

Institute of Veterinary, Animal and Biomedical Sciences

PATHOLOGY REPORT

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TO:

Department of Conservation
Auckland

Species: Cetacean (1)	Sex: Male	Age: Adult	Breed: Pygmy Sperm Whal
ID: O'Neil's Beach Jan 2015	At Risk:	Affected:	Dead: 1
Owner:	Prev. Accn.:	Type: Post Mortem	

HISTORY

The whale was reported on the beach by a member of the public in the early afternoon of 29/01/2015 and the Department of Conservation were notified.

GROSS FINDINGS

The whale was lying in left lateral recumbency, on the high tide mark roughly parallel to the shoreline. The animal was in fairly poor body condition, with reduced epaxial/hypaxial muscle mass and reduced blubber thickness. Dorsal, lateral and ventral blubber thickness averaged just less than 30mm (this compares to a previous adult male pygmy sperm whale, in good body condition, with an average blubber thickness of around 40mm). The blubber contained numerous cysts (up to 20mm in diameter) containing larval cestodes.

The animal was slightly bloated and there was epidermal slippage affecting approximately 10-15% of the skin. There were three cookie-cutter type circular defects (~ 70mm in diameter) through the skin and superficial blubber layer; the wound margins were slightly reddened and swollen.

There was a roughly elliptical defect, approximately 200mm in length, running parallel to the long axis of the body, on the right lateral body wall; the margins were smooth and there was no reddening of the "wound" margins while a small loop of bowel was protruding through the exposed subjacent abdominal musculature. At least 12 teeth from the lower jaw were recessed below the gingival margin while the remaining teeth were worn/broken and slightly rounded. There was a complete fracture through the mandibular symphysis, while the ramus of both mandibles contained multiple comminuted fractures; there was marked reddening and some swelling of the surrounding soft tissues including the acoustic adipose tissue. There was also reddening and swelling of the soft tissues over the left lateral cheek area.

The internal organs were in a fairly advanced state of decomposition, with post mortem gas present in the epicardial vasculature of the heart, thoracic rete and mesenteric blood vessels. Post mortem gas was present throughout the liver, both kidneys and gastric mucosa; crepitus was prominent on palpation of these organs.

Large numbers (200+) of nematodes (up to 80mm in length) were present in both the squamous and glandular stomach compartments. At least half a dozen shallow ulcers, up to 15mm in diameter were present in the squamous compartment. The glandular compartment contained one squid beak and half a dozen fish/squid lens; the remainder of the intestinal tract was largely devoid of ingesta/digesta. The distal trachea contained large amounts of pink froth; similar material oozed from the cut surface of the lung parenchyma.

Examination of the acoustic structures of the head (acoustic fat, pterygoid sinuses and periotic fat) revealed no obvious gross abnormalities. The pterygoid sinuses were empty and no parasites were observed. No haemorrhages or blood clots were observed in the brain case or over/in the meninges.

No other abnormalities were noted on gross post mortem.

PROVISIONAL DIAGNOSIS
Emaciation

COMMENTS

This was an adult male pygmy sperm whale who was in an emaciated condition; muscle and blubber reserves were depleted. This is likely due in large part to the loss of numerous teeth from the lower jaw while all the remaining teeth were broken and worn; this will have had a marked impact on the animal's ability to forage, leading to progressive weight loss and weakening. The loss and wearing of teeth is likely to be partly age-related so it appears this may have been quite an old animal.

It is possible this animal stranded alive due to his weakened state. There was quite a large amount of frothy fluid in the lungs which I have seen in other cetaceans that have live stranded.

This animal also had extensive fractures of the lower jaw; the fractures were very recent and appear to have occurred while the animal was still alive; the fractures could be the result of being banged around on nearby rocks in the animal's weakened condition.

Large numbers of parasites were present in the blubber and stomach, however parasites are common in wild animals and I have seen similar numbers of parasites in pygmy sperm whales that are still in good body condition.

With regard to seismic survey activity, injuries reportedly caused by seismic-related activity are seen in the echolocation producing and receiving structures of the head and brain. These include haemorrhages and blood clots in the air-sinuses, the fatty tissue around the lower jaw and ears, the melon and the brain. In the case of this animal, haemorrhage was present in the acoustic fat of the lower jaw but this is most likely due to physical trauma resulting in the fractured lower jaw. No haemorrhages or blood clots were observed in the air-sinuses or over the brain.

Gas and fat emboli have been reported in cases of sonar-related strandings. This occurs when gas and fat from the surrounding tissues enters the blood stream and lodge in vital organs such as the brain, heart and lungs (as well other other internal organs).

In the case of this animal, gas was present in many of the large blood vessels and internal organs but this is due to the proliferation of gas-producing bacteria that occurs during the decomposition process. With regards to fat emboli, these can only be detected by microscopic examination of the internal organs. Unfortunately the internal organs of this animal were too decomposed to be of value for microscopic examination. However, the brain was still in fairly good condition, so we have taken several small pieces of brain for microscopic evaluation (i.e. to look for fat emboli).

Thank you very much to the Kawerau A Maki for the opportunity to perform a post mortem on this whale- it was a great learning opportunity and is much appreciated.

File Nos.:

Students:

Date:

Pathologist:

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