CMHD Pathology Report

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ReportID: Report Date:
Pathologist: Dr. H. Adissu

CMHD LabID: N13-917

Relevant History:
Phenotypes:

increased response to stress-induced hyperthermia
decreased leukocyte cell number
decreased circulating LDL cholesterol level
increased T cell number
increased CD4-positive T cell number
increased CD8-positive T cell number
abnormal spine curvature
kyphosis
embryonic lethality

AnimalID: M00825270 (Male)

Histopathology Findings:

brain (MA:0000168)

Histopath Description:
There is moderate dilation of the fourth ventricle

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

Definitive Diagnosis:
Dilation of the brain ventricles

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

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Diffusely, hepatocytes contain intracytoplasmic clear vacuoles (lipid). The lipid vacuoles within the midzonal and periacinar regions are small (2-3 um in diameter) and surround a central nucleus (interpreted as microvesicular lipid). The lipid vacuoles within the portal areas are large (8-12 um in diameter) and displace the nucleus to the margin (macrovesicular lipid).

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** lipid deposition MPATH:42;

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
Hepatocellular vacuolar change of variable degree suggestive of lipidosis is present in all mice from WTSI, consistent with high lipid diet.

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: M00825271 (Male)

Histopathology Findings:

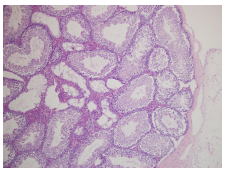
testis (MA:0000411)

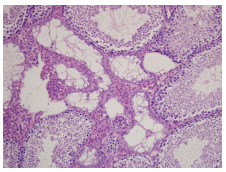
Histopath Description:
There are multiple foci of seminiferous tubule atrophy and vacuolation representing up to 10% of the testis. There is accompanying Leydig cell hyperplasia in the adjacent intetstitium.

Morphological Diagnosis:
Distribution: multifocal; **Severity:** mild; **MPATH Process Term:** atrophy MPATH:127

Definitive Diagnosis:
multifocal seminiferous atrophy and vacuolation; Leydig cell hyperplasia

Histopathology Comments:
The lesion is unlikely to cause infertility in presence of abundant sperm storage in the epididymis.


Testis, multifocal seminiferous atrophy, 10x, HE


Testis, seminiferous atrophy and Leydig cell hyperplasia, 20x, HE

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Diffusely, hepatocytes contain intracytoplasmic clear vacuoles (lipid). The lipid vacuoles within the midzonal and periacinar regions are small (2-3 um in diameter) and surround a central nucleus (interpreted as microvesicular lipid). The lipid vacuoles within the portal areas are large (8-12 um in diameter) and displace the nucleus to the margin (macrovesicular lipid).

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** lipid deposition MPATH:42;

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
Hepatocellular vacuolar change of variable degree suggestive of lipidosis is present in all mice from WTSI, consistent with high lipid diet.

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: M00902118 (Female)

Histopathology Findings:

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Diffusely, hepatocytes contain intracytoplasmic clear vacuoles (lipid). The lipid vacuoles within the midzonal and periacinar regions are small (2-3 um in diameter) and surround a central nucleus (interpreted as microvesicular lipid). The lipid vacuoles within the portal areas are large (8-12 um in diameter) and displace the nucleus to the margin (macrovesicular lipid).

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** lipid deposition MPATH:42;

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
Hepatocellular vacuolar change of variable degree suggestive of lipidosis is present in all mice from WTSI, consistent with high lipid diet.

thyroid gland (MA:0000129)

Histopath Description:
The thyroid intestitium contains well differentiated lymphoid tissue that is reminiscent of thymic tissue

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

Definitive Diagnosis:
Ectopic thymus

Histopathology Comments:
Incidental

lymph node (MA:0000139)

Histopath Description:
The mesenteric lymph node is markedly enlarged (greater than four fold). The medulla is particularly expanded by chords and sheets of plasmatoid cells. There are promient germinal centers within the medulla

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

Definitive Diagnosis:
Lymphoid hyperplasia

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. Early maginal center lymphoma is suspected.

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: M00935450 (Female)

Histopathology Findings:

liver (MA:0000358)

Histopath Description:
The overall hepatic lobular architecture is normal. Diffusely, hepatocytes contain intracytoplasmic clear vacuoles (lipid). The lipid vacuoles within the midzonal and periacinar regions are small (2-3 um in diameter) and surround a central nucleus (interpreted as microvesicular lipid). The lipid vacuoles within the portal areas are large (8-12 um in diameter) and displace the nucleus to the margin (macrovesicular lipid).

Morphological Diagnosis:
Distribution: Diffuse; **Severity:** moderate; **MPATH Diagnosis:** lipid deposition MPATH:42;

Definitive Diagnosis:
Hepatic lipidosis

Histopathology Comments:
Hepatocellular vacuolar change of variable degree suggestive of lipidosis is present in all mice from WTSI, consistent with high lipid diet.

lymph node (MA:0000139)

Histopath Description:
early lymphoma

Morphological Diagnosis:
MPATH Diagnosis: lymphoid neoplasms MPATH:513; **MPATH Process Term:** neoplasia MPATH:218

Definitive Diagnosis:
Early lymphoma

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:
Lymphoma/ lymphoid hyperplasia were noted in two mice. This may explain some of the leukocyte abnormalities observed in this line. Lymph node hyperplasia could also be seen in wildtype mice albeit at low pevalence (5-15% in various B6 WT strains we have analyzed). Hence this finding should be interpreted with caution. We did not find morphological explanation for increased response to stree-induced hyperthermia. We did not find lesions to explain embryonic lethality; analysis of homozygous embryos may explain cause mortality.

Line summary: Testis: Seminiferous tubules atrophy, Leydig cell hyperplasia (1/2)