

Surgical Management of Strangulated Foreign Body of Mandible Jaw in Dogs

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Abstract

Four dogs were presented with history of encircled mandibular swelling, redness, oedema, salivation, rolling of tongue, anorexia and painful ulceration since three to five days. On examination the mandible shows presence of a foreign body (rubber band) which was tightly encircled and strangulated. Under mild sedation, the encircled foreign body was carefully resected with the help of scissors without injuring adjacent tissues. All animal recovered uneventfully.

Keywords: Dog; foreign body; mandible; strangulated; ulceration

Introduction

Strangulation is a rare clinical situation that requires emergency management to prevent its devastating outcomes. Foreign bodies embedded deep in the mandibular region pose a challenge to an oral and maxillofacial surgeon. These objects may become a potent source of pain and infection (Pulkit *et al.*, 2018). It causes initial obstruction of both venous and lymphatic outflow distal to the device followed by arterial inflow obstruction, ultimately resulting in tissue ischemia and necrosis (Cassidy and Mador, 2010). Early diagnosis and removal of these foreign bodies is necessary to get a successful outcome. The present article discusses successful removal of strangulated foreign bodies in dogs.

History and Observations

Two Spitz and two Non-descript dogs of six months to one and a half year old intact male weighing around 8 to 13 kg were presented with history of encircled mandibular swelling, redness, oedema, salivation, rolling of tongue, anorexia and painful ulceration since three to five days. The cases were treated locally without any improvement. Clinical examination of all the animals revealed apparently healthy and normal range of physiological parameters. Dogs were found to be restless and frequent pawing of jaws was noticed. Since the animals were restless and in pain and non cooperative, mild sedation was induced using Atropine sulphate at 0.04 mg/kg b.wt. intramuscularly followed by inj Xylazine hydrochloride at 1 mg/kg

b.wt. intramuscularly. Hairs around the lesions were clipped and shaved and were cleaned with normal saline solution. On examination of ulcerating wound, a deep cut injury was noticed with a presence of thick band, which gave a suspicion of foreign body. An artery forceps was introduced into ulceration, that revealed presence of a foreign body (rubber band) which was tightly encircled the mid of mandible and strangulated (Fig. 1 and 2).

Encircled foreign body was carefully resected with the help of scissors without injuring the internal tissues. The foreign body was found to be rubber band. Wound was cleaned with Povidone iodine and gently massaged to improve the blood circulation and then bandaged. Animals were administered with inj Cefotaxime and inj. Meloxicam (Melonex[®]) intravenously at 20 and 0.2 mg/kg b.wt. respectively and advised tablet Cefpet[®] (Cefpodoxime) 100 mg BID with periodical dressing of external wound and with this all animals recovered uneventfully.

Discussion

Strangulation is a condition in which circulation of blood to a part of the body is cut off by constriction. The presence of constricted foreign substance can result in acute or chronic inflammation causing persistent and distressing symptoms such as local tissue temperature, color, sensation and oedema (Altan *et al.*, 2015). The foreign bodies causing strangulation are divided into metallic (steel ring, wedding ring and ball bearing) and non-metallic (washers, rubber band, plastic wire, jute rope and nylon wire). The predisposing causes includes playful nature, indiscriminate feeding habit of young dogs and improper disposal of rubber band by the kids. In all cases, young dogs that were kept indoor and with the family with presence of kids was observed while collecting

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Strangulated foreign body in dogs



Fig. 1: Non-descript dog-strangulated rubber band

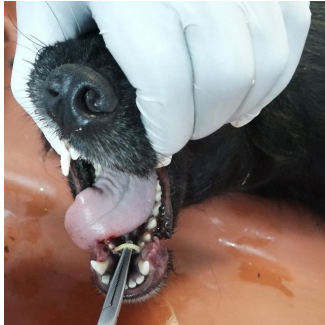


Fig. 2: Spitz - strangulated rubber band



Fig. 3: Spitz - encircled deep ulcer

the history. The kids were playing with rubber band and during play they might had applied around the mandibular region and because of hair it may not visible by the owner, which encircled and strangulated. Presence of foreign body causes compression followed by secondary oedema, due to inability or initial venous and lymphatic outflow obstruction, arterial inflow obstruction which results in skin erosion, tissue ischaemia, necrosis, infarction and gangrene formation (Elizabeth *et al.*, 2017). In all cases, the animal had redness, oedema, salivation, rolling of tongue, anorexia and painful deep ulceration (Fig. 3), but the owner was unable to identify foreign body. Bhat *et al.* (1991) graded strangulated foreign body lesion into five. Grade I - only oedema on distal part without skin ulceration, grade II - oedema, injury and paresthesia, grade III - oedema, ulceration, no sensation, but no fistula formation, grade IV - oedema, deep skin ulceration, discoloration and fistula formation and grade V - ischemia, necrosis, gangrene and complete amputation. In all present cases, it was observed as grade II. Baruah *et al.* (2009) based on nature of foreign body graded as low grade (metallic) and high grade (non-metallic). The probable cause for this might be laid in the fact that non-metallic objects are more elastic and can produce more severe constriction. In the present cases, all are high graded, based on the foreign body. Based on the duration, Silberstein *et al.* (2008) graded as low grade (if less than 72 hrs) and high grade (if more than 72 hrs). In all the present cases, it was graded as high grade.

Treatment of non-metallic foreign body required manual cutting and removal with scissors and metallic foreign body required saws, cutter, hammer and chisel. The present cases were non-metallic foreign body, so we removed by using scissors. In any encircled non-healing wound showing continuous discharge, swelling, oedema and pain, foreign body should be suspected (Clover *et*

al., 2005). The prognosis depends upon the type of foreign body, duration, severity of trauma, early diagnosis and treatment. Encircled foreign body in the oral cavity in lower jaw (mandible) is rare, to prevent these, kids playing with rubber band should be avoided. In all cases, prognosis was good.

Summary

Strangulated foreign bodies of lower jaw with rubber band were recorded in two Spitz and two Non-descriptive dogs. The cases were successfully diagnosed and managed.

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