

A Study of Supernumerary Teeth in a Population of Bihar

Sumanta Kumar Kolay¹, Raman Kant Sinha^{2*}

¹Associate Professor, Department of Dentistry, Darbhanga Medical College, Laheriasarai, Darbhanga, Bihar, India.

²Reader, Department of Oral Pathology, Sarjug Dental College, Laheriasarai, Darbhanga, Bihar, India.

ABSTRACT

Background: Supernumerary teeth refers to an excessive number of teeth. Supernumerary teeth are usually detected accidentally during routine radiographic examination or when normal tooth eruption is delayed or fails. The objective of the study is to investigate the prevalence and their distribution.

Materials and Methods: In this study, 22652 patients were evaluated in the out-patient department of Darbhanga Medical College, Darbhanga, Bihar, for supernumerary teeth during the period of December 2016 to September 2018.

Results: In this study we found that Twenty one males (0.09%) and eighteen females (0.08) supernumerary teeth among 22652 patient. According to location wise distribution they were found twenty seven in anterior region (0.12%), seven in molar region, three impacted (0.01%), two in premolar region (0.01%) and one in canine region (0.00%).

Conclusion: The study shows 0.172 prevalence among the

population and supernumerary teeth were more predominant in male as compared to female and their distributions.

Keywords: Supernumerary Teeth, Prevalence, Distribution.

*Correspondence to:

Dr. Raman Kant Sinha,
Reader, Department of Oral Pathology,
Sarjug Dental College, Laheriasarai, Darbhanga, Bihar, India.

Article History:

Received: 16-12-2018, **Revised:** 10-01-2019, **Accepted:** 28-01-2019

Access this article online

Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2019.5.1.049	

INTRODUCTION

Supernumerary teeth (ST) refers to an excessive number of teeth and are relatively common in the oral cavity.¹ and was first described between 23 and 79 AD.^{2,3} They can also be denoted by term hyperdontia.³ Supernumerary tooth in the primary dentition is a less common finding, with one-fifth of this seen in the permanent dentition.⁴ It is more common in the central region of the upper or lower jaw; however, its occurrence in the mandible is rare.⁵ Supernumerary teeth are usually detected accidentally during routine radiographic examination or when normal tooth eruption is delayed or fails. Traditionally, supernumerary teeth were diagnosed and located using two-dimensional radiographic methods such as panoramic views, cephalometric, apical, or occlusal radiographs (Garvey *et al.*, 1999; Rajab and Hamdan, 2002).⁶

The reported prevalence of ST in the permanent dentition of Caucasians is between 0.15% and 3.9% and it appears to be highest among the Mongoloid racial group, with a reported frequency higher than 3%. Supernumerary teeth appear with a higher frequency in men than in women, with a 2:1 ratio.⁷

Recently, tooth abnormalities have become an important point in dentistry. Care should be taken in order to determine the tooth abnormalities. There are varying abnormalities, therefore, they are classified according to their number, size, shape and structure.⁸ Primosch classified anterior supernumerary teeth into two types (according to their shape):

1. Supplemental - Eumorphic teeth of normal shape and size; also termed as incisiform. They appear most commonly as extra maxillary and mandibular lateral incisors in the permanent dentition and maxillary central incisors in the primary dentition
2. Rudimentary - Dysmorphic teeth of abnormal shape and smaller size; includes conical, tuberculate, and molariform types. Conical-shaped supernumerary teeth are the most common and occur as single, midline (mesiodens), or bilateral (mesiodentes) structures. The tuberculate type has a barrel-shaped appearance (width is equal to its length), a crown anatomy consisting of multiple tubercles, and either incomplete (stunted) or total absence of root formation. Finally, the molariform type has derived its name because the crown closely resembles the morphology of a premolar. It is unique in that it appears to occur in pairs in the central incisor area and unlike the tuberculate type shows complete root formation. On literature search, there is abundant data on the prevalence of supplemental, conical, and tuberculate types of anterior supernumerary teeth.⁹ These variations may be caused by local or systemically acting environmental factors and genetically determined, or possibly from a combination of both two factors.¹⁰ Localized and independent hyperactivity of the dental lamina is the most widely accepted cause for the development of ST today.⁶ ST occur more commonly in the relatives of affected patients than in the general population. They can be transmitted as an autosomal dominant or autosomal recessive trait with

incomplete penetrance, or may be associated with the X chromosome. Although there are some reports of multiple or bilaterally ST without any systemic conditions or associated syndromes, in most cases, ST are associated with other conditions or defects such as cleft lip/palate, cleidocranial dysostosis and Gardner's syndrome. Less common syndromes that related with ST are; Fabry disease, Ellis-van Creveld syndrome, Trico-Rhino-Phalangeal syndrome, Rubinstein-Taybi Syndrome, and Nance-Horan syndrome. In this review, possible etiological factors and the genetic background of ST were identified.⁵

MATERIALS AND METHODS

The patients that were attended at the outpatient department of Dentistry, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India for various oral and dental complains between December 2016 to September 2018. A total 22652 patient were examined clinically for supernumerary teeth. The identification of the supernumerary tooth was confirmed clinically and radiologically in all age groups.

RESULTS

Total number of 22652 patients were screened, among them supernumerary teeth were detected in 39 patients with a prevalence rate 0.172. Twenty one males (0.09%) and eighteen

females (0.08%) Table 1. According to location wise distribution they were found twenty seven in anterior region (0.12%), seven in molar region, three impacted (0.01%), two in premolar region (0.01%) and one in canine region (0.00%) Table 2.

A detailed distribution of the cases according to the gender, jaw, region, position, shape and types is given in Table 3.

Table 1: Gender wise distribution of subjects with supernumerary teeth

	Frequency	Percentage
Male	21	0.09
Female	18	0.08

Table 2: Location wise distribution of supernumerary teeth

Location	Frequency	Percentage
Anterior region	27	0.12
Canine region	1	0.00
Premolar region	2	0.01
Molar region (paramolar)	7	0.03
Distomlar	0	0.00
Impacted	3	0.01

Figure 1: Gender wise prevalence of supernumerary teeth

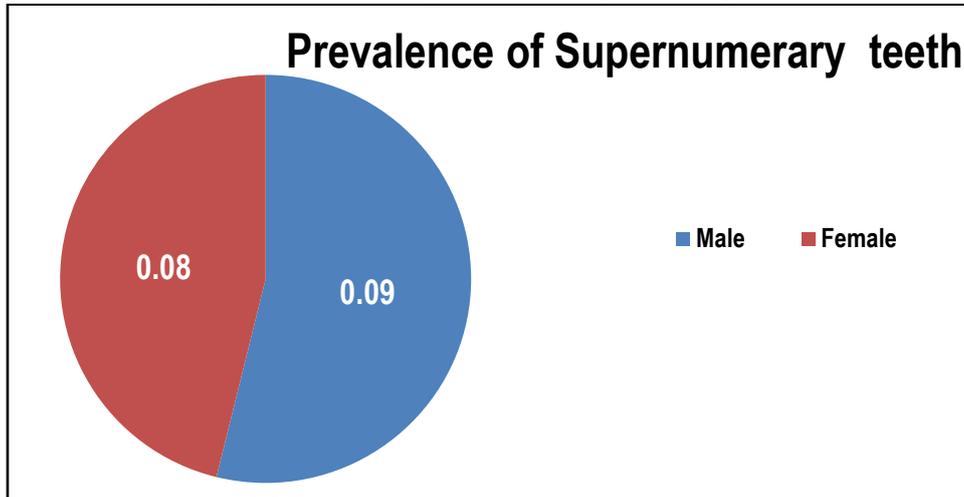


Figure 2: Location wise distribution of supernumerary teeth

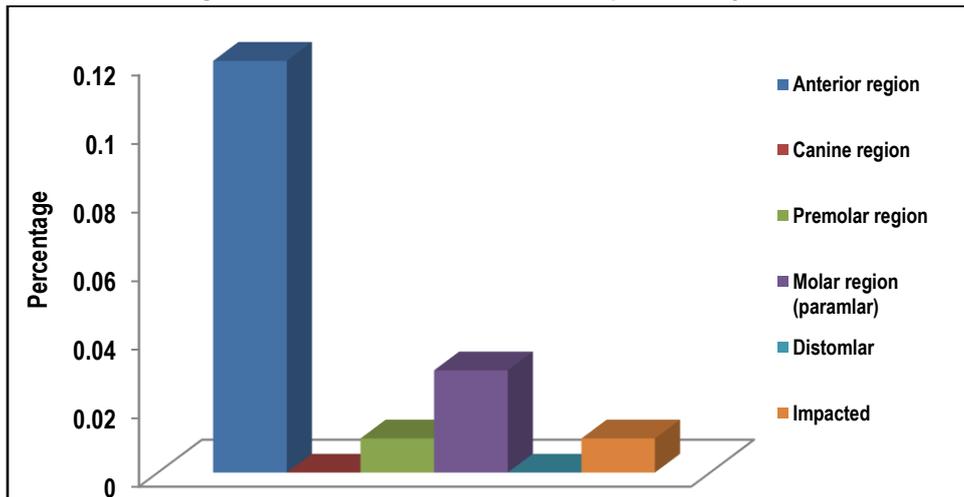


Table 3: Cases according to the gender, jaw, region, position, shape and types

	Male	Female	Ant.reg.	Canine reg.	Premolar region	Molar region	Distomolar region	Impacted supernumerary teeth
1		1				1		
2		1	1M					
3		1	1M					
4	1		1M					
5	1		1M					
6	1		1M					
7		1	1 Deciduous Supplement					
8	1		1M					
9		1		1				
10	1		1M					
11		1	1M					
12		1	2 Tuberculate					
13	1		2 Tuberculate					
14		1	1M					
15		1	1M					
16		1	1M					
17	1		1M					
18	1		1M					
19	1		1M					
20	1		1M					
21	1					1		
22		1	1M					
23	1		1M					
24	1					1		
25	1					1		
26	1		1M					
27	1		2					
28		1	1 Lat. supplemental					
29	1							Distomolar -2
30		1			1			
31	1		1M					
32	1		1M					
33		1						22,23 region
34	1		1M					
35		1				2-bilateral		
36		1						4
37		1				1		
38		1				1		
39	1		1		1			
	21	18	27	1	2	7		3

M= Mesiodence

DISCUSSION

Supernumerary teeth are defined as an excess number of teeth when compared with the normal dental formula⁹ sometimes appearing after the loss of the permanent teeth, which are known as "Post Permanent dentition."³ Other than esthetic issues, the most frequent complications generated by the presence of ST are prolonged retention of deciduous teeth¹¹, eruption failure, rotation or displacement of the adjacent teeth, dilacerations, root

resorption, crowding, malocclusion, fistulas and cystic formation, nasal cavity eruption, and delayed or abnormal root development of permanent teeth are common clinical complications linked with ST.¹⁰ Several authors have stated varied opinions on the management of mesiodens, especially with regard to the timing of removal. Russel et al. recommended the extraction of mesiodens in the early mixed dentition stage for better alignment of teeth and minimizing the need for orthodontic treatment. Rotberg

recommended the removal of the supernumerary as soon as it has been discovered.¹² Another therapeutic option is to keep the supernumerary tooth under observation as long as it does not provoke any complication and does not interfere with function or aesthetics.¹³

Our study showed prevalence rate of 0.172 in a series of 22652 patients where as other findings were 0.39. Gopakumar et al.,¹⁴ 0.75 Duarte et al.,¹⁵ 0.78 Saha et al.⁷ and 1.76 Meenakshi Bodh et al.¹⁶ which did not coincide with our values, it may be because of literature sources suggesting that the frequency of ST varies according to the population studied between 0.1-3.8% .¹⁷⁻¹⁹

According to gender distribution, our studies shows ST were prevalent in males (0.09%) as compared to females (0.08%) (Figure 1), this result is coinciding with various studies.^{1,4,6,7,11,14,16,20,21}

Supernumerary teeth most commonly occurs in maxillary region as compared to the mandibular region reported by most of the authors^{22,23} similar result were obtained in our study whereas Duarte et al. does not observe any significant difference in the frequency of supernumerary teeth occurring in the maxilla or mandible.

In our study the ST were more common in anterior region (0.12%) followed by molar region (0.03%) and lest in premolar (0.01%) and canine region (0.00%).(Figure 1) Whereas Saha et al. found in their study 38.6% of cases occurred in the premaxilla followed by the premolar (28.3%) and distomolar regions (17.3%) and only one case presented with canine region.⁷ But Berrocal found that, in upper arch the most common location was at distomolar region (38%) followed by anterior region (28.6%) and a lesser percentage were found in the premolar (9.6%) and canine region (4.8%).¹ Similarly Demiriz found more common with maxillary molars (34.0%), whereas the incidence of mesiodens remained at 7.1% only and suggested that this difference may be related to the range of age of the patients examined.²⁴

Finally we suggest that we need to do more studies in this field in different places because we examine only those patients who seek oral and dental treatment and those who visited at our out-patient department but most of the people remains undiagnosed because they got their treatment in private clinics or without any clinical complications related to oral cavity.

CONCLUSION

In this study we conclude that the prevalence of supernumerary teeth were 0.172 and they were more common in males as compared to females. The morphologic distribution are found twenty seven in anterior region (0.12%), seven in molar region, three impacted (0.01%), two in premolar region (0.01%) and one in canine region (0.00%)

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Source of Support: Nil.

Conflict of Interest: None Declared.

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Cite this article as: Sumanta Kumar Kolay, Raman Kant Sinha. A Study of Supernumerary Teeth in a Population of Bihar. *Int J Med Res Prof*. 2019 Jan; 5(1):224-28.
DOI:10.21276/ijmrp.2019.5.1.049