

Pathology Report

Submitter Ref.: H291	Date Sent: 11/03/2021	Accession No.: 59518
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To: Department of Conservation
Auckland

Report Sent: 08/04/2021
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Species: Cetacean	Breed: Maui dolphin		
Age: Adult - adult length but unable to determine maturity status due to scavenging	Sex: Female - scavenged; sex determined by genetic analysis		
Owner:	Type: Post Mortem		
ID: H291	Prev. Accn.:		
Submitted:	At Risk:	Affected:	Dead:

Gross Findings

This dolphin arrived frozen and was thawed for necropsy. The body was in a very poor state of post mortem preservation (code 4), with pronounced skin sloughing and liquefaction of the blubber. Both eyes were missing. The majority of the abdominal skin and muscle had been removed, with scalloped edges of tissue remaining, consistent with a shark bite/bites. The tissue at the wound edges had been exposed to water for at least several days, and could not be reliably assessed for evidence of whether the animal was alive at the time it was bitten. A 35mm linear skin incision was present in the skin at the midline transversely across the throat region. The skin margins stretched open to form an ellipse. There was a circular (approx 6mm diameter) shallow, blind ending puncture wound in the centre of this lesion.

The dolphin was in poor body condition, with marked atrophy of the dorsal musculature, and a thin blubber layer, significantly beyond what could be explained by blubber loss due to liquefaction. The neck was pronounced, and the flanks were concave.

Almost all of the abdominal contents were missing, other than a 3 x 2 x 2 cm organ in the dorsal lumbar area (interpreted as adrenal but to be confirmed by histology) and the stomach. The stomach contained fish bones. The thoracic organs were moderately to markedly autolysed, with no gross lesions evident.

Several measurements were not recorded as they were rendered misleading due to tissue loss and decomposition. The standard length was 1.54m.

Histopathology

Histology summary:

Sections of lung, adrenal, diaphragm and heart are identifiable. All organs are markedly autolysed, hampering interpretation. The heart has marked multifocal accumulation of lipofuscin (age pigment) with low to moderate numbers of intracytoplasmic inclusions. There is pronounced interstitial fibrosis surrounding individual fibres and dissecting between fibre bundles.

There is multifocal calcification of airway cartilage. A single lungworm cross section is identifiable. No further interpretation is possible.

Diagnosis

Open (unable to be determined due to advanced decomposition)

Comments

The absence of haemorrhage or blood clots in the abdominal cavity or around the margins of the shark bite suggests that this is more likely to be scavenging by a shark rather than predation. It is important to note though that the body had been in water for some time, which makes it impossible to be sure about this conclusion, as prolonged submergence and decomposition remove evidence of bleeding and other tissue reactions that are needed to confirm that an animal was alive at the time of tissue damage.

The dolphin was very thin, meaning that it had likely been ill for some time before death, so it is possible that it either died of its illness and was then scavenged, or that it was weak and therefore an easier target for a shark.

No recognisable reproductive organs were present therefore it isn't possible to determine the sex of this animal grossly; genetic analysis will clarify this.

Samples of the remaining tissues were processed for histology, however the fact that the body was decomposed and that most organs were missing made it impossible to determine a definitive cause of death in this case. Several of the histological changes that were present are consistent with an aged animal (e.g. calcification of cartilage in the lung and fibrosis and pigment accumulation in the heart), but the heart changes can also be seen in younger animals with primary heart disease.

Date: 18/03/2021	Pathologists:
Students:	