Case Report: Cosmetic Surgery in a Kakapo (S*trigops habroptilus*)

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Background

Kakapo ("night parrot") are a critically endangered flightless parrot endemic to New Zealand. There are currently 86 birds remaining, 41 females and 45 males. Of these, 21 females are of breeding age (>9 years) and 5 females are likely to be sexually mature by next breeding season (predicted to be no earlier than 2008) (Eason, 2006) There are 35 adult males (>5 years). Kakapo breed once every 2-4 years and breeding is dependent on food supply such as rimu (*Dacrydium cupressinum*) fruit (Department of Conservation, 2006).

History

Four kakapo chicks from the 2005 breeding season (3 female and 1 male) were hand-raised following the failure of the rimu fruit to mast (DOC). Once weaned and acclimatised to Whenua Hou (Codfish Island) at five months old, the chicks were placed in a pre-release pen two at a time. The second pair to be released, two females, Pounamu and Yasmine, were attacked by a young adult male kakapo who climbed into the pen to access the feeding station. Initial first aid and stabilisation was performed on Whenua Hou (Codfish island) before Pounamu was transported to the Massey University Veterinary Teaching Hospital (MUVTH). The other chick sustained minor injuries and was treated on the island.

Clinical examination

On arrival at MUVTH, the bird was given a brief examination. Grazing and punctures to head and face, a lacerated left eyelid and a dropped left wing with no palpable fractures were identified. Butorphanol, amoxicillin and clavulanic acid, and Harrisons handraising formula were given. She was placed in quiet, warm cage for 24 hours. During this time it was noted that she had difficulty prehending food.

Twenty-four hours later a full examination under anaesthesia was performed including radiographs and a full blood profile. Soft tissue injuries were present on her face, top of head and neck, and involved the right commissure of the mouth, nares, external ear canal and left eyelid. Treatment involved survey radiographs to rule out any fractures, removal of feathers around the wounds, cleaning the wounds and placement of a pharyngostomy tube to enable force-feeding and medication without beak manipulation. Medication included antibiotics and pain relief.

No bony abnormalities were seen, however loss of visualisation of the airsac space in the left axillary region was observed, suggesting some soft tissue swelling in this region. Subcutaneous air was noted on the dorso-caudal aspect of the cranium on the left hand side. This was associated with a soft tissue injury.

Summary of findings

1. Left eye had small fluoresceine positive ulcers and a lacerated eyelid
2. Multiple bruises, punctures and necrosis of skin over head and neck. Deep puncture wounds to the right side of the neck and running along the right mandible at the commissure of the mouth.
3. Superficial wound in left axilla.
4. Loss of the normal airsac space in the left axillary region

One week after presentation, an area of necrotic tissue on the right neck in the featherless tract was debrided back to healthy tissue and sutured with 5-0 vicryl. The remainder of the wounds were left to heal by second intention until three weeks after presentation when it was decided that the wound defect on the back of the cranium was too large to heal without creating a large featherless area. Head feathers in many species parrots are important for display and were concerned that she may not be completely waterproof with a featherless area. To prevent a large bald patch, a skin flap advancement surgery was performed. The skin was incised along the apteria on either side of the neck and blunt dissected from the underlying tissue. The cutaneous muscles attaching to the skin were transacted to enable advancement of the skin. The skin flap was advanced cranially to cover the defect. Tacking sutures were placed to reduce the deadspace between the skin flap and the subcutaneous tissue. The skin flap was sutured in place with 5-0 Vicryl with simple interrupted and continuous patterns.

The wound healed well, with feather growth on the caudal portion of the skin flap occurring within 7-10 days. Regrowth in the area over the wound did not occur for over a month and within a few days of feathers appearing it was noted they were dystrophic with few barbs on the shafts. The skin in the area was palpably thicker than the other head skin. A psittacine circovirus PCR test at this time was negative and the dystrophic feathers were attributed to chronic inflammation and fibrosis in the underlying tissue.

The bird was returned to Whenua Hou nearly 3 ½ months after her injury despite full feather regrowth not occurring by this stage. This was due to a combination of factors, such as the risk of further imprinting, the weather on her island had improved as summer advanced and the regrowth of some normal looking down feathers had begun to cover the gap. She was maintained in an enclosure with shelter provided until it could be confirmed she was relatively waterproof then she was released with a radiotransmitter and monitored frequently for foraging ability and weighed regularly. In late July (nearly 11 months after the injury) she was caught for a health check and vaccination. The field workers report a good body weight despite not being supplementarily fed. Her head is still "scruffy" but the feathers cover the injured area well and the rest of her feathers look normal. Despite (or maybe because of!) all the human attention as a youngster, she has established a home area as far away from human habitation as she can get!

References

Department of Conservation. (2006). *Kakapo*. Retrieved 31/07/2006, 2006, from http://www.doc.govt.nz/Conservation/001~Plants-and-Animals/001~Native-Animals/Kakapo.asp

Eason, D. (2006). Personal Communication.

Figure 1: A young female kakapo with soft tissue injuries three days after being attacked by a young adult kakapo.

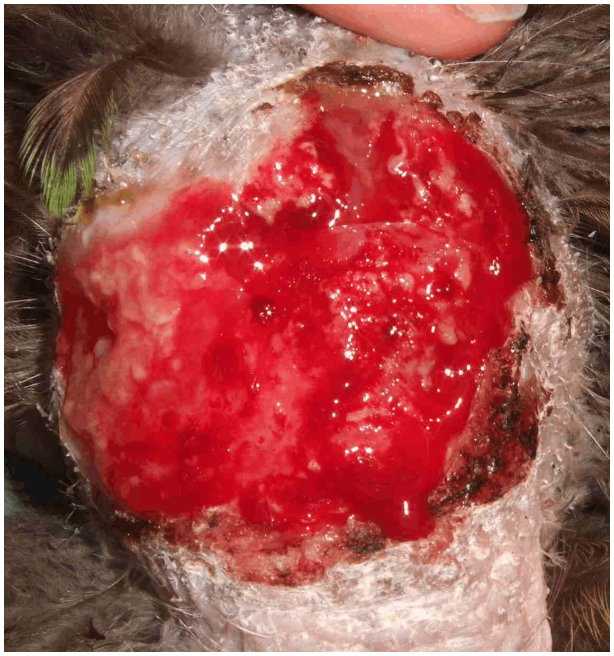

Figure 2: Large granulating wound on the back of the head of a young female kakapo following removal of the scab three weeks post-injury

Figure 3: Following advancement of a skin flap the defect seen in Figure 2 is now covered.

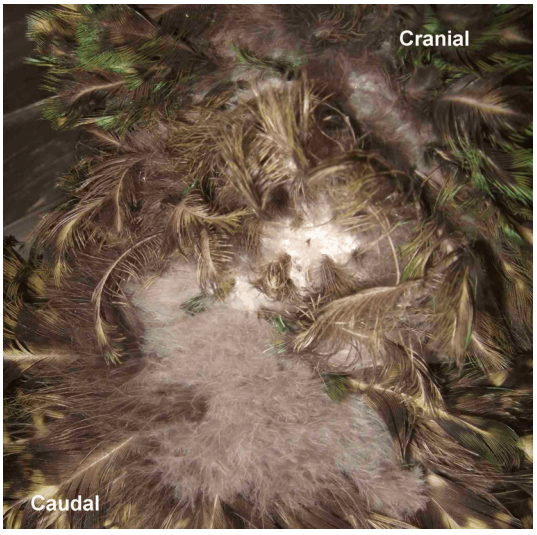

Figure 4: Feather re-growth over injured area at the time of return to Whenua Hou (codfish Island). Note the dystrophic feathers towards the cranial edge of the wound.