

Case Study

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Surgical Removal of Periodontal Traumatic Incisor Tooth along with Gingiva in a Buffalo: A Case Study

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ABSTRACT

This case report describes surgical removal of 3rd permanent corner incisor tooth along with hemorrhagic gingiva in buffalo caused due to oral trauma. The case was presented at Teaching Veterinary Clinical Complex, International Institute of Veterinary Education and Research (IIVER) Rohtak Haryana, with history of drooling of saliva, anorexia, absence of mastication and bleeding from mouth. Clinical examination revealed traumatic and hemorrhagic swollen area in 3rd permanent corner incisor tooth gingiva of lower jaw. Swollen area was hard, hot, painful and hemorrhagic. After the clinical observations and complete anamnesis from owner, it was confirmed as traumatic periodontitis and the gingiva and bone that support the incisor tooth become seriously and irreversibly damaged. The 3rd permanent corner incisor tooth along with hemorrhagic gingival was removed under general (Xylazine) and local (2% Lignocaine) anesthesia. Xylazine was injected @ 0.03-0.1 mg/kg BW. After successful removal of 3rd permanent corner incisor tooth along with hemorrhagic gingiva. The gingiva was sutured by using cat-gut as suturing material. The sutured edges were brought together without tension by simple interrupted sutures. Owner was advised for postoperative treatment prescribed as penicillin 40000 IU/kg and streptomycin 12mg/kg IM for 7 days and 6 liters dextrose 5% IV, meloxicam @ 0.5mg/kg BW IM, tribivet @ 15 mL total dose for 3 days. Owner was also advised provide semi-solid food to animal for care and management of surgical site. The animal recovered fruitfully.

Keywords

Buffalo, Hemorrhagic gingiva, Incisor tooth, Surgical removal

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Introduction

Cattle have 32 permanent teeth with a dental formula of 2(incisors 0/4, premolars 3/3, and molars 3/3). The temporary incisor teeth erupt sequentially at approximately weekly intervals from birth. The three temporary premolar teeth erupt within two to six weeks. The first permanent molar erupts at eight months. The second permanent molar erupts at nine to 12 months, and the third permanent molar and permanent premolars erupt from 24

months. The first (central) pair of permanent incisors erupt at 18 months and are fully in wear by 24 months. The second (medials), third (laterals) and fourth (corners) incisor teeth erupt sequentially at six months' intervals; 30 month-old cattle having four broad (adult) teeth.

Congenital abnormalities including cleft palate, prognathia and brachygnathia are rare

and most lesions affecting the mouth are caused by trauma and infection. Cattle with lesions of the mouth usually present with profuse salivation and poor abdominal fill due to impaired feeding. Lesions affecting the cheek result in obvious firm swellings. Infected lesions of the cheek and/or tongue may cause halitosis. Prognathia and brachygnathia defects can be managed by careful husbandry ensuring an adequate concentrate component of the ration to maintain growth rate to slaughter. Calves with severe cleft palate are typically recognised by the presence of milk at the nostrils when sucking and are euthanased for welfare reasons.

Abnormal regurgitation in ruminants is defined as the discharge of food from the mouth Dirksen *et al.*, (2002) and occasionally from the nose Radostits *et al.*, (2007) immediately after prehension of feed and before the feed enters the fore stomach. Affected cattle may suddenly stop eating, extend the neck momentarily and after a brief episode of retching, eject partially chewed food mixed with saliva. Regurgitation must be differentiated from vomiting; the latter follows a short period of restlessness and is characterised by a considerable amount of fore stomach ingesta exiting the mouth or nose with force Dirksen *et al.*, (2002). The vomitus of ruminants contains rumen fluid and small feed particles. While regurgitation is a normal phenomenon in ruminants, abnormal regurgitation is usually the result of an oesophageal disorder, often affecting the intrathoracic part. Causes include oesophageal dilatation Morgan (1965) and Vestweber *et al.*, (1985) and narrowing Alexander (1965), various types of trauma, chemical irritation, infection and parasites Dirksen *et al.*, (2002).

History and clinical observation

A buffalo was presented at Teaching Veterinary Clinical Complex, International

Institute of Veterinary Education and Research (IIVER) Rohtak Haryana, with complaints of drooling of saliva, bleeding from mouth, anorexia and absence of mastication. Clinical examination revealed traumatic and hemorrhagic swollen area in mouth near base of 3rd permanent corner incisor tooth gingiva of lower jaw (Figure 1). Hemorrhagic swollen area was hard, hot and painful on palpation. After the clinical observations and complete anamnesis from owner, it was confirmed as traumatic injury to tooth which leads to periodontitis of 3rd permanent corner incisor tooth and luxation of tooth root. The gingiva was hemorrhagic and swollen and bone that support the 3rd permanent corner incisor tooth become seriously and irreversibly damaged (Figure 1).

Results and Discussion

After complete examination it has been decided that the gingival mass along with tooth should be removed surgically. Before surgical approach buffalo was prepared for surgery with administration of xylazine @ 0.03-0.1 mg/kg BW IV and locally 2% lignocaine was injected. After administration of anesthetic agents the incisor tooth along with hemorrhagic gingival mass removed successfully (Figure 2). Gingival suturing was done by using cat-gut suturing material.

The sutured edges were brought together without tension by simple interrupted sutures (Figure 3). Owner was advised for postoperative treatment prescribed to inject Penicillin 40000 IU/kg BW and streptomycin 12mg/kg BW IM for 7 days along with 5% dextrose saline @ 6 liters IV, meloxicam @ 0.5mg/kg BW IM, tribivet @ 15 mL total dose for 3 days. Owner was also advised provide semi-solid food to animal for care and management of surgical site. The animal recovered uneventfully without any secondary complications.

Fig.1 Showing traumatic tooth and hemorrhagic gingival and **Fig.2** Surgically removed tooth along with hemorrhagic gingival



Fig.3 Showing sutured gingiva after removal of hemorrhagic mass and tooth



The horse has normal host defenses that work to maintain the integrity of the tissues that support the tooth. A disruption of the defense mechanisms results in an opportunistic infection Klugh (2003). In small animal practice tooth extraction is usually performed through the oral approach under general anesthesia Taney *et al.*, (2007). In horses the tooth extraction technique

is known as repulsion. It requires an osteotomy or trephination to expose the roots of the diseased tooth. Extraction is achieved by driving/repelling the tooth into the mouth with a dental punch Turner *et al.*, (1989). After extraction, flushing and gentle debridement of the alveolus removes loose fragments, debris and infected apical tissues DeBowes *et al.*,

(2005). This can be done using an intra-oral or extra-oral approach. In all species, the extraction site is generally sutured as this enhances wound healing, prevents contamination from food particles, stops hemorrhage effectively and reduces postoperative pain Dixon (2005) and DeBowes *et al.*, (2005). This procedure is contra-indicated, however, in cases of active infection where one should allow drainage of infected debris or discharges Fitch (2003) (11). Providing extra-oral drainage to infected areas after tooth extraction procedures (approached through cortical bone) in lagomorphs and horses, allows primary closure of the alveolus Vlaminck *et al.*, (2007) (12). Postoperative antibiotic administration is indicated in the presence of an active infection; severe periodontal disease or osteomyelitis, Smith (2005), Verstraete (1983), and Vlaminck *et al.*, (2007).

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