

PREVALENCE OF MAXILLARY IMPACTED CANINE AMONG ORTHODONTIC PATIENTS OF UNIVERSAL COLLEGE OF MEDICAL SCIENCES, COLLEGE OF DENTAL SURGERY, BHAIRAHAWA, NEPAL

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ABSTRACT

INTRODUCTION

In general, canines play an essential role in establishing a functional occlusion as well as serving as the foundation of an esthetic smile. With the exception of the third molars, impaction of the maxillary permanent canines is the most common form of tooth impaction and prevalence of impacted permanent canine has been reported in 1-5% of population. In this study, we aimed to determine the prevalence of maxillary canine impaction among orthodontic patients of Universal College of Dental Surgery, Bhairahawa, Nepal.

MATERIAL AND METHODS

A retrospective study was conducted on orthodontic patients at UCMS, CODS during August 2017 to October 2019. The study included clinical examination of 384 patients who visited Department of Orthodontics and Dentofacial Orthopedics seeking orthodontic treatment.

RESULTS

This study reveals a total of 22 (5.73%) patients having maxillary canine impaction where 13 (59.09%) were females and 9 (40.90%) were males. Likewise, 6 (27.27%) palatal and 16 (72.72%) buccal maxillary canine impaction was found.

CONCLUSION

Maxillary canines fulfill important esthetic and functional roles. Unfortunately, prevalence of impacted maxillary canine is approximately 5%, the second highest frequency behind that of third molar impaction. The prevalence of impacted maxillary canine is found to be (5.73%) where 13 (59.09%) were females and 9 (40.90%) were males. Likewise, 6 (27.27%) palatal and 16 (72.72%) buccal maxillary canine impaction was found.

KEYWORDS

Canine, Impacted, Orthodontic patients.

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INTRODUCTION

A tooth that is prevented from erupting by a physical barrier, usually by other teeth, is defined as an impacted tooth. Impaction may also have resulted from the orientation of the tooth in any other position than vertical within the periodontal structures. Taking into account the mean eruption time, teeth can be defined as impacted when they remain in the jaw two years after the respective mean age of tooth eruption.¹ Under normal circumstance, teeth erupt in the oral cavity when the developing root completes its three quarter of its final root length.²

Permanent maxillary canines are the second most frequently impacted teeth; the prevalence of their impaction is 1-2% in the general population³, where as 2.2% in children of 7-13 years of age is the cumulative prevalence of canine impaction according to Thailander and Myrberg.⁴

Ericson and Kuroi estimated 1.7% canine impaction.⁵ Impactions are twice as common in females (1.17%) as in males (0.51%) of all the patients with maxillary impaction. It is estimated that 8% have bilateral impaction. In Nepalese context, 5.29 % of canine impaction is of maxillary canine, among them 5.83 % were males and 5.0% were females.⁶

In general, the causes for retarded eruption or impaction of teeth may be either generalized or localized. Generalized causes include endocrine deficiencies, febrile diseases, and irradiation. The most common causes for canine impactions are usually localized and are the result of any one or combination of factors:

MATERIAL AND METHODS

A retrospective study was conducted on orthodontic patients at Universal College of Medical Sciences, College of Dental Surgery. For this data collection and analysis was done from August 2017 to October 2019. In this regard ethical clearance (UCMS/IRC/1992/19) was taken from institutional review committee of the Universal College of Medical Sciences. Consents of the patients was also taken

The study included clinical examination of 384 patients who visited Department of Orthodontics and Dentofacial Orthopedics. All the patients above 14 years. OPG and IOPA of every patient' was collected which were the part of essential diagnostic aids for the impaction and buccal or palatal position of canine. All the patients above 14 years. OPG and IOPA of every patient' was collected which were the part of essential diagnostic aids for the impaction and buccal or palatal position of canine.

RESULTS

Among the total 384 orthodontic patients, 124 were male and 260 were female, with the mean age of 17.24 ± 2.9 years (Table 1) This study reveals a total of 22 (5.73%) patients having maxillary canine impaction where 13 (59.09%) were females and 9 (40.90%) were males.

Table 1. Distribution of maxillary canine impaction

Sample	Canine impaction	Percentage
Female (N=260)	13	59.09%
Male (N=124)	9	40.90%
Total (N=384)	22	5.73%

Likewise, 6 (27.27%) palatal and 16 (72.72%) buccal, maxillary canine impaction was found (table -2).

Table 2. Pattern of maxillary canine impaction

Sample	Buccal	Palatal
Female (N=13)	10 (62.5%)	4(66.67%)
Male (N=9)	6 (37.5%)	2(33.33%)
Total (N=22)	16 (72.72%)	6(27.27%)

DISCUSSION

Eruption disturbances of permanent maxillary canines are common as they develop deep within the maxilla and have the longest path to travel up to occlusal level compared with any other tooth in the oral cavity.

As canines play a vital role in facial appearance, dental esthetics, arch development and functional occlusion, orthodontists are aware of the significance of retained impacted maxillary canines and have proposed various techniques to effectively and efficiently recover these teeth.

In orthodontics and dentistry in general, canine impaction is a dental anomaly that occurs frequently, and clinicians must be prepared to manage it.⁷ The present study helps dental professionals learn more about the prevalence of impacted canines and emphasizes the importance of early diagnosis and referral, thereby improving the prognosis of treatment and reducing the prevalence of impacted maxillary canines in the future. British sample showed impaction of either left or right side and 21% have bilateral canine impaction having the sex ratio of M1:F2.3.⁸ According to Thilander and Jakobsson 1968, prevalence of impacted canine was 1.8% and the mean age of Swedish population was 17.8 years.⁹ Ericson and Kuroi, 1968, 1.5-2% of population has impacted canine.⁵ 85% palatal and 15% buccal impaction. According to our study 5.73% of population has impacted canine which is high in comparison to the previous study. Here buccal impaction is 72.72% and palatal impaction is 27.27%, which says that buccal impaction is more prevalent than palatal impaction, which simulates with the result done in a study which gives the prevalence of impacted maxillary canine in Nepalese orthodontic patient to be 5.29%.¹⁰ The occurrence of maxillary impacted canine is more in buccal than palatal, which is similar to above study which also says that females are more affected than male which again simulates with our study where canine impaction is more prevalent in females, that is 59.09% than males. Mean age of 17.24 ± 2.9 was taken in our

study which is similar to the age group of Thilander and Jakobsson 1968 finding.⁹

CONCLUSION

Maxillary canines fulfill important esthetic and functional roles. Unfortunately, the prevalence of impacted maxillary canine is approximately 5%, the second highest frequency behind that of third molar impaction. The prevalence of impacted maxillary canine is found to be (5.73%) where 13 (59.09%) were females and 9 (40.90%) were males. Likewise 6 (27.27%) palatal and 16 (72.72%) buccal maxillary canine impaction was found.

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