

Reasons of Impacted Third Molar Extractions: A Retrospective Review

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Abstract

Introduction: Pericoronitis and caries are the most common reasons of impacted third molar surgical extractions. Extraction of asymptomatic and pathology free Impacted Third Molars (ITMs) is generally not recommended.

Objectives: To determine the frequency of reasons associated with extraction of Impacted Third Molars (ITMs).

Subjects and methods: This retrospective analysis was performed at Fatima Jinnah Dental College and Hospital. Patients' surgical record and radio-graph were analyzed to find out the reasons of extraction in Impacted Third Molars (ITMs) teeth.

Results: Mean age was 28.04 years +/- 7.3 standard deviation. Females were more common 66 (62.9%) than the males and lower molars were more commonly involved impacted teeth as compared to maxillary molars. Most common reason of extraction was pain due to caries 49 (38%) followed by pericoronitis.

Keywords: Impacted Third Molars (ITMs); Pathology

Introduction

Third molar, a small sculpture of enamel and dentin is being blamed for number of problems. These problems can range from simple discomfort during its eruption to very complex unexplained facial pain and development of invasive tumors. Third molars start to develop at the age of 08 years and they usually erupt at the age of 18 years, however, there can be variations in normal eruption of third molars [1,2]. Third molars are the most common impacted teeth and surgical extractions of Impacted Third Molars (ITMs) is a common oral surgical procedure [1-3].

The most common indications for third molar surgery were pericoronitis, caries in third or second molar, pulpal inflammation, and periodontal disease [3]. Prophylactic extraction of asymptomatic disease free third molars was not recommended by most authorities either due to lack of sufficient knowledge of developmen-

tal pathologies or to the risk of surgical complications [4-6].

A study conducted in Nigeria confirmed that most common indication for third molar surgery was pericoronitis in which most of the patients were in 21-30 years of age group and females being more common. In this study, prophylactic extraction of third molars were performed in only 4.2% of cases [7]; however, some authors have reported very high rates of prophylactic removal of third molars [8]. A study conducted in Saudi Arabia showed high rate 39% of distal surface caries in second molars adjacent to impacted mandibular third molars [9].

Impacted mandibular third molars were blamed for high incidence of mandibular angle fractures, however, most authors were against the prophylactic surgery for the prevention of fractures [10]; similarly, the incidence of pericoronitis associated with third molars was very low and preventive surgical removal was not a good choice [11].

The objective of this study was to determine the incidence of pathology associated with partially impacted maxillary and mandibular third molars and their association with age. The results of this study will be helpful in making patients aware of third impactions and its consequences so that patients can make informed decision to retain or extract the Impacted Third Molars (ITMs). This study will also be helpful in educating patients about prevention of caries and periodontal diseases associated with Impacted Third Molars (ITMs).

Methods and Material

This retrospective review was performed at Oral and Maxillofacial Surgery (OMS) Out Patient Department (OPD) of Fatima Jinnah Dental College and Hospital Trust (FJDCH) from 1st September 2017 till 30th September 2018. A convenient sample of 105 patients with 126 partially impacted maxillary and mandibular third molars that underwent surgical extractions was included in this study. Surgical record and radiograph of the patients were reviewed to collect data. Patients' age, gender, impacted tooth, angulations and reason of extraction were recorded on the pro forma. Data was entered and analyzed using SPSS version 20. Frequency percentages of patient's age, gender, impacted tooth number, angulations and reasons of extraction were calculated.

Results

A total of 105 patients with 126 partially impacted maxillary and mandibular third molars were included in this study. Minimum age was calculated as 17 years and maximum age was 45 years with mean age of 28.04 years +/- 7.34 Standard Deviation (SD). According to the age of patients, they were divided into three 3 groups; frequency percentages of each age group (Table 1).

S. No.	Age Groups	Age Range	Frequency	Percentage
1	Group I	17-24	33	31.4%
2	Group II	25-34	43	41%
3	Group III	≥35	29	27.6%

Table 1: Showing frequency percentages of each age group of patients included in this study.

Out of total 105 patients, 39 (37.14%) were males and 66 (62.9%) were females. Out of 126 teeth, tooth number 18 (upper right third molar) were 17 (13.5%), tooth number 28 (upper left third molar) were 26 (20.6%), tooth number 38 (lower left third molar) were 39 (31%) and tooth number 48 (lower right third molar) were 44 (34.9%) respectively. Tooth angulations of partially impacted teeth were calculated as, mesio-angular teeth were found to be 63 (50%), horizontal angulated were 15 (11.9%), Vertical impactions were 28 (22.2%) and disto-angular 20 (15.9%) respec-

tively with mesio-angular impactions being the most common. The most common reason of surgical extractions was pain due to caries in 49 (38%) cases. Prophylactic extractions were only performed in 7 (6.6 %) cases with the patient counselling and consent. The frequency percentages of each reason of extraction of impacted third molars (Table 2).

S. No.	Reasons for Impacted Third Molars (ITMs)	Frequency	Percentages
01	Pain in Impacted Third Molars (ITMs) due to caries	49	38.9%
02	Pericoronitis	24	22.9%
03	Periodontal Disease in second molar	15	14.3%
04	Caries in second molar	16	15.2%
05	Root Resorption of second molar	02	1.9%
06	Prophylactic Extraction	02	1.9%
07	Odontogenic cyst or Tumor associated with third molar	01	01%
08	Unexplained facial pain	05	4.8%

Table 2: Reasons of Impacted Third Molars (ITMs) extraction N: 105.

Discussion

This retrospective review has determined that the most common reason for impacted third molar extractions was caries in 49 (38.9%) cases followed by pericoronitis. Iqbal, et al. results are in agreement with other previous studies [2]; however, a study from Nigeria reported a high incidence of pericoronitis [7]. Most of the patients in our study were in group 2 (25-34 years) with a mean age of 28.04 years SD +/- 7.345. Females 66 (62.9 %) were most frequently presented with third molar problems 66 patients (62.9%). These findings in Iqbal, et al. study are in agreement with previous other studies [7-8].

Presence of Impacted Third Molars (ITMs) creates difficulty in cleaning of the area and development of caries is very common and in Iqbal, et al. study caries in impacted third molar and adjacent second molar was found a common reason of surgical removal of impacted third molars. McArdle and Renton [3] proposed prophylactic removal of Impacted Third Molars (ITMs) to prevent caries in distal surface of second molars [12].

There has been a debate going on effective management of impacted third molars. NICE guidelines advocate that prophylactic removal of symptom and pathology free third molars should not be performed to avoid unnecessary complications [4], but there

is still no evidence available which recommends the prophylactic removal of asymptomatic disease free Impacted Third Molars (ITMs). Retention of asymptomatic disease free Impacted Third Molars (ITMs) may be associated with a high risk of periodontal disease in adjacent second molars but there is no strong evidence available for this hypothesis. Therefore, there is a need to perform well designed prospective cohort studies to collect strong evidence [13]. Iqbal et al. study, the frequency of caries in second molar was in 16 (15.2%) teeth and frequency of periodontal disease in second molar was found in 15 (14.3%) teeth.

In this study Iqbal, et al. have performed only one extraction of impacted lower third molar associated with Odontogenic Kerato Cyst (OKC). Stathopoulos et al reported that the incidence of pathological lesions associated with Impacted Third Molars (ITMs) is very low and, therefore, prophylactic extractions couldn't be justified [11].

Caries on distal surface of second molar and periodontitis proximal to Impacted Third Molars (ITMs) is a very common problem. Retrospective studies confirm that horizontally angulated Impacted Third Molars (ITMs) were associated with high rate of distal surface caries and periodontitis of second molar and some authors recommended prophylactic extractions [14,15]; but, these are retrospective studies with a low level of evidence. A prospective cohort study of 2 years' follow-up confirmed that extraction of third molars were associated with a high rate of TMJ problems and paresthesia, whereas, retention of third molars had a very low incidence of caries on the distal surface second molars and third molars respectively [16].

In this study Iqbal, et al. didn't perform any extraction of impacted third molar in the line of mandibular angle fracture. Presence of impacted mandibular third molar may increase the risk of mandibular angle fracture, however, prophylactic extraction could not be justified [14]. It was found that presence of impacted mandibular third molars may decrease the risk of mandibular condylar fractures [17].

Conclusion

In this study, Iqbal, et al. have discovered that caries, periodontal disease and pericoronitis were among the common pathologies associated with impacted third molars. Dental caries and periodontitis are preventable diseases and, therefore, Iqbal, et al. should educate our patients about the nature and prevention of third molar associated problems. On the other hand, prophylactic extractions are not a common practice in our population and most of the patients do not opt to extract the asymptomatic pathology free Impacted Third Molars (ITMs).

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