



# ORAL AND MAXILLOFACIAL DISORDERS IN CANINES – AN INCIDENCE STUDY

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## Abstract

*The study was conducted in dogs with oral and maxillofacial affections presented to the University Veterinary Hospitals at Mannuthy and Kokkalai from June 2017 to June 2018. Out of 11,691 total cases presented in the surgery units during the study period, 87 cases presented with oral and maxillofacial disorders were subjected to the present study. Maximum incidence of oral and maxillofacial disorders noticed in dogs was dental tartar followed by oral neoplasm and enamel hypoplasia. In the present study, the incidence of various oral and maxillofacial disorders was not significantly related to either of the sexes ( $p$  value : 0.384). But the overall incidence was most commonly noticed in large sized breed (46 per cent) and in the age group of one to three year (24.1 per cent). Age and breed were significantly related to incidence of various oral and maxillofacial disorders ( $p$  value : 0.00, 0.048 respectively).*

**Key words :** Dental affections, Dogs, Incidence.

Small animal dentistry has gained tremendous advancement and has provided a

comprehensive preventive health care plan for pet dogs. Although small animal dentistry has become a popularized specialization in many of the developed countries, the developing countries continue to lag behind. The structures extending from lips to oropharynx forms the mouth and mouth disorders can be either due to localized lesions or as a result of systemic disorders. Oral cavity forms the fourth most common site of neoplasia in dogs and cats constituting almost 78 per cent of dogs at about three years of age (Gracis *et al.* 2007). Traumatic injuries involving oral and maxillofacial disorders are also increased due to the automobile accidents. Dental care is unavoidable and extremely important since 80 per cent of the dogs and 70 per cent of the cats suffers from periodontal disease (Niemic, 2013).

## Materials and Methods

The study was conducted in dogs with oral and maxillofacial affections presented to the University Veterinary Hospitals at Mannuthy and Kokkalai from June 2017 to June 2018.

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All the dogs belonging to different age, breed and of both sexes were screened for dental and maxillofacial disorders. Out of 11,691 total cases presented in the surgery units during the study period, 87 cases presented with oral and maxillofacial disorders were subjected to the study. Data was analysed during the study period regarding age, breed and sex to access the nature of incidence of various oral and maxillofacial disorders. Signalment and detailed anamnesis were obtained and dogs were subjected to detailed clinical and oral examination procedures. In cases of suspected neoplasms, detailed histopathological studies were carried out to confirm diagnosis. Detailed study with the aid of radiography was carried out in cases involving bony tissues. The recorded oral and maxillofacial conditions were categorized into six conditions based on the lesions for the convenience of the study and they were as follows: dental tartar, oral neoplasm, enamel hypoplasia, other dental affections (supernumerary teeth, pulpitis, persistent deciduous teeth, dental attrition and malalignment of teeth in dental arcade), mandibular disorders (mandibular fractures, mandibular abscess, mandibular dislocation) and others (lacerations due to traumatic injuries, pus in antrum, cleft palate, oral ulcer, persistent mass on maxillary region, glossoplegia and halitosis). Also six age groups were formulated as follows : zero to three month, three month to one year, one to three year, three to five year, five to ten year and above ten year. For the convenience of the statistical analysis, the breeds recorded in the study were classified into large, medium and small sized breeds on scientific basis. All the data collected was analyzed statistically using the standard Pearson chi – square test.

## Result and Discussion

Among the 87 cases, incidence of dental tartar was noticed high (19.54 per cent) followed by oral neoplasm (18.39 per cent), enamel hypoplasia (12.64 per cent), lacerations due to traumatic injuries (8.05 per cent), dental attrition and mandibular fractures (5.75 per cent each) (Table 1). Incidence pattern is detailed in table 1. A Labrador Retriever dog showed pulpitis and enamel hypoplasia simultaneously. Tongue laceration and attrition of lower lateral

incisor and canine were simultaneously observed in another German Shepherd dog. One boxer dog showed oral neoplastic growth and dental attrition simultaneously.

Dental tartar was most common affection noticed followed by oral neoplasms in dog. These findings were similar to the incidence noticed by Martin *et al.* (2011). Dental tartar might be due to the change in feeding pattern from their natural feeding style. Owners were unaware of the dental tartar accumulation and its consequences of gingivitis, periodontitis and tooth loss. Oral neoplasms are in a hike in dogs. This might be due to increased environmental exposure of animal to carcinogens. Gracis (2007) reported that oral cavity was rated as the fourth most common site of neoplasia in dogs and cats constituting almost 78 per cent of dogs at about three years of age.

In the present study, 12.64 per cent incidence of enamel hypoplasia was observed. Kyllar and Witter (2005) reported single cases of caries, enamel hypoplasia and tumors in a study to evaluate the prevalence of dental disorders in 408 pet dogs.

Oral lacerations, inflammatory conditions of gum and lacerations of tongue were reported in the study constituting 10.35 per cent which required immediate interventions as these conditions affected the feed intake. Oral ulcer was observed in the present study constituting about 2.30 per cent. A similar findings were also reported by Martin *et al.* (2011).

Cleft palate was noticed in young ones less than two month old dogs. The condition was difficult to manage as aspiration into respiratory system became a threat to life. Only a few percentage of total case load were presented specifically for oral lesion in the study. This might be due to lack of awareness about the disease conditions of the oral cavity and due to the fear of bite from the animal and thus the lesions in the oral cavity was unnoticed by the owner until the animal became anorectic.

Among the 87 dogs affected with oral and maxillofacial disorders, highest incidence of various oral and maxillofacial disorders were

recorded in age group of one year to three year (24.1 per cent) compared to other age groups. The incidence of dental tartar was noticed more in the age group of three year to five year (29.4 per cent), oral neoplasm in age group of above 10 year (35.3 per cent), enamel hypoplasia in age group of three month to one year (83.3 per cent), other dental affections in age groups of three month to one year, one year to three year, five to ten year (26.7 per cent each), mandibular disorders in age group of one to three year (42.9 per cent) and other conditions in age group of one to three year (31.6 per cent) in comparison to other age groups. Kortegaard *et al.* (2008) reported a highest prevalence of periodontal disease at the age of two years and also noticed that calculus accumulation increased with age. Umphlet and Johnson (1990), Bennett *et al.* (1994) and Lopes *et al.* (2005) reported that incidence of mandibular fractures was more in dogs below four years. Heyman *et al.* (1992) noticed the incidence of oral tumors at the mean age of 8.7 years when compared to the incidence of tumors in other

site where it occurred in an average of 5.4 years. The present study showed greater incidence of oral tumor in dogs older than 10 years similar to the reports of Kirpensteijn *et al.* (2002) and Selmic *et al.* (2014).

In the 87 dogs affected with oral and maxillofacial disorders, a total of nineteen breeds of dogs were identified. The incidence of dental tartar was most commonly noticed in small sized breeds (52.9 per cent), oral neoplasm in large sized breeds (52.9 per cent), enamel hypoplasia in large sized breeds (83.3 per cent), other dental affections in large sized breeds (60 per cent), mandibular disorders in medium sized breeds (42.9 per cent) and other conditions in small sized breeds (36.8 per cent) in comparison to other groups. The highest incidence of overall oral and maxillofacial disorders was noticed in large sized breeds (46 per cent) in comparison with other groups.

A high incidence in German Shepherd dogs followed by Spitz, Dachshund and

**Table 1:** Prevalence of Oral and Maxillofacial Affections in Dogs

Oral and Maxillofacial Affections	No. of Dogs Affected	Percentage (%)
Tartar	17	19.54
Oral neoplasm	16	18.39
Enamel hypoplasia	11	12.64
Laceration due to traumatic injuries	7	8.05
Dental attrition	5	5.75
mandibular fractures	5	5.75
Pulpitis	4	4.60
Malalignment of teeth in dental arcade	4	4.60
Persistent deciduous teeth	4	4.60
Pus in antrum	3	3.45
Cleft palate	3	3.45
Oral ulcer	2	2.30
Persistent mass on maxillary region	2	2.30
Glossoplegia	1	1.15
Mandibular abscess	1	1.15
Mandibular dislocation	1	1.15
Supernumerary teeth	1	1.15
Halitosis	1	1.15

Labrador Retriever was noticed by Martin *et al.* (2011) whereas Vani *et al.* (2007) reported in mongrels and Kumar *et al.* (2008) in Pomeranians. It was evident that the incidence of oral and maxillofacial affections breed wise vary widely and this might be due to regional preference of the breed.

In the present study, incidence of various oral and maxillofacial disorders was not significantly related to either of the sexes (p value : 0.384).

### Conclusion

Incidence of oral and maxillofacial disorders was noticed mainly as dental tartar followed by oral neoplasm, enamel hypoplasia, lacerations, dental attrition, mandibular fractures, pulpitis, malalignment of teeth in dental arcade, persistent deciduous teeth, pus in antrum, cleft palate, oral ulcer, persistent mass on maxillary region, glossoplegia, mandibular abscess, mandibular dislocation, supernumerary teeth and halitosis. In the present study, the incidence of various oral and maxillofacial disorders was not significantly related to either of the sexes (p value : 0.384). But the incidence of overall oral and maxillofacial disorders was most commonly noticed in large sized breed (46 per cent) and in the age group of one to three year (24.1 per cent). Age and breed were significantly related to incidence of various oral and maxillofacial disorders (p value : 0.00, 0.048 respectively).

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