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# Evaluation of the Impact of Impacted Mandibular Third Molars on Surrounding Structures: A Clinical and Radiographic Analysis in Students of Tagore Dental College and Hospital

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**ABSTRACT**

Useful purpose for third molars has become more difficult, especially when one considers that people experience pain and disease when third molars are not extracted, and many other people experience pain and morbidity when they are extracted. Whether there is a need for these teeth in the dentition is a question worth asking? This study aims to present data about the prevalence and distribution of mandibular third molars students of Tagore Dental College & Hospital. The sample of 200 students was selected by Simple Random Sampling Method in the age group between 21 to 25 years. Intraoral periapical radiographs of right and left mandibular third molars were taken and clinical examination was done to assess the presence of pericoronitis, periodontal pocket, proximal caries, root resorption in distal surface of second. On clinical examination, 23% of pericoronitis was present, 12% of periodontal pockets, 8% proximal caries and no resorption were observed. Within the limitations of this study, it was concluded that significantrelatively less impact of mandibular third molar on second molars. Further studies are recommended with increased sample size.

**Key words:** Mandibular, Dental, College, Hospital, Radiographic

## INTRODUCTION

A major conclusion of evolution is that the human jaw has shrunk from its much larger ape size to the smaller modern human size as humans evolved. In the process, the jaw has became too small for the last teeth to erupt which are normally the third molars. This constant change in third molar pattern is attributed to Phylogenic Theory and Disuse theory such as alteration in the usage and purpose of teeth, reduced masticatory demand, change in total arch length[1].

Useful purpose for third molars has become more difficult, especially when one considers that people experience pain and disease when third molars are not extracted, and many other people experience pain and morbidity when they are extracted. Whether there is a need for these teeth in the dentition is a question worth asking?[2]

Various studies have reported evaluating the function and importance of third molars but there are very few studies the impact of third molars among the younger age group in Chennai. The aim of this study is to evaluate the impact of impacted mandibular third molars on surrounding structures- a clinical and radiographic analysisin students of Tagore Dental College and Hospital.

## MATERIALS AND METHODS

The sample of 200 students was selected by Simple Random Sampling Method. This study

was approved by the Ethical committee of Tagore Dental College and Hospital and an informed consent form was obtained both in English and mother tongue of the sample.

The students in the age group of 21 to 25 years and the presence of impacted mandibular third molar were included in the study. Students with limited mouth opening were excluded.

Clinical examination was done to assess the presence ofpericoronitis, periodontal pocket, proximal caries in distal surface of second molar and anterior teeth crowding.

The criteria for assessing Pericoronitis were presence of pain, pus discharge and inflammation around the operculum covering the erupting mandibular third molar. A Williams Probe was used to measure the probing pocket depth on distobuccal and distolingual points of the mandibular second molar and the deepest point was recorded as the probing depth. If it was more than 4mm, it was considered as presence of a periodontal pocket.

Intraoral periapical radiographs of right and left mandibular third molars were taken. Radiographs were assessed for development of third molar, type of impaction, proximal caries and root resorption in distal surface of second molar.

A Visible discontinuation in the root morphology outline on the distal surface of mandibular second molar was considered as root resorption. The criterion for proximal caries in distal surface of second molar was a visible destruction of tooth structure.

## RESULTS

| Criteria | Percentage (%) |
|---|---|
| Pericoronitis | 23% |
| Proximal caries in second molar | 8% |
| Periodontal pocket in distal surface of second molar | 12% |
| Root resorption in second molar | 0% |

## DISCUSSION

Completely erupted third molars has beneficial functions such as it can be used as an abutment for fixed or removable prosthesis when second molar is absent. It can also be used as an anchorage tooth in orthodontics.

However, the disadvantages of impacted molars are pain from infection, root resorption and proximal caries in second molars, need for surgery and its complications and thereby it affects the psychological well being of the patient[2].

For generations many dentists recommended prophylactic extraction of impacted wisdom teeth as it may havean adverse effect on the surrounding structures. It is also much easier in the younger age, as bone is less denser and the younger patients will be able to tolerate the surgical procedure well when compared to the older people.

Pericoronitis is the most common indication for third molar surgery[3], and mainly occurs in adolescents and young adults but less commonly in older people[4]. Von Wowernet al[5] reported that over 4 years of follow up, 10% of lower third molars develop pericoronitis. In our srudy, we found that 23% hadpericoronitis.

In our study, we found12% of periodontal pocket distal to mandibular second molar. Several studies have evaluated the presence of periodontal pocket on distal surface of second molar only after extraction of mandibular third molars. We do not have compare any study to compare our data.

Very few impacted third molars cause dental caries (decay) of second molars[4] thoughestimates vary (1% to 4.5%)[6]. In our study, we found 8% occurrence of distal root caries of mandibular second molar. The fear of secondmolar caries is not a justification forprophylactic removal.

We found 0% incidence of root resorption. One review concludes that the risk of second molar root resorption by impacted third molars is low, and is likely to occur in younger patients for whom surgery is claimed to be associated with less morbidity[4].

In our study, we have found that there was less impact on second molars. Noroot resorption was observed for second molars, and only 8% had proximal caries on distal surface of second molar, whereas other studies have reported higher percentage of proximal caries but in an older age group. The other notable effect of third molar was 12% presence of periodontal pockets in relation to the distal surface of second molars. The same group should be followed over a period of time to determine the effects of impacted third molars.

## CONCLUSION

Within the limitations of this study, we conclude that there is relatively less impact of mandibular third molar on second molars. Further studies are recommended with increased sample size.

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