

ORIGINAL RESEARCH

Prevalence and type of mandibular third molar impaction in adults- A clinical study

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ABSTRACT:

Background: Impacted tooth is a tooth which is completely or partially unerupted and is positioned against another tooth, bone or soft tissue so that its further eruption is unlikely, described according to its anatomic position. The present study was conducted to assess prevalence of mandibular third molar impaction in adults. **Materials & Methods:** This study was conducted on 120 patients with impacted mandibular third molar. Prevalence and type of impaction was recorded. The position and level of the impacted teeth were assessed using the Pell and Gregory classification. The present study was conducted to assess prevalence of mandibular third molar impaction in adults. **Results:** Out of 120 patients, males were 65 and females were 55. Common type of impaction was mesio-angular seen in 58%, disto- angular in 24%, horizontal in 12% and vertical in 6%. The difference was significant ($P < 0.05$). Level of third molar was level A in 20%, level B in 65% and level C in 15%. Ramus relationship was class I in 18%, class II in 54% and class III in 28%. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that mesio- angular was the most common type of impaction and level B and class II was most common level and depth of impaction among adults.

Key words: Impaction, Third molar, Ramus relationship

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INTRODUCTION

Impacted tooth is a tooth which is completely or partially unerupted and is positioned against another tooth, bone or soft tissue so that its further eruption is unlikely, described according to its anatomic position.¹ The third molar impaction is occurring in about 73% of the young adults in Europe, these teeth generally erupt between the ages of 17 and 21 years.² It has also been reported that the third molar eruption varies with races, such as in Nigeria mandibular third molars may erupt as early as 14 years and in Europe it may erupt up to the age of 26 years. Factors such as the nature of the diet that may lead to attrition, reduced mesiodistal crown diameter, degree of use of the masticatory apparatus and genetic inheritance also affect the timing of third molar eruption.³

The debate centres on whether the health needs of the patient justify the cost of the extraction in terms of the discomfort experienced post-operatively, surgical cost, and the economic burden on government and other non-governmental organizations in some countries that may partly bear the surgical bills. However, the extraction of

impacted mandibular third molar in the absence of any pathology is common in Europe and America.⁴

Importance of preoperative assessment and planning for third molar extraction and following of standard sterilization protocol and principles of surgery are must as it is with any other surgical procedure for decreasing the incidence of complications. Besides the anatomic considerations, such as the distolingual angulation of the tooth or dehiscence in lingual cortical plate, an excessive or uncontrolled force, an improper manipulation and an inadequate clinical and radiographic examination are important factors that can lead to tooth displacement.⁵ The present study was conducted to assess prevalence of mandibular third molar impaction in adults.

MATERIALS & METHODS

This study was conducted in department of Oral and Maxillofacial Surgery. It comprised of 120 patients with impacted mandibular third molar. Ethical clearance was obtained prior to the study. All were informed regarding the study and written consent 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. The position and level of the impacted teeth were assessed using the Pell and Gregory classification. Panoramic radiographs were taken in all cases. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 120		
Gender	Males	Females
Number	65	55

Table I shows that out of 120 patients, males were 65 and females were 55.

Graph I Distribution of patients

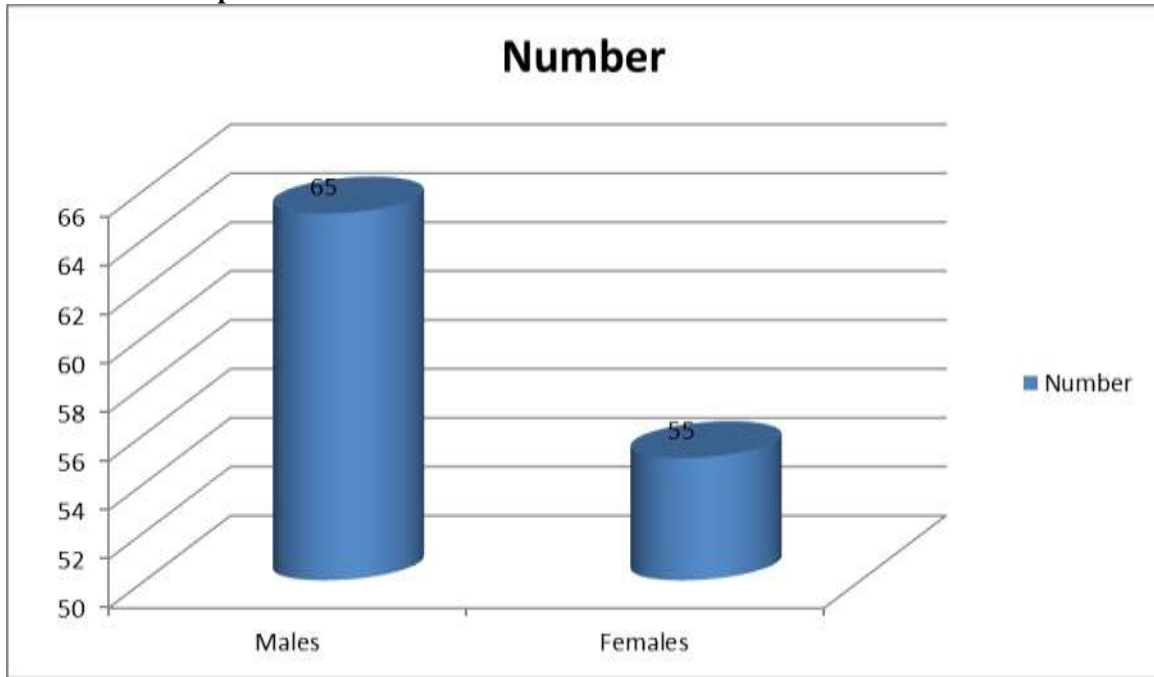


Table II Type of impaction

Type	Percentage	P value
Mesio- angular	58%	0.01
Disto- angular	24%	
Horizontal	12%	
Vertical	6%	

Table II shows that common type of impaction was mesio- angular seen in 58%, disto- angular in 24%, horizontal in 12% and vertical in 6%. The difference was significant (P< 0.05).

Table III Different level and class of impacted teeth

Third molar	Parameter	Percentage	P value
Level/depth of impaction	Level A	20%	0.02
	Level B	65%	
	Level C	15%	
Ramus relationship	Class I	18%	0.01
	Class II	54%	
	Class III	28%	

Table III show that level of third molar was level A in 20%, level B in 65% and level C in 15%. Ramus relationship was class I in 18%, class II in 54% and class III in 28%. The difference was significant (P< 0.05).

DISCUSSION

Impacted wisdom teeth are classified by the direction and depth of impaction, the amount of available space for tooth eruption the amount soft tissue or bone that covers them. The classification structure allows clinicians to estimate the probabilities of impaction, infections and complications associated with wisdom teeth removal.⁶ Wisdom teeth are also classified by the presence (or absence) of symptoms and disease. Treatment of an erupted wisdom tooth is the same as any other tooth in the mouth. If impacted, treatment can be localized to the infected tissue overlying the impaction, extraction or coronectomy.⁷ The present study was conducted to assess mandibular third molar impaction in adult population.

It is thought that complications like pain, edema and trismus are caused by surgical trauma depending on the inflammatory process.⁸ In surgeries for impacted mandibular third molar, time of the intervention is thought to be associated with tooth position, angle and the experience of the surgeon and these parameters determine the difficulty of the surgery and are related to the intensity and time of pain, edema and trismus.⁹ Longer surgical interventions are thought to increase tissue damage and vascular permeability can cause postoperative edema and affect its

intensity.¹⁰The present study was conducted to assess prevalence of mandibular third molar impaction in adults. In present study, out of 120 patients, males were 65 and females were 55. Common type of impaction was mesio-angular seen in 58%, disto-angular in 24%, horizontal in 12% and vertical in 6%. Bhatia et al¹¹ found that 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 mesio-angular (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.

We found that level of third molar was level A in 20%, level B in 65% and level C in 15%. Ramus relationship was class I in 18%, class II in 54% and class III in 28%. Hattab et al¹² found that the mean age of the subjects was 30.58 ± 11.98 years (range: 19-73); in a review of the 2,133 impacted third molar teeth, the most common angulation of impaction in both maxillaries was vertical (1,177; 55%). Level B impaction was the most common in the maxilla (425/1,037; 39%), while level C impaction was the most common in the mandible (635/1,096; 61%). Pain (272/705; 39%) and pericoronitis (188/705; 27%) were found to be the most common complications of impaction. Among 705 patients (335 males, 370 females), pericoronitis was more prevalent in males (101; 30%) and usually related to lower third molars (236; 22%). The retromolar space was significantly smaller in females ($p < 0.05$). Moreover, there was a significant difference in retromolar space for the area of jaw (maxillary: 11.3 mm; mandibular: 14.2 mm) and impaction level (A: 14.7 mm; B: 11.1 mm; C: 10.3 mm; $p < 0.05$).

CONCLUSION

Authors found that mesio- angular was the most common type of impaction and level B and class II was most common level and depth of impaction among adults.

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