



Complications of Third Molar Extraction done by BDS Interns under Supervision in a Dental College in Central India

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INTRODUCTION: Third molar is the most commonly observed impacted tooth in the oral cavity, with a higher prevalence among mandibular teeth.
AIM: To assess the Complications of Third Molar Extraction done by BDS Interns under Supervision in a Dental College in Central India.
MATERIALS AND METHOD: This cross-sectional study was conducted over a period of three years. BDS interns between the years 2016-2018 posted in the department of oral surgery were observed while doing third molar extractions under supervision. All patients underwent standard surgical protocol. Routine follow-up was done after one week and suture was removed. Complications, if any were noted down by the faculty and appropriate management of the same was done by the OPD incharge. Patients not available for follow up were excluded from the analysis. Data was analyzed using SPSS version 23.0. and the student's independent samples t-test was applied to find out associations between the complications.
RESULTS: A total of 1368 patients were included and a total of 2369 third molars were extracted with a majority of the teeth being in the mandibular region (69.8%). Males (62.5%) formed a majority of the population. The most common intra-operative complication was Swelling/pain/ trismus (36.8%) followed by dry socket (14.9%). Whereas the most common intra-operative complication was soft tissue injury (1.9%) followed by bleeding at the extraction site (1.8%). Both soft tissue injury ($p=0.02$) and swelling/pain/trismus ($p=0.03$) were found to be significant.
CONCLUSION: The low percentages of intra-operative and post-operative complications among interns indicate adherence to proper exodontia protocols.

KEYWORDS: Third Molar, Extraction, Dentists

INTRODUCTION

It has been extensively reported in the literature that the third molar is the most commonly observed impacted tooth in the oral cavity, with a higher prevalence among mandibular teeth.¹ For oral and maxillofacial surgeons, the extraction of third molars is the most commonly performed procedure.² Due to the expertise, most surgeries do have any complication, but due to certain factors, complications can range from 4.6 to 30.9%.³

Every dentist was a student once and it was his teachers who corrected them on the mistakes done in the dental college. However, even while under supervision, these students tend to make mistakes due to a lack of experience.

Surgical complications can be classified as Minor or Major. Minor complications are generally defined as complications which recover without any further treatment. In major complications, further treatment is advised and may result in irreversible consequences.⁴

Complications related to third molar surgery can also

be classified as intraoperative or post- operative. Intra-operative complications include injury to surrounding soft tissue, damage to adjacent tooth, restoration, bleeding from the socket, dislodgement of tooth or tooth pieces into adjacent potential spaces, fracture of tooth, root –alveolar bone-maxillary tuberosity-mandible. In post-operative complications, patients may experience trismus, pain, rebound bleeding, pain, swelling, dry socket, infections, osteomyelitis sensory alterations of inferior alveolar nerve (IAN) or lingual nerve (LN).

Although impacted third molars may remain symptom-free indefinitely, they may be responsible for significant pathology.⁵ Factors thought to influence the incidence of complications after third molar removal 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, surgical technique, surgeon experience, use of perioperative antibiotics, use of topical antiseptics, use of intra-socket medications, and anesthetic technique.⁶



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Irrespective of the various advancements in surgical dentistry, dental students need to gain considerable experience under supervision so there are no complications in their independent private practice. Hence, the present study was undertaken to assess the Complications of Third Molar Extraction done by BDS Interns under Supervision in a Dental College in Central India.

MATERIALS AND METHOD

This cross-sectional study was conducted over a period of three years. BDS interns between the years 2016-2018 posted in the department of oral surgery were observed while doing third molar extractions under supervision. These students had prior experience of extraction of teeth (except third molars) in their final year. During internship, they were first asked to assist atleast three staff/PG students in third molar extractions and then were permitted to do third molar extractions under direct supervision of the faculty incharge who noted all complications in a standardized proforma. To eliminate bias, the intern as well as the patient was blinded to this evaluation. All evaluating faculty were duly standardized prior to the start of the study.

All patients underwent standard surgical protocol. Patients with medical conditions like hypertensive, diabetic, kidney disease and other medical condition patients were consulted with their respective medical doctors, proper investigations were done. All needful precautions were taken and necessary local-haemostatic measures were used to control bleeding in needful conditions. In the majority of the cases Ward's incision were given, mucoperiosteal flap raised, bone guttering done and tooth resection were done in needed conditions using surgical drills. Elevators and forceps were used as per requirements. Once the surgical procedure was completed, the socket was irrigated using betadine and normal saline. The socket was packed using local haemostatic agent and sutured with black braided silk suture. Following the procedure, detailed postoperative instructions were given to the patients and suitable antibiotics and analgesics were prescribed.

Routine follow-up was done after one week and suture was removed. Complications, if any were noted down by the faculty and appropriate management of the same was done by the OPD incharge. Patients not available for follow up were excluded from the analysis. Data was analyzed using

SPSS version 23.0. and the student's independent samples t-test was applied to find out associations between the complications.

RESULTS

In the present study, a total of 1368 patients were included and a total of 2369 third molars were extracted with a majority of the teeth being in the mandibular region (n-1655, 69.8%). Males (62.5%) formed a majority of the population in the present study. A majority of the patients belonged to the age group of 25-34 years (51.4%). The most common reason of extraction was the buccal eruption of the third molar (39.7%) (Table 1).

CHARACTERISTIC	N (%)
Gender (n=1368)	
Male	855(62.5)
Female	513(37.5)
Age Range in Years	
15-24	386 (28.2)
25-34	703(51.4)
35-54	188(13.8)
>55	91(6.6)
Indication for Extraction	
Pericoronitis	413(30.2)
Buccally erupting tooth	543(39.7)
Cheek bite	27 (1.9)
Pain (Both acute/chronic)	357 (26.1)
Temporomandibular joint disorder	09(0.6)
Decayed Molar	16(1.2)
Any Other	3 (0.3)
Location of extracted third molars (N 2369)	
Mandible	1655 (69.8)
Maxilla	714(30.2)

Table 1. Preoperative and intraoperative characteristics of patients undergoing extraction of third molars

Table 2 describes the complications encountered by the patients. The most common post-operative complication experience by the patients was Swelling/pain/ trismus (36.8%) followed by dry socket (14.9%). The most common intra-operative complication was soft tissue injury (1.9%) followed by

COMPLICATION	FREQUENCY	PERCENTAGE	p-VALUE
		Intraoperative complications	
Root fracture	10	0.7	0.18
Bleeding	25	1.8	0.61
Tuberosity fracture	09	0.6	0.55
Soft tissue injury	27	1.9	0.02*
Damage to adjacent tooth	04	0.3	0.06
		Postoperative complications	
Swelling/pain/trismus	503	36.8	0.03*
Dry socket	205	14.9	0.16
Secondary bleeding	04	0.3	0.077

Table 2. Type and frequency of complications following extraction of third molars among patients

bleeding at the extraction site (1.8%). Both soft tissue injury ($p=0.02$) and swelling/pain/trismus ($p=0.03$) were found to be significant.

DISCUSSION

In the present study, it was reported that Swelling/pain/ trismus (36.8%) was the most common post-operative complication among patients. Extraction of third molars is often associated with expected and typically transient postoperative pain, swelling and trismus; however, at times, this pain may present beyond the first postoperative week and may require additional treatment such as placement of a dressing or administration of antibiotics during a follow-up visit.^{2,7} The prevalence of seeking postsurgical emergency appointments is around 10%.⁸

Buccal eruption of the third molar was the most common reason of its extraction (39.7%). However, alfadil et al reported 'asymptomatic; prophylactic indication' (66.8%) as the most common reason for extraction with vertical angulation was most common in the maxilla (56.5%), and mesioangular impaction in the mandible (40.5%).⁹ On the contrary, Iqbal and colleagues reported pain due to caries 49 (38%) as the most common reason for extraction of the third molar followed by pericoronitis.¹⁰

In the present study, the most common intra-operative complication was soft tissue injury (1.9%). This is in contrast to Sayed N. et al. and Desai B et al. who reported tuberosity fracture (1.2% & 0.78%) as their most common intra-operative complication.

CONCLUSION

It is a well-established fact that the third molars are the most common impacted teeth to be found in humans and their surgical extraction is one of the most common dentoalveolar surgical procedures in the oral maxillofacial surgical field. Dental students do undergo a through viva and practice on models, and have a staff, senior to guide them during their first extractions. The low percentages of intra-operative and post-operative complications among interns indicate adherence to proper exodontia protocols.

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