aggregates and lobular collapse), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, multifocal, suppurative and focally ulcerative colitis and gastritis with crypt abscessation, and with granulomatous and fibrosing mural colitis

2. Moderate, diffuse, lymphocytic, plasmacytic, and histiocytic gastro-entero-colitis with enteric villar blunting and fusion
3. Extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

Diagnosis #1 suggests a bacterial gastritis and colitis with common etiologic agents including *Campylobacter* and *Salmonella* and *Shigella* sp and other species. The colonic changes overall also suggest developing “cicatrizing colitis” (or cicatrizing colitis in areas not examined) which is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 reflects poor body condition/inanition, and is a secondary phenomenon.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession #___19-003_
Submission Date_8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z18221
Species_____Mn____ Requester's Phone_____

Date of Death__12 Dec 18_ Date of Necropsy_____Time_____Pathologist ____NIRC__

Nutritional Condition: ☒ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final _31 Jan 19___ ☐ Preliminary ____Gross_____ ☐ Amended _____

Clinical History and Gross Findings:

Stillborn, 700 gm, term fetus from dam A07104 from SPF colony at NIRC. No gross abnormalities and lungs did not float in formalin.

Histological Findings:

Lungs are uninflated and have diffuse, extensive, deep aspiration of amniotic cells and debris.

Sections of spleen, thymus, adipose (adequate), liver, heart, kidney, skin with umbilicus and umbilical cord are unremarkable.

Final Principal Diagnosis(es):

1. Extensive, diffuse, deep aspiration of amniotic cells and debris with uninflated lungs

Histology Comments:

Amniotic cells and debris within alveoli without inflammation and noninflation of the lungs are consistent with agonal aspiration due to fetal distress. This finding in concert with relatively large size of the fetus and lack of other overt lesions suggests stillbirth due to dystocia.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession #___19-004_
Submission Date_8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester____Colony_____ Investigator_Colony___ Animal ID #___Z14281
Species_____Mn____ Requester's Phone_____

Date of Death_11 Dec 18_ Date of Necropsy_11 Dec 18_Time_____Pathologist ____NIRC__

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other_____

Other Diagnostic Samples _____

Type of report: ☒ Final __18 Jan 19__ ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Four year old, 4.4 kg, female pig-tailed macaque part of SPF colony at NIRC, found dead 11 Dec, and only significant gross finding was marginal body condition.

Histological Findings:

Small intestine has mild to moderate, diffuse, lamina propria deposition of amyloid and with moderate villar blunting and fusion and increase in mucosal cell turnover. Stomach has multifocal, mild, probable deposition of amyloid in lamina propria. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells, macrophages and scattered eosinophils. One section of large intestine also has focal, extensive ulceration of mucosa with superficial suppuration, and with transmural granulomatous and fibrosing infiltrate with lymphofollicular formation.

Spleen has moderate follicular amyloid deposition, and also reactive endothelium.

Adipose has multicentric, extensive depletion including pericardial adipose, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, heart, kidneys, muscle, and skin with mammary gland are unremarkable besides autolysis (liver and lung not submitted).

Final Principal Diagnosis(es):

1. Mild to moderate, multicentric, gastrointestinal and splenic amyloid deposition: **"Systemic secondary amyloidosis"**
2. Severe, focal, ulcerative and transmural, suppurative to fibrosing and granulomatous colitis **("cicatrizing colitis")**

3. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with enteric villar blunting and fusion
4. Extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

The amyloidosis is secondary amyloidosis: secondary to mis-metabolism of acute-phase reactive proteins from a site(s) of chronic inflammation. The site of chronic inflammation potentially inducing amyloidosis in this case was the GI tract. The degree of small intestinal amyloid deposition was likely beginning to cause malabsorption, and diagnosis #4 (inanition) is at least partially due to consequences of malabsorption.

Cicatrizing colitis is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #3, which can cause diarrhea and potentially other sequelae thereof (including systemic secondary amyloidosis), represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 19-005
Submission Date 8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z12339
Species Mn Requester's Phone

Date of Death 18 Dec 18 Date of Necropsy 18 Dec 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 18 Jan 19 ☐ Preliminary ☐ Amended

Clinical History and Gross Findings:

Six year old, 4.3 kg, female pig-tailed macaque part of SPF colony at NIRC, found dead 18 Dec.

Histological Findings:

Sections of large intestine have multifocal, moderate to extensive, lamina propria suppuration with rare ulceration of mucosa with superficial suppurative crust, and with submucosal abscessation and transmural granulomatous and fibrosing infiltrate with lymphofollicular formation. Also, throughout the stomach, small and large intestine there is mild to moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with scattered Mott cells, macrophages and scattered eosinophils. Small intestine has probable (evaluation impeded by autolysis) moderate villar blunting and fusion.

Adipose has multicentric, extensive depletion including pericardial adipose, and pancreas has moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen (reactive endothelium), liver (mild lobular collapse and minimal lymphohistiocytic aggregates), heart, kidneys (minimal lymphohistiocytic aggregates and membranoproliferative change of glomeruli), lungs (mild peribronchial, peribronchiolar and perivascular lymphohistiocytic aggregates and pneumoconiosis), muscle, and skin with mammary gland are unremarkable besides autolysis and stated minor changes.

Final Principal Diagnosis(es):

1. Severe, multifocal, ulcerative and transmural, suppurative to fibrosing and granulomatous colitis **(“cicatrizing colitis”)**
2. Mild to moderate, diffuse, lymphocytic, plasmacytic, histiocytic and eosinophilc gastro-entero-colitis with probable enteric villar blunting and fusion
3. Extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

Cicatrizing colitis is a relatively common, idiopathic condition in macaques, and the condition appeared to be extensive in this animal. Chronic bacterial colitis is a commonly speculated cause of the condition.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 (inanition) is at least partially due to consequences of “cicatrizing colitis”.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 19-006
Submission Date 8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18229
Species Mn Requester's Phone

Date of Death 25 Dec 18 Date of Necropsy 25 Dec 18 Time Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☐ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other

Other Diagnostic Samples

Type of report: ☒ Final 31 Jan 19 ☐ Preliminary Gross ☐ Amended

Clinical History and Gross Findings:

One day old, 350 gm, male, from dam Z13036 from SPF colony at NIRC. Found abandoned by dam 24 Dec, brought to nursery, and found dead the next day. Necropsy findings were puncture wound of right caudolateral thorax/cranial abdomen with moderate subcutaneous, peri-renal and abdominal hemorrhage.

Histological Findings:

One kidney (described above) has moderate peri-renal hemorrhage and fibrin deposition with large numbers of mixed bacteria, and also some plant material and a few white blood cells.

Sections of spleen, lymph nodes, thymus, liver, heart, lungs (mild deep aspiration of amniotic cells and debris), adipose (adequate), GI tract and pancreas, muscle, and skin with umbilicus are unremarkable.

Final Principal Diagnosis(es):

1. Traumatic puncture wound of right caudolateral thorax (gross diagnosis) with peri-renal hemorrhage and fibrin containing mixed bacteria and plant material

Histology Comments:

Based upon history and gross and histological findings, proximal cause of demise is suspect as being due to inadequate nursing with resultant hypoglycemia. However, the (probable) bite wound with intra-abdominal introduction of mixed bacteria would have resulted in serious clinical signs if the animal had not died.

Please contact me with any questions, comments or concerns.

Pathologist _____RM__

University of Washington
National Primate Research Center

Accession # 19-007
Submission Date 8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z11085
Species Mn Requester's Phone _____

Date of Death 30 Dec 18 Date of Necropsy 30 Dec 18 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 1 Feb 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Seven year old, 4.2 kg, intact female pig-tailed macaque part of SPF colony at NIRC. Recent history of weight loss. Presented 29 Dec with lethargy, diarrhea, and poor body condition, and did not respond to therapy. Found moribund on 30 Dec and euthanized. Weight of 6.7 kg listed in Oct '18. Gross findings not reported.

Histological Findings:

Sections of large intestine have multifocal, moderate, submucosal granulomatous and fibrosing infiltrate with lymphofollicular formation. Large intestine also has extensive ciliate overgrowth, and moderate numbers of dilated and also abscessed crypts. Throughout the stomach, small and large intestine there is moderate, diffuse, lamina propria infiltrate of/increase in lymphocytes, plasma cells with moderate numbers of Mott cells, macrophages and rare eosinophils. There also is small intestinal villar blunting and fusion, scattered tortuous crypts, and increase in mucosal cell turnover.

Adipose has multicentric, extensive depletion including of pericardial adipose, and pancreas has mild to moderate, diffuse zymogen depletion.

Sections of lymph nodes, spleen, heart, lungs, kidneys (minimal membranoproliferative change of glomeruli diffusely), liver (minimal lymphohistiocytic aggregates and lobular collapse and diffuse lto cell vacuolation), muscle, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Moderate, multifocal, large intestinal crypt abscessation with granulomatous and fibrosing submucosal colitis, and with extensive ciliate overgrowth

2. Moderate, diffuse, lymphocytic, plasmacytic, and histiocytic gastro-entero-colitis with enteric villar blunting and fusion
3. Extensive, multicentric adipose depletion with diffuse, moderate, pancreatic zymogen depletion

Histology Comments:

The inflammatory component of diagnosis #1 suggests a colitis with common etiologic agents including *Campylobacter* and *Salmonella* and *Shigella* sp and other species. The colonic changes overall also suggest developing “cicatrizing colitis” (or cicatrizing colitis in areas not examined) which is a relatively common, idiopathic condition in macaques. Chronic bacterial colitis is a commonly speculated cause of the condition. Also, the ciliate overgrowth (likely *Balantidium coli* and others) indicates dysbiosis which will also contribute to diarrhea.

Diagnosis #2, which can cause diarrhea and potentially other sequelae thereof, represents typical changes in this species in this colony, and they have been previously discussed. These changes are consistent with food allergy/hypersensitivity/dietary intolerance/IBD.

Diagnosis #3 reflects poor body condition/inanition, and is a secondary phenomenon.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____

University of Washington
National Primate Research Center

Accession # 19-008
Submission Date 8 Jan 19

DIAGNOSTIC LABORATORY NECROPSY REPORT

Requester Colony Investigator Colony Animal ID # Z18230
Species Mn Requester's Phone _____

Date of Death 2 Jan 19 Date of Necropsy 2 Jan 19 Time _____ Pathologist NIRC

Nutritional Condition: ☐ Adequate ☐ Marginal ☒ Poor ☐ Obese

Other Tests Required: ☐ Sero ☐ Micro ☐ Parasit ☐ Other _____

Other Diagnostic Samples _____

Type of report: ☒ Final 1 Feb 19 ☐ Preliminary _____ ☐ Amended _____

Clinical History and Gross Findings:

Six day old, 600 gm, intact male pig-tailed macaque part of SPF colony at NIRC. Animal was found dead in the enclosure (dam M03284). Postmortem was unremarkable.

Histological Findings:

Adipose has multicentric, extensive depletion including of pericardial and perirenal adipose.

Sections of lymph nodes, spleen, and thymus have moderate hypoplasia.

GI tract is autolyzed, especially small intestine, impedeing evaluation. However, large intestine has moderate, lamina propria pyogranulmatous infiltrate with moderate numbers of abscessed crypts. The GI tract is otherwise unremarkable besides autolysis.

Sections of heart, lungs (agonal congestion and edema and mild multifocal deep aspiration of amniotic cells and debris), kidneys, liver, muscle, pancreas, and skin with mammary gland are unremarkable besides stated changes and autolysis.

Final Principal Diagnosis(es):

1. Extensive, multicentric adipose depletion
2. Moderate, multicentric lymphoid hypoplasia: lymph nodes, spleen and thymus
3. Moderate, diffuse, pyogranulomatous colitis with multifocal crypt abscessation

Histology Comments:

The scenario leading to demise is speculated as being primary inanition (inadequate suckling and represented as diagnosis #1) leading to secondary immunosuppression (evidenced by diagnosis #2) and finally with a bacterial colitis that may have been opportunistic. Other scenarios are feasible.

Common etiologic agents of the colitis include *Campylobacter* and *Salmonella* and *Shigella* sp and other species.

Please contact me with any questions, comments, concerns.

Pathologist ____RM_____