ORIGINAL ARTICLE DENTISTRY

Journal of Contemporary Medicine and Dentistry
www.jcmad.com

ISSN [P-2347-4513]
ISSN [O-2349-0799]
Year: 2020
Volume: 8
Issue: 1
58-61

Mandibular Third Molar Impactions in South India-A Descriptive Cross-Sectional Study

R Anitha[1], S Devakumari [2], DS Dinesh [3], S Devameena[4]

1. Professor and HOD, Department of Dentistry, Govt. Rajaji Hospital, Madurai Medical College, Tamil Nadu, India.
2. Associate Professor and HOD, Department of Dentistry, Indira Gandhi Medical College and Research Institute (Govt.), Puducherry-605008, India.
3. Professor and HOD, Department of Conservative Dentistry and Endodontics, Sri Venkateswara Dental College and Hospital, Ariyur, Puduchery.
4. Senior Lecturer, Department of Prosthodontics, Sri Venkateswara Dental College and Hospital, Ariyur, Puduchery.

Abstract

Background: *Mandibular third molars are the most common impacted teeth in human dentition. This is attributed to the evolution and modern dietary habits. Infections and pathologies from third molars are major factors affecting oral health next to dental caries and periodontal diseases. Surgical removal of mandibular third molars is definitely indicated to prevent the risk of odontogenic cyst and tumors.* ***Materials and Methods:*** *A descriptive cross-sectional study was undertaken to analyze the patterns and prevalence of mandibular third molars in Govt. Rajaji hospital Madurai, India. Demographic, clinical and radiological data of one hundred patients (N=100) who underwent surgical removal of lower third molars were retrieved tabulated and analyzed using SPSS software version 16.* ***Results:*** *The results demonstrated that Females predominantly underwent surgical removal of mandibular third molars. The common age group is 26 to 35 years. The distoangular type being the most common impaction type and Pericoronitis is the most common etiology.* ***Conclusion:*** *The study proves that the mandibular third molar impactions are prevalent in the south Indian population in and around Madurai.*

Keywords*: Distoangular Impactions, Pericoronitis, Prevalence, Third Molar Impaction, Wisdom Tooth*

Address for correspondence: Dr. S. Devakumari, Associate Professor and HOD, Oral and Maxillofacial Surgeon, Mobile: 9444552688 Email: gopalsdevakumari@gmail.com

Date of Acceptance: 09/04/2020

Introduction

Evolutionary process had led to reduction in jaw size (more parabolic jaws) and tooth size [(1)]. Evolutionary changes coupled with adherence to modern soft diet had increased the incidence of impacted third molars. Studies from western countries and African countries support this hypothesis. Impactions of mandibular third molars lead to early caries formation (due to the complex differential anatomy of the tooth) and food impaction. Mandibular third molars being the last tooth to erupt get impacted and leads to Pericoronitis, dental caries and serious life-threatening fascial infections. Prevalence and patterns of impacted mandibular third molars were reported from various states of India and worldwide. A study was conducted to analyze the patterns and prevalence of mandibular third molar impactions in south Indian population, Madurai.

Materials and Methods

A descriptive cross-sectional study was conducted in the department of Dentistry, Madurai medical college on prevalence and patterns of impacted mandibular third molars. Demographic, clinical and radiological

data (IOPA) were retrieved for 100 patients (January 2018 to August 2018) for the assessment.

Following parameters were assessed

- Age.
- Sex.
- Etiology.
- Location of impacted third mandibular third molar (48 or 38).
- Angulation (winters classification).
- Position and level of impacted tooth (Pell and Gregory classification).

Inclusion criteria

- Age group—16 to 52 yrs.
- Patient who underwent surgical removal of 38 or 48 under LA by Trans alveolar method.

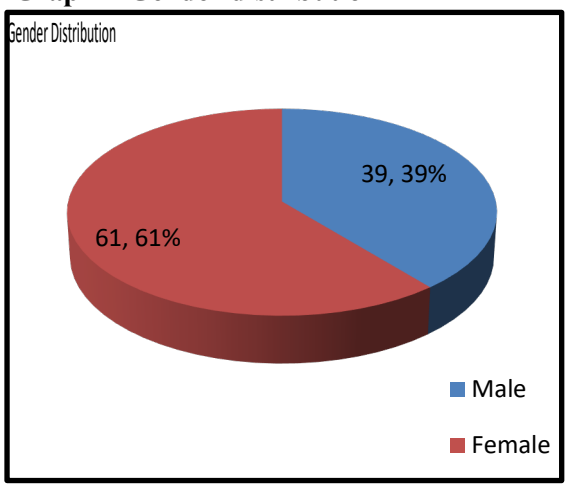
Exclusion criteria

- Missing second molars.
- Previous history of surgery in the mandible.
- Removal for orthodontic reasons.
- Buccoangular and ectopic impactions.
- Impacted tooth removed by closed methods

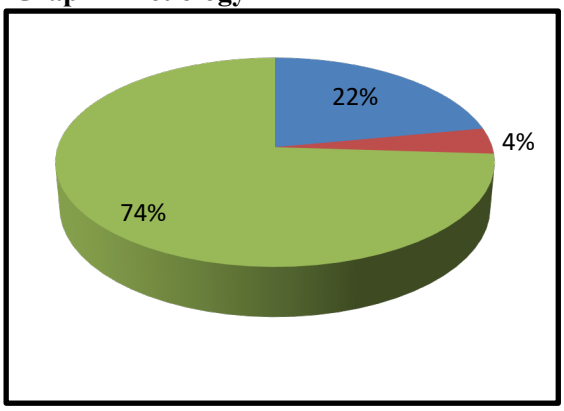
The analysis of retrieved data was done using SPSS software version 16.

Results

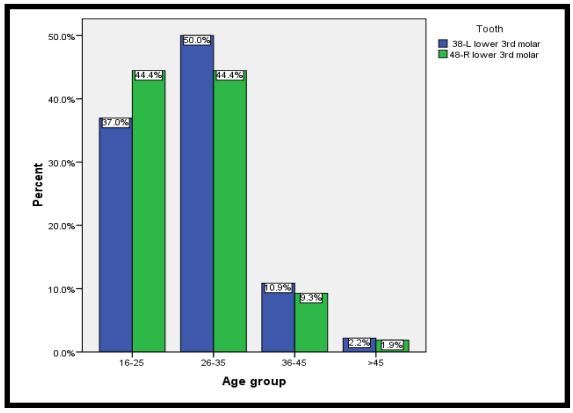
Graph 1-Gender distribution



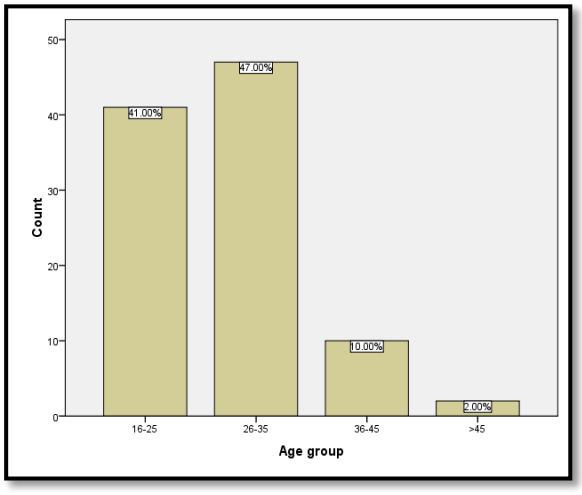
Graph 2-Aetiology



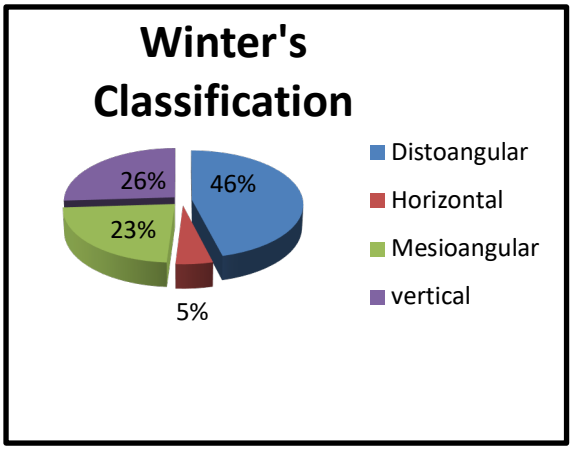
Graph 3- Distribution based on Right and Left side



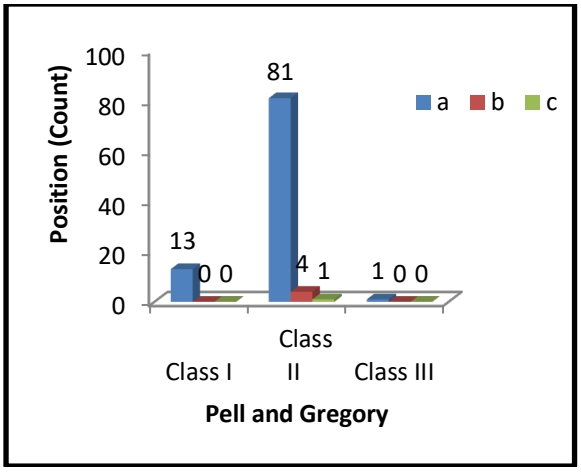
Graph 4-Age distribution



Graph 5-Angulation of impacted tooth.



Graph 6-Position of the impacted tooth



Impacted mandibular third molars were more prevalent in the age group of 26 to 35 yrs.ie 66%. Females had undergone surgical removal more than males (61%). The most common etiology is Pericoronitis (74%) followed by dental caries. Distoangular (winters classification) is the commonest type of impacted tooth (46%) that was removed followed by vertical type (26%). Position and level as ascertained by Pell and Gregory classification was class 2 and position A (81%) was the most common finding.

Discussion

Removal of Impacted mandibular third molars is common oral surgical procedures that are routinely done in oral surgical clinics. Mandibular third molars are the most common tooth to get impacted in jaws than maxillary third molars, this is due to the presence of compact bone in the mandible and greater mesio distal width of posterior arch in maxilla[2,3,4]. India being the most diversified country with dense population it presents with varied differences in the prevalence of impacted mandibular third molars from different states. This is due to racial differences and difference in food habits. Our study shows strong females' preponderance although some studies contradict about gender predilection [5-7]. This is due to early growth spurt in females and late mineralization of mandibular third molars. In females the end of growth spurt coincides with the onset of menarche and now the age of menarche is found to be early by 2. 8 years [8-10] because of change in life style and dietary pattern. As far as age is concerned, impacted tooth removal was mostly done at the age group of 26 to 35 years according to our study. This is because in India prophylactic removal of potentially impacted third molars were not done and only symptomatic tooth were removed one by one under LA. This can also be attributed to lack of insurance cover for these elective oral surgical procedures widely.

The most common type of third molar impaction reported for surgical removal was Distoangular impactions. The study by Rajdan [11] in North India and Venu Gopal Reddy [12] in Dharwad South India shows vertical as the most common type of impactions. This may be due to the fact that their sample collection was not on postoperative records. Most of the vertically impacted third molars were attempted by closed methods in our setting. Pericoronitis is the commonest cause for impacted tooth removal according to our study. Stanely et al;[13] observed that the pathologies associated with third molars are Dental caries, Pericoronitis, Root resorption of second molars, cysts and Tumors of the jaws. Mandible is the most common site of impacted third molars due difference in resorption pattern in ramus of the mandible leading to reduction in the angulation of the mandible or due to increase in mandibular plane angle [14]. Elliason et al;[15] Morris et al;[16] and Heshemipour et al;[17] in their studies on impacted third molars had clearly proven that impacted mandibular third molars is prevalent

all over the world in different kind of populations but their patterns vary.

Conclusion

This study on the south Indian population analyses prevalence and patterns of impacted mandibular third molars in this region. Incidence of impacted tooth is increasing because of modern dietary habits and evolution. With this trend it is imperative to equip Indian health care system with oral and maxillofacial surgeons in all government run hospitals.

Conflict of Interest: *None declared*
Source of Support: *Nil*
Ethical Permission: *Obtained*

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