

Pathology Report

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To: [REDACTED]
Department of Conservation
Christchurch

Report Sent: 21/12/2018

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Species: Pinniped	Breed: New Zealand Fur Seal		
Age: Juvenile	Sex: Female - 3 female pups		
Owner: Department of Conservation	Type: Post Mortem		
ID:	Prev. Accn.:		
Submitted: 3	At Risk:	Affected:	Dead:

History

Six apparently headless fur seal pups found floating on the tide in Scenery Nook approximately 2km west of of Timutimu Head at the entrance to Akaroa harbour. Five were found in one bay and a 6th at a nearby bay. Retrieved from the water and packaged for shipping to Massey. The pups were not in a good state of preservation and had probably been in the water for several days.

Gross Findings

All three pups were in a poor state of post mortem preservation.

Pup #1. This pup is female, weighs 3.84kg, is in good body condition (good skeletal muscle mass and subcutaneous body fat reserves) and has a stomach full of milk. The skin from the entire head and the proximal neck is absent; the adjacent exposed edges of the skin are not reddened or swollen and neither are the exposed soft tissues, including the cervical musculature. Exposed soft tissue is markedly decomposed. The rostral half of the skull, including both mandibles, is absent with the skull separated at the coronal suture.

There is patchy reddening, swelling and tearing of the subcutaneous tissues and superficial musculature around the neck and shoulder regions; no obvious puncture wounds are noted in the overlying skin.

The metatarsals of both hind flippers are exposed, with the overlying soft tissue missing. All joint surfaces are clean and no bones are fractured.

Pup #2. female, weight 4.41kg, good body condition, empty stomach. The skin of the head is missing ventrally as far back as the throat, and dorsally all skin and soft tissue from the nasal area forwards is missing. Extending back from the caudal part of the nasal bones the skin has been removed with a scalloped margin, leaving the underlying muscle intact. The mandibles are fully exposed but intact, and are separated at the mandibular symphysis.

Remaining bones of the calvarium are variably separated at the suture lines or fractured, and the conchae of one nasal cavity are lying free within the cranial vault. Over the left shoulder there is a shallow circular wound affecting the superficial muscle layer. The overlying skin has peeled away leaving decomposed, thin ragged margins. There are three oval, partial to full thickness skin/blubber lesions diagonally across the ventrocaudal abdomen. The deepest exposes the underlying abdominal muscle and is 35mm diameter at the skin surface and 20mm diameter at the deep surface. On the opposite aspect of the dorsal pelvis a similar wound is present, and penetrates the abdominal muscle with herniation of the kidney through the soft tissue defect. The muscle at the margins of this wound is haemorrhagic. Most of both flippers is missing, with exposure of the tarsal bones as above. The anogenital soft tissue has also been removed, with scalloped to zig-zag skin margins remaining.

Pup #3, female, weight 3.30kg, , good body condition, empty stomach. This pup is similar to the first two, in that there is damage to the flippers and the head. There is extensive soft tissue removal from most of the head, and the few remaining skull bones are fractured and held together by soft tissue remnants. The flippers appear similar to those of pup #1, with the distal metatarsals/phalanges missing and smooth exposed joint surfaces. Circular wounds involving the skin and underlying blubber, similar to those described for pup #2, are present over the ventrum. There is some haemorrhage into the intercostal muscles of the sternum.

Diagnosis

Possible con-specific infanticide

Comments

The injuries on these seal pups are not consistent with any terrestrial predator or scavenger, nor are they consistent

with human-inflicted injuries. The fact that the pups were found floating at sea and likely to have been there for a few days means that the wound margins have been 'washed out', so we can't assess them for haemorrhage or inflammation in order to determine whether they were inflicted while the pups were still alive. Several of the pups did have areas of soft tissue bruising on their bodies though, which indicates that at least some of this damage occurred before death. These pups were too young to have been swimming at sea, so the most likely scenario is that they were either killed on land and moved out to the sea, or were dragged out to sea and killed there. The nature of the injuries (mostly head/face and flippers) would fit with these pups being killed by an adult pinniped, for example a leopard seal or fur seal. Such attacks have been described in a number of pinniped species, and are generally more common in phocids than in otariids, although there are a number of descriptions in sea lion species. In one published study a group of South American sea lions attacked and killed a total of 31 South American fur seal pups over a period of several days, with at least 8 deaths. Similar events have been described where seals (particularly adult and subadult males) attack pups of the same species.

Date: 21/12/2018	Pathologists: 
Students:	