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EVALUATION OF INCIDENCE AND PATTERN OF THIRD MOLAR IMPACTIONS IN JAMMU REGION; A CROSS SECTIONAL STUDY

Dental Science

Syed wakeel*	seniour resident Department of oral and maxillofacial surgery indra Gandhi Dental College, jammu *Corresponding Author
Sabzar Abdullah	Assistant professor Department of prosthodontics ZA Dental College, AMU, Aligarh
Zubair Janbaaz	junior resident Department of oral and maxillofacial surgery indra Gandhi Dental College, jammu
Praveen lone	Professor Department of oral and maxillofacial surgery indra Gandhi Dental College, jammu
Mahbooba Khazir	Resident Department of Public Health Dentistry Teerthanker Mahaveer Dental College & Research Centre Moradabad
Rashid Jamal Khan	Resident Department of prosthodontics ZA Dental College, AMU, Aligarh

ABSTRACT

AIMS AND OBJECTIVES: The aim is to evaluate the frequency of third molar impactions, their angulation, and percentage of agenesis in both mandible and maxilla. The pattern of third molar impactions shows variegation with respect to different population. Besides, impacted third molars engender potential pathologic complications. The objective of this study is to determine the prevalence and pattern of third molar impactions in demographic confines of Jammu region of J & K state in India.

MATERIALS AND METHODS: The sample consists of 310 orthopantomograms from patients who reported to the department of oral and maxillofacial surgery IGGDC Jammu from November 2017 to August 2018. Data regarding age, gender, prevalence and pattern of third molars were collected and analysed. The relationship between predictor and outcome variables is analyzed by using Z –Test with P< 0.05

RESULTS: Among 310 patients, 183 were male and 127 were female. The percentage of impactions was higher in case of females than males. Moreover, females had a marginally higher rate of agenesis than males. Mandibular impactions had a higher percentage than maxillary impactions. Mesioangular was the most prevalent angulation. Percentage of vertical impactions in maxilla exceeded that in mandible.

CONCLUSION: The pattern of third molar impactions in Jammu region presented a higher percentage of impactions in females, with predominance in mandible and mesioangular being the commonest.

KEYWORDS

third molar, agenesis, impaction.

INTRODUCTION

the mandibular third molars are the most frequently impacted teeth that can be found in human[1]. Causes of impactions have been broadly classified as local and systematic. Impacted teeth are often associated with pericoronitis, periodontitis, cystic lesions, neoplasm, root resorption and can cause detrimental effects on adjacent tooth[2].Prevalence and pattern of third molar impactions presents a varied picture across the globe. The prevalence of third molar impaction ranges from 16.7% to 68.6% (3-10). Variance among males and females has also been observed. Some studies have reported no sexual predilection in third molar impaction[3,4]. Whereas some studies have reported a higher frequency in females than males [10, 11] Furthermore, the agenesis of third molars can be either genetic or due to lifestyle and dietary habits[12].

Classification is based on the level of impaction [13] the angulations of the third molars and the relationship to the anterior border of the ramus of the mandible. Depth or level of maxillary and mandibular third molars can be classified using the Pell and Gregory classification system, where the impacted teeth are assessed according to their relationship to the occlusal surface (OS) of the adjacent second molar[14]Hence the current study aims to evaluate the incidence of third molar impactions and agenesis in maxilla and mandible and their incidence in males and females.

MATERIALAND METHODS

The study was performed at the Department of Oral and maxillofacial surgery, IGGDC jammu from november 2017 upto august 2018. OPG's from 310 patients (183 males + 127 females) were collected after obtaining an informed consent.The OPGs of patients in the age group of 18-40 were included. The patients below 18 years of age, those having any history of maxillo- facial trauma, craniofacial anomalies, third molars with incomplete root formation and those with missing second molars were exluded from the study.

The OPG's were evaluated using a radiographic viewer and were interpreted for Impactions of maxillary and mandibular third molars, Agenesis of third molars and Angulation of the impacted third molar teeth. The demographic variables recorded were age and gender. A third molar was considered as impacted when it was devoid of functional occlusion while the root formation is completed. An orthodontic protractor was used to measure the angle between the longitudinal axis of second and third molars.

RESULTS

A total of 310 patients were included in the study of which 183 were male and 127 female patients (table 1). The mean age of patients was 23 years .A total of 595 impacted teeth were analysed of which 337 were in males and 258 in females.(table 2) Total impacted mandibular and maxillary third molars were 442 and 153 respectively.(table 3) The percentage of impactions in males was 51.7% and in females was 56.33%, agenesis was found to be 8% (59 potenial teeth) in males and 11% (56 potential teeth) in females. Number of impacted third molars in maxilla were 153 (25.7%) and 442 (74.3%) in the mandible.(table4) The most prevalent angulation was mesioangular.(table5)

Table 1: OPGs of patients among males and female

No. of OPG's	310
Male	183
Female	127

Table 2: No. of impacted teeth among males and females

Total impacted teeth	595	%
Male	337	56.6
Female	258	43.3

56% in males with pvalue<0.05 with significant difference

Table 3 No. of impacted teeth in Maxilla and Mandible

Total impacted teeth	595	%

Maxilla	153	25.7
Mandible	442	74.3

Table 4 Percentage of impacted teeth in Maxilla and Mandible among males and females

IMPACTED THIRD MOLARS	Male	Female	Total	Percentage
Maxilla	83	70	153	25.7%
Mandible	254	188	442	74.3%

74.3% with pvalue<0.05 i.e significant difference between mandible and maxilla

Table 5 Percentage of angulation of impacted teeth in Maxilla and Mandible among males and females

Site	Sex	Mesioangular		Distoangular		Vertical		Horizontal	
		No.	%	No.	%	No.	%	No.	%
Mandible	Males	178	70	20	7.8	45	17.7	11	4.3
	Females	140	74.4	18	9.5	22	11.7	8	4.2
Maxilla	Males	33	39.7	18	21.6	31	37.3	1	1.2
	Females	28	40	14	20	28	40	0	0

74.4% Mesioangular angulation in mandible of females with p value <0.05 i.e significant

Discussion

Third molar impaction is a common pathological deformity of modern civilization. According to Elsey and Rock, it is occurring in up to 73% of young adults in Europe.[15] Because of the increased incidence of unerupted third molars and the association of numerous complications with these retained teeth, assessment of third molars in terms of its position, angulation,and level in relation to gender and arch is a necessary intervention for better patient management and decision making of whether to retain or remove these teeth . The percentage of impactions in males was 51.7% and in females was 56.33%, agenesis was found to be 8% (59 potenial teeth) in males and 11% (56 potential teeth) in females.

Our findings do coincide with Hellmans statement who proposed that females show higher frequency of third molar impaction as a result that their jaws stop growing at the time when third molars begin to erupt, whereas in males, the growth continues beyond the time of third molar eruption. Number of impacted third molars in maxilla were 153 (25.7%) and 442 (74.3%) in the mandible.

Our results showed that 70% of third molars were mesioangular in position. This number is considerably higher than most of studies as reported by Hattab et al.[4] Complications in surgical removal of impacted mandibular third molars in relation to flap design was done by Scherstén E et al [5]. A radiological study of the frequency and distribution of impacted teeth was done by Brown LH, Berkman S[6].Another study was done on Australian aborigines and Caucasoids for comparison of permanent mandibular molar formation[7]. The incidence of impaction may be influenced by local as well as racial factors study done by Haidar Z, Shalhoub SY[8].Incidence study was done in Harlem hospital by Kramer RM, Williams AC[9] (50%) Quek et al.[10] (60%) and Kruger et al. (62.9%), and by Byahatti and Ingafou[16] (23.7%).In the present study, mesioangular impaction was the most common angular position followed by vertical and distoangular. Same results were obtained by Hattab et al. Level and Padhye et al[17] .Gupta et al.[18] found that the highest proportion of impacted third molars was in vertical position, followed by mesioangular and distoangular.Furthermore, Richardson[19] found that the highest number of impacted third molars was in horizontal position. These results demonstrate that angular position of impacted third molars varies among population groups included in each study.

There are few studies documenting the bilateral occurrence of impacted third molars. Dachi and Howell[20] reported almost equal frequencies of unilateral and bilateral impactions while our results showed that 70% of cases presented with bilateral impaction in one or both arches. In addition, approximately 69% of mandibular bilateral impactions presented with same classification of angular position

CONLUSION

Third molar impaction was more prevalent in the mandible than in the maxilla. Mesioangular impaction was the most commonly encountered angular position.

REFERENCES

1 Lima CJ, Silva LC, Melo MR, Santos JA, Santos TS. Evaluation of the agreement by examiners according to classifications of third molars.Med Oral Patol Oral Cir Bucal. 2012;17:281-216.
2. Ma'aita J, Alwrikat A. Is the mandibular third molar a risk factor for mandibular angle fracture? Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2000;89:143-6
3. Kaya GS, Aslan M, Ömezli MM, Dayi E. Some morphological fea¬tures related to mandibular third molar impaction. J Clin Exp Dent. 2010;2:12-7.
4. Hattab FN, Rawashdeh MA, Fahmy MS. Impaction status of third molars in Jordanian students. Oral Surg Oral Med Oral Pathol Radiol Endod.1995; 79:24-9.
5. Scherstén E, Lysell L, Rohlin M. Prevalence of impacted third molars in dental students. Swed Dent J. 1989;13:7-13.
6. Brown LH, Berkman S, Cohen D, Kaplan AL, Rosenberg M. A ra¬diological study of the frequency and distribution of impacted teeth. J Dent Assoc S Afr. 1982;37:627-30.
7. Fanning EA, Moorrees CF. A comparison of permanent mandibu¬lar molar formation in Australian aborigines and Caucasoids. Arch Oral Biol. 1969;14:999-1006.
8. Haidar Z, Shalhoub SY. The incidence of impacted wisdom teeth in a Saudi community. Int J Oral Maxillofac Surg. 1986;15:569–71.
9. Kramer RM, Williams AC. The incidence of impacted teeth. A survey at Harlem hospital. Oral Surg Oral Med Oral Pathol. 1970;29:237-41.
10. Quek SL, Tay CK, Tay KH, Toh SL, Lim KC. Pattern of third molar impaction in a Singapore Chinese population: a retrospective radiographic survey. Int J Oral Maxillafac Surg. 2003;32:548-52
11. Hugoson A, Kugelberg CF. The prevalence of third molars in a Swedish population. An epidemiological study. Community Dent Health. 1988;5:121-38.
12 Gann SM,Lewis AB,Bonne B:Third molar formation and its development course;Angle Ortho;1962;32:271-79
13 Almendros-Marqués N, Alaejos-Algarra E, Quinteros-Borgarel¬lo M, Berini-Aytés L, Gay-Escoda C. Factors influencing the pro¬phylactic removal of asymptomatic impacted lower third molars. Int J Oral Maxillofac Surg. 2008;37:29-35.
14. Breik O, Grubor D. The incidence of mandibular third molar im¬pactions in different skeletal face types. Aust Dent J. 2008;53:320-4.
15. Elsey MJ, Rock WP. Influence of orthodontic treatment on development of third molars. Br J Oral Maxillofac Surg 2000;38:350–3.
16. Byahatti S, Ingafou MS. Prevalence of eruption status of third molars in Libyan students. Dent Res J 2012;9:152–7.
17. Padhye MN, Dabir AV, Girotra CS, Pandhi VH. Pattern of mandibular third molar impaction in the Indian population: a retrospective clinico-radiographic survey. Oral Surg Oral Med Oral Pathol Oral Radiol 2013;116:161–6.
18. Gupta S, Bhowate RR, Nigam N, Saxena S. Evaluation of impacted mandibular third molar by panoramic radiography. ISNR Dent 2011;2011:406714.
19. Richardson ME. The etiology and prediction of mandibular third molar impaction. Angle Orthod 1977;47:165–72.
20. Dachi SF, Howell FV. A survey of 3874 routine full mouth radiographs: II. A study of impacted teeth. Oral Surg Oral Med Oral Pathol 1961; 14:1165–9.