SEAL POSTMORTEM REPORT FORM

Interim report

NATIONAL REFERENCE NUMBER: SS2020/47
POST MORTEM NUMBER: M60/20
HISTOLOGY NUMBER: 01102005331
SPECIES: *Phoca vitulina*
SEX: Male
AGE GROUP: Juvenile
DATE FOUND: 13/01/2020
LOCATION FOUND: Poolewe, Little Loch Ewe. Highland
NATIONAL GRID NUMBER:NG 8440481509

DATE OF POSTMORTEM: 28/01/2020
PATHOLOGIST: Redacted

BODY CONDITION USING CONDITION CODE: 2a
Live (becomes code 2 at death)
2a) Extremely fresh (as if just died, no bloating, meat is considered by most to be edible)
2b) Slight decomposition (slight bloating, blood imbibition visible)
3) Moderate decomposition (moderate bloating, skin peeling, penis may be extended in males, organs still intact, excluding postmortem damage)
4) Advanced decomposition (major bloating, skin peeling, penis extended in males, organs beyond recognition, bones exposed due to decomposition)
5) Indeterminate (mummified carcass or skeletal remains, no organs present)

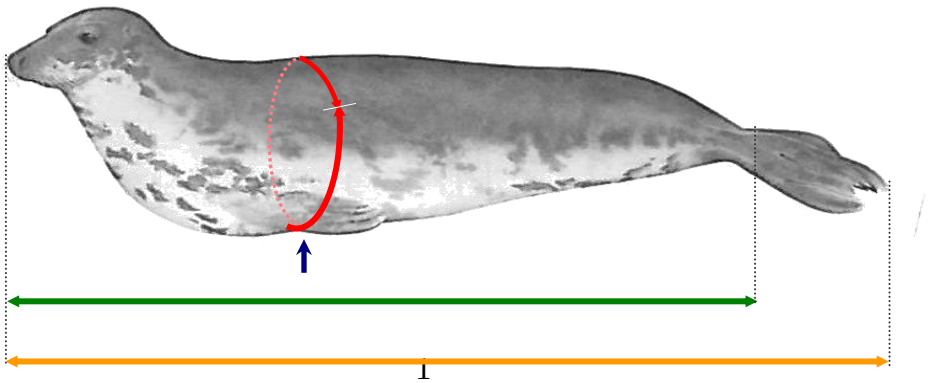
1. MORPHOMETRIC DATA

FROZEN: No

BODY WEIGHT: 16.8 KG

LENGTH, GIRTH AND BLUBBER THICKNESS:

1) **tip of nose to tip of hind flipper (1):** **111 cm**
2) **tip of nose to end of tail (2):** **99 cm**
3) **girth behind front flippers (3):** **53.5 cm**
4) **mid-sternal blubber thickness (4):** 9 mm



2. GROSS PATHOLOGY

NAD: No Abnormalities detected **NE**: Not Examined

1) Body condition Thin

2) External examination
Body orifices: NAD Gingivitis to upper arcade, no focal ulceration however
Ectoparasites: NAD
Flippers: Skin defect in webbing of left hind flipper 12-14mm square, no associated infection or abnormal inflammation suspect >3 days duration as wound edge appears to be granulating

3) Integument
Epidermis: Skin thickenin/hyperkeratosis with alopecia on ventum, possibly due to prolonged contact with hard surface. Single ulcer under jaw , full thickness annular, 10mm in diameter, 2mm deep. Multiple smaller/shallower annular dermal ulceration on ventral neck.
Blubber: Thin layer, no free lipid on cut section
Subcutaneous tissue: Dehydrated, no bruising

4) Musculoskeletal system
Skull: Single entry wound to top of skull consistent with ballistic trauma, skull fractured into >5 sections, cranial vault destroyed. No other trauma evident
Other bones: NAD
Back muscle mass: Thin
Other muscles: NAD

5) Nervous system
Brain: Massive trauma due to ballistic trauma, intracranial harmorrahge and loss of structure- death likely almost immediate
Spinal cord: NE
Peripheral nerves: NAD
Eyes: Present, no trauma

6) Cardiovascular system
Pericardial sac: NAD
Myocardium: NAD
Valves: NAD
Arteries, veins: NAD

7) Respiratory system
Nasal cavity: NAD
Sinuses: NAD
Trachea, bronchi: Small volume of blood, likely drained in post mortem from skull trauma. No foam, but very ‘wet’ in appearance. ucosa otherwise NAD. No gross parasite burden detected

Lungs: Bilateral congestion and some focal consolidation of some regions, giving a mottled appearance to parenchyma especially of caudal lung margins. No emphysema. Suspect underlying pneumonia, possibly early stage verminous
Pleura/pleural cavity: NAD

8) Alimentary system
Mouth: NAD
Oesophagus: NAD
Stomach: Scant contents, no solid ingesta, some nematodes and >30 otoliths and fish lenses. No blood
Duodenum/small intestine: NAD Normal contents.
Large intestine: Large volume of faeces indicative of past feeding
Anus: NAD
Liver: NAD No fatty change evident but slightly tan coloured indicative of mild jaundice. Gall bladder full
Pancreas: NAD
Peritoneum/peritoneal cavity: NAD

9) Urogenital system
Ovaria/testes: Immature male
Uterus: NAD
Vagina/penis: NAD
Kidneys: NAD
Adrenals: NAD
Ureters: NAD
Urinary bladder: Normal, straw coloured urine
Urethra: NAD

10)Lymphatic and endocrine systems
Thyroid: NAD
Spleen: NAD
Thymus: NAD
Lymph nodes: Enlarged MLN and bronchial associated lymph nodes. Nodes draining from left flipper lesion were unremarkable.

3. CHECKLIST OF STANDARD SAMPLES

In each square, enter: *X = sample taken*
Blank = sample not taken or not present
Record any extra samples taken in section 4.

Weights
left testis (g):
right testis (g):
heart (g):

Freeze at -20^{0}C

☒ epidermis	4 cm^2
☒ blubber	2 x 20g
☒ liver	2 x 20g
☒ muscle	2 x 20g
☒ serum or PCF	to 20 ml
☒ teeth / jaw	>4
☒ whiskers	>4
☒ urine	up to 10 ml
☒ faecal material	up to 50 ml
☒ Entire carcase to NMS	

Bacteriology

☒ brain	swab/block
☐ CSF	swab/fluid
☒ kidney	swab/block
☒ liver	swab/block
☒ lung	swab/block
☒ spleen	swab/block

Virology (freeze at -80^{0}C)

☒ brain	1 cm^3
☒ spleen	1 cm^3
☒ lung	1 cm^3
☒ liver	1 cm^3
☐ skin	1 cm^3

10% Formalin

☒ adrenal glands	both
☒ bladder	1 cm^3
☐ brain	whole
☒ heart	1 cm^3
☒ kidney	1 cm^3
☒ liver	1 cm^3
☒ lung	1 cm^3 x …
☐ mammary gland	1 cm slice
☒ mesenteric ln.	1 cm slice
☒ pancreas	1 cm^3
☒ bronchial ln.	1 cm slice
☐ skin and blubber	1 cm^3
☒ spinal cord	1 cm^3
☒ spleen	1 cm^3
☒ testes	both/slices
☒ thymus	1 cm^3
☒ thyroid	1 cm^3
☐ uterus	1 cm^3
☐ ovaries	both

Ethanol
☐ Parasites from
-
-

4. STOMACH CONTENTS

Food remains cardiac section stomach (g): . . . . . .

☐ No food remains

Stomach contents were:

☒ Sieved stomach contents through a 425 micron mesh and store in ethanol?

☐ Stomach contents frozen directly ay -20OC

☐ Entire Stomach frozen directly ay -20OC

5. OTHER SAMPLES COLLECTED

Extra samples for histological examination:	Extra samples for bacteriological examination:	Other extra samples taken (list):
-Prescap LN	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
		-

Optional (if time and storage allows)

Freeze at -20^{0}C

☐ foetus/placenta	whole
☐ milk	up to 20 ml
☐ claws	2 – 3

Virology (freeze at -80^{0}C) or RNAlater (freeze at -20^{0}C)

☐ pituitary	section
☐ cranial nerve	section

Fixed tissue

☐ pituitary	whole

6. BACTERIOLOGY REPORT:

Lung: +++ gross mix flora.
Liver: No growth @14 days.
Spleen: + gross mix flora.
Kidney: No growth @14 days.
Brain: ++ gross mix flora.

7. HISTOPATHOLOGY REPORT:

Heart. One section evaluated. Multifocal artifactual fragmentation of tissue. Unremarkable.
Lung. 2 sections evaluated. One section shows marked alveolar capillary congestion, patchy alveolar oedema and moderate alveolar collapse. Multifocally both within bronchioles and alveolar spaces there are numerous transverse and oblique sections of nematodes with a thin cuticle with no associated inflammation. Small to moderate quantities of mucus are present within moderate sized bronchioles. Multifocally interlobular septa show mild to moderate expansion by oedema fluid.
Liver. One section evaluated. Rare small foci of hepatocyte loss with associated mild to moderate eosinophil and macrophage infiltrate and rarely multinucleate giant cells are present within acini.
Pancreas. One section evaluated. Unremarkable.
Kidney and bladder. 3 sections evaluated. Both kidney sections are unremarkable. Mild artifactual/autolytic detachment of urothelium within the bladder but no lesions identified.
Spleen. One section evaluated. Unremarkable.
Lymph node. 3 sections evaluated. Differing lymph nodes show mild to moderate lymphoid hyperplasia with germinal centre formation. There is also mild to moderate medullary histiocytosis with rare multinucleated giant cells predominantly within subcapsular sinuosoids.
Thyroid gland. 2 sections evaluated. Follicles contain moderate quantities of pale staining eosinophilic hyaline colloid and are lined by cuboidal epithelium with common resorption vacuoles of the colloid/epithelial interface (normal morphology). Where present parathyroid tissue appears unremarkable.
Adrenal gland. 2 sections evaluated. Mild artifactual change in the zona glomerulosa. Unremarkable.

Morphological Diagnosis:

Lung-variable pulmonary congestion, patchy alveolar oedema and moderate atelectasis. Multifocal, mild, lungworm burden (likely Parafilaroides species).

Liver-multifocal, minimal, eosinophilic and granulomatous, necrotising hepatitis.

Lymph node-variable mild to moderate reactive lymphadenosis with medullary histiocytosis.

Comment: The pulmonary congestion, oedema and moderate atelectasis would represent hypostatic change and likely post-mortem change secondary to euthanasia. There is a mild lungworm burden with nematodes consistent with Parafilaroides species-these are common pulmonary parasites and normally do not result in significant pulmonary pathology often only doing so once dead when they elicit a local granulomatous reaction. In some other seal species they can be regarded as being more significant resulting in vasculitis. The multifocal eosinophilic and granulomatous hepatitis is a non-significant finding and merely represents parasitic migration through the liver. Changes in the lymph nodes reflect antigenic stimulation in the drainage field and may be related to the endoparasitism and/or focal areas of bacterial infection/colonisation.

8. OBSERVATIONS/COMMENTS:

This juvenile male common seal was shot on request of the SSPCA by a local marksman from the Mowi aquaculture unit, due to a 'substantial wound to the rear flipper' and submitted for necropsy as a fresh case. The animal was in thin condition and appeared to have been shot with a single bullet to the top of the skull, which obliterated the cranial vault and caused severe trauma to the brain. Death was likely almost instantaneous. The wound in the left hind flipper was a superficial skin defect, 12-14mm square across in the webbing, with indication of tissue healing but no unusual inflammatory reaction or indication of infection. Draining lymph nodes from the left flipper were unremarkable. There was indication of pneumonia with congestion and focal consolidation to the lungs. There was no patent parasite burden detected grossly however, histology showed variable pulmonary congestion, patchy alveolar oedema and moderate atelectasis. Multifocal, mild, lungworm burden (suspected Parafilaroides species). There was also minimal, eosinophilic and granulomatous, necrotising hepatitis and mild to moderate reactive lymphadenosis with medullary histiocytosis. These changes are considered within normal limits. Bacterial examination did not reveal any significant isolates. The animal otherwise appeared healthy and there was indication of successful feeding, however the absence of ingesta in the stomach suggests the animal did not feed for a few hours prior to death.

a. Significant diseases or conditions thought to contribute to the death of the animal: Euthanased

b. Incidental diseases or conditions not thought to contribute to the death

or condition causing it: Underlying pneumonia

9. DIAGNOSIS: SHOT ON WELFARE GROUNDS

10. CAUSE OF DEATH: SHOT (KNOWN)

11. CAUSE OF DEATH CATEGORY: PHYSICAL TRAUMA (SHOT)

12. CAUSE OF DEATH CLASS: TRAUMA

13. CONFIDENCE IN DIAGNOSIS:5

Scottish Marine Animal Stranding Scheme
SAC Veterinary Services
Inverness
Scotland

Report last modified: 19/02/2021 16:23 by Redacted

Email regarding this case:

31 Jan 2020, 08:02)

SMASS <redacted @sruc.ac.uk>
to redacted

All,

We recently received for necropsy a juvenile male harbour seal (ref M60/20), submitted to us by Mowi Scotland, shot apparently on welfare grounds and under instruction from the SSPCA, due to a 'substantial wound to the rear flipper'.

Upon examining the animal there was no clear pathological reason for this animal to have been euthanized. The wound was a superficial skin defect, <20mm across in the webbing of the hind flipper, with no associated inflammatory reaction or indication of infection. The animal was in thin body condition, with evidence of congestion and focal consolidation to the lungs, possibly suggestive of pneumonia. Parasite burden was however low and otherwise the animal appeared healthy and had been recently feeding.

If possible, could you clarify why this animal was euthanized, who made the decision and on what basis? For example was the animal particularly lethargic, exhibiting neurological signs or otherwise unsuitable for rehabilitation?

Whilst it it appreciated this was likely all done in good faith and with the animal's welfare in mind, given the protected nature of this species it is concerning from both an individual and population basis if animals are being removed unnecessarily.

Many thanks

Redacted