Original Article

Third Molar Impaction: Evaluation of the Symptoms and Pattern of Impaction of Mandibular Third Molar Teeth

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ABSTRACT

OBJECTIVES: The objectives of this study are to analyze the pattern; symptoms and pathology associated with impacted mandibular third molar teeth.

MATERIAL AND METHODS: This descriptive case series study was conducted at department of Oral &Maxillofacial Surgery Liaquat University Hospital Hyderabad.

The duration of study was from 1st Nov 2011 to 31st July 2012.Patients complaining of impacted teeth along with two diagnostic x rays, age, gender, type of impaction and associated pathology were recorded.

RESULTS: Total of 290 patients were included in this study. Out of these females were predominantly affected, mean age was found to be 24.41 years. Vertical impaction was the most common type of mandibular impaction(37.4%) and pain, caries was the common pathological symptom associated with impacted teeth.

CONCLUSION: Our study showed most common age group involved was group 1 sample sizes. Vertical and Mesioangular were most common impaction seen in this study group with common symptoms pain and caries.

KEY WORDS: Impaction, Caries, Mandible, associated pathology.

INTRODUCTION

The mandibular third molar is the most common tooth to become impacted. Impacted tooth is that tooth which fails to erupt or develop into the proper functional location. Impacted teeth may be non-functional, abnormal, or associated with the pathology[1, 2, 3].

There are many reasons which causes impacted tooth but commonly encountered basis is inadequate space in the mandible that accommodate the erupting teeth[1,4]. Teeth that fail to attain proper functional position in the arch, may be pathological and should beindicated for extraction, other common indications for extraction include, pain, pericoronitis, periodontal disease, caries,and cyst formation pathogy and pathological root resorption[5].

Studies have shown that impacted third molar weakens the angle area of mandible which makes it susptile to fracture either during removal or due to trauma[3].

The position of an impacted third molars are categorizeas radio-graphically according to the anterior-posterior space between the second molar and the mandibular ramus, its superior-inferior position, its medial lateral position in the body of the mandible and the position of its long axis, this classification is universally accepted, easy to coordinate between oral surgeons and even in record maintaining, treatment planning [6,7].

After carry outing this study we will be in a betterposition to analyze the pattern, diagnose the symptoms and pathology associated with impacted mandibular third molar and this will guide us to make the departmental protocol for management of impacted teeth.

MATERIALS AND METHODS

This study was done with the sample size of 290 patients aged 16 to 45 years with 500 impactions. This descriptive case series study was conducted at department of Oral & Maxillofacial Surgery Liaquat University Hospital Hyderabad which is tertiary care Hospital with catchment of around 4 to 5 million population of Hyderabad division.

The duration of study was from 1st Nov 2011 to 31st July 2012. All the patients presenting in outdoor patients department of Oral & Maxillofacial Surgery were examined by team of this study.Patients with complaining of impacted teeth were included in this study. A written informed consent was obtained from the patient or attendant. A comprehensive history was taken from the patient and questionnaire filled for each patient. At least two diagnostic radiographs (Plane X-rays like per-apical and orthopentomograme (OPG)) were taken for every case.

Data was analyzed in statistical program for social sciences (SPSS) version 11.0. The simple frequencies and percentage was computed for qualitative variables, like gender, symptoms/ pathology presented as n(%).

The level of impaction was determined using Winter's (Angulation) Classification[7,8] as follows: The classifica-

tion is totally based on the inclination of the impacted wisdom tooth (3rd molar) to the long axis of the 2nd molar.

***Mesio*-Angular:** When the tooth is in mesial direction towards the2nd molar[6,7].

***Disto*-Angular:** When the tooth is in distal direction/ posteriorly away from the 2nd molar[6,7].

Horizontal: The long axis of the 3rd molar is flat.

Vertical: The long axis of the 3rd molar is parallel to the long axis of the 2nd molar[6,7].

Buccal/Lingual Version: The tooth is in two sided position (tilled lingually or buccally) along with the above impaction [6,7].

RESULTS

Two hundred and ninety patients were seen. The age ranges from 16 to 45 years, with a mean±SD 24.41. One hundred and seventy eight (61.37%) were females 178 (61.37) were predominantly affected and males were 112 (38.62%).As shown in **Table I**. A total Five hundred impacted mandibular third molars were seen in both gender groups. As shown in **Table II**. Assessing the level of impaction using winter's classification showed that mesioangular were 164 (32.8%) impaction, distoangular were 56 (11.2%), vertical were187 (37.4%), horizontal were 83 (16.6%) and buccolinguo version were 10 (02%) in position. As shown in table II.

All patients with impacted teeth were reviewed, out of that 293 patients has symptom of pain, 169 patients has pericoronitis, 55 patients has periodontal disease, 201 patients has caries and 12 patients has other pathology like cyst, tumor. As shown in **Table III**.

A total of 111 (38.27%) impaction were seen in patients between the ages of 16 to 25 years, while 80 (27.58%) impaction were seen between the ages of 26 to 35 years, 66 (22.75%) were seen in ages of 36-45 years and 33 (11.37%) were seen in 46-55 years of age group persons. As shown in Table I.

TABLE I: BASE LINE CHARACTERISTICS (n=290)

Characteristics	n (%)
Age (in years)	**Mean ± SD 24.41**
Gender	
M	112 (38.62%)
F	178 (61.37%)
Age in years	
16-25 years	111 (38.27%)
26-35 years	80 (27.58%)
36-45 years	66 (22.75%)
46-55 years	33 (11.37%)

TABLE II: POSITION OF IMPACTED MANDIBULAR THIRD MOLARS (WINTER CLASSIFICATION) (n=290)

Angulation	No. of Impaction	Percentage
Mesioangular	164	32.8%
Distoangular	56	11.2%
Vertical	187	37.4%
Horizontal	83	16.6%
BL version*	10	02%
Total	**500**	**100%**

*Whereas * Bucco-linguo Version*

TABLE III: IMPACTED TEETH PRESENTED WITH SYMPTOMS/ PATHOLOGY (n=290)

Symptom/ Pathogy	Type of Impaction					Total
	MA[1]	DA[2]	V[3]	H[4]	BLV[5]	
Pain	98	24	101	65	05	293
Pericoronitis	101	02	66	00	00	169
Periodontal Disease	19	09	27	00	00	55
Caries	78	22	89	12	00	201
Other Pathology	03	07	02	00	00	12

Whereas;[1] Mesioangular, [2] Distoangular, [3] Vertical [4] Horizontal, [5]Bucco-linguo Version

DISCUSSION

Third molars often develop in inappropriate location, and therefore unable to erupt properly[9,10].

Third molars are more difficult to clean as compared to other teeth and it is due to having posterior location, emerge near the vertical mandibular and prone to early decay, compromised gingival status[9, 10].

Several studies have been done on impacted mandibular third molars in developed countries and these shows that mandibular third molars are the frequently impacted teeth in human with regarded as most common dental procedure done and where several millions of dollars are spent annually Worldwide[11, 12, 13, 14].

The principal age group was group 1 (Between 15-25 years) which correlates with the studies done in past in Pakistan, Malaysia and other countries.[10, 14, 15, 16]

This study also indicates that females were commonly affected with molar impaction as compared to males and this finding was also seen in other studies regarding gender distribution[14, 15, 17].

In our study in group 4 there was very less number of patients as compared to other groups and this could be due to early removal and neglected oral hygiene maintenance[11].

The literature shows the variation in the frequency of occurrence of different angular positions of the third molar and for this variation different characteristics of the residents are studied or state variations may explain these differences.

The results of our study shows that vertical position was 37.4%, mesioangular 32.8%, horizontal 16.6% and distoangular 11.2% and these results are comparable with Sasano T[20], Venta et al[21], Van der linden et al[22], but unlikely with Stanley et al[23] andKnutson et al[24] which showed the common impaction according to winter's classification was mesioangular.

Sasano T[20], Venta et al[21], Knutssonet al[24] and Punwutikorn et al [25] showed that with the distoangular and vertical position impaction there was high risk of acute diseases and this should be explained in terms that food impaction was common in such types of impactions and the results of our study were similar but there is variation in mesioangular impactions where pericoronitis was common finding.

CONCLUSION

Most common age group between 16-25 (Group 1) involve. Vertical and Mesioangular were most common impaction seen in this study group with common symptoms pain and caries. On the basis of our study results prophylactic extraction may be beneficial for patient but larger sample size study is required for further conclusion.

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