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CASE REPORT

Surgical Management of a Broken Horn in a Buffalo: A Clinical Case Report

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ABSTRACT

mon traumatic injuries that can lead to severe haemorrhage, pain and secondary sinus infection. This report describes the clinical management of a 5-year-old buffalo presented with a complete transverse fracture of the right horn sustained during transportation. Clinical examination revealed active bleeding, sinus exposure and pain on palpation. Surgical amputation was performed under cornual nerve block using a gigli wire, followed by debridement, haemostasis, lavage and wound packing. Postoperative care included systemic antibiotics, anti-inflammatory therapy, tetanus prophylaxis and routine dressing. The animal showed uneventful recovery, with complete healing by day 21 and resumption of normal feeding and production. This case highlights the importance of timely diagnosis, surgical intervention and appropriate postoperative management in horn fractures of buffaloes.

KEYWORDS

• Buffalo • Horn fracture • Horn amputation • Surgical management • Case report

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INTRODUCTION

Horns are specialized keratinized structures that develop from the cornual process of the frontal bone and are permanent in ruminants such as cattle and buffaloes. They are important for defense, social interactions and breed identity (Prasad *et al*., 2016). However, the same structure also predisposes animals to traumatic injuries. Horn affections in large ruminants are relatively common and include fractures, avulsion, overgrowth, sinusitis, neoplasia, maggot infestations and ulcers (Mahla *et al*., 2021). Among these, horn fractures are considered serious because they are associated with severe pain, haemorrhage, reduced feed intake and risk of infection due to exposure of the frontal sinus (Mahida *et al*., 2010).

Buffaloes are particularly prone to such injuries because of their large, massive horns, fighting behaviour and management conditions. Injuries typically occur due to fighting, accidents during transportation or mishandling. Fractures involving the horn base are critical because of the direct communication with the cornual diverticulum of the frontal sinus, predisposing animals to ascending bacterial infections, osteomyelitis and chronic sinusitis (Mulatu *et al*., 2021). Delay in treatment not only increases morbidity but may also compromise the animal's productivity and welfare (Sodhi and Sangwan, 2019).

Surgical amputation of the fractured horn is considered the treatment of choice, as conservative management often fails to control bleeding and prevent sinus infection. Several methods, including guillotine-type dehorning, wire saw and flap techniques, have been described for horn amputation in cattle and buffaloes (Mahesh *et al*., 2024). The prognosis largely depends on the severity of fracture, degree of sinus involvement and postoperative management. The present case study documents the clinical presentation and successful surgical management of a complete horn fracture in a buffalo, highlighting the importance of prompt surgical intervention supported by literature evidence (Mahla *et al*., 2021).

Case History

A 5-year-old female buffalo was presented to the Veterinary Clinical Complex (VCC), PGIVER, Jaipur, with a complaint of a recent horn injury sustained during road transportation. The animal had fallen and struck its right horn against the side panel of the vehicle.

The owner reported moderate bleeding from the horn base and behavioural changes including head shaking, irritability and reduced appetite. Upon examination, the right horn was detached with an open wound at the base, active haemorrhage and visible cornual bone. Despite the trauma, the animal maintained normal vital parameters and showed no signs of systemic illness.

Clinical Examination and Diagnosis

Physical examination revealed a complete transverse fracture of the right horn at its base, along with associated soft tissue injury (*Figure* 1). The horn was completely detached and palpation induced pain and mild serosanguinous discharge. The fracture appeared to involve the cornual process with sinus exposure.

Figure 1: Complete transverse fracture of the right horn at its base

Based on clinical signs, a diagnosis of traumatic horn base fracture with secondary infection risk was established. While diagnostic imaging such as radiography could provide insight into sinus involvement, it was not performed in this case due to the clear external nature of the injury.

Treatment Strategy and Surgical Management

Considering the degree of trauma, surgical amputation of the broken horn under local anaesthesia was advised. Horn injuries involving the base or cornual process are best managed by surgical removal, especially to avoid complications from contamination of the frontal sinus.

1. Preoperative Preparation

- ***Restraint:*** Standing position in travis using rope casting.
- ***Aseptic preparation:*** Scrubbing with povidone-iodine and chlorhexidine.
- ***Anaesthesia:*** Cornual nerve block using 2% lignocaine hydrochloride (10 mL).

Amputation: A sterile gigli wire was used to amputate the horn base horizontally above the fracture site.

1. ***Debridement:*** Removal of necrotic horn sheath and debris from the wound (*Figure* 2).
2. ***Hemostasis:*** Achieved using ligation, manual pressure and styptic powder (*Figure* 3).
3. ***Wound Lavage:*** Irrigation with normal saline and antiseptic solution (povidone-iodine + metronidazole) (*Figure* 4).
4. ***Packing and Bandaging:*** Iodoform gauze packing inside the horn cavity (*Figure* 5) with horizontal matters suture (*Figure* 6) and sterile pressure bandage application (*Figure* 7).

Figure 2: Removal of necrotic horn sheath

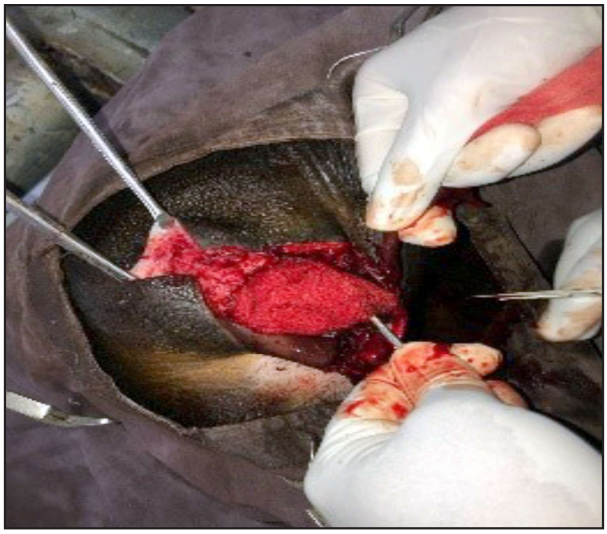

Figure 3: Haemostasis

Figure 4: Wound Lavage

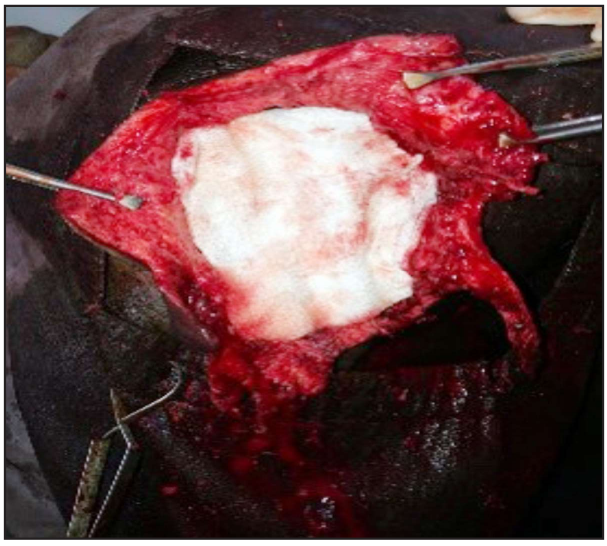

Figure 5: Iodoform gauze packing inside the horn cavity

Figure 6: Horizontal matters suture

Figure 7: Pressure bandaging

2. Postoperative Care and Medication

Proper postoperative care is essential to prevent wound infection and facilitate healing.

- ***Antibiotics:*** Inj. Ceftriaxone @ 20 mg/kg IM for 5 days
- ***NSAIDs:*** Inj. Meloxicam @ 0.5 mg/kg IM for 3 days
- ***Tetanus Prophylaxis:*** Single-dose tetanus toxoid
- ***Supportive Care:*** Multivitamin supplements and probiotics
- ***Wound Dressing:*** Changed every 48 hours, continued until complete granulation (*Figure* 6)
- ***Fly Control:*** Topical fly repellents used to prevent myiasis

The wound was monitored closely for signs of sinus discharge, swelling or foul odor-none of which developed, indicating good healing progression.

3. Recovery and Prognosis

The buffalo showed positive clinical response within 2 days. Appetite and activity improved and no further bleeding or discharge was observed. Full epithelialization of the horn stump occurred by day 21, with no signs of sinus infection or behavioural complications.

The animal resumed milk production and normal social behaviour within 10 days. The owner expressed satisfaction with the outcome and follow-up at 1 month confirmed complete recovery.

DISCUSSION

Horn fractures in buffaloes, especially near the base, are critical due to involvement of the sinus (Prasad *et al*., 2016; Mulatu *et al*., 2021). The present case was managed by horn amputation under local anaesthesia, which is considered a safe and effective technique (Mahesh *et al*., 2024). Timely intervention prevents sinus infection, as reported by Kumar *et al*. (2013) and Reddy *et al*. (2017). Large-scale clinical studies also highlight that horn affections, including fractures, cancer and maggot infestations, require early surgical correction for improved prognosis (Mahla *et al*., 2021). Literature shows that successful recovery is possible with proper haemostasis, asepsis and postoperative care (Giri *et al*., 2011; Sodhi and Sangwan, 2019).

CONCLUSION

The successful surgical management of this broken horn in a buffalo underscores the importance of timely diagnosis, skilled surgical execution and comprehensive postoperative care. Veterinary institutions like PGIVER, Jaipur, are vital in addressing such emergencies and enhancing animal welfare outcomes.

REFERENCES

1. Giri, D.K., Kashyap, D.K., Dewangan, G., Tiwari, S.K., Ghosh, R.C. and Sinha, B. (2011). Squamous cell carcinoma of horn and its

surgical management: A report of three cases. *International Journal of Livestock Research, 1*(1), 55–58.

2. Kumar, V., Mathew, D.D., Kumar, N. and Arya, R.S. (2013). Horn cancer in bovines and its management. *Intas Polivet, 14*(1), 56–57.

3. Mahesh, A.S., Bidari, K., Wadeyar, K., Prasanna, H. M., Jahangirbasha, D. and Mumtaz, S. (2024). Surgical management of unilateral horn cancer in cattle. *International Journal of Veterinary Sciences and Animal Husbandry, 9*(2), 97–99. https://doi.org/10.22271/veterinary.2024.v9.i2b.1180

4. Mahida, H.K., Tank, P.H., Dhami, M.A., Vagh, A.A., Vala, K.B., Karle, A.S. and Vedpathak, H. S. (2010). Modified flap method for amputation of the horn in buffaloes. *Indian Journal of Veterinary Surgery, 31*(1), 47–48.

5. Mahla, J.K., Anjana, R.R., Parikh, P.V., Parmar, J.J., Koli, P., Patel, M.D. and Mecvan, A.R. (2021). Surgical management of horn affections in large ruminants. *Ruminant Science, 10*(2), 475–478.

6. Mulatu, Z., Dugassa, J. and Telila, C. (2021). Unilateral surgical amputation of horn due to different causes in cattle and goat: Case report. *Stechnolock Vet Sci, 1*(1), 1-8.

7. Prasad, V.D., Kumar, P.R., Harikrishna, N.V., Sreenu, M., Vidyasagar, P., Mahesh, R. and Bhagyaraju, D. (2016). A comprehensive study on surgical affections of horns in buffaloes (Bubalus bubalis). Journal of Livestock Science, 7(2): 280-287.

8. Reddy, K.J.M., Kumar, V.G., Ganesh, S. and Raghavender, K.B.P. (2017). Unilateral horn cancer in cow and its surgical management: A case report. Int. J. Curr. Microbiol. App. Sci, *6*(8), 3349–3352. https://doi.org/10.20546/ijcmas.2017.608.399

9. Sodhi, H.S. and Sangwan, V. (2019). Successful horn amputation for the treatment of horn cancer in an 18-year-old humped bullock. Int. J. Curr. Microbiol. App. Sci, 8(8): 537-541. doi: https://doi.org/10.20546/ijcmas.2019.808.063