

Prevalence of Mesiodens among 6–15-Year-Old School Going Children of Jammu Population

Nanika Mahajan¹, Ritesh Gupta², Shivani Jandial³, Bhanu Kotwal⁴, Sharad Kharyal⁵, Vinod Tomar⁶

¹Lecturer, Department of Pedodontics and Preventive Dentistry, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ²Dental Surgeon, Department of Orthodontics, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ³Consultant Dental Specialist, Department of Prosthodontics, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ⁴Lecturer, Department of Periodontics, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ⁵Private Practitioner, Department of Orthodontics, Jammu, Jammu and Kashmir, India, ⁶Medical Officer, Civil Hospital, Dadahu, Himachal Pradesh, India

Abstract

Aim: The aim of this study is to determine the prevalence of mesiodens among 6–15-year-old school going children of Jammu population.

Materials and Methods: A total of 700 subjects with age between 6 and 15 years were selected for the study. The subjects were divided into two groups. Group I included 350 males and Group II included 350 females. The subjects were examined to find the presence of mesiodens, their morphological features, and complications associated with their presence. All obtained data were statistically analyzed with SPSS-20.0 version.

Results: Mesiodens is prevalent in 8.3% of males and 3.7% of females. The difference between the different genders is found to be statistically significant ($P = 0.0109^*$). Mesiodens is more prevalent in the age group of 6–10 years in both the genders (4.9% and 2.6%, respectively) in comparison to the age group of 11–15 years. The most common morphology of the mesiodens is conical (6.3%) followed by tuberculate (4%) and supplemental (1.7%). Midline diastema is the most common complication associated with mesiodens is midline diastema in both the genders (5.1% of males and 2% of females) followed by impaction of permanent teeth (1.7% of males and 0.9% of females).

Conclusion: It can be concluded that the mesiodens has a lower prevalence rate. Males tend to have more prevalence for mesiodens and the most common morphology of mesiodens is conical.

Key words: Dentition, Jammu, Mesiodens, Prevalence

INTRODUCTION

Supernumerary teeth are described as the teeth that exceed the normal dentition no matter what their location and form are. This condition is also called “hyperdontia.” They are a rare alteration of odontogenesis defined as the presence of a number of the teeth which is greater than the normal dental formula (20 in the primary dentition and 32 in the permanent dentition).^[1,2] The presence of multiple supernumerary teeth is called “mesiodentes.”^[3] These teeth have been found in both

primary and permanent dentitions; however, the appearance in the permanent dentition is higher than in the primary teething.^[2,4-7] It has been reported that in 82% of the cases it occurs in the maxilla, specifically in the pre-maxillary region. Only a few studies have reported the occurrence of mesiodens in the anterior region of the mandible.^[3,8,9]

Supernumerary teeth may occur on one or both jaws, and their number may vary such as single, double or multiple, and unilateral or bilateral.^[10] Multiple hyperdontia can be associated with several syndromes; however, it can be present among patients without any systemic illness. Accordingly, the presence of supernumerary teeth may result in different complications. These complications are described as unerupted teeth or delayed eruption, ectopic eruption, displacement, diastemas, occlusal problems, rotated neighboring teeth, radicular resorption, and cyst formation.^[5,7,10]

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Corresponding Author: Dr. Nanika Mahajan, Department of Pedodontics and Preventive Dentistry, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India. E-mail: drnanikamahajan@gmail.com

Supernumerary teeth may be classified depending on their location in dental arches and morphology. They can be located in any zone of the maxilla and mandible and can occur in various forms. Supernumerary teeth are mostly located in the anterior medial region (between two maxillary incisors), and these teeth are named mesiodens.^[2,9,11]

This is commonly followed by maxillary lateral incisor, maxillary fourth molar, mandibular third premolar, maxillary premolar, maxillary canine, and mandibular fourth molar. In literature, four morphological types of supernumeraries have been described: (a) Conical, (b) tuberculate, (c) supplemental, and (d) odontomatous.^[12-14]

Treatment options include normal extraction, but surgical extraction of the mesiodens may be needed if it is impacted. If the permanent teeth do not erupt in a reasonable period after the extraction, surgical exposure and orthodontic treatment may be required to ensure eruption and proper alignment of the teeth. In some cases, fixed orthodontic therapy is also required to create Sufficient arch space before eruption and alignment of the incisors.^[15-17]

The aim of the present study is to determine the prevalence of mesiodens among 6–15-year-old school going children of Jammu population.

MATERIALS AND METHODS

A total of 700 school going children with age between 6 and 15 years visiting the Department of Pedodontics and Preventive Dentistry in Indira Gandhi Government Dental College, Jammu, were selected for the study.

The subjects were divided into two groups. Group I included 350 males and Group II included 350 females. All the subjects were examined by a single examiner trained for the specific study. The subjects were examined to find the presence of mesiodens, their morphological features, and complications associated with their presence. All obtained data were statistically analyzed with SPSS-20.0 version.

RESULTS

Table 1 presented that the mesiodens is prevalent in 8.3% of males and 3.7% of females of the total sample size. The difference between the different genders is found to be statistically significant ($P = 0.0109^*$). Table 2 summarized that the mesiodens is more prevalent in the age group of 6–10 years in both the genders (4.9% and 2.6%, respectively) in comparison to the age group of 11–15 years. However, this difference was found to be statistically insignificant ($P = 0.5127NS$). Table 3 showed that the most common

morphology of the mesiodens is conical (6.3%) followed by tuberculate (4%) and supplemental (1.7%). Table 4 presented that the midline diastema is the most common complication associated with mesiodens is midline diastema in both the genders (5.1% of males and 2% of females) followed by impaction of permanent teeth (1.7% of males and 0.9% of females).

DISCUSSION

The current study was conducted in 700 school going children with age between 6 and 15 years visiting the Department of Pedodontics and Preventive Dentistry in Indira Gandhi Government Dental College, Jammu, to determine the prevalence of mesiodens. The findings of our study showed that the mesiodens was prevalent in 6% of the total sample size which is in accordance with the results of Tay *et al.*^[18] who found that mesiodens was prevalent in 5.8% of its total sample size. Similar results were found by Khandelwal *et al.*,^[19] Thilander, and Myrberg

Table 1: Prevalence of mesiodens in different genders

Mesiodens	Group I 350 males (%)	Group II 350 females (%)	Total (%)
Present	29 (8.3)	13 (3.7)	42 (6)
Absent	321 (91.7)	337 (96.3)	658 (94)
Total	350 (50)	350 (50)	700 (100)

$\chi^2=6.484$, $df=1$, $\chi^2/df=6.48$, $P(\chi^2>6.484)=0.0109$

Table 2: Prevalence of mesiodens in different age groups

Gender	Age group		Total (%)
	6–10 years (%)	11–15 years (%)	
Males	17 (4.9%)	12 (3.4%)	29 (8.3%)
Females	9 (2.6%)	4 (1.1%)	13 (3.7%)

$\chi^2=0.428$, $df=1$, $\chi^2/df=0.43$, $P(\chi^2>0.428)=0.5127$

Table 3: Morphological characteristics

Morphology	Males (%)	Females (%)	Total (%)
Conical	16 (4.6)	6 (1.7)	22 (6.3)
Tuberculate	9 (2.6)	5 (1.4)	14 (4)
Supplemental	4 (1.1)	2 (0.6)	6 (1.7)

$\chi^2=0.304$, $df=2$, $\chi^2/df=0.15$, $P(\chi^2>0.304)=0.8591$

Table 4: Associated complications

Complications	Males (%)	Females (%)	Total (%)
Midline diastema	18 (5.1)	7 (2)	25 (7.1)
Rotation	3 (0.9)	2 (0.6)	5 (1.4)
Impaction	6 (1.7)	3 (0.9)	9 (2.6)
Crowding	2 (0.6)	1 (0.3)	3 (0.9)

$\chi^2=0.325$, $df=3$, $\chi^2/df=0.11$, $P(\chi^2>0.325)=0.9552$

Stafene in their studies.^[20,21] Our findings also showed that mesiodens was more prevalent among males which is in accordance with the results of Luten and Rajab and Hamdan in their studies.^[14,22]

The presence of mesiodens that may cause over retention of primary teeth, delayed eruption of permanent incisors, impaction of permanent teeth, displacement or rotation of the central incisors, space loss, and median diastema that may lead to open bite, increasing overjet with protrusion of upper incisors, and insufficient lip closure have been well-documented in the literature. According to Tashima, the prevalence of interincisal diastema is 7 times higher in the presence of mesiodens.^[23,24]

The most complication associated with the presence of mesiodens was midline diastema followed by impaction in our study; however, Peedikayil *et al.* reported rotation of the permanent teeth as the most common complication.^[25]

Bartolo *et al.* also reported that 63% of the patients had unerupted incisors.^[26]

The limitation of the present study is that the location of the mesiodens in the upper arch and more complications such as root resorption of the permanent teeth and presence of cysts were not taken into consideration. Further studies with a much larger sample size and overcoming the respective limiting factors should be done.

CONCLUSION

It can be concluded that the mesiodens has a lower prevalence rate. Males tend to have more prevalence for mesiodens, and the most common morphology of mesiodens is conical. Early diagnosis and management of this condition must be done in pediatric dentistry to minimize the risk of associated complications to the permanent dentition.

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