CMHD Pathology Report

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Europhenome

ReportID: Report Date: March 19, 2014
Pathologist: Dr. H. Adissu

CMHD LabID: N13-1261

Relevant History:
"Large abdominal mass visiable in xrays. Non- obese. Heart - enlarged heart [MP:0000274],Kidney - polycystic kidney [MP:0008528] - left kidney, very enlarged and fluid filled. Right kidney slightly enlarged: enlarged kidney [MP:0003068],Seminal Vesicles - enlarged seminal vesicle [MP:0002997] abnormal seminal vesicle morphology [MP:0002059] Both seminal vesicles slightly enlarged and abnormally shaped"

AnimalID: M00975544 (Male)

Histopathology Findings:

sternebra (MA:0001333)

Histopath Description:
normal

Definitive Diagnosis:
Normal

Sternum, normal, 1.25x

mesenteric lymph node (MA:0002829)

Histopath Description:
The mesenteric lymph node is markedly enlarged (greater than four-fold). The medulla is expanded by chords and sheets of lymphocytes. There are multiple germina centers.

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** hyperplasia MPATH:134; **MPATH Process Term:** hyperplasia MPATH:134

Definitive Diagnosis:
Lymphoid hyperplasia with medullary plasmacytosis.

Histopathology Comments:
The changes in the mesenteric lymph node are suggestive of draining of a regional inflammatory process. However, such a process was not observed in the tissues examined.

Organ/Tissue Analyzed:
Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, testis, epididymis, seminal vesicle, and prostate.

AnimalID: M00980693 (Male)

Histopathology Findings:

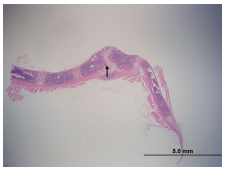
sternum (MA:0001331)

Histopath Description:
There is a sternal dislocation between the 4th and 5th sternal bodies. This is encased by a large nodular cartilaginous proliferation that extends to the outer aspect of the body wall and into the thoracic cavity (reactive reparative chondroid hyperplasia)

Morphological Diagnosis:
Duration: chronic; **Distribution:** focally extensive; **MPATH Process Term:** degenerative change MPATH:14

Definitive Diagnosis:
Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus')

Histopathology Comments:
The cause of this lesion is not certain.



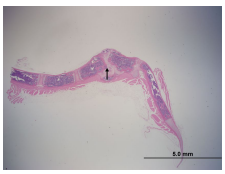
Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus'), 1.25x, HE

eye (MA:0000261)

Histopath Description:
Involving one eye, there are clusters of external nuclear structures within the internal plexiform layer.

Morphological Diagnosis:
Distribution: multifocal; **Severity:** mild; **MPATH Process Term:** developmental dysplasia MPATH:64

Definitive Diagnosis:
Retinal dysplasia



Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus'), 1.25x, HE

brain (MA:0000168)

Histopath Description:
There is marked dilation of the lateral ventricles

Morphological Diagnosis:
Distribution: diffuse; **Severity:** severe; **MPATH Process Term:** degenerative change MPATH:14

Definitive Diagnosis:
Dilation of the brain ventricles

Histopathology Comments:
Mild to moderate dilation of the ventricles is a background condition in mice of C57BL/6N background

Organ/Tissue Analyzed:
Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal

muscles, brown fat, pinna, skin, testis, epididymis, seminal vesicle, and prostate.

AnimalID: M01041095 (Female)

Histopathology Findings:

sternum (MA:0001331)

Histopath Description:
There is a sternal dislocation between the 4th and 5th sternal bodies. This is encased by a large nodular cartilaginous proliferation that extends to the outer aspect of the body wall and into the thoracic cavity (reactive reparative chondroid hyperplasia)

Morphological Diagnosis:
Duration: chronic; **Distribution:** focally extensive; **MPATH Process Term:** degenerative change MPATH:14

Definitive Diagnosis:
Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus')

Histopathology Comments:
The cause of this lesion is not certain.

Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus'), 1.25x, HE

thymus (MA:0000142)

Histopath Description:
There are two 50 um diamater epithelial cysts.

Morphological Diagnosis:
Distribution: multifocal; **MPATH Diagnosis:** cyst MPATH:62; **MPATH Process Term:** developmental and structural abnormality MPATH:55

Definitive Diagnosis:
Epithelial cyst

Histopathology Comments:
This is a developmental abnormality commonly seen in mice.

Organ/Tissue Analyzed:
Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, uterus, oviduct, and ovary, and mammary gland.

AnimalID: M00980691 (Female)

Histopathology Findings:

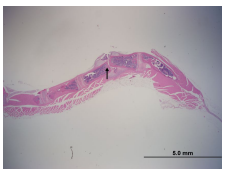
sternum (MA:0001331)

Histopath Description:
There is a sternal dislocation between the 4th and 5th sternal bodies. This is encased by a large nodular cartilaginous proliferation that extends to the outer aspect of the body wall and into the thoracic cavity (reactive reparative chondroid hyperplasia)

Morphological Diagnosis:
Duration: chronic; **Distribution:** focally extensive; **MPATH Process Term:** degenerative change MPATH:14

Definitive Diagnosis:
Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus')

Histopathology Comments:
The cause of this lesion is not certain.



Sternal dislocation and reactive and reparative chondroid hyperplasia ('calus'), 1.25x, HE

kidney (MA:0000368)

Histopath Description:
One of the kidneys is entirely is replaced by a large cyst; the renal parenchyma surrounding the cyst is mildly compressed. There is moderate tubular hyperplasia and interstitial inflammation.

Morphological Diagnosis:
Duration: Chronic; **Distribution:** Unilateral; **Severity:** severe; **MPATH Diagnosis:** hydronephrosis MPATH:635;

Definitive Diagnosis:
Hydronephrosis

Histopathology Comments:
Hydronephrosis is usually caused by an ascending obstructive urinary lesion; this is not evident in the examined sections.

kidney (MA:0000368)

Histopath Description:
The contralateral kidney is 1.25x larger than normal

Morphological Diagnosis:
Distribution: unilateral; **Severity:** severe; **MPATH Process Term:** hypertrophy MPATH:159

Definitive Diagnosis:
Unilateral renal hypertrophy (renomegaly)

Histopathology Comments:
Thhis is likely compensatory renal hypertrophy secondary to the hydronephrosis in the contraleteral kidney.

thymus (MA:0000142)

Histopath Description:
There is one 50 um diamater epithelial cyst.

Morphological Diagnosis:
Distribution: focal; **MPATH Diagnosis:** cyst MPATH:62; **MPATH Process Term:** developmental and structural abnormality MPATH:55

Definitive Diagnosis:
Epithelial cyst

Histopathology Comments:
This is a developmental abnormality commonly seen in mice.

eye (MA:0000261)

Histopath Description:
A 100 stalk of fibrous connective tissue containing a small artery in the center extends from the area of the optic disc towards the posterior vitreous. A small fragment of fibrous tissue is freely present within the vitreous anterior to this stalk (assumed to be extension of the stalk).

Morphological Diagnosis:
MPATH Diagnosis: developmental and structural abnormality MPATH:55; **MPATH Process Term:** developmental and structural abnormality MPATH:55

Definitive Diagnosis:
Persistent hyaloid artery

Histopathology Comments:
hyaloid artery remnant is a rare condition in which there remain some parts of the hyaloid artery. The posterior hyaloid vascular system of mice usually undergoes involution in the first month of life (Richard et al., 2000).

Organ/Tissue Analyzed:
Histopathology examination included the following organs and tissues: brain, trigeminal ganglion, eyes, salivary glands, trachea, lungs, heart, thymus, thyroid gland, parathyroid gland, exocrine and endocrine pancreas, oesophagus, stomach, small intestine, large intestine, liver, gall bladder, spleen, kidneys, adrenal gland, lymph nodes, spinal cord, bone marrow, sternum, femur and tibia with associated skeletal muscles, brown fat, pinna, skin, uterus, oviduct, and ovary, and mammary gland.

Report Summary and Recommendation:
Sternal dislocation is observed in three mice. The presence of this lesion in three of the four mice in this line may suggest an underlying skeletal abnormality. Note that other related genes (Fam20a and Fam20c) have been linked to ameliogenesis iperfecta and other biomineralization defects in mice and humans (Vogel., 2012).

The hydronephrosis in one of the mice is consistent with observations at necropsy and x-ray imaging. There is a compensatory hypertrophy of the contralateral kindney. This lesion is considered incidental.

Line summary: Sternum: Segmental sternal dislocation (3/4)

References:
Vogel P, et al., (2012). Amelogenesis Imperfecta and Other Biomineralization Defects in Fam20a and Fam20c Null Mice. Vet Pathol. 49:998-1017