

Surgical management of odontoma in ruminants: A review of 2 cases

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Abstract: *Incidence of odontoma is rare in ruminants, two cases presented with odontoma; where one cow had all four incisor teeth involvement of lower mandible, while one bullock had two middle teeth involvement. Surgical removal of affected mass carried out under bilateral mental nerve block using 2% lignocaine hcl along with xylazine sedation. Comparatively smaller odontoma growth in bullock was recovered after surgery, while bigger odontoma with bony involvement had reoccurrence after 3 months of surgery.*

Key words: *Odontoma, neoplasm*

Introduction

An Odontoma is rarely observed in ruminants, tumors growth around teeth and mainly involves odontogenic epithelium and mesenchymal tissue within the maxillary bone or gingival tissues. Neoplasms are classified based on microscopic pattern of specific cell type (Brown *et al.* 2007 and Cohen & Bhattacharyya, 2004).

Among these rare odontogenic tumors, ameloblastic fibro-odontoma stands out as a benign tumor that emerges from both odontogenic epithelium and mesenchyme, often leading to the formation of enamel and/or dentin. While it is

infrequent across all species, it notably ranks as the most common odontogenic neoplasia in cattle, with documented cases in humans, cats, dogs, horses, sheep, non-human primates, and rats as well (Gardener, 1996 & Head *et al.* 2002). These neoplasms tend to affect young animals, with a range spanning from newborns to approximately 2.5 years old, showing no clear gender predilection (Miller *et al.* 1976).

Case history

Two non-descript cattle were presented in the clinical camp with watermelon size growth involved all four incisor teeth in 9 years old cow, while 8 years old bullock was presented with cricket ball size odontoma involving two middle incisor teeth with 1.5-2 years of clinical history.

Diagnosis and Treatment

The diagnosis of the condition was based on a comprehensive evaluation, including a thorough history, clinical signs and clinical examination. Both animal were sedated with xylazine (0.1 mg/kg I/M) along with bilateral mental nerve blocks were achieved using 2% lignocaine hydrochloride (10 ml on each side) after securing the animal in lateral recumbency. The surgical site was meticulously prepared to maintain aseptic conditions, reducing the risk of infection. A gingival incision was made ventral to the visible margin of the mass, creating a lower flap. Surgical excision of the tumorous growth was then performed, carefully detaching it from the mandible. Osteotomy was conducted using a chisel and hammer to remove affected bone tissue. Haemostasis was achieved through several methods, including digital pressure over sterilized gauze, cauterization, and the administration of inj. Texa bleed to control bleeding effectively.



Case no. 1 Odontoma involved all four incisors before and after surgery



The oral cavity was thoroughly irrigated using a solution of potassium permanganate mixed with normal saline and povidone iodine to ensure cleanliness and minimize the risk of infection. The surgical site was closed by opposing the flaps using interrupted mattress sutures, particularly the lower lip skin, with nylon suture material along with medicinal management with inj. Streptopenicillin (2.5 gm) for five days and Meloxicam (Melonex) at a dosage of 0.2 mg/kg b. wt. for four days. Additionally, restricted feeding was implemented to support recovery with intravenous fluid therapy using 5 liters of 5% Dextrose normal saline for four days post-operatively to meet demand of energy. Sutures were removed after 12 days, and daily wound care involved flushing with a solution of normal saline mixed with povidone iodine for a period of fifteen days to promote optimal healing.

Result and Discussion

Odontogenic tumors in animals remain a relatively limited and occasionally perplexing aspect of veterinary pathology. Notably, odontomas, such as the cases observed here, typically originate from odontogenic epithelial remnants, frequently occurring in the incisor region of the mandible. These neoplasms often manifest as cystic formations and can lead to the resorption of adjacent teeth roots (Gardner, 1992; Theilen and Madewell, 1979). Surgical excision emerges as an effective method for controlling this condition, involving the removal of the tumor growth and diligent closure of the cavity to minimize complications (Singh et al., 1993). In our cases, the surgical procedure successfully eliminated the calcified masses, along with associated fluid and hard fibrous covering.

Case no.2 recovered uneventfully, while case no.1 had bigger growth with bony involvement and despite of partial bone ablation reoccurrence was observed after 3 months.

Conclusion

Surgical removal of tumorous mass is the best treatment for odontoma; while surgical removal at early stage had least complication and good recovery.

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