Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Prevalence of supernumerary teeth in Hazaribag Population: A Pilot Study

Shreedevi Bhoi[1], Supreeya Patel[2], Rashmi Jayanna[3], Arundhati Singh[4], Jayesh Anand[5], Gautam Kumar[6]

[1]Reader, [4,5]Senior Lecturer, Department of Oral & Maxillofacial Surgery, Hazaribag College of Dental Sciences and Hospital, Hazaribag, Jharkhand 853001;
[2]Senior Lecturer, [3]Prof & HOD, Department of Paediatrics & Preventive Dentistry, Hazaribag College of Dental Sciences and Hospital, Hazaribag, Jharkhand 853001;
[6]Consultant Paediatrician & Neonatologist, Sharda Narayan Hospital, Mau-Uttar Pradesh

ABSTRACT:
Aim of the study: Aim of the study was to investigate the prevalence of supernumerary teeth in permanent dentition among patients reporting to the Dept of Oral & Maxillofacial Surgery, Hazaribag college of Dental Sciences, Hazaribag. **Material & Methods:** A total number of 4800 patients were examined for supernumerary teeth like Mesiodens, Parapremolar, Paramolar, Distomolar and Odontomes during the period from Jan 2019 to Jan 2020 in the Department of Oral & Maxillofacial Surgery with age group ranging from 15-40yrs. **Results:** The study showed a prevalence of 2 % of Supernumerary teeth in permanent dentition and a sex distribution of M: F ratio was 1.5:1. The prevalence of supernumerary teeth found was as follows: Mesiodens (30.2%), Parapremolar (31.2%), Paramolars (13.5%), Distomolar (13.5 %), Odontome (4.1%), Mesiodens & Parapremolar together (4.1%), Parapremolar and Paramolar together (3.1%). **Conclusion:** This study showed prevalence of supernumerary teeth in Permanent Dentition is 2% with male predilection and parapremolar being the commonest.
Key words: Supernumerary Teeth, Permanent Dentition, Prevalence.

Received: 2 April, 2020 Revised: 14 April, 2020 Accepted: 19 April, 2020

Corresponding Author: Dr. Shreedevi Bhoi, Reader, Department of Oral & Maxillofacial Surgery, Hazaribag College of Dental Sciences and Hospital, Hazaribag, NH -33, Demotand, Hazaribag, Jharkhand 825301

This article may be cited as: Bhoi S, Patel S, Jayanna R, Singh A, Anand J, Kumar G. Prevalence of supernumerary teeth in Hazaribag Population: A Pilot Study. J Adv Med Dent Scie Res 2020; 8(5): 18- 21.

INTRODUCTION:
Developmental Dental anomalies are marked deviations from the normal presentation of the primary or permanent dentition. Local as well as systemic factors may be responsible for these disturbances. The influence of these factors may begin before or after birth; hence deciduous or permanent teeth may be affected. Developmental dental anomalies consist of a wide range of disorders, including changes in the number, morphology, eruption, and size of teeth. These anomalies can complicate dental treatments, such as root canal therapy or tooth extraction, and can induce malocclusion, and aesthetic problems. Anomalies resulting in a variation in the number of teeth include hypodontia and hyperdontia and both can be found in almost any region of the dental arch either unilaterally or bilaterally and in the mandible and/or in the maxilla.[1] Supernumerary teeth/hyperdontia can be the teeth which are in excess when compared to the normal series.[2] The prevalence of hypodontia has been reported to be more common than hyperdontia. The Prevalence of hyperdontia in the permanent dentition has been reported by various studies to fall in the range of 0.04 to 2.7%.[3,-8] The literature on supernumerary teeth reveals significant discrepancies between the results of studies analyzing the prevalence of supernumerary teeth in various populations.[3,5,8-10] Previous studies have reported prevalence rates ranging between 0.3% and 0.8% in primary dentition and between 0.1% and 3.8% in permanent dentition.[9-12] Reported male and female ratio is 2:1.[2] Supernumerary teeth has familial tendency which has

been reported in the literature.[13] Supernumerary teeth may be single or multiple, cases of multiple (five or more) supernumerary teeth not associated with other systemic diseases or syndromes are rare and when present the most common site affected is the mandibular premolar region.[14] Supernumerary teeth are more frequently observed in permanent dentition than in deciduous dentition with more frequency for the upper arch than the lower arch with a strong predilection for the premaxilla. Classification of supernumerary teeth is usually based on their morphology, together with their location in the dental arches.[15] According to their locations, supernumeraries may be categorized into four types; mesiodens, paramolar, distomolar and parapremolar and into four types according to their morphology (form); rudimentary/conical, supplemental, Odontome. Tuberculate Supernumerary teeth may also be classified according to their orientation (vertical or normal, inverted and horizontal) or according to their position (buccal, palatal and transverse).[16-18] Complications associated with supernumerary teeth include crowding, disturbed eruption, or retention of teeth, delayed or abnormal root formation in permanent teeth, cyst formation, tooth displacements and other alterations which require surgical as well as orthodontic treatments.[1,19]

However, some cases of supernumerary teeth may be asymptomatic and detected incidentally during a routine radiographic examination or when normal tooth eruption is delayed or fails. Exact etiology for supernumerary teeth is unknown, but there are several theories to justify their existence. The various theories are Phylogenetic theory, Dichotomy theory, Dental lamina hyperactivity theory, and Genetic theory, they can also occur as an abnormal reaction to traumatic episodes or environmental factors.[20,21] Multiple supernumerary teeth may be associated with conditions such as Cleidocranial dysplasia, Gardner`s syndrome, and Cleft Lip and Cleft Palate.[18] No Study has been done to assess the prevalence and occurrence of supernumerary teeth in Hazaribagh population hence the aim of this study was to determine the prevalence of supernumerary teeth in the Hazaribagh population.

MATERIAL & METHODS:

A total number of 4800 patients were examined for supernumerary teeth like Mesiodens, Paramolar, Distomolar, Parapremolar and Odontomes during the period from Jan 2019 to Jan 2020 in the Department of Oral & Maxillofacial Surgery, Hazaribag College of Dental Sciences and Hospital, Hazaribag with age group ranging from 15-40 yrs. Examination for supernumerary teeth was carried out in both the maxillary and mandibular arches, when there was a clinical presence of supernumerary teeth or tooth was confirmed, radiographs were taken to rule out multiple unerupted supernumerary teeth or associated pathologies if any. The supernumerary teeth examined in this study were Mesiodens, Paramolar, Parapremolar, Distomolar, and Odontome. Syndromic patients were excluded from this study. Ethical Clearance was obtained from the institution.

RESULTS:

Among the 4800 patients examined, 96 patients were identified with supernumerary teeth, with the age ranging from 15-40years, out of these 96 patients 58 (60.4%) were male and 38 patients were female (39.6%) with M: F ratio 1.5:1(p=0.025) **(Table 1)**

Gender	Frequency	Percent
Male	58	60.4
Female	38	39.6
Total	96	100

Table 1: Gender wise distribution of the study subjects

The prevalence of supernumerary teeth was 2 %. In 96 patients distribution of supernumerary teeth based on their location showed highest occurrence only in the maxilla was 57 (59.4%) compared to mandible 29 (30.2%) and presence of supernumerary teeth in both the jaws was 10 (10.4%) (p<0.00). **(Table 2)**

Location	Frequency	Percent
Maxilla	57	59.4
Mandible	29	30.2
Maxilla and mandible	10	10.4

Table 2: Distribution of Supernumerary Teeth based on their location

Out of 96 patients 29 had Mesiodens (30.2%), 30 patients had Parapremolar (31.2%), 13 patients had Paramolars (13.5%), 13 patients had Distomolar (13.5 %), and 4 patients had Odontome (4.1%), another 4 patients had Mesiodens & Parapremolar together (4.1%), another 3 patients had Parapremolar and Paramolar together (3.1%) (p<0.00). (**Table 3)**

Type of Supernumerary Teeth	Frequency	Percent
Mesiodens	29	30.2
Para Premolar	30	31.2
Paramolar	13	13.5
Distomolar	13	13.5
Odotontome	4	4.1
Mesiodens and Parapremolar	4	4.1
Parapremolar and paramolar	3	3.1

Table 3: Characteristics of the Supernumerary Teeth in Study Population

Out of 29 patients who had Mesiodens, 17 (17.7%) were male and 12(12.5%) were female, out of 30 patients who had Parapremolar 20 (20.8%) were male and 10 (10.41%) were female, 13 patients who had Paramolars in this 8 (8.3%)were male and 5 (5.2%) patients were female, 13 patients had Distomolar, among these patients 7 (7.3%) were male and 6 (6.3%) were female, 4 patients who had odontome 3 (3.1%) were male and 1(1.04%) patient was female, 4 patients had Mesiodens & Parapremolar together among them 1 (1.04%) was male and 3 (3.1%) were female, 3 patients had Parapremolar and Paramolar together out of which 2 (2.08%) were male and 1(1.04%) patient was female.

DISCUSSION:

The etiology of supernumerary teeth is not clearly understood, these teeth are the developmental alterations that can occur in any zone of dental arch and can involve any tooth.[1,18] One theory suggests that they develop from a third tooth bud arising from dental lamina near the normal tooth. According to another theory, it is due to dichotomy of the tooth bud. A third theory called hyperactivity theory suggests that it is formed as a result of local, independent, conditioned hyperactivity of dental lamina.[1,16,20,21] Genetics is also thought to contribute to the development of supernumerary teeth; as such teeth have been reported in twins, siblings and sequential generations of a single-family. The interplay between genetic and environmental influences during the process of odontogenesis can lead to a range of anomalies of tooth number and size, including hypodontia, supernumerary teeth, microdontia and macrodontia.[1,20] Environmental influences such as trauma, infections, radiation, drugs, and hormonal influences have been suggested as possible insults that might have impinged on tooth formation during the embryologic stages of dental development.[1,22] They can be classified according to the time of appearance, position in the arch, shape, and number of supernumerary teeth. Odontome represents a hamartomatous malformation rather than a neoplasm. Two types of odontomes are present; they are compound composite and complex composite odontomes. Failure of eruption, displacement, and crowding of permanent teeth are the complications associated with supernumerary teeth. Another problem associated with supernumerary teeth is the occurrence of dentigerous cyst[1].

In the present study, among the 4800 patients examined, 96 patients were having supernumerary teeth, with a prevalence of 2 % which was within the range reported by previous studies.[3,7,8,9,11,12,20] The supernumerary teeth found were mesiodens (30.2%), parapremolars (31.2%), parmolar (13.5%), distomolar (13.5%), Odontome (4.1%), and Mesiodens & Parapremolar together (4.1%), Parapremolar and Paramolar together (3.1%) The results of the present study in the studied population showed that the most commonly found supernumerary teeth were parapremolars followed by mesiodens which was statistically significant($p<0.00$) and it is in consistent with study conducted by Almuheiri F and Duarte C.[22]

Variations in the prevalence figures and characteristics reported for supernumerary teeth in different populations maybe due to ethnic differences, and local environmental and dietary factors. In addition, the sampling criteria, diagnostic tools, and age groups might contribute to the variations reported.[1, 22]

The male: female gender predilection was for mesiodens (1.4:1), parapremolars (2:1), para molar (1.6:1), distomolar (1.2:1), and odontome (3:1), Mesiodens & Parapremolar together was (1:3), Parapremolar and Paramolar together was (2:1). Overall, the M: F ratio was 1.5:1 and it was statistically siginificant ($p<0.025$), which coincides with the values reported in other studies.[1,5,8,9,10,19,20]

Our study is also in accordance with the majority of the studies that describe maxilla (59.4%) as the most common site involved with supernumerary teeth[1,7,8,9,21,] and it was statistically significant ($p<0.00$) In our study, 10 (10.4%) patients had supernumerary teeth which were present both in the maxilla and mandible, which was similar to the study conducted by other authours.[21]

CONCLUSION:

In the literature, children and young adolescents were the most evaluated populations, and most of these patients are treated by surgical extraction before the age of 18, whereas some patients are followed up periodically until the supernumerary tooth creates a risk for any complication and this situation may occur after many years. On the other hand, some supernumerary teeth can be detected in older age because of some reasons such as the supernumerary tooth staying without any complications or creating a complication after many years, or due to

inadequate clinical and radiographical examinations. In our research, we focused on adult patients to highlight the frequency of supernumerary teeth in adult patients. These situations should be perceived as a warning for all clinicians to take measures and examine all patients carefully even at older ages before charting out any treatment plan.

REFERENCES:

1. Arandi NZ, Abu-Ali A, Mustafa S. Supernumerary teeth: a retrospective cross-sectional study from Palestine. Pesqui Bras Odontopediatria Clín Integr. 2020; 20:e5057.
2. Shah A, Gill DS, Tredwin C, Naini FB. Diagnosis and management of supernumerary teeth. Dent Update 2008; 35:510-2, 514-6, 519-20.
3. Shokri A, Poorolajal J, Khajeh S, Faramarzi F, Kahnamoui HM. Prevalence of dental anomalies among 7- to 35-yearold people in Hamadan, Iran in 2012-2013 as observed using panoramic radiographs. Imaging Sci Dent 2014; 44(1):7
4. Hagiwara Y, Uehara T, Narita T, Tsutsumi H, Nakabayashi S, Araki M. Prevalence and distribution of anomalies ofpermanent dentition in 9584 Japanese high school students. Odontology 2016; 104(3):380-9.
5. Vani NV, Saleh SM, Tubaigy FM, Idris AM. Prevalence of developmental dental anomalies among adult population of Jazan, Saudi Arabia. Saudi J Dent Res 2016; 7(1):29-33.
6. Davis PJ. Hypodontia and Hyperdontia of permanent teeth in Hong Kong school children. Community Dent Oral Epidemiol 1987; 15(4):218-20.
7. Arikan V, Ozgul BM, Oz FT. Prevalence and characteristics of supernumerary teeth in a child population from Central Anatolıa – Turkey. Oral Health Dent Manag 2013; 12(4):269-72.
8. Burhan AS, Nawaya FR, Arabi Katbi ME, Al-Jawabra AS. Prevalence of supernumerary teeth in a nonsyndromic Syrian sample. J Egypt Public Health Assoc 2015; 90(4):146-9.
9. Rajab LD, Hamdan MA. Supernumerary teeth: review of the literature and a survey of 152 cases. Int J Paediatr Dent 2002; 12(4):244-54.
10. Mahabob MN, Anbuselvan GJ, Kumar BS, Raja S, Kothari S. Prevalence rate of supernumerary teeth among nonsyndromic South Indian population: an analysis. J Pharm Bioallied Sci 2012; 4(Suppl 2): S373-S375.
11. Yusof WZ. Non-syndrome multiple supernumerary teeth: Literature review. J Can Dent Assoc 1990; 56:147-9.
12. Stafne EC. Supernumerary teeth. Dent Cosmos 1932; 74:653-9.
13. Marya CM, Kumar BR. Familial occurrence of mesiodens with unususal findings: case Reports. Quintessence Int. 1988;29:49-51
14. Scheiner MA, Sampson WJ. Supernumerary teeth: a review of the literature and four case reports. Aust Dent J 1997; 42(3):160-5.
15. Ata-Ali F, Ata-Ali J, Peñarrocha-Oltra D, Peñarrocha-Diago M. Prevalence, etiology, diagnosis, treatment and complications of supernumerary teeth. J Clin Exp Dent 2014; 6(4):e414-418.
16. Primosch RE. Anterior supernumerary teeth - assessment and surgical intervention in children. Pediatr Dent 1981; 3(2):204-15.
17. Mallineni SK. Supernumerary teeth: review of the literature with recent updates. Conf Pap Sci 2014; 2014:764050.
18. Rajendran R, Sivapathasundaram B. Shafers Textbook of Oral Pathology. 6th ed. Noida, India: Elsevier; 2009. p. 46-8.
19. Garvey MT, Barry HJ, Blake M. Supernumerary teeth-An overview of classification, diagnosis and management. J Can Dent Assoc, 1999;65:612-6
20. Gopakumar D, Thomas J, Ranimol P, Vineet DA,Thomas S, Nair VV. Prevalence of supernumerary teeth in permanent dentition among patients attending a dental college in South Kerala: A pilot study. J Indian Acad Oral Med Radiol 2014; 26:42-5.
21. Khandelwal P, Rai A B, Bulgannavar B, Hajira N, Masih A, Jyani A. Prevalence, Characteristics, and Morphology of Supernumerary Teeth among patients visiting a Dental Institution in Rajasthan; Contemp Clin Dent 2018;9(3);349-356.
22. Almuheiri F, Duarte C. Prevalence and characteristics of supernumerary teeth in patients from Ras Al Khaimah: A retrospective study from a teaching dental hospital in the UAE. Hamdan, Med J 2018; 11:116-9.