



Prevalence of mesiodens in Orthodontic patients in Kanpur

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Abstract

Aim: To determine the prevalence of mesiodens along with other epidemiological characteristics among the Orthodontic patients in Kanpur.

Material & Methods: A retrospective study was designed in which 2312 records of patients were examined. Radiographic examination of the records included examination of intraoral periapical radiographs & occlusal views.

Results: The prevalence of mesiodens in Kanpur Orthodontic population was found to be 1.81%. The male to female ratio was found to be 2.8:1. Vertically positioned mesiodens was found to be more common (69.04%). Erupted mesiodens (78.57%) was found to be more common than unerupted (21.42%). Most common complication was found to be midline diastema (35.71%).

Conclusion: Timely detection & management of mesiodens is important to avoid future complications.

Keywords: Prevalence, Mesiodens, Orthodontics, Diastema

Introduction

Developmental anomaly where an extra tooth is present in addition to the normal series is called supernumerary tooth.¹ Mesiodens refers to supernumerary tooth present in midline of the maxilla between the central incisors.^{2,3} Mesiodens is the most common type of supernumerary tooth.⁴ The global prevalence of mesiodens varies from 0.15 to 7.8% & frequency is more in males than in females⁵. Supernumerary teeth may occur in both jaws and may also occur as single, multiple, unilateral or bilateral.⁶ Etiology of supernumerary teeth has not been established clearly. Most possible factors include environmental, genetic, syndromes (such as Gardiner's syndrome, Cleidocranial dysplasia) and disturbances in dental

development.⁷⁻¹⁰ A mesiodens may lead to various complications such as delayed eruption, altered position of central incisor, crowding, resorption of adjacent teeth, median diastema, dentigerous cyst formation.^{11,12,13} The purpose of present study was to determine the prevalence of mesiodens along with other epidemiological characteristics among the Kanpur Orthodontic patients visiting the department of Orthodontics & Dentofacial Orthopedics, Rama Dental College, Hospital & Research Centre, Kanpur.

Materials & Methods

A retrospective study was designed in which 2312 records of patients who visited the OPD department of Orthodontics & Dentofacial Orthopedics, Rama Dental College, Hospital & Research Centre, Kanpur from 2016 to 2022 were examined. Radiographic examination of the records included examination of intraoral periapical radioographs & occlusal views. Following inclusion criteria was followed: Patients aged between 7-17 years with presence of at least one supernumerary tooth in the mid saggital region. Patients with any kind of syndromes, craniofacial anomalies, history of extraction & incomplete or poor records were excluded from the study. In addition to the presence of mesiodens, their number, position & associated complications were recorded.

Results

The prevalence rate of mesiodens was found to be 1.81%. The total number of male was 31 & females were 11 in number leading to a male to female ratio of 2.8:1. The number of patients with single mesiodens was 38 (90.47%) (male 28 & female 10). Patients with more than one mesiodens were 4 (9.43%) in number (3 males & 1 female). (Table 1) Based on position, 29 (69.04%) mesiodens were vertical in position, 9 (21.42%) were inverted & 4 (9.42%) were transversely positioned. (Table 2). Based on eruption status, 33 (78.57%) mesiodens were erupted & 9 (21.42%) were unerupted. (Table 3). Various complications were associated with mesiodens such as midline diastema (35.71%), axial rotation or inclination of incisors (26.19%), impaction (7.14%), & resorption of adjacent teeth (4.76%). (Table 4)

Table 1. Distribution of mesiodens according to gender & number (single or multiple)

Gender	Single	Multiple	Percentage
Male	28 (66.66 %)	3(7.14%)	31(73.8%)
Female	10 (23.8%)	1 (2.38%)	11 (26.2 %)
Total	38 (90.47%)	4 (9.43)	42 (100%)

Table 2. Distribution of mesiodens according to position

Position	Number of mesiodens	Percentage
Vertical	29	69.04%
Inverted	9	21.42%
Transverse	4	9.52%
Total	42	100%

Table 3. Distribution of mesiodens according to eruption status

Eruption status	Number of mesiodens	Percentage
Erupted	33	78.57%
Unerupted	9	21.42%

Table 4. Complications associated with mesiodens

Complications	Number of mesiodens	Percentage
Midline diastema	15	35.71%
Axial rotation or inclination of incisors	11	26.19%
Impaction	3	7.14%
Resorption of adjacent teeth	2	4.76%

Discussion

Supernumerary teeth are commonly found during routine intraoral examination. In the present retrospective study in which records of 2312 patients were examined, a total of 42 patients with mesiodens were found, leading to a prevalence of 1.81%. These results are in line with the results of other studies. Prevalence of mesiodens in Indian subcontinent varies from 0.69 to 3.18 %^{1,14-16} Out of 42 patients with mesiodens, 31 were males & 11 were females leading to a male to female ratio of 2.8:1. This value is in accordance with most other studies.^{1,5,12,14-16} Mahajan et al¹⁷ in their study on Jammu population found the prevalence to be higher in males. Patil et al¹⁸ in their study on north Indian pediatric population found the male to female ratio to be 1.8:1. Singhal et al¹⁶ in their study also found the prevalence to be higher in males as compared to the females with male to female ratio to be 3.22:1. In our study, vertically positioned mesiodens (69.04%) was most commonly found. It was inverted in 21.42% cases & transversely positioned in 9.52% cases. These findings were similar to the findings of other studies.^{1,14,16} In our study 78.57% cases had erupted mesiodens & 21.42% cases had unerupted mesiodens. This was similar to the study of Singhal et al¹⁶ where 83.11% cases had clinically erupted mesiodens & 16.89% cases were unerupted. Most common complications associated with mesiodens in our study was midline diastema (35.71%) followed by axial rotation & change in inclination of incisors (26.19%), impaction (7.14%) & root resorption adjacent teeth (4.76%). Mahajan et al¹⁷ & Patil et al¹⁸ in their study also found the midline diastema to be the most common complication in their study. However, Peedikayil et al¹⁹ in their study found rotation of permanent incisors as the most common complication. Lara et al⁵ in their study found that delayed eruption of incisors to be the most common complication.

Conclusion

Following conclusions were drawn from the present study:

1. The prevalence of mesiodens in Kanpur Orthodontic population was found to be 1.81%.

2. The male to female ratio was found to be 2.8:1.
3. Vertically positioned mesiodens was found to be more common (69.04%), followed by inverted (21.42%) & transversely (9.52%) positioned.
3. Erupted mesiodens (78.57%) was found to be more common than unerupted (21.42%).
4. Most common complication was found to be midline diastema (35.71%). Timely detection & management of mesiodens is important to avoid future complications.

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