

## Original Research

### Comprehensive Evaluation of Post Operative Complications in Mesioangular Mandibular Third Molar Impaction Surgeries: An Original Research Study

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#### ABSTRACT:

**Background and Aim:** Mandibular third molar mesio-angular impaction surgeries are commonly performed oral surgical procedure. Clinical expertise, surgical techniques and host factors primarily governs the overall success of this therapy. Therefore, complications in post operative phases are not an uncommon finding. Such complications can lead to serious consequences when left unattended. The ultimate aim of this study was to evaluate of post operative complications in mesioangular mandibular third molar impaction surgeries. **Materials and Methods:** Mandibular third molar with mesioangular impaction was studied for their post operative complications in 30 patients. All mandibular third molar mesioangular impaction surgeries were performed in the single operatory with single operatory team. Patients were recalled in their post operative phases and asked about the complication like Bleeding, Edema, Trismus, Pain, Infection, Dry Socket, Nerve Disturbance, TMJ Issues, and Lower Jaw Fracture. The recorded data was subjected to suitable statistical tests to obtain p values, mean and other statistical parameters. P values less than 0.05 was considered as significant. **Statistical Analysis and Results:** Statistical analysis was attempted by using SPSS statistical package for the Social Sciences version 22. 12 patients belonged to the age group of 25-34 years, 9 patients were of 35-44 years of age, P value was reported to be significant for all studied age groups. Maximum 7 patients were noted with Trismus and minimum 1 patient was noted with Lower Jaw Fracture. P value was found to be significant for all studied post operative complications. Level of significance evaluation using Pearson Chi-Square Test revealed that P value was highly significant for Edema (0.030), Trismus (0.030), Infection (0.001). Maximum mean was observed for TMJ Issues (1.83). Minimum mean was observed for Nerve Disturbance (1.17). **Conclusion:** Within the limitations of the study authors concluded that Trismus, Pain, Bleeding was common post operative complications while Nerve Disturbance, TMJ Issues and Lower Jaw Fracture was less commonly seen post operative complications. As clinicians, we must monitor any post-operative complications in mesioangular mandibular third molar impaction surgeries and treat them to maximize patient overall health and comfort.

**Keywords:** Mesio-angular Impaction, Third Molar, Surgery, Complication, Pain, Infection, Mandible

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#### INTRODUCTION

Literature has well evidenced about the post operative complications in mesioangular mandibular third molar impaction surgeries. These complications are disturbing the patient's health and social wellbeing.<sup>1-4</sup> The most distressing post operative issue is Bleeding, Trismus, Pain. They severely affect the overall functioning of oral tissues. Many researchers have

shown that these complications can be life threatening also when left untreated or ignored. As a clinician we must recall such patients in their post operative phases.<sup>5-9</sup> These follow ups are highly critical since it enables the clinician to monitor and treat the complications. Many studies have demonstrated the transfer of infection from the surgical/operative site to the underlying alveolar bone. This systemic transfer

of infection can affect any organ or system. It is therefore highly imperative to monitor patients of mandibular third molar impaction surgeries.<sup>10-13</sup> Timely identification of complications with precise diagnosis and treatment may reduce the subjective dilemma with improved satisfaction and acceptances.<sup>14-16</sup> The definitive aim of this study was to evaluate of post operative complications in mesioangular mandibular third molar impaction surgeries.

## MATERIALS AND METHODS

This study was conducted on 30 patients with age 25-50+ years those who reported to institute's outpatient department. Out of 30 patients, 17 patients were male and 13 were female. Inclusion criteria were impacted mandibular third molar with mesioangular impaction. Exclusion criteria were patients on any other heavy ongoing medications, patients those have follow-up issues, patients those suffering from serious chronic diseases. Mandibular third molar with mesioangular impaction is most common type. The study was planned and performed in the department of oral surgery of the institute. The relative benefits of the study were explained in detail to all participating patient. Systematic random sampling procedure was employed to select the precise samples. Written and informed signed consent was obtained from all selected patients. All mandibular third molar mesioangular impaction surgeries were performed in the single operatory with similar armamentarium over a period on one year. Single operatory team performed all the surgeries to maintain the consistency and minimize the intra-operator variations. Patients were recalled in their post operative phases and asked about the complication they feel. Some of the common complication of surgeries of impacted mandibular third molar with mesioangular impaction was noted. These were Bleeding, Edema, Trismus, Pain, Infection, Dry Socket, Nerve Disturbance, TMJ Issues, and Lower Jaw Fracture. The privacy and other interrelated rights

of the patients along with their freedom of expression were kept absolutely confidential. The recorded data was subjected to suitable statistical tests to obtain p values, mean and other statistical parameters. P values less than 0.05 was considered as significant.

## STATISTICAL ANALYSIS AND RESULTS

All the recorded data were arranged in reasonable manner and subjected to appropriate statistical analysis using SPSS statistical package for the Social Sciences version 22 for Windows. Out of the total sample size of 30 patients who participated in the study, 12 patients belonged to the age group of 25-34 years, 9 patients were of 35-44 years of age, 6 patients were 45-50 years of age and 3 patients were in >50 years of age. P value was reported to be significant for all studied age groups (0.001). Maximum 12 patients were reported in the age group of 25-34 Yrs. Overall it had 17 male and 13 female subjects (Table 1-2, Graph 1). Table 3 and Graph 2 denote about the patients distribution according to post operative complications in mesioangular mandibular third molar impaction surgeries. Maximum 7 patients were noted with Trismus and minimum 1 patient was noted with Lower Jaw Fracture. P value was reported to be significant for all studied post operative complications (0.002). Edema, Infection and Dry Socket was observed in 4 patients each. Mean and standard deviation was also calculated for each observed complications of mesioangular mandibular third molar impaction surgeries. Table 4 demonstrated about the fundamental statistical description with level of significance evaluation using Pearson Chi-Square Test for complications in mesioangular mandibular third molar impaction surgeries. P value was highly significant for Edema (0.030), Trismus (0.030), Infection (0.001). Maximum mean was observed for TMJ Issues (1.83). Minimum mean was observed for Nerve Disturbance (1.17). Maximum standard deviation was noted for TMJ Issues (2.565) and Minimum standard deviation was noted for Lower Jaw Fracture (1.120).

**Table 1: Patients distribution according to gender: Statistical Evaluation using Student's t-test**

Sex	Number [n]	Mean	SD	P value
Male	17	2.65	1.230	0.980
Female	13	2.87	1.630	
Total	30		-	

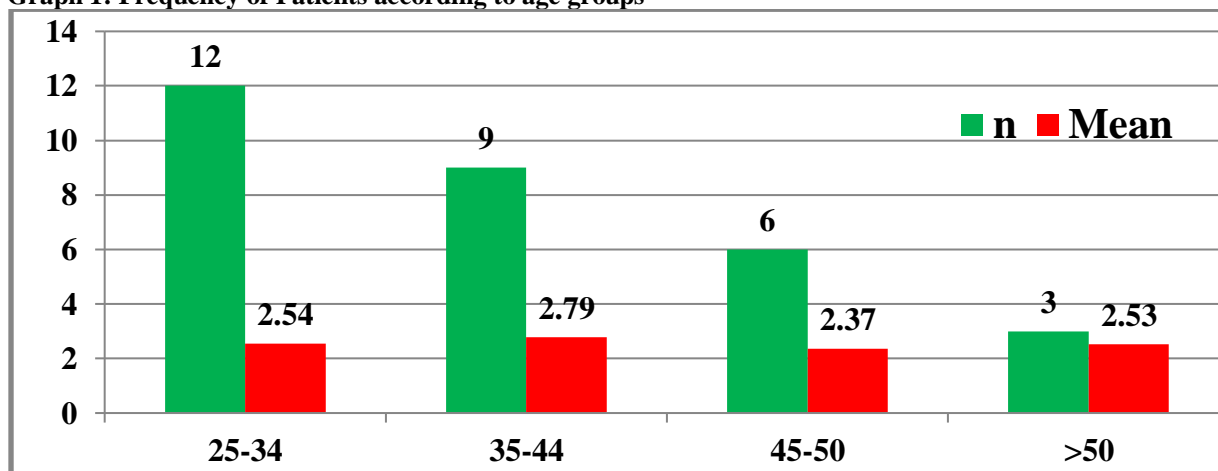
**Table 2: Patients distribution according to age groups: Evaluation of level of significance using ANOVA test**

Patients distribution according to age groups					
Group	Age Range	n	Mean	SD	P value
I	25-34 Yrs	12	2.54	1.460	0.001* *Sig [*p<0.05]
II	35-44 Yrs	9	2.79	1.240	
III	45-50 Yrs	6	1.37	2.144	
IV	>50 Yrs	3	1.53	2.465	

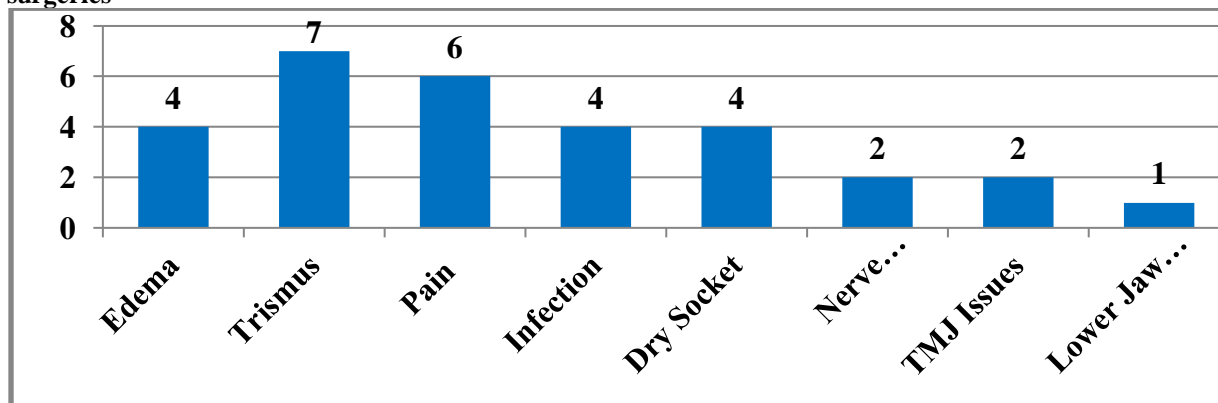
**Table 3: Patients distribution according to post operative complications in mesioangular mandibular third molar impaction surgeries**

Patients distribution according to post operative complications						
Sr No.	Type	n	Mean	SD	P value	*Sig [*p<0.05]
1	Bleeding/Hemorrhage	5	1.54	1.450	0.002*	
2	Edema/Swelling	4	1.23	1.540		
3	Trismus/Less Mouth Opening	7	1.67	2.324		
4	Pain/Tenderness	6	1.23	2.435		
5	Infection/Inflammation/Redness	4	1.24	1.420		
6	Dry Socket/Alveolar Infection	4	1.53	1.140		
7	Nerve Disturbance/Numbness	2	1.17	2.474		
8	TMJ Issues/TMJ Sounds/Crackings	2	1.83	2.565		
9	Lower Jaw Fracture	1	1.74	1.120		

**Graph 1: Frequency of Patients according to age groups**



**Graph 2: Frequency of post operative complications in mesioangular mandibular third molar impaction surgeries**



**Table 4: Fundamental statistical description with level of significance evaluation using Pearson Chi-Square Test for complications in mesioangular mandibular third molar impaction surgeries**

Complications	Mean	Std. Deviation	Std. Error	95% CI	Pearson Chi-Square Value	df	Level of Significance (p value)
Bleeding	1.54	1.450	0.160	1.96	2.433	1.0	0.086
Edema	1.23	1.540	0.000	1.96	2.242	2.0	0.030*
Trismus	1.67	2.324	0.078	1.96	2.498	1.0	0.030*
Pain	1.23	2.435	0.035	1.96	1.556	1.0	0.080
Infection	1.24	1.420	0.025	1.96	2.550	3.0	0.001*
Dry Socket	1.53	1.140	0.029	1.96	2.463	1.0	0.435
Nerve Disturbance	1.17	2.474	0.016	1.96	1.231	1.0	0.341

TMJ Issues	1.83	2.565	0.033	2.33	1.219	1.0	0.324
Lower Jaw Fracture	1.74	1.120	0.025	1.26	1.526	1.0	0.090
<b>*p&lt;0.05 significant</b>							

## DISCUSSION

Barone and associates studied about the Ultrasound Bone Surgery against conventional Rotary Instruments in Lower Third Molar Extraction. It was a Randomized Clinical assessment wherein they noticed few critical complications and their deleterious effect on the overall quality of life.<sup>17</sup> López-Cedrún and other researchers have experimented about the effectiveness of Amoxicillin Treatment in Preventing Postoperative Complications in Patients Undergoing Third Molar Surgery. It was a Prospective, Randomized, and Double-Blind Controlled Study. They also believed that post operative complications in mesioangular mandibular third molar impaction surgeries can only be minimized by maximizing the accuracy of the procedures.<sup>18</sup> Monaco and other researchers have explored the effects and usage of Antibiotic action in impacted third molar surgery.<sup>19</sup> Poeschl studied the Postoperative prophylactic antibiotic treatment in third molar surgery. Their inferences were highly comparable and predictive as our results.<sup>20</sup> Marciani and other colleagues have explored in detail about the Complications of third molar surgery and their management. They also agreed on the critical role of post operative complication.<sup>21</sup> Synan and other coworkers have studied in detail about the Management of Impacted Third Molars as related to the post operative complication in their recall visits.<sup>22</sup> Candotto and other pioneer workers have highlighted the role of complication in third molar extractions. They stressed on the immediate and precise management of post operative complications and associated quality of life.<sup>23</sup> Azab and other researchers have studied in detail about the effectiveness of secondary against primary closure methods for the avoidance of postoperative complications after impacted mandibular third molar extractions. Their inferences were highly comparable with our results and recomondatoins.<sup>24</sup> Barone and other colleagues have demonstrated the management of Mandibular Second Molar Impaction especially in terms of their post operative complications.<sup>25</sup> Murad and colleagues and Peixoto and coworkers have also agreed on the imperative role of post operative complications on the overall patient health and quality of life.<sup>26,27</sup>

## CONCLUSION

Within the limitations of the study, authors concluded that post operative complications in mesioangular mandibular third molar impaction surgeries are apparently unavoidable. In our study, Trismus, Pain, Bleeding are the common post operative complications while Nerve Disturbance, TMJ Issues and Lower Jaw Fracture was less commonly seen post operative complications. However, post operative

complications are dependent on other imperative factors like clinical expertise, surgical techniques and host related factors. As clinicians, we must observe any post-operative complications in mesioangular mandibular third molar impaction surgeries and treat them to maximize patient overall health and comfort. Our study's findings must always be correlated with clinical findings and observations. Authors also expect some similar long term studies to establish authentic guidelines in these perspectives.

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