

## Management of Carnassial Tooth Abscess - An Endodontic problem leading to Dental Fistula in Dogs

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### Introduction

Carnassial tooth abscess is a unique endodontic problem of older dogs above six years (Wright, 1939). Severe periodontitis, trauma or bacterial infections which gains access to the root of tooth are the aetiological factors for carnassial tooth abscess. Carnassial tooth is the largest tooth in the maxilla, which has three roots. Due to the abscess at the root of the fourth premolar, the animal is unable to do the function of chewing or cracking the hard substance like bone.

### Materials and Methods

Three dogs were presented with the complaint of swelling below the medial canthus of eye on either side. Clinical examination in two cases of small breeds *i.e.* an 8 year old Pomeranian female and a 6 year old male Pug revealed an infraorbital painful swelling below the medial canthus of right eye and severe alveolar periostitis with presence of thick dental tartar. Halitosis, reduced appetite, gingivitis and presence of dental tartar were observed in both the cases. The swollen nose,

painful swelling and a chronic fistulous opening below the medial canthus of left eye. The serosanguinous mucoid discharge was observed from the opening which eventually turned into purulent discharge over the period of one month. The carnassial tooth was fractured and mobile. Dental fistula was confirmed clinically in this case.

**Patho-physiology** – Accumulation of dental tartar is commonly seen in geriatric dogs. It is composed of organic matter, bacteria and minerals. In the long standing cases, the bacteria gain access to the root of the premolar causing gingivitis and alveolar periostitis (Bharti *et al.*, 2008). Purulent alveolar periostitis is characteristically observed in carnivorous animals. The root of the 4<sup>th</sup> premolar tooth is located in the maxillary sinus (antrum) hence leads to the condition known as pus in antrum. This causes accumulation of the pus in the maxillary sinus. The maxillary bone gradually softens due to necrosis eventually establishing the communication of the root of the tooth with the outside leading to dental fistula.



Fig.1: Chronic dental fistula



Fig. 2 : Severe dental tartar leading to carnassial tooth abscess.



Fig. 3 : Carnassial tooth embedded in the dental tartar.

scratching, and pawing at nose were the other symptoms observed.

The third case was a non-descriptive male of about 7 years age, which was presented with the

### Results and Discussion

The carnassial tooth abscess is the chronic disease of the older dogs. The infection of the 4<sup>th</sup> premolar (PM4) root leads to infraorbital dental fistula just below the medial canthus of the eye

(Bell, 1965). By the time the disease is diagnosed, the root of the carnassial tooth is already destroyed. The treatment involves removal of the diseased premolar and establishing the drainage to the abscess (Neuman, 1974).

For the clinical examination dog was tranquilized with xylazine @ 1mg/kg body weight and was subjected to the dissociative anaesthesia with the diazepam and ketamine intravenously to effect for the surgical intervention. The dog was intubated and a mouth gag was placed to keep the mouth open. As stated by Dorn (1993) and Smith (2004) the conventional exodontic method of tooth extraction remained the treatment of choice in case of dental fistula. Two straight incisions were taken on either side of the tooth to make gingival flaps. The gingival flaps were separated from the maxillary bone. The carnassial tooth was fractured with the giggle wire saw and all the three roots were completely removed with the help of extraction forceps. A catheter was passed from the socket formed and the abscess was irrigated with the mild hydrogen peroxide solution and then chlorhexidine solution. The fistulous tract was defulgared and all the debris was removed.

The gingival flaps were sutured with simple interrupted sutures using 3-0 synthetic absorbable suture. Post operatively, Ceftriaxone @ 10mg/kg body weight and Meloxicam 5 mg by intramuscular route were administered for 8 days. Liquid diet was advised for two days after surgery.

In other two cases, tooth abscess was present as a lump just below the medial canthus of the eye. The dental tartar was removed manually with the help of the scalers. Gingival washes were given with the help of chlorhexidine solution and gumex was applied twice a day for 8 days. The abscess subsided with the administration 3rd generation

cephalosporin for over 12 days. It was observed in one case of the Pomeranian, that the tooth abscess recurred after two month, which was attributed to the uncooperativeness of the patient to allow the gingival irrigation. The endodontic treatment, root canal treatment (RCT) can prove to be an appropriate measure to treat such a case to prevent the recurrence of the abscess in order to protect the tooth and to preserve the mastication function (Captik *et al* 2000 and Grove, 1993). Tartar control diets and treats were advised for feeding to reduce the plaque formation.

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