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Original Research

Assessment of mandibular third molar impaction status

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ABSTRACT:
Background: Mandibular third molar impaction refers to the condition where the third molarsfail to fully erupt into their normal position in the dental arch and become stuck or impacted.The present study was conducted to assess mandibular third molar impaction status. **Materials & Methods:** 82 cases of mandibular third molar impaction of both genders were studied. Parameters such as angulation, position, and level of the impacted tooth were recorded. The angulation, position and level of the impacted teeth were assessed. **Results:** Out of 82 patients, males were 50 and females were 32. Type of impaction was vertical in 8, horizontal in 20, mesio- angular in 36, disto- angular in 13 and transverse in 5 cases. The level/ depth of impaction was level A in 30, level B in 45 and level C in 7 cases. Ramus relationship was class I in 15, class II in 40 and class III in 23. The difference was significant (P< 0.05). **Conclusion:** Impaction was commonly seen among males and most common type of impaction was mesio- angular.
Key words: Mesio- angular impaction, ramus, position

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INTRODUCTION

Mandibular third molar impaction refers to the condition where the third molars, also known as wisdom teeth, fail to fully erupt into their normal position in the dental arch and become stuck or impacted.[1] The mandibular third molars are the last teeth to develop and usually erupt between the ages of 17 and 25, although the timing can vary from person to person.[2]

Impaction occurs when there is insufficient space in the jaw for the third molars to erupt properly. As a result, they may remain partially or completely trapped within the jawbone or soft tissues.[3]Retained, unerupted mandibular third molars are often associated with varied pathologies which are Pericoronitis, Dental caries , cysts and tumours associated with the tooth , Periodontitis, root resorption. Untreated mandibular third molar can sometimes even cause fracture of the mandible.[4]The location and arrangement of impacted third molar, surrounding bone, mandibular canal and adjacent tooth are significant in imaging diagnosis for the proper surgical treatment planning. Therefore, impacted third molar prophylactic removal is becoming a common practice nowadays.[5]Treatment for mandibular third molar impaction usually involves extraction, especially if the impacted teeth are causing pain, infection, or other dental issues.[6] The extraction process may be performed by a general dentist or an oral surgeon, depending on the complexity of the impaction. In some cases, the extraction may involve a surgical procedure, such as when the impacted tooth is deeply embedded in the jawbone or surrounded by dense tissue.[7]The present study was conducted to assess mandibular third molar impaction status.

MATERIALS & METHODS

The present study comprised of 82 cases of mandibular third molar impaction of both genders. All

were informed regarding the study and their written consent was obtained.
Data such as name, age, gender etc. was recorded. A thorough examination was carried out. Parameters such as location of the impacted third molar, angulation, position, and level of the impacted tooth were recorded. The position and level of the impacted teeth were assessed using the Pell and Gregory classification. The angulation was assessed using Quek's adaptation of the Winter's classification. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 82		
Gender	**Male**	**Female**
Number	50	32

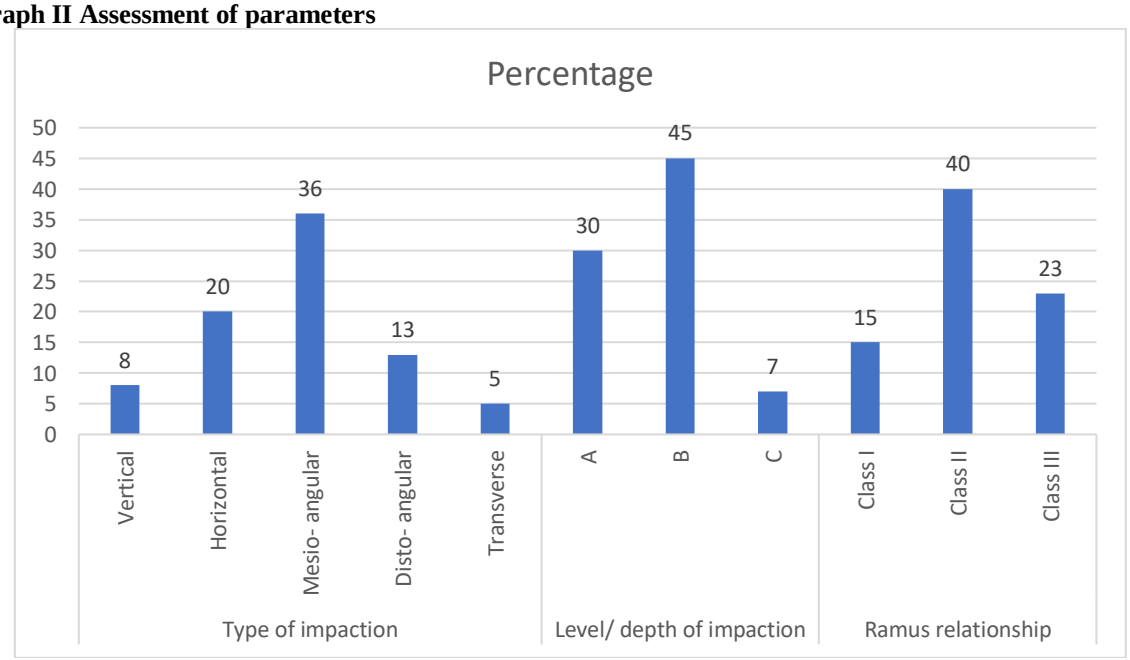
Table I shows that out of 82 patients, males were 50 and females were 32.

Table II Assessment of parameters

Parameters	Variables	Percentage	P value
Type of impaction	Vertical	8	0.03
	Horizontal	20	
	Mesio- angular	36	
	Disto- angular	13	
	Transverse	5	
Level/ depth of impaction	A	30	0.04
	B	45	
	C	7	
Ramus relationship	Class I	15	0.05
	Class II	40	
	Class III	23	

Table II, graph I shows that type of impaction was vertical in 8, horizontal in 20, mesio- angular in 36, disto- angular in 13 and transverse in 5 cases. The level/ depth of impaction was level A in 30, level B in 45 and level C in 7 cases. Ramus relationship was class I in 15, class II in 40 and class III in 23. The difference was significant (P< 0.05).

Graph II Assessment of parameters



DISCUSSION

One of the most frequent irregularities of dental position is tooth impaction. A tooth that is impacted is one that has a fully developed root that is partially or entirely covered by hard or soft tissues and is not in the physiological eruption window.[8] In a dental surgery, the process for surgically removing impacted wisdom teeth is regularly carried out. According to

numerous research, the prevalence of impacted teeth has varied from 6.9 to 76.6%. Third molars are the teeth most likely to develop an impacted position, particularly in the mandible.[9]

The mandibular third molar may become impaction due to imbalance, insufficient dental arch space, inadequate retromolar space development, mandibular ramus growth resorption at its anterior surface, deposition at its posterior surface, and other factors. While performing these small surgical operations, an appropriate history must be taken.[10] Antiplatelet monotherapy or even antiplatelet dual therapy patients do not need to change their medications or stop taking them prior to minor oral surgical procedures. Food impaction, pericoronitis, caries, discomfort, and the emergence of disease are all risks associated with impacted teeth.[11]The most efficientradiographic technique for the assessment of 3rd molar impaction is the panaromic radiographic technique.[12]The present study was conducted to assess mandibular third molar impaction status

We found that out of 82 patients, males were 50 and females were 32.Yilmaz et al[13]assessed the pattern of third molar impaction and associated symptoms in a Central Anatolian Turkish population.A total of 2,133 impacted third molar teeth of 705 panoramic radiographs were reviewed. The positions of impacted third molar teeth on the panoramic radiographs were documented according to the classifications of Pell and Gregory and of Winter. 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; $p < 0.05$).

We observed that type of impaction was vertical in 8, horizontal in 20, mesio- angular in 36, disto- angular in 13 and transverse in 5 cases. The level/ depth of impaction was level A in 30, level B in 45 and level C in 7 cases. Ramus relationship was class I in 15, class II in 40 and class III in 23. Passi et al[14] in their study a total of 250 patients with impacted mandibular third molars (152 [60.8%] men and 98 [39.2%] females were included in the study out of 960 patients with the third molar under investigation. The average age was 27.6 years, and the standard deviation was 5.8 years. The age varied from 20 to 55 years. In this study, there were 26.04% more impacted mandibular third molars than normal. This study showed that men (60.8%) were more prevalent than women (39.2%) to present with impacted mandibular third molars. Third molar impactions were nearly equally common on the left (45.8%) and right (54.2%) sides.

Hadad et al[15] in their study 195 (12.2%), 252 (15.8%), and 119 (7.4%) had resulted in pathological lesions, second molar distal caries, and second molar root resorption, respectively. Additionally, 872 (54.5%) had come into contact with the mandibular canal. Impaction angulation was a risk factor for second molar distal caries. The risk factors for second molar root resorption were altered angulation and increased impaction depth. A risk factor for related pathological lesions was a smaller distance between the ramus and the second molar's distal side. The risk factors for contact with the mandibular canal included mesio-angular and horizontal angulations, as well as increased impaction depth.

The limitation of the study is small sample size.

CONCLUSION

Authors found that impaction was commonly seen among males and most common type of impaction was mesio- angular.

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