



## COMPARISON OF POSTOPERATIVE COMPLICATIONS AFTER IMPACTED MANDIBULAR THIRD MOLAR EXTRACTION WITH CONVENTIONAL SUTURING VERSUS TUBE DRAINAGE.

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**ABSTRACT... Objectives:** To determine the effectiveness of tube drain compared with conventional suturing on postoperative complications after extraction of impacted mandibular third molars. **Study Design:** Cross Sectional study (Comparative). **Setting:** Department of Oral & Maxillofacial Surgery, Institute of Dentistry, LUMHS Jamshoro/Hyderabad. **Period:** Six months duration from 12-11-2015 to 13-05-2016. **Material & Methods:** All the patient age from 18 to 45 years irrespective of gender, having mesioangular impacted mandibular third molar were included in the study. Patients were divided into two groups, Group-A and group-B. The severity of pain was recorded by using Visual Analog Scale from 0 no pain to 10 worst pain, degree of swelling was measured by facial size through Amin and Laskin criteria and mouth opening was measured by interincisal distance through ruler. All data was recorded on the 3<sup>rd</sup> and 7<sup>th</sup> day by the clinician. **Results:** Mean age of group A was 31.22+7.21 years, and mean age of group B was 28.34+5.33 years. Male were found slightly more as compared to female. On 3<sup>rd</sup> day the post-operative pain assessment was almost equal in both groups p-value 0.06 and assessment of post-operative swelling on 3<sup>rd</sup> day was found with insignificant difference p-value 0.22. Assessment of pain on 7<sup>th</sup> post-operative day was that the severe pain was found significantly reduced in group B as compared to group A p-value 0.01, swelling was significantly reduced in group B p-value 0.04. While mouth opening was also found significantly more in group B as compared to group A p-value 0.022. **Conclusion:** After removal of impacted mandibular third molars, incorporating tube drain is very effective as compared to conventional suturing in reducing the facial swelling, trismus and postoperative pain.

**Key words:** Extraction, Conventional, Impacted Tooth, Suturing, Tube Drain.

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## INTRODUCTION

When a tooth does not show signs of eruption during or beyond its normal era of eruption, it is explained as impaction of tooth.<sup>1</sup> Wisdom teeth probably erupt between the ages of 17 to 21 years.<sup>1</sup>

Most considered reasons for removal of mandibular wisdom tooth are to lessen the danger of developing pathologies like cysts and tumors. Other factors that make the indication for removal are the diminution of the risk of mandibular angle fracture, non restorable caries or caries in the adjacent second molar also requires extraction of third molar. Prophylactic removal is sometimes also carried out to overcome all these risks,

because these teeth do not help in mastication.<sup>2</sup>

Oral surgeons or Oral and maxillofacial surgeons consistently execute such type of surgery in their routine practice.<sup>3</sup> Several aspects are accountable for significant postoperative pain, swelling and trismus in patients who undergo this type of surgery, these comprise the angulations, deepness of impacted tooth, the kind of suture technique and length of surgical procedure.<sup>3,4</sup>

Through various techniques this unwanted postsurgical inflammation can be lessen.<sup>4</sup> Agents which can be prescribed or used to minimize these postsurgical effects include non-steroid anti-inflammatory drugs, steroids and enzymes.<sup>5</sup>

With some untoward effects and limitations these medication play vital role in reducing these postoperative complications.<sup>5</sup>

Other than medications, the length of surgical procedure and the surgical technique adopted have also key role in developing these complications. More lengthy surgery will have more chances of occurrence of these effects.<sup>6</sup> Enzymes can also suppress the edema but various studies report that their efficacy is not that valuable.

Wound closure that is either by primary or secondary intention is also responsible for these postoperative problems.<sup>7</sup> Many authors have suggested to incorporate tube drains while doing primary closure to evaluate the effectiveness in reducing the postoperative pain, swelling, and trismus in impacted lower third molar surgery.<sup>8</sup> Rubber and Penrose drain have also been used by many maxillofacial surgeons where they have been successful to evacuate pooled blood and eliminate dead space in wound. Some surgeons also used infant feeding tube drain to reduce the postoperative complications.<sup>8</sup>

The aim of this study is to treat mandibular third molar impaction after extraction along with associated complications like pain, swelling and trismus in better way by placing rubber drain or conventional suturing

## MATERIAL & METHODS

This comparative cross sectional study with non-probability purposive sampling contains 64 patients as follows:

- Group-A With Suturing (32patients)
- Group-B With tube drainage (32 patients)

### Inclusion Criteria

- Patient age from 18 to 45 years irrespective of gender.
- Patient having mesioangular impacted mandibular third molar.
- Patient willing to participate in this study.

### Exclusion Criteria

- Smokers and poor oral hygiene.
- Patient having any systemic diseases.

- Patients having any pathology in the impacted tooth vicinity.

Patients fulfilling the desired criteria were included. The data was collected from the patients who came to the outpatient department. Informed and written consent was taken from the patient. The impacted tooth was diagnosed by clinical examination, panoramic and periapical radiographs. The demographic and clinical parameters like age, gender, preoperative assessment of pain, swelling and mouth opening were recorded.<sup>3</sup> Two groups were made for patients distribution, Group-A and group-B. All surgical extractions were done under local anesthesia. In group A, after extraction primary wound closure was done with 3.0 silk sutures (Glysilik) without tension. In group B with buccal incision, between 1<sup>st</sup> and 2<sup>nd</sup> molar an infant feeding tube (3cm long and 2.67mm diameter). To prevent the tube from dislodgement or becoming lost, it was sutured with vestibular mucosa. Postoperative directives for the patients include soft diet, and maintain good oral hygiene by using mouthwash. In group A sutures were removed on the seventh postoperative day and in group B tubes were removed on the third postoperative day.

The severity of pain was recorded by using Visual Analog Scale from 0 no pain to 10 worst pain, degree of swelling was measured by facial size through Amin and Laskin criteria and mouth opening was measured by interincisal distance through ruler. And all data was recorded on the 3<sup>rd</sup> and 7<sup>th</sup> day by the clinician.

## RESULTS

Male were found slightly more as compared to females, in group A 17 were male and 15 were female out of 32, and in group B male were 20 and 12 were female, while no significant difference was found in both groups according to gender p-value 0.09. Figure-1

According to the age distribution mean age of group A was 31.22+7.21 years, and mean age of group B was 28.34+5.33 years, no significant difference was found in both groups according to age p-value 0.13. Table-I.

According to the preoperative assessment of pain majority of the cases were found with mild to moderate pain, with significant difference in both groups p-value 0.44. As showed in Table-II.

On 3<sup>rd</sup> post-operative day according to VAS, severity of pain were reduced in group B, while mild and moderate pain was almost equal in both groups p-value 0.06. Assessments of pain on 7<sup>th</sup> post-operative day according to VAS, severe pain was found considerably less in group B as compared to group A p-value 0.01. Table-III

In this study the pre-operative assessment of swelling and pre-operative mouth opening was also found normal almost in all cases, only few cases were found with swelling and abnormal mouth opening Table-IV.

Assessment of post-operative swelling on 3<sup>rd</sup> day, swelling was reduced almost equally in both

groups without significant difference p-value 0.22, while on 3<sup>rd</sup> postoperative day mouth opening was found significantly more in group B as compared to group A p-value 0.043. Post-operative swelling on 7<sup>th</sup> day, it was notably reduced in group B as compared to group A, p-value 0.04. While mouth opening was also found significantly more in group B as compared to group A p-value 0.022 Table-V.

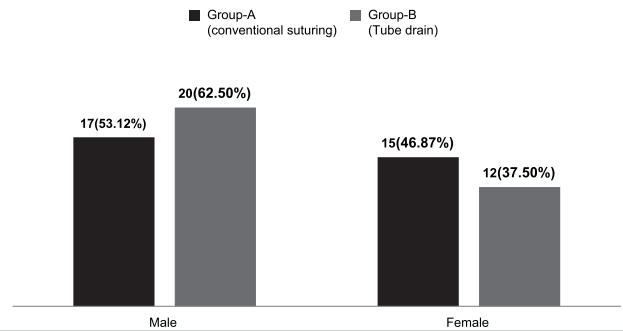


Figure-1. Showing gender distribution in both groups.

Study Groups	AGE (Mean+SD)	P-Value
Group-A n=32 (conventional suturing)	31.22+7.21 years	0.13
Group-B n=32 (Tube drain)	28.34+5.33 years	

Table-I. Age distribution in both groups. n=64

Pain according to (VAS)	Study Groups		P-Value
	Group-A n=32 (conventional suturing)	Group-B n=32 (Tube drain)	
No pain	05	03	0.44
Mild	15	12	
Moderate	08	14	
Severe	04	03	

Table-II. Assessments of pre-operative pain in the patients According to VAS. n=64.

Pain on 7th post-operative day	Study Groups		P-Value
	Group-A n=32 (conventional suturing)	Group-B n=32 (Tube drain)	
No pain	12	22	0.01
Mild	16	09	
Moderate	03	01	
Severe	01	00	

Pain on 3 <sup>rd</sup> Post-Operative Day	Study Group		P-Value
	GROUP-A n=32 (conventional suturing)	Group-B n=32 (Tube drain)	
No Pain	06	10	0.06
Mild	19	18	
Moderate	04	03	
Severe	03	01	

Table-III. Assessments of pain on 3rd and 7th Post-operative day according to VAS.

Pre-Operative	Study Groups		P-Value
	Group-A n=32 (conventional suturing)	Group-B n=32 (Tube drain)	
Swelling (Facial size in mm)	10.44+2.54	10.56+2.00	0.23
Tragus to corner of mouth			
Lateral angle of mandible	10.67+1.8	10.55+1.43	
Tragus to menton	10.12+2.23	10.55+2.12	
Mouth opening	42.43+2.76	42.12+2.65	0.032

**Table-IV. Assessments of pre-operative swelling and mouth opening n=64.**

3rd Postoperative Day	Study Groups		P-Value
	Group-A n=32 (conventional suturing)	Group-B n=32 (Tube drain)	
Swelling (Facial size in mm)	12.12±1.22mm	13.44±1.66mm	0.22
Tragus to corner of mouth			
Lateral angle of mandible	12.65±0.21mm	11.12±1.22mm	
Tragus to menton	14.23±1.67mm	12.20±2.34mm	
Mouth opening	38.32±2.12mm	42.54±1.36mm	0.043
7th Postoperative Day	Study Groups		P-value
Variable	Group-A n=32 (conventional suturing)	Group-B n=32 (Tube drain)	0.04
Swelling(Facial size in mm)	11.55+1.67	09.44+1.00	
Tragus to corner of mouth			
Lateral angle of mandible	11.54+1.9	10.11+0.33	
Tragus to menton	12.41+2.66	10.99+1.55	
Mouth opening	41.55+2.66	45.23+2.11	0.022

**Table-V. Assessment of swelling and mouth opening on 3rd and 7th postoperative day n=64.**

## DISCUSSION

In this study according to the age distribution mean age of group A was 31.22+7.21 years, and mean age of group B was 28.34+5.33 years, no significant difference was found in both groups according to age p-value 0.13. On other hand Anighoro, E. O et al<sup>9</sup> reported that out of 120 study subjects, 50 (41.6%) were males while 70 (58.3%) were females (ratio 1:1.4). Group A had a mean age of 26.5 ± 7.2 while group 2 had a mean of 27.1 ± 8.1. There was no statistical significant difference ( $p > 0.05$ ) between the mean ages of the two groups. In our study male were found slightly more as compared to females in group A 17 were male and 15 were female out of 32, and in group B male were 20 and 12 were female, while no significant difference was found in both groups according to gender p-value 0.09.

We found in this study decrease swelling in

drained group as compared to conventional suturing group but it was non-significant on 3<sup>rd</sup> postoperative day, similarly Koyuncu BO et al<sup>10</sup> also compared these two techniques and reported that during first and 2<sup>nd</sup> postoperative days postoperative swelling was less in the drainage group. Another study by Hashemi et al<sup>11</sup> concluded that by creation of a passageway through which inflammatory exudates could be drained from the site could reduce postoperative edema and swelling after extraction of impacted teeth. On other hand Saglam et al<sup>12</sup> also reported that markedly a smaller amount puffiness after the using the drain. Rakprasitkul and Pairuchvej et al<sup>13</sup> and Dubois<sup>14</sup> also showed comparable results as; a decreased swelling was noted in patients in which drain was placed.

In our study on the post-operative pain assessments on 3<sup>rd</sup> post-operative day severe

pain was reduced in the drained group, while mild and moderate pain was almost equal in both groups p-value 0.06. Similarly Koyuncu BÖ et al<sup>10</sup> stated that on first 3 postoperative days, pain was drastically superior in the control group than the experimental group. While inconsistently Rakprasitkul and Pairuchvej et al<sup>13</sup> reported that the degree of pain was almost equal in both the groups.

In present study on the post-operative pain assessments on 7<sup>th</sup> post-operative day, brutality of ache was found drastically reduced in the drained group as compare to conventional suturing group, and swelling was also significantly reduced in group B as compare to group A, p-value 0.04. This study concluded that, to reduce the severity of trismus, application of tube drain has obvious advantage. Mouth opening was also seen less restricted as compare to control group, these findings were also supported by Koyuncu BO et al.<sup>10</sup> Post-operative trismus was also seen reduced in the study carried out by Chukwuneke et al.<sup>15</sup>

Rakprasitkul and Pairuchvej<sup>13</sup> reported that interincisal distance was significantly greater in the immediate postoperative period in the drainage group. Various studies have endorsed that postoperative swelling is seen reduced by the use of drain.<sup>16,17</sup>

In evaluation of the effectiveness of drainage in reducing the postoperative effects different drains have been used by many authors. Flynn et al.<sup>18</sup> and Chukwuneke et al<sup>15</sup> reported that clinicians have employed rubber and Penrose drains in intraoral procedures with varying extent of victory to vacate pooled blood and get rid of dead space in wound.<sup>19</sup>

## CONCLUSION

It was concluded that after extraction of impacted mandibular third molars, the use of the tube drain is very effective as compare to conventional suturing in reducing the facial swelling, trismus and postoperative pain. More comparative studies are needed to evaluate the more accuracy of tube drain on the post-operative assessment after






extraction of impacted mandibular third molars.  
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2	Kashif Ali Channar	Supervision, Ideas.	
3	Munawar Din Larik	Discussion, References.	
4	Sajid Ali Majeedano	Manuscript designing.	
5	Aftab Ahmed Soomro	Results.	
5	Asfar Hussain	Proof read.	