

Incidence of Missing Lower Third Molars in Patients Reporting for Orthodontic Treatment

Shruthi.M

Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 600077, Tamil Nadu, India. Email:151701049.sdc @saveetha.com

Dr. Remmiya Mary Varghese

Reader, Department of Orthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 600077, Tamil Nadu, India. Email: remmiyav.sdc@saveetha.com

ABSTRACT

Introduction: The development of third molars and their interaction with the rest of the dentition has been of great concern to general dentists and dental specialists for a long time. There are no previous studies to find out the incidence of missing lower third molars in patients reporting for orthodontic treatment.

Aim: The aim of this study is to find out the incidence of missing lower third molars in patients reporting for orthodontic treatment.

Materials and methods: A retrospective evaluation was conducted to analyze the subjects who presented for orthodontic treatment between August 2019- March 2021 who visited a private dental hospital in Chennai. The collected data was subjected for data analysis.

Results: The results of the study found Higher number of patients in the age group of 18-21 years have visited hospital for orthodontic treatment 46.31%(n=257); Higher number of male patients 50.81% (n=282) have undergone treatment for trigeminal neuralgia; In Most patients third molars were present 79.46% (n=441); third molar absent in only 20.54% (n=114);

Another important finding of this study is that there is no statistically significant association between missing lower third molar and age. gender. [p>0.05]

Keywords: third molar; lower arch ; missing ;incidence; orthodontic therapy.

Introduction:

Third molar is a tooth characterized by variability in the time of its conformation and calcification, its crown and root morphology, its course of eruption and final position, presence or absence in the oral depression. [1] Third molars start appearing on radiographs as early as the age of 5 times and as late as the age of 16 times, generally erupting in the oral depression between the periods of 18 and 24, and they present the loftiest rate of impaction.[2]

Orthodontic treatment, especially during the period of active growth, may significantly impact the development of the dentition. The main issues, concerning the third molars that are related to orthodontic treatment and have been most considerably reported throughout the literature are the possibility of their eruption or impaction in relation to genetically destined factors, the possible influence of orthodontic treatment lines in their position and their influence in orthodontic post treatment mandibular incisor relapse.[3]

Although, in the maturity of cases, third molars aren't directly involved in orthodontic treatment, the fact that, in some cases, they can impact the ultimate or be told by it, dictates their direct involvement in treatment planning. The possibility of eruption of third molars is of important consideration in treatment planning and in the long- term conservation of the dentition and, thus, of particular interest to dentists and orthodontists.[4,5]

Thus the development of third molars and their commerce with the rest of the dentition has been of great concern to general dentists and dental specialists for a long time.[6] There are no former studies to find out the prevalence of missing lower third molars in cases reporting for orthodontic treatment. With this background in mind, this study fulfills this crunches and aims to find out the prevalence of missing lower third molars in cases reporting for orthodontic treatment.

Our team has extensive knowledge and research experience that has translate into high quality publications[7],[8],[9],[10],[11],[12],[13],[14],[15],[16],[17],[18] ,[19–23] [24],[25],[26]

Materials and methods:

Study designs and Study setting

The present study was conducted in the University setting (Saveetha Dental College and Hospitals, Chennai, India). Therefore the data available is of cases from the same geographic position and have analogous race. This retrospective study was carried out with the help of digital case records of cases who reported to the sanitarium. Ethical concurrence to conduct this study was attained from the scientific review board of the sanitarium.

Sampling:

Data of 555 cases were reviewed and also uprooted. All cases who reported for orthodontic treatment in the given duration of time period were estimated. Only applicable data was included to minimize slice bias. Simple arbitrary slice system was carried out. Cross verification of data for error was done by presence of fresh critics and by photographic evaluation. Deficient data collection was barred from the study.

Data collection

A single calibrated monitor estimated the digital case records of cases who reported to Saveetha Dental College from August 2019 to March 2021. For the present study, additional criteria was data of cases who reported for orthodontic treatment within the age group of 18-30 times. Data attained were age, gender, Presence/ absence of lower third molars. All attained data were tabulated into Microsoft excel documents. Statistical analysis The collected data was tabulated and analysed with Statistical Package for Social Lores for Windows, interpretation20.0 (SPSSInc., Vancouver style) and results were attained. Categorical variables were expressed in frequency and chance. Chi square test was used to test association between categorical variables. Chi square tests were carried out using age, gender and as independent variables and dependent variables. The statistical analysis was done by Pearson Chi square test. P value<0.05 was considered statistically significant.

RESULTS:

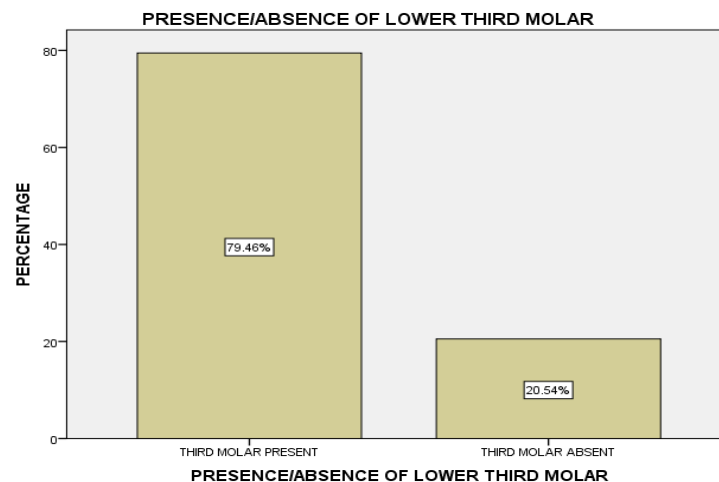


Figure 1 Bar graph representing the percentage distribution of the presence/ absence of lower third molars. X-axis shows the presence/ absence of lower third molars while the Y-axis shows the percentage of patients. In Most patients third molars were present 79.46% (n=441); third molar absent in only 20.54% (n=114).

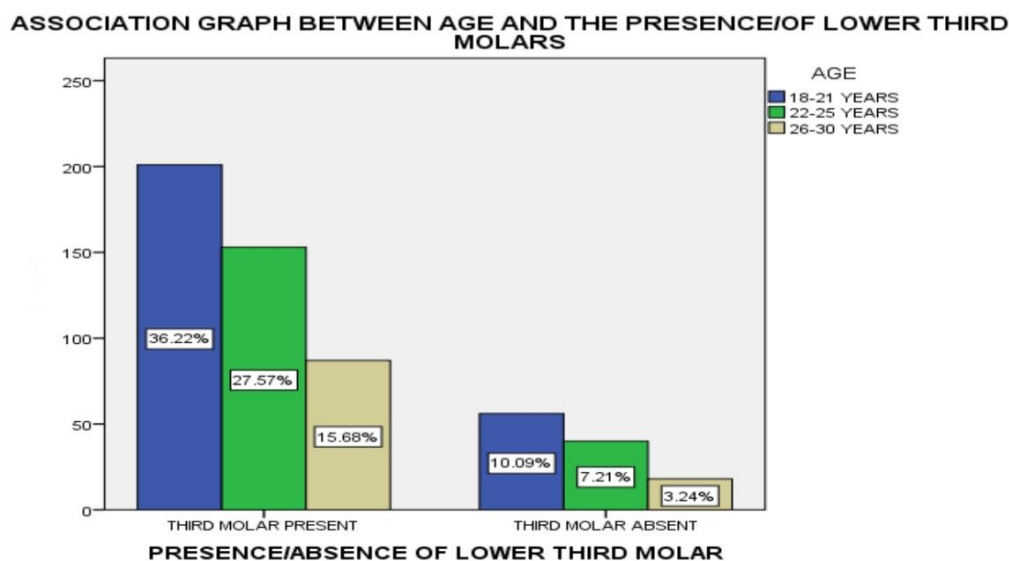


Figure 2 Bar graph representing the association between age and the presence/absence of lower third molar teeth. X- axis represents the presence/ absence of the lower third molar and Y axis represents the age groups. Blue colour represents the age group of 18-21 years; Green colour represents the age group of 22-25 years; Grey colour represents the age group of 26-30 years. Chi square test was done and the association was found out to be not statistically significant. Pearson chi-square value :0.992, DF:2, p value :0.609 (>0.05) hence not statistically significant, proving that missing lower third molar has no significant association with age.

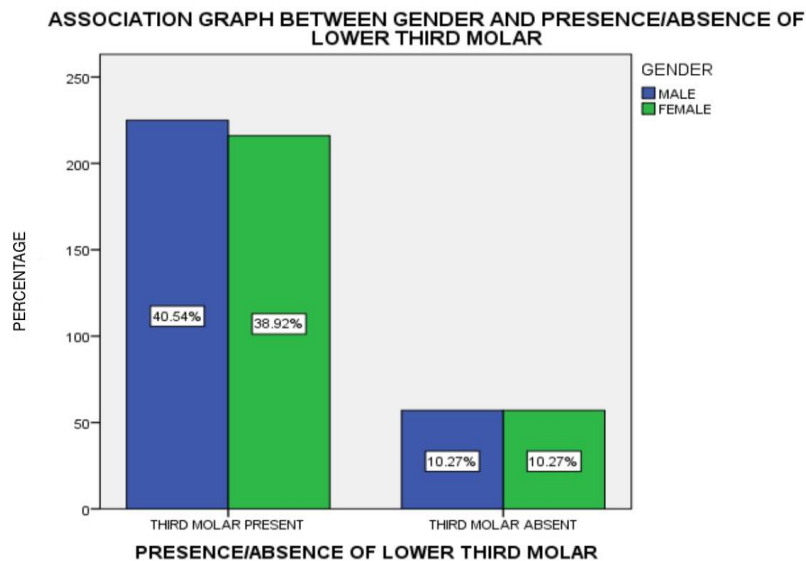


Figure 3: Bar graph representing the association between Gender and the presence/absence of lower third molar teeth. X- axis represents the presence/ absence of the lower third molar and Y axis represents the gender. Blue colour represents the males; Green colour represents females. Chi square test was done and the association was found out to be not statistically significant. Pearson chi-square value :0.038, DF:1, p value :0.846 (<0.05) hence not statistically significant, proving that missing lower third molar has no significant association with gender.

DISCUSSION:

The present study delved the prevalence of lower third molars in a large sample of orthodontic patients. Because of ethical variation, nature of one's diet, degree of use of masticatory outfit, and inheritable heritage can affect the jaw size, tooth size, and facial growth, differences can be seen among studies of the frequency of third molar teeth performed in different populations.

Massler et al reported that third molar calcification starts at 7 to 10 times of age, calcification of the crown is completed at 12 to 16 times of age, and eruption begins at 17 to 21 times of age. Hence we examined cases progressed 18 to 30 times to determine the lower third molar prevalence.[27]

The Absence of lower third molars seen among orthodontic cases visiting the sanitarium in our study was 20.54, lesser than that reported by Levesque et al for the French-Canadians (9.0%) [28] or that reported by Venta et al for Finnish scholars (12.0%). [29]

The study showed no significant association between gender and the presence / absence of lower third molar in all calculated values ($p > 0.05$). This agrees with the results reported by some other investigators. However, this is contradictory to Daito et al who showed that third molar agenesis was more common in women than in men.[30]

The study showed no significant association between gender and the presence/ absence of lower third molar in all calculated values ($p > 0.05$). This agrees with the results reported by some other investigators. Still, this is antithetical to Daito et al who showed that third molar agenesis was more common in women than in men. (30,31) The strength of this study was that the records of cases seen during the period of study were used; thus there was no issue regarding declined participation from cases and in addition there was no issue regarding indecorous case selection. The weakness of the study

being a retrospective study, there was no possibility for direct commerce with the cases and the study reckoned only on the case wastes, clinical photos and the sample size was also limited and confined to only the South Indian population. Also, the control group was grounded on an orthodontic population rather than the general population, which meant there was an advanced presence of malocclusion or some other dental anomalies similar as hypodontia, microdontia, or impaction. Still this study will exfoliate light for unborn studies that study an indeed larger population; prospective RCTs are demanded to further support our substantiation.

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CONFLICT OF INTEREST:

All the authors declare that there was no conflict of interest in present study.

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