



ERUPTION STATUS OF THIRD MOLARS IN BIHAR. A COMPREHENSIVE STUDY

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ABSTRACT

Aim and Objective: The aim of the present study is to determine the number of third molars per person, amount of space for eruption of third molar between ramus of mandible and second molar status. To study the eruption status of third molar in population of Bihar.

Materials and methods: The study conducted at Department of Oral Medicine and Radiology, Patna Dental College and Hospital, Bihar. A total of 300 patients (108 females and 192 males) visiting outpatient department between the age group of 15 and 30 with a mean age of 22.5 years were selected before starting the study. **Results:** The results showed approximately 94.66% of the subjects had all four third molars, 8.6% had three third molars, 4.6% had two third molars and

2% had one third molars. Level of occlusal plane of third molar similar to that of adjacent tooth seen in 52.65%. Below the occlusal plane in 19.61%, totally impacted teeth noted in 27.73%. **Conclusion:** Because of increasing incidence of unerupted third molars and the association of numerous complications with these retained teeth, assessment of germ position and prognosis of third molar eruption is necessary for better patient management.

KEYWORDS: Third molar, Impaction, Prevalence.

INTRODUCTION

An impacted wisdom tooth is one of the most common findings, and is the tooth of concern by all departments. The third molars are the last teeth to erupt in all races despite racial variations in the eruption sequence. This late eruption is responsible for the third molar being the most frequently impacted tooth. Facial growth, jaw size and tooth size differ among different races and population groups and exhibit definite inheritance patterns.^[1] Agenesis of one or more third molar vary substantially in persons from different races with prevalence of approximately 1% in African Negro and Australian aboriginal samples,^[2] 10 to 25% in whites,^[3] difference in sex distribution. Gorgani⁶ (1990) found that the rate of agenesis of third molar for black and white population ranged from 7 to 10% with bilateral agenesis occurring in 79% of the sample.

An unerupted or partially erupted tooth can cause mild to severe symptoms. Patients, who have unerupted teeth, seek dental treatment because of pain or swelling or for other reasons. The literature shows that tooth impaction is a frequent phenomenon. However, there is considerable variation in the prevalence and distribution of impacted teeth in different regions of the jaw.^[4]

Even with the presence of latest imaging modalities of concern for assessing the status of third molars. Orthopantomography or panorama still remains 'an old friend' to all oral diagnosticians, oral and maxillofacial surgeons, orthodontists, epidemiologists and other dentists,^[5] panoramic view^[6] is superior to periapical X-rays in its coverage when third molar status has to be assessed. To date, there are very few documentations are reported regarding pattern of third molar eruption status in the South Indian population. The objective of the present study is to determine the number of third molar per person (impacted or agenesis), angulation, level, amount of space for eruption of third molar between ramus of mandible, number of third molars with occlusal caries, periodontal lesions, pericoronal and periapical lesions, status of root and to study the difficulty index.

MATERIALS AND METHODS

A total of 300 consecutive patients (108 females and 192 males) visiting outpatient department between the age group of 15 and 30 were selected. Entire study conducted for the duration of 6 months. All these outpatients had some or the other problems related to teeth.

The details regarding study were explained for each of the patient and informed consent was taken. All patients were examined clinically to see the status of third molar and, based upon their clinical status, they were classified as completely erupted, partially erupted and unerupted. The eruption status was assessed by using visual method with the help of probe.

The patients, who had problems related to third molar teeth, were classified as asymptomatic and symptomatic cases. All patients underwent thorough extraoral and intraoral examination. When examined clinically, the status of the surrounding tissue of third molar was examined to find out, whether source of any inflammation, pocket ulcers or any white lesion. Later third molar was classified as partially erupted or completely erupted or unerupted. To avoid bias, all the patients were examined by single observer.

The teeth, which were partially erupted and unerupted, were subjected for radiographic examination. Each patient after clinical examination was subjected for panoramic radiography.

The teeth radiographically noted are divided as mesioangular, distoangular, vertical and horizontal impactions.

Erupted and partially erupted teeth were further clinically examined for any pathology, like caries, periodontal pathology, pericoronal or periapical pathology, etc. After thorough clinical examination, all patients were subjected for radiographic examination, After both clinical and radiographic examination, the impacted teeth noted were divided as mesioangular, distoangular, vertical and horizontal, transverse and bud stages of impactions.

RESULTS

Among total 300 consecutive patients visiting our department for some or the other dental problems, only 44 cases (34 males and 10 females) were symptomatic cases, whereas remaining 256 cases were asymptomatic. The mean age of the study group was 22.5 years (± 2.9079). Among complaints related to third molar cheek bite, lymphadenopathy, ear pain, difficulty in swallowing, food lodgment, pericoronitis and trismus were noted. Among anomalies related to teeth, 6 patients had microdontic upper and lower third molars and hypoplasia with lower both side third molar. In pathology related to third molar, 34 (11.33%) of teeth were showing occlusal caries, 2 patient (0.66%) had periodontal pocket and 6 (2%) patients had pericoronal pathology. Among total number of teeth, 1036 (91.51%) teeth were

easy to extract and remaining 66 (5.8%) were difficult to extract. Table 1 shows 94.66% subjects had all four-third molars, 8.66% had three-third molars, 4.66% had two-third molars and 2% had one-third molar. Only 3.3% of the subjects had agenesis of all third molars. Males had 17.91% more third molar at level B eruption than females.

Table 1: Total number of molars per person.

GENDER	NO OF 3 RD M/P(4)	NO OF 3 RD M/P (3)	NO OF 3 RD M/P (2)	NO OF 3 RD M/P (1)	NO OF 3 RD M/P (0)	TOTAL
MALE	166(86.45%)	14(7.29%)	8 (4.1%)	0	4 (2.08%)	192
FEMALE	78(72.22%)	12(11.11%)	6 (5.58%)	6 (5.55%)	6(5.55%)	108
TOTAL	244 (94.66%)	26 (8.66%)	14 (4.66%)	6 (2%)	10 (3.33%)	300

Root Completion

More than 77% of the roots in upper right molar teeth had complete root formation and 11.27% had only 1/3rd or 2/3rd root completed. Whereas more than 87% of the upper left third molar had complete root formation with least showing 2/3rd of root formation (5.8%). In lower left side (83%), these were showing complete root formation. The lower right side 7% of the roots were completely formed, whereas least showing more than 2/3rd root formation (4.32%). There was more tendency for males to have incomplete root formation than females.

DISCUSSION

The third molar is the most frequently impacted tooth with a frequency of occurrence generally reported to be from 18 to 32%.^[7] As racial variation, nature of diet, degree of use of masticatory apparatus and genetic inheritance can affect the jaw size and tooth size, studies of prevalence and incidence of impacted third molars have been carried out on different population groups.^[8,9] Although various complaints are related to third molars, acute pericoronitis is most commonly found among young adults with erupting lower third molars.^[10] In our study, only 14% of the patients had painful symptoms related to third molar similar to study by Peterson^[11] and males were showing more symptoms than females similar to Geoffrey hoe^[12] in 1985. Peak age of occurrence varies from 21 to 25 years, the findings were similar to our study. The mean age of our study group was 22.5 years (± 2.9079).

Our results showed differences in both male and female groups which were statistically significant (Chi-square test) and which was in agreement with the results obtained from Schersten et al.^[13] The mean age in our study was 22 years with 27.73% of the third molars were unerupted (level C eruption). This finding is in agreement with Sandhu et al.^[8]

CONCLUSION

Radiographic diagnosis of the presence, position and degree of third molar formation is a crucial part of integral treatment planning. The frequent impaction of lower third molars can only be reliably predicted when the calcification of the crown or of one-third of the root has been completed. Early removal of impacted third molars is justified because of the possibility of increased complications at a later age. Removal of painless impacted third molars is indicated, if pathological problems are probable.

REFERENCE

1. Odusanya SA, Abayomi IO. Third molar eruption among rural Nigerians. *Oral Surg Oral Med Oral Pathol*, 1991; 71: 151.
2. Stewart RE, Barber TK, Thoutman KC, Wei SHY. *Pediatric dentistry: Scientific foundation and clinical practice* (1st ed). St Louis: CV Mosby, 1982: 91.
3. Banks HV. Incidence of third molar development. *Angle Orthod*, 1934; 4: 223-33.
4. Chu FCS, Li TKL, Lui VKB, et al. Prevalence of impacted teeth and associated pathologies—a radiographic study of the Hong Kong-Chinese population. *Hong Kong Med J.*, 2003; 9: 158-63.
5. Barrett MJ. Dental observations on Australian aborigines: Tooth eruption sequence. *Aust Dent J.*, 1957; 2: 217-27.
6. Venta I. Predictive model for impaction of lower third molars. *Oral Surg Oral Med Oral Pathol*, 1993; 76: 699-703.
7. Quek SL, Tray CK, Tay KH, Toh SL, Lim KC. Pattern of third molar impaction in a Singapore-Chinese population: A retrospective radiographic survey. *Int J Oral Maxillofac Surg*, 2003; 32: 548-52.
8. Sandhu S, Kaur T. Radiographic evaluation of the status of third molars in the Asian-Indian students. *J Oral Maxillofac Surg*, 2005; 63: 640-45.
9. Hattab FN, Rawashdeh MA, Fahmy MS. Impaction status of third molars in Jordanian students. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 1995; 79: 24-29.
10. SA Leone, et al. Correlation of acute pericoronitis and the position of the mandibular third molar. *Oral Surg Oral Med Oral Pathol and Oral Radiol and Endodontics*, 1986; 62: 245: 50.
11. Thoma Kurt H. *Textbook of Oral Surgery*, 1948; 1.
12. Howe Geoffrey L. *Minor Oral Surgery*, 1985.

13. Scherstén E, Lysell L, Rohlin M. Prevalence of impacted third molars in dental students. *Swed Dent J*, 1989; 13: 7-13.