

EXTRACTION OF WISDOM TEETH UNDER GENERAL ANESTHESIA- A STUDY

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ABSTRACT

Objective: The objective of the study is to highlight the indications, surgical procedure and complications of 3rd molar removal under General Anesthesia among patients reporting to Khyber College of Dentistry Peshawar.

Materials and Methods: Impacted teeth are teeth that fail to erupt into their proper functional position in the dental arch. These often need extraction due to reasons like pericoronitis, caries of 3rd or 2nd molar, periodontal pocket on distal aspect of 2nd molar, cysts, tumors and pain of unexplained origin. This Retrospective descriptive study was carried out in Department of Oral and Maxillofacial Surgery at Khyber college of Dentistry Peshawar during the period from July 2007 to October 2012 on 121 patients from whom 484 teeth were extracted under general anesthesia. All patients included in the study were advised panoramic X-ray study and Pederson scale was used to find out difficulty of extraction.

Results: Out of 121 patients, 71 were male and 50 female with the male to female ratio of 1.42:1. The age range of the patient was from 19 years to 41 years. Majority of the wisdom teeth were extracted in the third decade of life. Among males, out of a total of 282 mandibular third molars, 70 teeth were most difficult, 40 moderate while 32 belonged to mildly difficult category. Among female patients, 46 were mildly difficult. Complication rate in current study was 4.5% (22 patients). These included lingual and ID nerve paresthesia, tuberosity fracture and dry socket.

Conclusions: Extraction of all four third molars is a safe procedure to be carried out under general anesthesia and has a low rate of complication.

Key words: Surgical extraction, Wisdom teeth, Third molars, General anesthesia

INTRODUCTION

Impacted teeth are teeth that fail to erupt or develop into their proper functional position in the dental arch¹. Mandibular 3rd molars are the most commonly impacted teeth and causes for their impaction include lack of space, late eruption time of mandibular 3rd molars and aberrant path of eruption². Several theories have been postulated to explain the reason for impaction and among these the phylogenetic theory of regression in jaw size is the most accepted one world wide³.

A large number of reasons make the removal of 3rd molars inevitable. These include disorders like pericoronitis, caries of 3rd or 2nd molar, periodontal pocket on distal aspect of 2nd molar, cysts, tumors and pain of unexplained origin^{4,5}. In addition to these indications, 3rd molars may also be removed for orthodontic or prosthodontic purposes and also sometimes are prophylactically removed to limit possible complications⁶.

Although some conservative options for management of 3rd molars are reported, extraction still remains the treatment of choice. This can be done either by closed extraction or in most cases by taking an adequate soft tissue flap and by removing bone around the impacted tooth with a bur⁷. This procedure can be carried out under Local or General Anesthesia (GA). National surveys carried out in UK shows that

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the majority of 3rd molar extractions are done under GA⁸. The choice of anesthesia depends upon factors like patient's preference, number of teeth to be extracted, depth of impaction and anticipated complications during the procedure⁹.

Removal of third molar teeth may result in a number of complications including pain, swelling, bleeding, alveolar osteitis (dry socket) or nerve dysfunction. Thus it is necessary to inform the patient about these possible problems and also take meticulous care to avoid these problems¹⁰.

Local data concerning prevalence of 3rd molar impaction is available but none of these studies involved removal of 3rd molar under General Anesthesia. The purpose of present study is to highlight the indications, surgical procedure and complications of 3rd molar removal under General Anesthesia among patients reporting to Khyber College of Dentistry Peshawar. This will help establish a safer and time saving approach with regards to surgical management of impacted 3rd molars.

METHODS AND MATERIALS

This retrospective descriptive study was carried out in Department of Oral and Maxillofacial Surgery at Khyber college of Dentistry Peshawar. A total of 121 patients were recruited in the study, and a total of 484 teeth were extracted under general anesthesia during the study period i.e., from July 2007 to October 2012.

The study was evaluated and approved by the local Ethics review Committee (ERC). Patient data confidentiality was guaranteed. With the written and informed consent of the patients all the necessary information about the variables of the study written in Proforma were collected through history, clinical examination and radiographic study. All patients included in the study were advised panoramic X-ray to record the depth of 3rd molars and the distance between the ramus and the distal surface of the 2nd molar according to Pell & Gregory Classification¹¹ as A, B, C and Class I,II,II respectively. In addition, we recorded molar angulation with respect to the longitudinal axis of the second molar (mesioangular, distoangular, vertical, horizontal), based on the classification of Winter. However, in some cases involving doubt as to the type, class or position of the molars, classification was carried out based on tracings and measurements on the X-rays. The surgical difficulty

for mandibular teeth in current study was found out by using Pederson scale. This index is based on angulation of third molars, depth and relationship with ramus¹².

All extractions were done under General anesthesia using a conventional surgical technique. Dental phobias and apprehensive patients, Parents willingness to go for surgical extraction in single visit, deeply embedded impacted wisdom teeth class ramus III and Depth C were indications for surgical decision for extraction under general anesthesia. Patients having incomplete root formation of third molar and absence of adjacent second molar and third molars associated with pathologies like odontogenic tumours and cysts were excluded from the study.

Upper 3rd Molars were accessed with the raising of an oral flap and, where necessary, bone was removed with a low-speed hand piece under continuous irrigation. In the case of the lower Third molars, a three cornered flap was raised with releasing incisions to the second molar. Where necessary, bone was removed and the crown and roots were sectioned. In all these cases the flap was repositioned with 3/0 silk suture. The patients were instructed on postoperative care, including the use of cold, soft diet, oral hygiene, general care and medications use. All the patients were advised first generation, cephalosporin, metronidazole and analgesics in post-operative period for one week. The sutures were removed after 7 days.

The data was presented in the form of Tables and Charts. A descriptive analysis was made to determine the central tendency and dispersion measures of the variables. Frequency tables were used to determine patient age and gender distribution, as well as the type, class and position of the extracted third molars.

RESULTS

A total of 484 teeth were extracted from 121 patients recruited in the study. Out of them 71 patients were male and 50 female with the male to female ratio of 1.42:1. The age range of the patient was from 19 years to 41 years. Majority of the wisdom teeth were extracted in the third decade of the life followed by fourth decade. A detail of the age distribution is given in Table-1. The difficulty index was found out for all mandibular teeth using Pederson scale. Among males, out of a total of 142 mandibular third molars, 70 teeth had severe difficulty. Among female patients, 34 out of 100 mandibular third molars had severe difficulty. The

details of difficulty index are given in Table-2.

The extraction of 242 Mandibular 3rd molar extraction results in lingual nerve paresthesia in 10 cases (4.1%), ID nerve Paresthesia in 8 cases (3.3%) and Dry socket in 2 cases (0.8%). Similarly the extraction of 242 Maxillary 3rd molar extraction resulted in Tuberosity fracture leading to oro antral communication in 2 cases (0.8%). The over all complication rate (both maxilla and mandible) in this study was 4.5%. Oroantral communication was closed by buccal advancement flap. Dry socket was managed by repeated applications of topical zinc oxide eugenol packs changed daily. Patients who had nerve parasthesias showed complete recovery during a course of 6 weeks.

DISCUSSION

Impacted third molars (ITM) during its course of eruption often changes position and can lead to many pathologies. Thus often patients opt for removal of these teeth. In the current study 59% of patients were male while 41% were female. This is in contrast to a study done in Malaysia where ITM were found to be more common in females¹³. Khan¹⁴ also reported female preponderance for ITM among Pakistani population. However in another study by Susarla¹⁵ carried out on difficulty of ITM extractions it was found that more male patients reported for extractions as compared to female patients. In Saudi population the male to female ratio was found to be 5.54:1¹⁶. According to theory by Hellman impactions are more common in females because their jaws stop growing when third molars just begin to erupt. On the other hand jaws of male continue to grow even beyond this time¹⁷. However current study was carried out among patients opting for removal of ITM under GA thus results may be a

Table-1: Age distribution of patients with impacted teeth

Age group in years	n	%
11-20	20	16
21-30	70	58
31-40	29	24
41-50	2	2
Total	121	100

reflection on increased phobia regarding complications of general anesthesia among females. Moreover male patients in our society are outdoor workers and thus cannot take out time for removal of impacted teeth in multiple appointments.

Majority of patients in current study belonged to age group of 21-30. This is in agreement with other studies^{18,19}. Third molars continue to erupt till 25 years of age thus before 20 years they remain asymptomatic however after 25 years the chances of pathologies associated with ITM also increases. Thus commonly patients in third decade presents for extraction²⁰.

Although a part of textbook reference, Pederson scale was never accepted as a reliable index. Thus in current study additional factors such as root morphology and number, follicle space, ID position were also taken into account^{21,22}. In current study majority of male patients reported with third molars in severe difficult category (70 teeth) while in female mildly difficult extractions were more predominant. Thus although total number of female opting for extraction under GA was less, majority of teeth in this category belonged to mildly difficult type. Moreover majority of patients in current study belonged to dental profession (final year students and house officers. This may be a reflection on increased phobia and awareness regarding pathologies associated with third molars among female patients, thus they opted for extraction under GA even for mildly difficult extractions.

Complication rate in current study was 4.5% patients. The reported frequency rate of complication after third molar surgery is between 2.6% and 30.9%²³. Lingual nerve paresthesia and ID nerve paresthesia was found among 18 out of 22 patients. Jerjes²⁴ in his study on nerve paresthesia came across 1.5% and 1.8% incidence of ID and lingual nerve paresthesia respectively which improved on subsequent followups. Permanent dysfunction was 0.6% for ID nerve and 1.1% for lingual nerve. Similar results were obtained by Queral-Godo et al²⁵. It is known that most trigeminal nerve injuries undergo spontaneous recovery; 96% of ID nerve and 87% of lingual nerve injuries recover

Table-2: Difficulty index among mandibular wisdom teeth

Gender	Mild Difficulty		Moderate difficulty		Severe Difficulty		Total	
	n	%	n	%	n	%	n	%
Male	70	49.3	40	28.2	32	22.5	142	100
Female	34	34	20	20	46	46	100	100

within 4-8 weeks after surgery²⁶, moreover the recovery rates are not influenced by gender, and only slightly by age²⁷. The frequency of lingual nerve paresthesia in our study is higher as compared to ID nerve however over all percentage is low. Also complete recovery was seen in all patients. This may be due to the young age of the patient. Also operation under GA makes the surgeon more cautious and reduces the risk of damage by working in controlled environment.

In the current study, tuberosity fracture was seen among 2 patients. Fractured part of maxillary tuberosity was removed along with extracted tooth. These patients also had oroantral communication which was closed by buccal advancement flap. Fracture of the tuberosity is a potential complication of maxillary third molars extraction. Although considered to be a grave complication, the incidence of tuberosity fracture is low around 0.15%²⁸. The risk factors include large maxillary sinus with thin walls, problem with number or shape of roots and ankylosed teeth. Some time due to chronic infection especially in young adults bone sclerosis occur which increases risk for tuberosity fracture²⁹. Management of tuberosity fracture depends upon size of segment. In case of smaller piece removal should be carried out, while larger pieces should be managed conservatively by stabilization for 4-6 weeks followed by extraction of third molar after initial healing³⁰. In current study smaller portion of tuberosity fracture occurred and was thus removed along with tooth.

In this study 2 patients suffered from dry socket following impacted mandibular molar removal. This frequency is low as compared to study by Malkawi et al³¹ (11.9%) who reported the previous frequency of dry socket to range from 0-35%. Agrawal et al³² also reported dry socket to be the most prevalent complication of third molar surgery (11.11%). Sisk et al³³ has documented that incidence of dry socket after third molar extraction is much lower when all the extractions are carried out by single operator. This combined with the fact that majority of patients in current study were students of medical profession and were thus more compliant with post operative instructions explains this low frequency of dry socket.

CONCLUSIONS

It is concluded from this study that:

1. Third decade was the most common time for

extraction of wisdom teeth.

2. Difficulty index was more among males.
3. Lingual nerve parasthesias was the common complication.
4. All the complications were followed and managed accordingly.

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