

# Dehorning as the Surgical Management for Horn Fracture in a Buffalo: A case report

## Abstract

An eight-year-old pluriparous, non-pregnant graded Murrah cross buffalo was presented with a history of left horn fracture due to trauma and accompanied by serosanguineous to purulent nasal discharge from the ipsilateral nostril and maggot infestation for nine days. Clinical examination revealed a fractured left horn with contamination of the wound and evidence of myiasis. Based on the history and clinical findings, horn fracture with secondary infection was diagnosed. Surgical amputation of the affected horn was performed under standing restraint using local analgesia. The fractured horn was completely removed, the wound was thoroughly debrided, and routine postoperative care was instituted. Antibiotics, analgesic, and multivitamin supplementation were administered for five days, while alternate-day wound dressing and fly-repellent application were continued until satisfactory healing was achieved. Progressive wound contraction and healthy granulation tissue formation were observed during follow-up. Complete healing occurred within 17 days, and skin sutures were removed on day 19. The buffalo recovered uneventfully without postoperative complications. This report highlights the effectiveness of timely horn amputation and appropriate postoperative management in achieving favorable clinical outcomes in buffaloes affected with complicated horn fractures.

**Keywords:** Buffalo, dehorning, epistaxis, horn amputation, myiasis

## Introduction

Horn injuries are frequently encountered in adult bovines and bubalines and are commonly associated with fighting, accidental trauma, transportation, and improper housing conditions (Tyagi & Singh, 2016). As per Prasad and co-workers (2016), horn fractures in buffaloes account for 42.36%. Fractures involving the horn core often expose the cornual sinus, predisposing affected animals to hemorrhage, sinus infection, myiasis, and persistent pain (Singh & Nigam, 2013). When severe contamination, necrosis, or instability of the horn is present, surgical amputation remains the treatment of choice. Successful management depends on complete removal of diseased tissue, adequate analgesia, effective control of infection, and diligent postoperative care (Mahida *et al.*, 2010). Buffaloes are particularly prone to horn injuries

because of their prominent horn structure and aggressive social interactions (Prasad *et al.*, 2016). Various surgical techniques for horn amputation and reconstruction have been described in buffaloes and other ruminants with favorable clinical outcomes (Mahida *et al.*, 2010; Kumaret *al.*, 2018). More recently, successful management of fractured horns in buffaloes through surgical amputation has also been documented in clinical case reports (Mahlaet *al.*, 2021). The present report describes the successful surgical management of a fractured left horn in an adult graded Murrah cross buffalo.

## **Materials and Methods**

An eight-year-old pluriparous, non-pregnant graded Murrah cross buffalo was presented to the veterinary clinic with a history of left horn fracture due to traumatic injury from tying pole nine days ago. The owner reported continuous serosanguineous to purulent discharge from the left nostril and the presence of maggots around the fractured horn. Clinical examination revealed a fractured left horn with foul-smell, local suppuration and myiasis. The nasal discharge suggested communication of the cornual lesion with the frontal sinus and secondary infection.

The animal was restrained in a standing position, and the surgical site was clipped and prepared aseptically. Local anesthesia was achieved using inj. Lignocaine hydrochloride (2%) administered through cornual nerve block along with a circumferential ring block around the horn base. After adequate desensitization, surgical amputation of the affected horn was performed. An elliptical incision around the base of horn was made, the skin flaps reflected and the horn tissue was chiseled out. The sinus space was copiously lavaged with normal saline and the wound was thoroughly cleaned and debrided to remove devitalized tissue. Hemostasis was achieved with point firing using potassium permanganate granules. The surgical incision was sutured using suture material (Polyamide no. 2) applied in horizontal mattress pattern.

Postoperatively, broad-spectrum antibiotic (inj. Streptopenicillin @ 44,000 IU/Kg IM OD for 5 days), analgesic (inj. Meloxicam @ 0.2mg/kg IM OD for 5 days), and multivitamin supplementation were administered. Alternate-day wound dressing was performed using 5% povidone-iodine, and fly-repellent spray was applied regularly to prevent reinfestation and promote wound healing.

## **Results**

The buffalo tolerated the surgical procedure well and remained stable throughout the operation. Reduction in nasal discharge and local inflammation was observed during the initial postoperative period. The wound remained free from further maggot infestation owing to regular dressing and fly control measures. Healthy granulation tissue developed progressively, followed by satisfactory wound contraction. Complete healing of the surgical wound was achieved within 17 days after surgery. Sutures were removed on the 19<sup>th</sup> postoperative day. No postoperative complications such as hemorrhage, sinus infection, wound dehiscence, or recurrence of myiasis were observed. As per telephonic follow-up taken from the owner, the buffalo resumed normal feeding and behavior, and recovery was uneventful.

## Discussion

Horn fractures involving the cornual sinus are clinically significant because they predispose animals to infection, chronic discharge, sinusitis, and fly strike. In the present case, the occurrence of serosanguineous to purulent discharge from the left nostril indicated involvement of the frontal sinus and secondary bacterial contamination. Similar observations have been reported in bovines and bubalines with complicated horn fractures and septic horn conditions requiring surgical intervention (Mahida *et al.*, 2010; Mahlaet *al.*, 2021). Diagnostic evaluation of horn injuries should focus on determining the extent of horn and sinus involvement, as advanced lesions may require complete horn amputation for successful resolution (Kofler *et al.*, 2014).

Adequate local anesthesia achieved through cornual and ring blocks provided effective analgesia and facilitated the procedure in standing restraint. Standing horn amputation is advantageous in adult buffaloes because it avoids the risks associated with general anesthesia while providing satisfactory surgical access (Rao, 2011; Singh & Nigam, 2013; Tyagi & Singh, 2016). Previous reports have demonstrated successful outcomes following horn amputation using various surgical approaches, including modified flap techniques and keratogenous flap procedures (Mahida *et al.*, 2010; Kumaret *al.*, 2018). In the present case, postoperative administration of antimicrobial and anti-inflammatory therapy, together with regular wound management and fly control, contributed significantly to successful healing. The absence of postoperative complications and complete recovery within 17 days was consistent with earlier

reports describing favorable healing following timely surgical intervention in horn affections of buffaloes (Mahida *et al.*, 2010; Mahla *et al.*, 2021).

**Conclusion**

Fracture of the horn associated with secondary infection and myiasis can be successfully managed by prompt surgical amputation of the affected horn under local anesthesia. Appropriate postoperative antimicrobial therapy, anti-inflammatory medication, wound care, and fly control are essential for rapid healing and prevention of complications. The present case demonstrated complete healing within 17 days and uneventful recovery, emphasizing the value of timely surgical intervention in buffaloes with complicated horn injuries.

Tyagi, R. P. S., & Singh, J. (2016). *Ruminant surgery* (12th ed.). New Delhi, India: CBS Publishers & Distributors.

**Figures:**



**Fig. 1:** Fractured left horn at its base upon case presentation



**Fig. 2:** Administration of corneal and ring-block using 2% lignocaine for local analgesia



**Fig. 3:** Intraoperative image depicting removal of fractured fragment of horn and extension of infection into the frontal sinus



**Fig. 4:** Immediate postoperative image depicting sutured site with applied fly-repellent ointment

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