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Surgical management of bilateral mandibular fracture in Buffalo

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Abstract

Bilateral mandibular fracture was presented in 4 years old buffalo due to accidental injury. Radiographically the fracture was seen at the proximal one third of horizontal ramus of mandible. The fracture was stabilized with bilateral intramedullary pinning. Bilateral fracture in buffalo can be well managed with intramedullary pinning.

Keywords: buffalo, intramedullary pinning, mandibular fracture

Introduction

Fractures of the mandible are the most common fractures of the cranium in cattle, usually involving the interdental space and the molar part of the horizontal ramus of the mandible (Lischer *et al.*, 1997) [4]. Severe contusions, traffic accidents can cause mandible fractures (Nuss *et al.*, 1991) [5]. Mandibular fractures usually occur in a unilateral form, but can also occur bilaterally. Fractures may occur in the symphysis, corpus and ramus of the mandible, and in the processus condylaris, which forms the temporomandibular joint (Fessler and Adams, 1996) [3]. The fracture can be open or closed. In some animals, fractures may be associated with the dental alveolus and the loss of milk teeth. The most common symptoms of mandibular fractures are the dropping of the lower jaw, increased salivation, difficulty in feeding, food trapped between teeth and putrid breath. A detailed intraoral examination should be performed in any animal presenting such symptoms (Trent and Ferguson, 1985) [6]. The present case was reported with bilateral mandibular fracture in Mehsana buffalo.

Case history and observation

A 4 years old, 270 kg Mehsana buffalo was presented to Department of Veterinary Surgery and Radiology, College of Veterinary Science & A. H., KU, Sardarkrushinagar with a history of difficulty in feeding, hanging of lower jaw incisor after knocking of head against bike during accident. On clinical examination, rectal temperature was 99.4⁰F, the heart rate was 64 beats /min and the respiration rate was 28 breaths/ min. Upon examination of oral cavity, left side mucosa was tear near 1st molar along with abnormal motility of lower jaw and fracture fragment was noticed at proximal one-third of horizontal ramus, while right side mucosa was intact with closed fractures of right horizontal ramus (fig.1). Upon palpation, pain and crepitation was exhibited by animal. The haematological parameters were within normal range. Radiographic examination of horizontal ramus of mandible was performed in latero-medial and rostro-caudal position using computed radiography. The case was confirmed as complete bilateral fracture of mandible.

Treatment

Following 24 hrs fasting, the buffalo was premeditated with Xylazine hydrochloride (0.1mg/kg) and the anaesthesia was induced with 2 mg/kg of ketamine and 50 mg/kg guaifenesin in 5% solution in 5% dextrose saline. After onset of nystagmus, the buffalo was restrained in right lateral recumbency. Preoperatively, the oral cavity was lavaged copiously with diluted Potassium permanganate (1:1000) solution using irrigator. The fractured wound was debrided with gauze piece till fresh bleeding from fractured bone.

The head of buffalo was elevated on wooden stool covered with sterile drape (fig.2). The reduction of fracture was performed with steady traction on lower jaw and was manually held in proper position of occlusion. The normograde intramedullary pinning was done using 5 mm diameter Steinmann pin, by passing in between 2nd and 3rd incisor teeth on both sides (fig.3). The pin was passed up to the root of first premolar and hammered in place followed by cutting of extra pin portion. The post-operative radiograph was taken in lateral recumbency and it's observed that slight malalignment of fractured bone because of the less palpable space for distal fragment (fig.4). The lacerated mucosa was sutured with chromic catgut no.1 by continuous lock stitch pattern. Post-operatively, Inj. Dicrysticin (Streptopenicillin) 5 gm total dose, Inj. Melonex (Meloxicam) 0.2 mg/ kg b. wt. and Inj. Clomet (Chlorpheniramine Maleate) 15 ml total dose intramuscularly was given for five days. Daily antiseptic dressing with dilute Povidone iodine was performed by flushing at fracture and pin entry site till complete mucosal healing. Lower mandible was supported with card board for minimum movement of fracture. The owner was advised for only liquid feeding up to one week, followed by semi-solid diet for another 15 days along with *adlibitum* watering. The buffalo has started normal feeding after 21 days of surgery without any complications (fig.5).



Fig 3: Intramedullary pinning



Fig 4: Radiograph after pinning



Fig 1: Bilateral mandibular fracture in buffalo



Fig 2: Restrain in lateral recumbency for intramedullary pinning



Fig 5: Normal feeding after 21st Post-operative day

Result and Discussion

Mandibular Fractures commonly occur as a result of falls on to hard surfaces or hitting the head on solid objects (Adams and Fessler 1988) [1]. In present case, fracture occurred due to accidental injury. The interdental space, the molar part and the symphysis are the most common sites for mandibular

fractures in cattle (Adams and Fessler 1988) ^[1]. In present case, fracture was at proximal one third of both horizontal ramus of mandible. Lischer *et al.* (1997) ^[4] treated mandibular fracture in cow by using pinless external fixator but there was osteomyelitis with bone sequestration at the site of the fracture, while in present case, intramedullary pinning was performed without any complications.

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