Intas Polivet (2018) Vol. 19 (I): 149-150 *Short Communication*

Wiring Technique for Management of Mandibular Fractures in Canines

Vimalraj Padayatchiar Govindan[1]
Veterinary Practitioner
Sridar Nagar
Ariyankuppam - 605007 (Puducherry)

Abstract

The clinical study describes wiring technique and its application for the management in mandibular fracture in three dogs, their jaw functions and healing.

Keywords: Dog; mandibular fracture; surgery; wiring technique

Introduction

The principle of immobilizing mandibular fractures in young animals and potential complications arising from jaw fractures needs attention (Kachwaha *et al.,* 2011). Umphlet and Johnson (1990) studied mandible fracture in 105 dogs and achieved acceptable cosmetic and functional results in 85 percent dogs. Loretta (2005) reported that while deciding on repair technique, it should be remembered that fracture fixation on tension surface of bone will maximize implant strength and indicated wiring technique for simple fractures of mandible and contraindicated for comminuted fractures or when bone loss is apparent.

History and Diagnosis

Male (2) and female (1) dogs aged 2-8 years were presented with history of automobile injury. Physical examination revealed, horizontal complete (case 1), vertical complete (case 2) and horizontal incomplete (case 3) simple mandibular fracture (Fig. 1a, 2a, 3a).

Surgical Procedure

Surgery of all three dogs were carried out on different days adhering to the principles of standard operating procedure. General anesthesia was carried out in all dogs with combination of Atropine sulphate (0.04 mg/kg), Xylazine (0.5-1 mg/kg) and Ketamine (10 mg/kg b. wt.). The oral cavity was irrigated with normal saline solution.

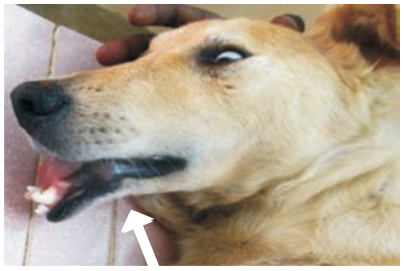

Fig. 1a: Before mandibular surgery

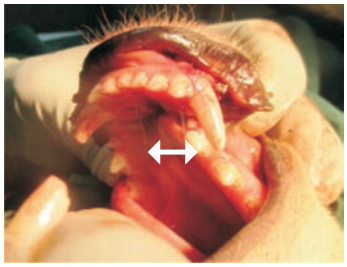

Fig. 1b: After mandibular surgery

Fig. 2a: Before mandibular surgery

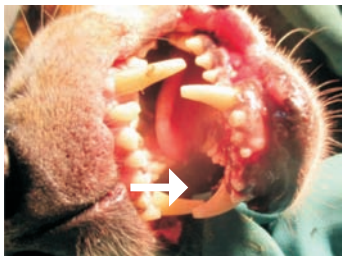

Fig. 2b: After mandibular surgery

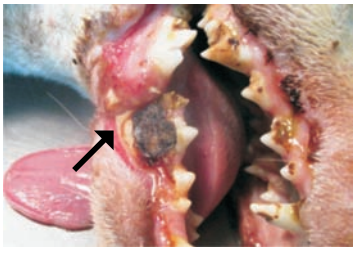

Fig. 3a: Before mandibular surgery

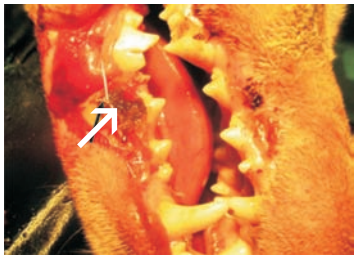

Fig. 3c: After mandibular surgery

1. Corresponding author. E-mail: vemalrajpg@gmail.com

Wiring involves placement of orthopedic wire between fractured bone fragments was advocated. The wire used to 'suture' the bone fragments together in an interrupted pattern were employed. Holes were drilled 5-10 mm from the fracture site on both sides of fracture using hand operated driller. The wire was placed on the tension side of bone as long as holes are drilled away from tooth roots and neurovascular structures. The wires were passed through the drill holes and then tightened. This technique should only be used when all bone fragments can be anatomically realigned. Additionally, the wire may fracture out of weak/ thin bone, care should be taken and also try to avoid tooth roots and neurovascular structures, place the appropriate number of wires and obtain good stability (Fig. 1b,2b,3c).

Post-operatively, the dogs were given Inj. Amoxicillin (500 mg bid intramuscularly for five days) and Inj. Meloxicam (Melonex[a]) (0.5 mg/kg intramuscularly for three days) and during the operation, rehydration was done by slow intravenous injection of Ringers lactate @ 500ml. Dogs was allowed on a liquid diet for two weeks.

Discussion

The fracture fixation method by wiring technique provided early return to function and expected fracture healing during ten week period. Marshall *et al.* (2010) also reported fracture healing within twenty days. Snyder *et al.* (2009) used inter-fragmentary wire surgical technique to repair a caudal mandibular fracture in fifteen week old Labrador retriever dog. Loretta (2005) reported that wiring is indicated in simple mandible fractures and jaw function is preserved during the healing process. In present study, no complication was observed after immobilizing the fractured jaw and it was a successful, handy and simple procedure in field for practicing Veterinarians.

a - Brand of Intas Animal Health, Ahmedabad

References

Loretta,B. **(2005)**. Mandibular fractures-assessment and treatment. *Proc. NAVC, North American Veterinary Conference,* 8-12, Jan., Orlando, Florida.

Kachwaha, K., Parashar, M.C. and Gahlot, T.K. **(2011)**. Accidental Mandibular Fracture in a Pup and its Surgical Management. *Intas Polivet* **12**: 168-69.

Marshall, W.G., Farrell, M., Chase D. and Carmichael, S. **(2010)**. Maxillo mandibular circular external skeletal fixation for repair of bilateral fractures of the caudal aspect of the mandible in a dog. *Vet. Surg.* **39**: 765-70.

Snyder, C.J., Soukup, J.W. and Gengler, W.R. **(2009)**. Imaging and management of a caudal mandibular fracture in an immature dog. *J. Vet. Dentistry* **26**: 97-05.

Umphlet, R.C. and Johnson, A.L. **(1990)**. Mandibular fractures in the dog - A retrospective study of 157 cases. *Vet. Surg.* **19**: 272-75.