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Assessment of complications of surgical removal of maxillary third molar: an observational study

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Abstract: Background: *The removal of impacted maxillary third molars is one of the most common procedures performed in oral and maxillofacial surgery units with low rates of complications and morbidity.*
Aims:*to assay the complications during and after maxillary third molarextraction.*
Materials and Methods: A *Retrospective study was conducted in the Department of Maxillofacial surgery, Narayan Medical College and Hospital,Sasaram, Bihar, India for 18 month. Total 200 Patient who were planned for surgical extraction of maxillary third molar were included in this study. All surgical extractions of maxillary third molar were performed under local anesthesia by a qualified and experienced oral and maxillofacial surgeon.*
Results:*out of 200, 50 patients were having intra-operative or postoperative complications. Also, age group of more than 40 years were found more complications (32.22%) than other age groups. Male patients had 26.4% complications and females had 22.67% complications, which is less than male patients. Most common complications in our study were maxillary tuberosity fracture seen in 18 patients (36%). The second most commonly found complication was delayed wound healing (7 patients, 14%), postoperative pain (6 patients, 12%) and post-operative infection (5 patients, 10%). Other less commonly found complications are iatrogenic injury to palate (8%), displacement into sinus (8%), haemorrhage (6%), herniation of buccal fat pad into surgical site (4%) and displacement into infratemporal fossa (2%).* ***Conclusion:****The risk of complications in third molar surgery will always exist and increases in proportion to the surgical difficulty.*
Key words: *Maxillary third molar, complications, surgical procedures*

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I. Introduction

The removal of impacted maxillary third molars is one of the most common procedures performed in oral and maxillofacial surgery units with low rates of complications and morbidity.[1,2] Most third molars surgeries are performed without intra- or postoperative difficulties, however sometimes this common procedure can result in several complications. The most common complications following third molar surgery include: sensory nerve damage, dry socket, infection, hemorrhage and pain. Less common complications are: severe trismus, iatrogenic damage to the adjacent second molar and iatrogenic mandibular fracture.[3-5] In all surgical procedures, proper preoperative planning and the blending of surgical technique with surgical principles is of paramount importance for decreasing the incidence of complications.[6] Complications related to third molar removal range from 4.6% to 30.9% and may occur intraoperatively or develop in the postoperative period.[6,7] The surgeon must inform the patient before surgery of the statistical likelihood of complications so that the patient can make an informed decision as to whether to undergo surgery.[5] Any complication should be handled in a timely and corrective manner by the surgeon.[6] Factors reported to be associated with third molars complications include age, gender, medical history, oral contraceptives, presence of pericoronitis, poor oral hygiene, smoking, type of impaction, relationship of third molar to the inferior alveolar nerve, surgical time and technique, surgeon experience, number of teeth extracted, use of perioperative antibiotics, use of topical antiseptics, use of intra-socket medications and anesthetic technique.[6,7] There is a distinctive association between age and observed postoperative complications. These associations result from the fact that the intervention in older patients lasts longer because of increased bone density. Age depended maturing of tooth root formation and decreased healing capacity lead to intensive postoperative complications. Bruce and Chiapasco et al. state that older patients have more pain, edema and trismus as postoperative complications.[8] It seems that female patients show higher accident and complication rates.[9] Monaco et al. reported that the incidence of postoperative edema in female patients (12.7%) is significantly higher than in male patients (1.4%).[8] The experience of surgeon also appears to be a determining factor in the development of postoperative complications and can result in a longer treatment process, social and financial difficulties and a corresponding decrease in patient's life quality.8 Prior to any surgical procedure, the patient must be informed about the

possible accidents and/or complications that may occur during the entire treatment, being aware of the fact that any unexpected situation should be dealt with the best possible way.[9]

II. Materials and Methods

A Retrospective study was conducted in the Department of Maxillofacial surgery,Narayan medical College and Hospital,Sasaram Bihar, India for 18 month.

Indications

- Following were the indication for maxillary third molar extraction.
- Damage to periodontal ligament,
- Bone loss,
- Root resorption of adjacent maxillary second molar.
- Radiolucency associated with impactedtooth.
- Impaction of both third and adjacent secondmolar

Inclusive Criteria

- Maxillary third molar extraction patients.

Exclusion Criteria

- Systemic disorders that affects the local complication of surgical removale of thirdmolar

Methodology

Total 200 Patient who were planned for surgical extraction of maxillary third molar were included in this study. Data which includes age, sex and region of patient, medical history, frequency of pericoronal infections, use of pre and postoperative medications where verified. All surgical extractions of maxillary third molar were performed under local anesthesia by a qualified and experienced oral and maxillofacial surgeon.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 19 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages and means.

III. Results

A total of 200 patients of surgical extraction of maxillary third molar were carried out under local anaesthesia over a scheduled period of study. 50 patients were having intra-operative or postoperative complications. Also, age group of more than 40 were found more complications (32.22%) than other age groups. Out of 200 patients, 125 were males and 75 were female patients. Male patients had 26.4% complications and females had 22.67% complications, which is less than male patients. (Table 1). Most common complications in our study were maxillary tuberosity fracture seen in 18 patients (36%). The second most commonly found complication was delayed wound healing (7 patients, 14%), postoperative pain (6 patients, 12%) and post-operative infection (5patients, 10%). Other less commonly found complications are iatrogenic injury to palate (8%), displacement into sinus (8%), haemorrhage (6%), herniation of buccal fat pad into surgical site (4%) and displacement into infratemporal fossa (2%). (Table2)

Table 1: Distribution of patients according to different Gender and age groups

	Total Number of patients=200	**Patients with complications**	**%**
Gender			
Male	125	33	26.4
Female	75	17	22.67
Age			
Below 20	9	1	11.11
20-30	21	4	19.05
30-40	80	18	22.5
Above 40	90	29	32.22
Total	200	50	25

Table 3: Complications during surgical extraction of maxillary third molar

Complications	**Number of cases=50**	**%**
Fracture tuberosity	18	36
Delayed wound healing	7	14
Post-operative pain (in patients with tuberosity fracture)	6	12
Post-operative infection	5	10
Iatrogenic injury to palate	4	8
Displacement into sinus	4	8
Haemorrhage	3	6
Herniation of buccal fat pad into surgical site	2	4
Displacement into infratemporal fossa	1	2
Total	50	25

IV. Discussion

The most common impacted teeth are mandibular third molar and maxillary third molars, followed by the maxillary canines and mandibular premolars.[10]There is a distinctive association was found in the current study between age and checked postoperative problems.

These associations consequence from the fact that the interference in geriatric patients lasts longer because of raised bone density. Age related maturing of tooth root formation and declined healing ability cause to intensive postoperative complications. Bruce and Chiapasco et al. revealed that geriatric patients have more pain, swelling and trismus as postoperative problems.[11,12]In our study, Most common complications were maxillary tuberosity fracture seen in 18 patients (36%). Fracture of large maxillary tuberosity bone area is of concern. As maxillary tuberosity is especially important for retention of maxillary dentures. Fractures of the maxillary tuberosity will create problems of denture retention, management of fracture tuburosity is to relocate to its place and maintain environment forhealing.[13]

Posterior to maxillary third molar is maxillary sinus, and porous bone. That add to fracture of maxillary tuberosity when excessive force applied also anatomical connection of maxillary third molar with maxillary sinus, extraction of third molar can lead to an accidental communication of the sinus or displacement of the tooth in the sinus whenever improper, excessive force and improper use of elevators and foreceps.one rare possibility of third molar displacement into infratemporal fossa. Others like fracture of root apex of tooth, may occur mainly in root morphology such as hypercementosis and ankylosis and conditions that more resistance toavulsion.[14]In our study the cases of haemorrhage was (6%).Haemorrhage could occur through (accident) or after (complication) the surgery, classified as late or recurrent haemorrhage. In such condition of intense bleeding classified as late, the haemorrhage occur only once, after the completion of the procedure. In recurrent haemorrhages, more than one intense bleeding occur, even after initially controlbleeding.[12]

Displacement of maxillary third molars into near anatomic spaces may be due poor clinical and radiographic assessment; poor anatomic knowledge, low surgical techniques, improper visibility, inadequate flap reflection and excessive, uncontrolled force during surgical extraction of third molar.[15]Another postsurgical morbidity after third molar surgery were pain. The post-surgical pain arises when the effects of the local anaesthesia decreases and reaches peak levels in 6 to 12 hours postoperatively. Analgesics should be administer before the effect of the local anaesthesia subsides. In this way, pain is normally easier to control, requires fewer drugs, and may require a less potent analgesic. The administration of NSAIDs before surgery may be advantage in aiding in the control of postoperative pain.[12] In our study postoperative pain (6 patients, 12%) and post-operative infection (5 patients, 10%) was high as compared to other studies.The postoperative infection rate stated in the literature from 1.5% to 5.8%.[16] Antibiotic prophylaxis decreases risk of suffering infection, localised alveolar osteitis and pain after third-molar extractions in healthyadults.[12]Prior to any surgical procedure, patient must be well know about chances of complications and/or problem may cause during entire treatment, being aware of the fact that any unexpected situation should be dealt with the best possible way.[17]

V. Conclusion

The risk of complications in third molar surgery will always exist and increases in proportion to the surgical difficulty.

Reference

[1]. Gulbrandsen S R, Jackson I T, and Turlington E G, "Recovery of a maxillary third molar from the infratemporal space via a hemicoronal approach," Journal of Oral and Maxillofacial Surgery. 1987; 45(3): 279–282.

[2]. Dawson K, MacMillan A, and Wiesenfeld D, "Removal of a maxillary third molar from the infratemporal fossa by a temporal approach and the aid of image-intensifying cineradiography," Journal of Oral and Maxillofacial Surgery.1993; 51(12):1395–1397.

[3]. Woldenberg Y, Gatot I, Bodner L. Iatrogenic mandibular fracture associated with third molar removal. Can it be prevented?. Med Oral Patol Oral Cir Bucal. 2007;12:E70-2.

[4]. Visintini E, Angerame D,Costantinides F, Maglione M. Peripheral neurological damage following lower third molar removal. A preliminary clinical study. Minerva Stomatol. 2007;56:319-26.

[5]. Sisk AL, Hammer WB, Shelton DW, Joy ED Jr. Complications following removal of impacted third molars: the role of the experience of the surgeon. J Oral Maxillofac Surg. 1986;44:855-9.

[6]. Bouloux GF, Steed MB, Perciaccante VJ. Complications of third molar surgery. Oral MaxillofacSurgClin North Am. 2007;19:117-28.

[7]. Bui CH, Seldin EB, Dodson TB. Types, frequencies, and risk factors for complications after third molar extraction. J Oral Maxillofac Surg. 2003;61:1379-89.

[8]. Azenha MR, Kato RB, Bueno RBL, Neto PJO, Ribeiro MC. Accidents and complications associated to third molar surgeries performed by dentistry students. Oral Maxillofac Surg. 2014 Dec;18(4):459-464

[9]. Atalay B, Guler N, Cabbar F, Sencift K. Determination of incidence of complications and life quality after mandibular impacted third molar surgery. Belgrade, Serbia, 2008. XII. Congress of Serbian Association of Maxillofacial Surgeons with International Participation First Meeting of Maxillofacial Surgeons of Balkans. Oral Presentation

[10]. Kasapoglu C, Brkic A, Gurkan-Koseoglu B,Kocak-BerbergluH. Complications Following Surgery of Impacted Teeth and Their Management. Adv Oral MaxillofacSurg 2013

[11]. Miloro M, Ghali GE, Larsen PE, Waite PD, Decker BC. Peterson's principles of oral and maxillofacial surgery.Inc Hamilton, Second Edition, 2004.

[12]. Szmyd L. Impacted teeth. Dent Clin North Am1971;15(2):299-318.

[13]. Chrcanovic BR, Feire-Maia. Considerations of maxillary tuberosity fractures during extraction of upper molars: a literature review. Dent Traumatol2011;27:393–8.

[14]. Sebastiani AM, Todero SRB, Gabardo G, Joao da Costa D, Rebelatto NLB, Scariot R. Intraoperative accidents associated with surgical removal of third molars. Braz J Oral Sci 2014;13(4):276-80.

[15]. Ozer N, Ucem F, Saruhanoglu A, Yilmaz S, Tanyeri H. Removal of a Maxillary Third Molar Displaced into Pterygopalatine Fossa via Intraoral Approach. Hindawi Publishing Corporation- Case Reports in DentistryVolume 2013,ArticleID392148,4pages

[16]. Soylu E, Asan CY, Kiliç E, Alkan A. An Unusual Complication after the Extraction of a Maxillary ThirdMolar: Extensive Subcutaneous Emphysema. A Case Report. J Clin Anal Med 2016

[17]. Salmen F, Oliveira MR, Gabrielli MAC, Piveta ACG, Pereira- Filho VA, Gabrielli MFR. Third molar extractions:aretrospective study of 1178 case. Rev GaúchOdontol 2016;64(3):250-5.

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