

Successful repair of mandibular symphyseal fracture in a Dog

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Introduction

Mandibular symphyseal fractures are the most common in the cat accounting for 73% of jaw fractures in this species [1], while fractures in the premolar region are most common in the dog accounting for 31% of mandibular fractures. Vehicular trauma being the most common cause and most patients are young, having a mean age of 3 year [2] and almost 50% of affected dogs are less than one year of age [3]. Most jaw fractures are open with varying degrees of contamination and infection. The complication rate of treatment for jaw fractures however, is high at 34%. Nearly 2/3 of those complications involved dental malocclusion or osteomyelitis [1]. The healing of most mandibular fractures is rapid enough [4] and generally heal without a large callus [5]. Since there are a few case reports, successful repair of mandibular symphyseal fractures in a dog is reported.

Case history and Observation

A five year old German shepherd dog that met with an automobile accident, sustaining a fracture of mandibular symphysis was brought to the Department of Veterinary Surgery and Radiology. On physical examination, the animal was found depressed, with extended neck, partially opened mouth and protruding tongue. Copious amount of blood stained saliva drooled from the mouth. Palpation of the area elicited pain and there was open and complete fracture of mandibular symphysis. The dog resisted manipulation of the jaw. On clinical examination the temperature, heart rate and respiration were normal. Diagnosis was done on the basis of history, physical, clinical and radiographic examination of mandible as a symphyseal

fracture. Therefore, it was decided to repair the fracture with wiring.



Figure-1. Symphyseal fracture of mandible
Treatment and Discussion

After aseptic preparation of the site, animal was premedicated with Atropine sulphate @ 0.04 mg/kg body weight followed by Xylazine hydrochloride @ 0.5 mg/kg body weight intramuscularly. Ketamine hydrochloride was given @ 5 mg/kg body weight intramuscularly to induce general anaesthesia. After manipulative reduction of the symphysis, a single 8 inch long, 20 gauge stainless steel wire was introduced behind the canine tooth lateral to the horizontal ramus through the mucosa and out through the skin on the midline ventral to the mandible (Fig. 1). The other end of the wire was introduced in a similar manner and the wires were twisted close to the skin. Reduction of the fracture was obtained while the wire was tightened. The wire was cut off, leaving approximately

three twists. It was allowed to remain in place for 5 weeks. Post operatively; the animal was given cefotaxime @ 20 mg/kg body weight intramuscularly once daily for 5 days, meloxicam @ 0.2mg/kg body weight intramuscularly for 4 days, B-complex 1 ml for 3 days and mouth washing was done with chlorhexidine after feeding (soft gruel) for 5 weeks. There were no post operative complications and animal recovered uneventfully.

Cerclage techniques can be used, most notably in fractures of the mandibular symphysis [6] and wire can be wrapped around teeth adjacent to the fracture to provide stability. Interdental wiring is a simple, affective, with a few drawbacks like accumulation of food particles between the wire and gum line with accompanying gingivitis [7]. Fractures of Mandible that progress to osteomyelitis, necrosis, or nonunion may require a partial mandibulectomy. However, animal can function adequately with a fibrous union of the fracture fragments [8]. The technique relies on the presence of stable teeth on either side of the fracture and, indeed, the complication rate in fractures where adjacent teeth are damaged or missing has been noted to be much higher [2]. Complications of gingivitis can be controlled by rinsing the mouth after meals and by the use of chlorhexidine [9]. In general healing is rapid in roastal mandible but more delayed in the caudal region [10]. Many are functionally healed within 2–3 weeks with a reported average healing time between 5.5 and 6.3 weeks [4].

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