SHORT COMMUNICATION

Corrective and Reconstructive Surgery of Various Trauma of Head Region in Dogs

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Abstract

Five male dogs age ranging from 2 to 7 years, were presented in emergency services at Veterinary Clinical Complex of the College in Anand with the history of traumatic injuries of different grades on ear and head region following automobile accidents. The physiological parameters were within normal range in 3 cases, whereas increased heart and respiration rates and rectal temperature were observed in 2 dogs. All dogs were treated under general anaesthesia with either simple suturing or reconstructive surgery. Four dogs recovered well without any complications, whereas one dog which died suddenly without any sign.

Keywords: Automobile accident, Dog, Head region, Reconstructive surgery, Trauma.

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Introduction

The automobile accidents in dogs are very common resulting in shock, thus the dogs need immediate attention and veterinary care. 12.5% of dogs died due to intra-thoracic and intra-abdominal injuries and 50% of the dogs euthanized with central nervous injuries and abdominal viscera rupture caused by automobile accidents (Kolata and Johnson, 1975). The fracture of the nasal bone, damage to teeth, mandibles and surrounding structure are most common due to its anatomical prominence (Alizadeh and Hayatrouhi, 2017). Sometime, complex injuries of these structures may become difficult to manage due to crushing or separations of the tissues. The reconstructive surgeries can be indicated for the maintenance of cosmetic appearance of animals with minimum disturbance in normal functions of the body parts. This paper presents successful reconstructive surgical management of accidental trauma on head region in dogs.

History and Clinical Examination

Five male dogs comprised of 2 Labrador and 3 non-descript, age ranging from 2 to 7 years, were presented in emergency services at Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, Anand. A 7 years old Labrador dog was presented with the history of profuse bleeding due to injury by sharp fencing wire on left ear tip, while in other 3 years and a 5 years non-descript dogs, there were deep wounds on head region (Fig. 1a) caused by sharp object. The 4th case of a 2 years old male Labrador dog was presented with history of automobile accident leading to bilateral mandible fracture along with hanging of lower jaw exposing teeth (Fig. 2a). The 5th case of 3 years old male non-descript dog was presented with history of trauma on face region (Fig. 3a). The detailed clinical examination revealed the skin tear on the base of right ear and fracture of nasal

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Fig. 1a: Non-descript male dog with deep head injury (Case 3)

Fig. 1b: Non-descript dog with head injury immediate after surgery (Case 3)

Fig. 2a: Labrador dog with bilateral fracture of mandibles and hanging of jaws (Case 4)

bone along with tear which reached up to gum and root of canine tooth. The patient experienced severe difficulty in respiration along with bleeding from nostrils and gums. The physiological parameters were within normal range in first 3 cases, whereas increased heart and respiration rates and rectal temperature were observed in other 2 dogs. It was decided to perform corrective and reconstructive surgery of traumatic face of dogs.

Treatment and Discussion

Based on history of trauma by sharp object and automobile accident surgical management was planned under general anaesthesia using Inj. Ketamine HCl @ 5 mg/kg and Inj. Midazolam @ 0.5 mg/kg along with inj. RL 500 mL, Inj.

Fig. 2b: Labrador dog with bilateral mandible fracture immediate after surgery (Case 4)

Fig. 3a: A non-descript male dog with trauma on face region (Case 5)

Ceftriaxone and Tazobactum 15 mg/kg, and Inj. Meloxicam @ 0.2 mg/kg body weight. In case 1, ligation of vessel was done and skin was apposed by interrupted suture pattern using 2-0 non-absorbable suture material and pressure bandage

Fig. 3b: A non-descript dog with facial trauma 12th day after surgery (Case 5)

was applied, which was removed after two days. In cases 2nd and 3rd, the wounds were cleaned with diluted Betadine with normal saline to remove clots, dirt, dust and debris, and the edges of muscles were sutured by continuous suture pattern and the skin was closed similar to case 1 (Fig. 1b). In remaining two cases reconstructive surgery was done. In 4th case, after thorough cleaning of oral cavity, the crushed tissues were removed and smoothening of mandible was done to align the fractured edges and avulsed tissues were brought to normal anatomical position. The oral mucosa was sutured with continuous suture and the gum was sutured by interrupted suture pattern by Polyglactin 910 No. 2.0. The skin apposition was done by interrupted suture technique with 2.0 non-absorbable suture materials (Fig. 2b). In 5th case, the skin suture of tear on right ear was treated as per case 1. The alignment of fractured nasal bone and skin suture was done similar to case 4. The gum was sutured by Polyglactin 910 No. 2.0 with interrupted suture technique (Fig. 3b). In both the dogs (4th and 5th), the external support was provided by muzzle.

Post-operatively, all the dogs were given Inj. Ceftriaxone and Tazobactum 15 mg/kg, and Inj. Maloxicam @ 0.2 mg/kg body weight along with daily antiseptic dressing of wounds till healing. In 4th and 5th case, the owners were advised to give same medications as above with fluid therapy and liquid diet to minimise the movement of jaws. The 4th case died after six days of surgery without any history or clinical signs. Other four cases were recovered uneventfully and the skin sutures were removed on 15th day post-operative.

The ear trauma in dogs is very common and it is highly vascularised structure. The head shaking behaviour of dog leads to trauma over the tip of ears. The falling from height, fight and accidents are causes for the dental trauma, and teeth may become displaced, especially if the bone is resilient. Some of these injuries represent dental emergencies. In these cases, tooth survival depends upon the length of time between trauma and treatment (Gracis, 2021).

In the present study, 4th and 5th case were complicated, but the bone alignment was done and supported by external support using tight muzzle, and the bones were allowed to heal spontaneously of its own. Kamble *et al*. (2016) also repaired the nasal bone fracture with wire and suggested that the minor fractures of nasal bone can be allowed to heal itself, if needed, manual alignment can be performed and managed with medications, while Shukla (2020) treated similar case successfully. Surgical intervention is needed, if injury is with other facial bones and surrounding structures. The temperament of animals and regular post-operative medications play very important role in outcome of such cases. If immobilization is adequate, the prognosis for success and return to normal function is very good. The long term symptoms due to complication like external deformity, nasal obstruction, nasal septum perforation and chronic sinusitis will remain if the diagnosis and treatment of nasal bone fracture was delayed or untreated (Ettinger and Feldman, 2000).

In short, 5 dogs aged 2 to 7 years presented with history of injuries on ear and head region with automobile accident, were treated with either simple suturing or reconstructive surgery. One dog died, while other four dogs recovered uneventfully.

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