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ORIGINAL RESEARCH

Evaluation of prevalence of mandibular third molar impaction in adults: An observational study

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ABSTRACT:

Background: The tooth fails to erupt completely or partially to its correct position in the dental arch and its eruption potential has been lost and will not eventually assume a normal arch relationship with the other teeth and tissues. Hence; the present study was undertaken for evaluating the prevalence of mandibular third molar impaction in adults. **Materials & Methods:** A total of 100 patients were included in the present study. Complete demographic details of all the patients were obtained. Clinical examination was carried out in all the patients. All the patients underwent radiographic analysis and OPG of all the patients was obtained. Patient's information such as name, age, gender, etc. was recorded. A thorough clinical examination was done. Prevalence and type of impaction was recorded. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. **Results:** Mesio-angular impaction was the most common type of impaction, found to be present in 55 percent of the patients. Non-significant results were obtained while correlating age and gender-wise distribution with type of impaction. **Conclusion:** Mesio- angular is the most common type of impaction among adults.

Key words: Impaction, Third molar, Ramus relationship

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INTRODUCTION

Teeth grow to be impacted when they fail to erupt or develop in their proper functional location. Also; of all teeth, mandibular third molars are the most frequently impacted. The tooth fails to erupt completely or partially to its correct position in the dental arch and its eruption potential has been lost and will not eventually assume a normal arch relationship with the other teeth and tissues. Many theories have been proposed owing to the causes of teeth impaction.¹⁻³

Various etiologic factors have been suggested for impacted mandibular third molars. These include the change in orientation or the position of the erupting

third molar tooth, differential root growth between the mesial and distal roots. The size of the mandible or maxilla with the resultant lack of space and also the retarded maturation of third molars when compared to the skeletal growth of the jaws.⁴⁻⁶ Hence; the present study was undertaken for evaluating the prevalence of mandibular third molar impaction in adults.

MATERIALS & METHODS

The present study was conducted for assessing the prevalence of mandibular third molar impaction in adults. A total of 100 patients were included in the present study. Complete demographic details of all the

patients were obtained. Clinical examination was carried out in all the patients. All the patients underwent radiographic analysis and OPG of all the patients was obtained. Patient's information such as name, age, gender, etc. was recorded. A thorough clinical examination was done. Prevalence and type of impaction was recorded. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Chi-square test was used for evaluation of level of significance.

RESULTS

In the present study, a total of 100 patients were analyzed. Mean age of the patients was found to be 28.7 years. 61 percent of the patients belonged to the age group of more than 25 years. There were 53 males and 47 females in the present study. Mesio-angular impaction was the most common type of impaction, found to be present in 55 percent of the patients. In the present study, non-significant results were obtained while correlating age and gender-wise distribution with type of impaction.

Table 1: Age and gender-wise distribution

Parameter		Number of patients	Percentage
Age group (years)	Less than 25	39	39
	More than 25	61	61
Gender	Males	53	53
	Females	47	47

Table 2: Type of impaction

Type of impaction	Percentage	P value
Mesio- angular	55	0.00
Disto- angular	28	
Horizontal	12	
Vertical	5	

Table 3: Correlation of Age and gender-wise distribution with type of impaction

Parameter		Type of impaction				p- value
		Mesio-angular	Disto-angular	Horizontal	Vertical	
Age group (years)	Less than 25	25	10	3	1	0.58
	More than 25	30	18	9	4	
Gender	Males	25	17	8	3	0.15
	Females	30	11	4	2	

DISCUSSION

Teeth become impacted when they fail to erupt or develop in their proper functional location; third molar is the most common impaction that accounts for 98% of all impactions. The frequency of third molar impaction varies substantially among different populations and was reported to range from 18% to 70%. This can be attributed to racial variation in the pattern of facial growth, jaw, and tooth size, which are crucial determinants of the eruption pattern. Among all teeth, mandibular third molars are the most frequently impacted teeth. The cause of third molar impaction is due to inadequate space in the mandible, which may lead to pericoronitis, dental caries, and cystic lesions.^{7,8} Impacted teeth are those which fail to erupt or develop into the proper functional location in oral cavity beyond the time usually expected. Etiology may be multifactorial usually due to adjacent teeth, dense overlying bone or soft tissue, size of the mandible or maxilla with the resultant lack of space in the jaw, aberrant path of the eruption, abnormal positioning of

tooth bud, differential root growth between the mesial and distal roots, or pathological lesions. Impacted teeth can lead to impaction of food, pericoronitis, caries, pain, and development of pathology. Therefore, impacted third molar prophylactic removal is becoming a common practice nowadays. Certain acquired systemic conditions and developmental disturbances lead to retardation in the growth of an individual which can subsequently lead to impaction. Examples of such conditions include Syphilis, tuberculosis, anemia, malnutrition, cleft palate, rickets and endocrine dysfunctions.⁹ Hence; the present study was undertaken for evaluating the prevalence of mandibular third molar impaction in adults. In the present study, a total of 100 patients were analyzed. Mean age of the patients was found to be 28.7 years. 61 percent of the patients belonged to the age group of more than 25 years. There were 53 males and 47 females in the present study. Mesio-angular impaction was the most common type of impaction, found to be present in 55 percent of the patients. Passi

D et al studied the prevalence and pattern of mandibular impacted third molar among Delhi-National Capital Region (NCR) population. Out of 960 patients with the third molar investigated, a total of 250 patients having impacted mandibular third molar (152 [60.8%] males and 98 [39.2%]) females between June 2014 and June 2016 were included in the study. The age ranged from 20 to 55 years, with a mean age of 27.6 years and the standard deviation was 5.8 years. The prevalence of impacted mandibular third molars for this study was 26.04%. This study demonstrated that males (60.8%) were more likely to present with impacted mandibular third molars than females (39.2%). The prevalence of third molar impactions was almost the same on both the left (45.8%) and right (54.2%) sides. This study also noted that mesioangular impactions (49.2%) were the most common type of impaction. The least common form of impactions was the transverse types (2%). The prevalence of impacted mandibular third molars for this study was 26.04%.¹⁰

In the present study, non-significant results were obtained while correlating age and gender-wise distribution with type of impaction. Al-Anqudi SM et al assessed the prevalence and pattern of third molar impaction in patients between 19–26 years old. The study reviewed 1,000 orthopantomograms (OPGs) of patients. Patients were evaluated to determine the prevalence of third molar impaction, angulation, level of eruption and associated pathological conditions. Of the study population, 543 (54.3%) OPGs showed at least one impacted third molar. The total number of impacted molars was 1,128. The most common number of impacted third molars was two (41%). The most common angulation of impaction in the mandible was the mesioangular (35%) and the most common level of impaction in the mandible was level A. Of the 388 bilateral occurrences of impacted third molars, 377 were in the mandible. There was no significant difference in the frequency of impaction between the right and left sides of both jaws. Pathological conditions associated with impacted lower third molars were found in 18%, of which 14% were associated with a radiographic radiolucency of more than 2.5 mm, and 4% of impacted lower third molars were associated with dental caries. This study found that more than half of adult patients ranging in age from 19–26 years had at least one impacted third molar.¹¹

CONCLUSION

From the above results, the authors conclude that mesio- angular is the most common type of impaction among adults. However; further studies are recommended.

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