

Management of Chronic Purulent Temporal Adenitis in a Captive Asian Elephant

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Introduction

Elephants have two specialized apocrine glands called temporal glands located between the eye and the ear. They are multi-lobed and can weigh up to 3 kg in males, and about 1 kg in females. They secrete a viscous, pungent liquid from a small opening above the zygomatic arch. When male elephants go into musth there is copious discharge from the glands, which may have a specific communicative functions and bio-responses related to recognizing genetic and social relationships, choosing mates, and in establishing and maintaining social order (Rasmussen & Krishnamurthy 2000). In females the glands are usually non-secretory although a small discharge may rarely occur.

Inflammation of the temporal gland is called 'temporal adenitis', which may also occur due to blockage of the opening and retention of secretions. In adenitis, the gland becomes swollen, oedematous, thick and painful. Pus may or may not be present. The gland and adjacent tissues become indurated and hard. It may get injured resulting in recurrent inflammation of the temporal region. Owing to irritation, the animal may rub or scratch the temporal region and the skin may get abraded, leading to secondary infection. Recurrent injury to the swollen gland is also possible when the animal lies down on concrete floors.

Case history

A captive female Asian elephant used for elephant back safaris for tourists, was seized and rehabilitated by the Western Circle Forest Division, Nainital, India. She had a history suggestive of temporal adenitis for the past three years. The elephant presented with a swelling

in the right temporal region (Fig. 1). She was aged around 56 years, weighing 3200 kg, in good physical condition and with normal feeding activity.

On examination there was thick purulent matter with a foul smell clogging the opening of the temporal gland (Fig. 2). The swollen area was hard to the touch and she evinced pain on palpation. Based on the clinical signs, temporal adenitis was diagnosed.

Pus was collected on a sterile swab for culture and sensitivity tests, but no bacterial growth was reported after 24 h. Blood was collected for haematology (Table 1). The wound was flushed with 2% potassium permanganate solution followed by 5% povidone iodine solution and thoroughly cleaned with gauze. The wound pocket was packed with a mixture of copper sulphate and magnesium sulphate powder mixed with Iodine solution twice daily for two months, and after that once a day for three months (Fig. 3). Additionally, the elephant was given Enrofloxacin (10 mg/kg IM), Meloxicam (0.2 mg/kg IM), Chlorpheniramine Maleate (4 mg/



Figure 1. Noticeable swelling of the temporal area.

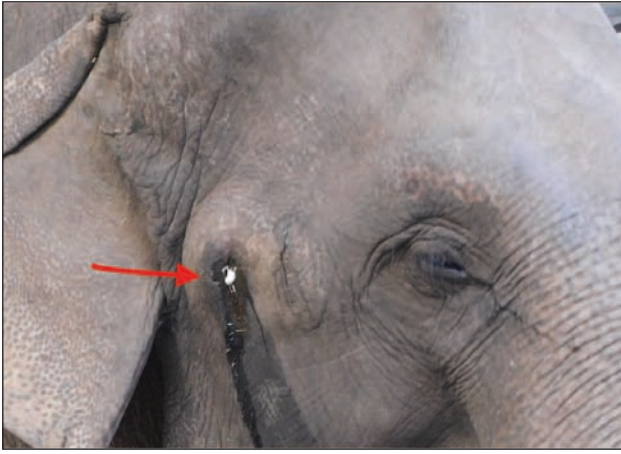


Figure 2. Thick pus clogging the opening.



Figure 3. Wound cleaning with antiseptics.

kg IM) and Multivitamin (70 ml IM) for five days. The swelling reduced dramatically after six months of regular dressing and the wound pocket showed signs of healing with reduction in wound depth as assessed through introduction of artery forceps.

Discussion

The successful treatment of chronic purulent temporal adenitis took more than five months and proved challenging because of the site. Management was conducted using counter-irritants, antiseptics and anti-inflammatory drugs to sterilize the wound, prevent recurrence, reduce pain and promote healing.

The indurated gland in temporal adenitis may also be surgically removed under general anaesthesia which needs extensive post-operative care as suturing is not generally practiced for elephants, as wound dehiscence (rupture) is common (Fowler & Mikota 2008). Opening the swollen gland and cauterizing it with caustics like triple

sulphate or draining and treating as open wound is also possible (Ajithkumar *et al.* 2009).

We opted for the described procedure, as approval was not received for alternatives. The procedure undertaken is easily conducted under field conditions and facilities available in range state settings. Therefore it maybe preferable to other options, in treating chronic purulent temporal adenitis in similar situations.

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References

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Table 1. Haematology values before and after treatment.

Parameters	19.8.2018	25.9.2019
WBC (x10 ³ / mm)	10.9	6.8
RBC (x10 ³ / mm)	2.7	2.95
PCV (%)	36.0	32.9
Platelets	4.4	8.8