Institute of Veterinary, Animal and Biomedical Sciences

PATHOLOGY REPORT

Submitter's Ref.: MWTU 1415-3	Date Sent: 10/06/2015	Accession No.: **52167**

TO:

Department of Conservation
Kapiti Coast

Species: Cetacean (1)	Sex: Female	Age: Adult	Breed: Minke Whale
ID: Minke Whale	At Risk:	Affected:	Dead: 1
Owner:		Prev. Accn.:	Type: Post Mortem

HISTORY
Department of Conservation arrived on scene at 12pm on 09/06/2015; the whale was in the wash and dead, south side of Waikawa river mouth. On the morning of 10/06/2015 morphometric measurements were taken (this included rolling the whale from right lateral recumbency to sternal recumbency with the use of an excavator). The whale was then towed by the tail stock several hundred metres to near the base of the sandunes for post mortem and eventual burial.

GROSS FINDINGS
Total length: 710cm
Tip of upper jaw to tip of dorsal fin: 520cm
Tip of upper jaw to anus: 545cm
Tip of upper jaw to genitial slit: 540cm
Tip of jaw to front insertion of flipper: 220cm
Tip of upper jaw to blowhole: 90cm
Length of flipper (external): 110cm (internal): 90cm
Greatest width of flipper: 29cm
Width of tail fluke: 190cm
Length of rostrum: 130cm
Length of gape: 150cm
Height of dorsal fin: 30cm
Axillary girth: 215cm
Length of throat pleats: 350cm
Length of genital slit: 20cm (distended)
Average axillary blubber depth (ventral, lateal, dorsal): 70mm

At the time of post mortem the whale was in left lateral recumbency, lying parallel to the shoreline. She was a lactating adult female in good body condition (good blubber thickness and good hypaxial and epaxial musculature). Estimated weight of 4-5 tonnes. She was also in fair-to-moderate post mortem condition; although there was some post mortem lividy to the skin along the ventrum and distension of the genital slit, there was minimal skin slippage. The internal organs were in a moderately advanced state of decomposition.
There were large numbers (in the tens of hundreds) of larval cestodes cysts (up to 25mm in diameter) throughout the blubber layer.
At least two thirds of the intestine, as well as the stomach had herniated through a roughly 30cm in diameter tear in the left rectus abdominal/left transverse abdominal muscle near the insertion onto the xiphoid process of the sternum and was lying in a potential space between the blubber/subcutaneous layer of the left ventro-lateral thorax and thoracic cage. The diaphragm appeared intact, the intra-thoracic organs appeared grossly normal and the thoracic cage also appeared intact.

The serosal surfaces of the herniated intestine, associated mesentery and a metre long segment of the intrabdominal intestine were diffusely dark brown-to-black and slightly dull. The tissues lining the potential space in which the intestines had herniated were also diffusely dark brown-to-black. The herniated segment of intestine was moderately thickened when compared to unaffected segments of gut. Obvious haemorrhaghe/bruising was not readily apparent in the ends of the torn musculature. The stomach compartments were devoid of ingesta/digesta.
The right uterine horn was markedly enlarged when compared to the left, but there was no excess fluid or obvious signs of infection in that horn.
No other abnormalities were noted on gross post mortem.

DIAGNOSIS
Intestinal herniation and incarceration

COMMENTS
This was an adult, female, lactating Minke whale in good body condition. There were no obvious signs of trauma; bruising was not observed in the large muscles running along the back of this animal and no rib or vertebral fractures were seen.
It appears as though this animal had given birth in the last few days, as one of the uterine horns was much larger than the other. Unfortunately this also means that the calf has probably died within several days of its mother as the calf would have had no milk to survive.
On examination of the internal organs, a large segment of intestine had herniated through a tear in the abdominal muscle and has become trapped (incarcerated) just under the skin/blubber layer of the ventral chest area. The colour of the herniated intestine was almost black, which could indicate that there had been haemorrhage into the wall of this herniated segment of gut (then with the animal having been dead for 24 hours, the initial reddening/haemorrhage has turned black).
There are two possibilites for the herniation and discolouration of the intestine. The first is that this animal may have suffered an (mesenteric) intestinal torsion, possibly while giving birth. The mesentery is a broad but thin layer of tissue that carries the blood supply to the intestines, and when the mesentery becomes twisted (torsion), the blood supply becomes compromised and the wall of the intestine becomes filled with blood. Because the intestinal wall becomes swollen with blood, not enough blood is available for the rest of the body, including the heart, and the animal will die. Then, during rolling and transport of the deceased whale to the dunes, the damaged intestine has been forced from the abdomial cavity forward between the chest and overlying skin/blubber, i.e. the herniation has occurred while the animal was dead (post mortem herniation).
The second possibility is that there may have been a pre-existing hole/hernia in the abdominal muscle (sometimes animals are born with these hernias). During birth there is an increase in the pressure within the abdominal cavity due to contractions of the abdominal muscles (in an effort to help expel the calf). In theory it is then possible that the intestine (healthy at this stage) has been forced through the abdominal hernia and when this happens, the blood supply to the herniated gut becomes compromised. I think the first theory is probably the more plausible.
Thank you very much to the Ngati Wehi Wehi Iwi for the tremendous privilege and unique opportunity to learn more about these beautiful animals.