

Prevalence of Supernumerary Teeth in Orthodontic Patients

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ABSTRACT

Background: Supernumerary teeth are one of the most common anomalies in the human dentition, found most frequently in the maxillary anterior region causing impaction or displacement of the adjacent permanent teeth. The purpose of this study was to determine the prevalence of supernumerary teeth in orthodontic patients.

Materials and methods: The study sample consisted of Orthopantomogram (OPG) of 700 (356 male and 344 female) patients in the department of orthodontics and dentofacial orthopaedics, Patna dental college and hospital, Patna. All the radiographs were examined for the presence of any supernumerary tooth. Data thus collected was subjected to statistical analysis.

Conclusions: A prevalence of 1.2% was found in our study. Male showed a higher predilection as compared to females. The most common supernumerary tooth was found to be mesiodens located at the maxillary anterior region.

Keywords: Supernumerary teeth, Prevalence, Mesiodens, Hyperdontia.

INTRODUCTION

Supernumerary teeth are those which develop in addition to the normal complement¹. The condition is also known as hyperdontia. Generally, supernumerary teeth may erupt in any part of the dental arch, but they most commonly occur in the maxillary midline region, i.e. mesiodens, which is approximately 80% of all supernumerary teeth.^{2,3} These are most often found among the permanent teeth. They can occur in deciduous dentition, but they tend to be harder to identify, as they often erupt normally, are shaped like other teeth, and are in correct alignment. A clinical examination or an X-ray usually leads to the diagnosis. There is no commonly accepted etiology for supernumerary teeth, but hyperactivity of the dental lamina is the most widely accepted theory.^{4,5}

The incidence of supernumerary teeth is more common in adult permanent teeth as

compared to deciduous teeth. It is 0.8% in deciduous teeth and 2.1% in permanent teeth. These can be unilaterally present or can be present bilaterally. It can be single or multiple. Normally it is single but multiple supernumerary teeth are present in cases of cleft lip and palate, cleidocranial dysplasia or Gardner's syndrome. Multiple supernumerary teeth are exceptional in individuals with no other linked diseases or syndromes. The incidence of supernumerary teeth in cleft lip and palate cases is around 22%. While in cleidocranial dysplasia cases it is 22.2% in maxillary region and 5 % in molar region. The supernumerary teeth can be present in one jaw or both the jaws. In deciduous teeth the incidence of supernumerary teeth is equal in males and females but in case of permanent teeth the incidence of supernumerary teeth is twice in males as compared to the females. Presence of supernumerary teeth leads to many dental problems. The most commonly encountered problem in orthodontic practice is presence of

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midline diastema. The presence of the supernumerary teeth may cause displacement of the adjacent teeth. Some times these teeth are so placed that it causes the hindrance in the eruption of the normal teeth resulting into their impaction. The supernumerary teeth also cause crowding as they are the extra tooth or teeth present in the oral cavity. Few pathological conditions are also found in relation to the supernumerary teeth like cyst formation. Dentigerous cyst formation is the most common pathological condition found in case of supernumerary teeth. Some times the position of the supernumerary teeth is such that it causes the Resorption of the roots of the adjacent teeth.

As supernumerary teeth play an important role in development of malocclusion, this study aimed to investigate prevalence of supernumerary teeth in orthodontics.

MATERIALS AND METHODS

A total of 700 (356 male and 344 female) panoramic radiographs of the patients visiting to the department of orthodontics and dentofacial orthopaedics, Patna Dental College and Hospital, Patna for orthodontic treatment were investigated for the presence of supernumerary teeth. The age of the patient ranges between 11-25 years. The study was conducted between the period of March 2017 to July 2018. Patients with history of trauma to the maxilla and mandible, metabolic disorders, syndromes affecting bone metabolism, previous extraction or tooth loss due to dental caries and periodontal disease were excluded; cleft lip and palate were excluded. All the panoramic radiographs were examined by one observer. The findings on the panoramic radiographs were registered, and statistical analysis of the data was performed using SPSS software version 16.

RESULTS

There were 356 males (51 %) and 344 females (49 %), with an age range of 11-25 years (Table 1). Result of the present study showed that Supernumerary teeth were found in 9 patients (1.3%), of which 7 were found in male (1 %) and only two female patients (0.3%) were reported with supernumerary teeth.. (Table 2). Out of 9 patients who were reported with supernumerary teeth in the present study, 7 patients (78%) were reported

with the presence of single supernumerary tooth in which five (71%) were male and 2 patients (29%) were female. Only 2 patients (22%) among 9 reported with multiple supernumerary teeth. Both of these patients were male. No female (0%) patients were reported with multiple supernumerary teeth.

Among 9 patients presented with supernumerary teeth, all were found to be present in maxilla. No single case of supernumerary teeth in mandible was reported. Out of 9 supernumerary teeth located in maxilla, 7 (78%) showed the presence of mesiodens while only 2 patients (22%) were reported with presence of para molar (Table 3).

Table 1: Gender distribution of sample

Gender	Frequency	Percentage
Male	356	51%
Female	344	49%
Total	700	100%

Table 2: Gender wise distribution of supernumerary teeth

	Male (percentage)	Female (percentage)	Total (percentage)
One supernumerary tooth	5(71 %)	2(29 %)	7(78 %)
Multiple supernumerary teeth	2(29 %)	0(0 %)	2(22 %)
Total	7(78 %)	2(22 %)	9(100 %)

Table 3: Distribution of supernumerary teeth in maxilla and mandible with frequency of mesiodens

	Maxilla	Mandible
Number of supernumerary teeth	9(100 %)	0 (0 %)
Mesiodens	7(78 %)	0 (0 %)

DISCUSSION

Panoramic radiographs or OPGs play a vital role in diagnosing various pathologies as well as abnormalities present in dentition. Dental and bony injuries, presence of cysts and tumors, and dental anomalies of number, size and shape and many more can be easily detected on a panoramic

radiograph. Some of the previous studies have verified the role of Orthopantomogram in analysis of hypodontia.

Supernumerary teeth or hyperdontia describes an excess in tooth number. The prevalence of hyperdontia is reported to lie between 1-3% in permanent dentition and is considerably rarer in the primary dentition. The present study showed a prevalence rate of supernumerary teeth to be 1.2%. the result of this study were found to be in agreement with the study done by a Brazilian study – (Campos, 1996) which also showed a prevalence rate of 1.2%. Some of the other studies also showed similar results.^{6,7}

Bäckman and Wahlin⁸ found 14 cases with one supernumerary tooth in a study in the Caucasian population. They also noted that the majority of the supernumerary teeth were mesiodens, which showed a similar result as of the present study.. Another study of 2,393 Saudi Arabian children⁷ found the prevalence of supernumerary tooth to be 0.5%, a lesser prevalence rate as compared to present study. The present study reported with a sex ratio of 7:2 which was found to be almost similar to the result of a study conducted by Santosh patil ⁹ who found a ratio of 7.2:1. In Caucasians¹⁰ ratio of 2:1 was repoted between males and females.; it is usually associated with some other disorder such as harelip, cleft palate, or syndromes such as Gardner syndrome, Down syndrome, cleidocranial dysplasia, ZimermanLaby syndrome or Noonan syndrome¹¹. The detection of supernumerary teeth can be an important feature in the diagnosis of these conditions. In the present study 22 percent of patients presented with multiple supernumerary teeth which was found to be in agreement with the study done by Francisco Xavier who found 20% of patients with two extra teeth.

CONCLUSION

The present study reported a prevalence rate of 1.2 %. Males showed a higher predilection for supernumerary teeth than females. On considering location wise prevalence of supernumerary teeth, maxilla showed a higher predilection as compared to mandible. Mesiodens was found to be most

commonly encountered type of supernumerary teeth.

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