

## Comparison of Post-Operative Sequaele in Patients After Third Molar Extraction: Sutureless and Sutured Group

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### ABSTRACT

**Background:** Removal of third molars is a commonly performed procedure in dental practice. The soft tissue and hard tissue barriers in the form of adjacent teeth and mucosa are mainly responsible for impaction of teeth. Complications after third molar surgery can be divided into immediate or delayed. Delayed complications can arise due to soft tissue injury and due to injury to adjacent teeth. Certain common postoperative complications include dry socket, pain, swelling and infections. The aim of the present study is to evaluate the difference in post-operative sequel after third molar surgery in cases that undergo primary and secondary closure.

**Materials and Methods:** The present prospective randomised study was conducted in the Department of Oral and maxillofacial surgery of the institute during a period of 1 year. The study included 25 cases of bilaterally impacted mandibular third molars that were indicated for extraction. The flap was placed back and compressed with saline gauze on case side and in control side, normal suturing was done. Written and verbal postoperative instructions were given to all the patients. Everyone was prescribed with 500 mg Amoxycillin and 400 mg Metrogyl three times a day for 5 postoperative days. Ibuprofen was prescribed as an analgesic. All the data was recorded in a tabulated form and analysed using SPSS software. Student t test was used for comparison. P value of less than 0.05 was considered as significant.

**Results:** The present study was conducted over a period of 1 year and it enrolled 25 subjects. The mean of the subjects was 25.21 +/- 9.31 years. There were 16 males and 9 females. The

mean pain scores on day 1 in cases was 1.12+/-0.24. The mean pain scores on day 1 in controls was 1.23+/-0.31. There was no significant difference between the two groups as p value was more than 0.05. The mean swelling scores on day 1 amongst cases was 11.42+/-0.52. The mean swelling scores on day 1 amongst controls was 11.25+/-0.41. There was no significant difference between the two groups as p value was more than 0.05. The mean swelling scores on day 4 amongst cases was 12.11+/-0.48.

**Conclusion:** From the above study we can conclude that though there was no significant difference between healing by primary and secondary intention but the pain and swelling scores were lesser in patients with healing by secondary intention.

**Keywords:** Healing, Extraction, Secondary Intention.

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### INTRODUCTION

Removal of third molars is a commonly performed procedure in dental practice. The soft tissue and hard tissue barriers in the form of adjacent teeth and mucosa are mainly responsible for impaction of teeth. The order of impaction is maxillary and mandibular third molars, maxillary canines and mandibular premolars. Since the third molars are the last teeth to erupt in oral cavity, they are the most commonly impacted teeth because of lack of space. The best age group for extraction is 17-20 years of age.<sup>1</sup> Complications after third molar surgery can be divided into

immediate or delayed. Delayed complications can arise due to soft tissue injury and due to injury to adjacent teeth. Certain common postoperative complications include dry socket, pain, swelling and infections.<sup>1</sup> Most of the patients are scared of surgery because of complications like pain and edema. The operating surgeons try their best to minimize these complications as much as possible. Body's natural response to injury is inflammation. As a result of inflammation there is release of mediators like serotonin, histamine and bradykinin. These chemical mediators

are responsible for increasing the blood vessel permeability and hence leading to accumulation of inflammatory exudates and swelling in the area of concern. After the extraction of third molars, wound can either undergo primary closure or secondary closure. Various studies have been conducted in literature to determine the effect of the types of closure techniques on swelling, pain and trismus. Some of them compare suturing techniques<sup>2-5</sup> while some others compare the types of flaps used for surgery.<sup>6-8</sup> There have also been studies that compare the use of rubber tube drains.<sup>9-11</sup> The aim of the present study is to evaluate the difference in post-operative sequel after third molar surgery in cases that undergo primary and secondary closure.

**MATERIALS AND METHODS**

The present prospective randomised study was conducted in the Department of Oral and maxillofacial surgery of the Institute, during a period of 1 year. The study included 25 cases of bilaterally impacted mandibular third molars that were indicated for extraction. Prior ethical committee clearance was obtained from the institute. All the subjects were informed about the study and a written consent was obtained from all in their vernacular language. Patients belonging to ASA III or IV, patients with history of bleeding disorders and patients with allergy to local anaesthesia were excluded from the study. Complete detail of patient's demographics was obtained which included age, gender,

socioeconomic status was obtained. Patient's medical history was also taken into consideration. Swelling was measured as the difference in preoperative and postoperative reading between the tragus of ear and the oral commissure. Pain was measured on the VAS with 0 denoting no pain and 100 meaning severe pain. Readings were evaluated on 1<sup>st</sup>, 4<sup>th</sup> and 7<sup>th</sup> postoperative days. All the patients were given oral hygiene instructions before surgery and underwent scaling and root planning. Surgery was performed by single operator. Under complete aseptic conditions, lingual and inferior alveolar with long buccal nerve block was given. A triangular full thickness mucoperiosteal flap was reflected followed by bone guttering with number 8 bur. Odontomy was done if required. Curetting and debridement was done after removal of tooth from socket. The flap was placed back and compressed with saline gauze on case side and in control side, normal suturing was done. Written and verbal postoperative instructions were given to all the patients. Everyone was prescribed with 500 mg Amoxycillin and 400 mg Metroglol three times a day for 5 postoperative days. Ibuprofen was prescribed as an analgesic. There was a time lag of two months between both extractions.

Patients were recalled in the department and the postoperative data was recorded. All the data was recorded in a tabulated form and analysed using SPSS software. Student t test was used for comparison. P value of less than 0.05 was considered as significant.

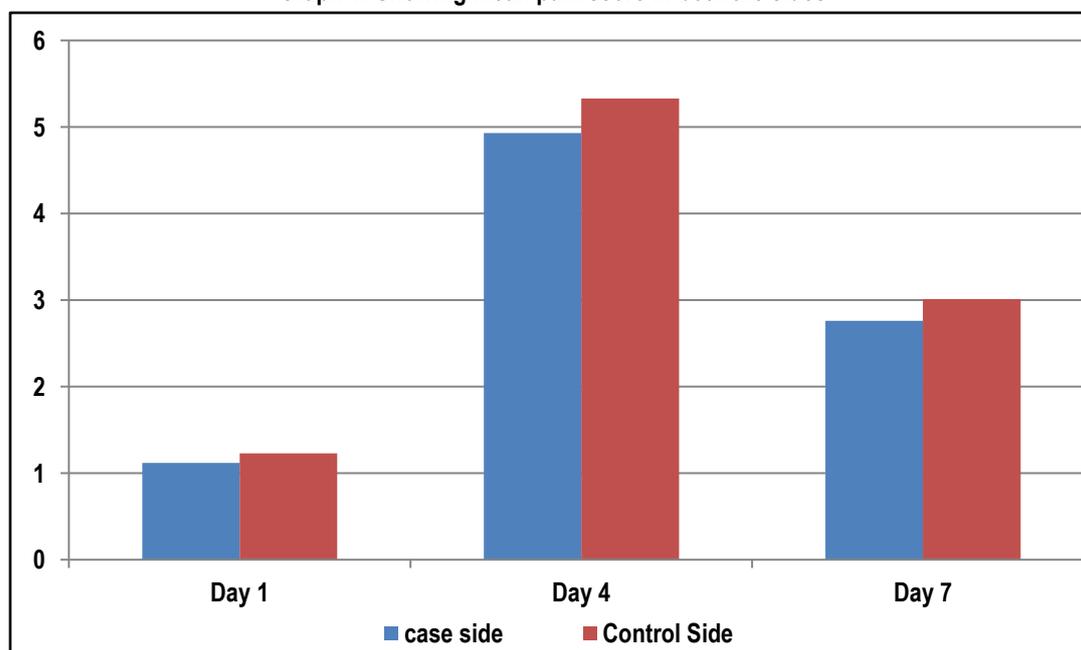
**Table 1: Showing mean pain score in both the sides**

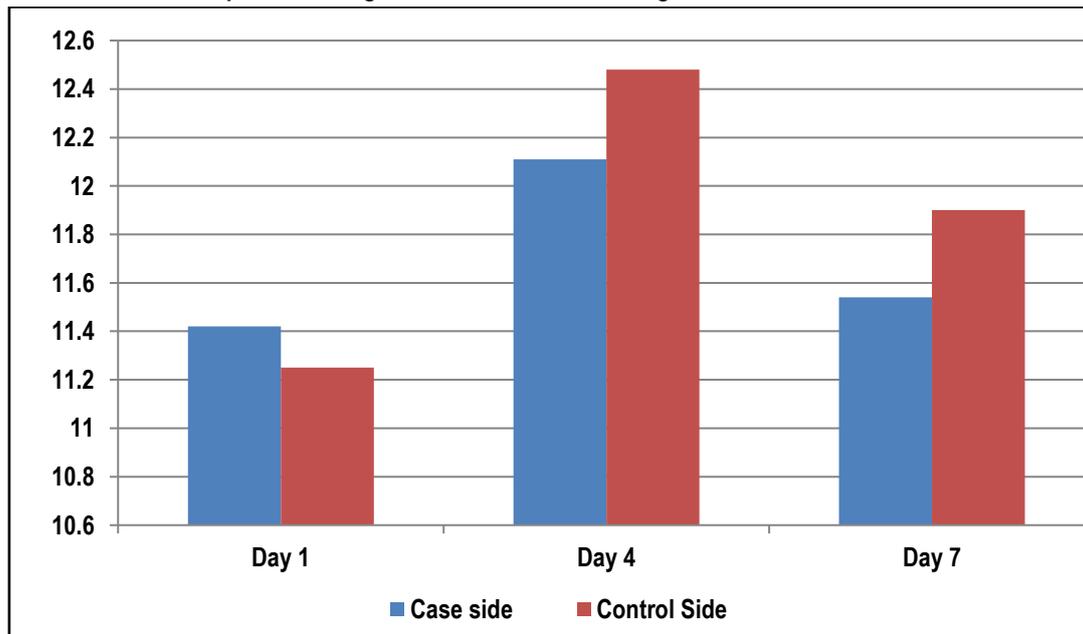
POST-OPERATIVE DAYS	CASE	CONTROL	P value
Day 1	1.12+/-0.24	1.23+/-0.31	>0.05
Day 4	4.93+/-1.10	5.33+/-1.22	>0.05
Day 7	2.76 +/-0.88	3.01+/-0.65	>0.05

**Table 2: Showing difference in mean swelling between both the sides**

POST-OPERATIVE DAYS	CASE	CONTROL	P value
Day 1	11.42+/-0.52	11.25+/-0.41	>0.05
Day 4	12.11+/-0.48	12.48+/-0.56	>0.05
Day 7	11.54 +/-0.61	11.90+/-0.64	>0.05

**Graph 1: Showing mean pain score in both the sides**



**Graph 2: Showing difference in mean swelling between both the sides**

## RESULTS

The present study was conducted over a period of 1 year and it enrolled 25 subjects. The mean of the subjects was 25.21 +/- 9.31 years. There were 16 males and 9 females.

Table 1 shows the mean pain scores amongst the subjects. The mean pain scores on day 1 in cases was 1.12+/-0.24. The mean pain scores on day 1 in controls was 1.23+/-0.31. There was no significant difference between the two groups as p value was more than 0.05. The mean pain scores on day 4 in cases was 4.93+/-1.10. The mean pain scores on day 1 in controls was 5.33+/-1.22. There was no significant difference between the two groups as p value was more than 0.05. The mean pain scores on day 7 in cases were 2.76 +/-0.88. The mean pain scores on day 1 in controls was 3.01+/-0.65. There was no significant difference between the two groups as p value was more than 0.05.

Table 2 shows the mean swelling between the two groups. The mean swelling scores on day 1 amongst cases was 11.42+/-0.52. The mean swelling scores on day 1 amongst controls was 11.25+/-0.41. There was no significant difference between the two groups as p value was more than 0.05. The mean swelling scores on day 4 amongst cases was 12.11+/-0.48. The mean swelling scores on day 4 amongst controls was 12.48+/-0.56. There was no significant difference between the two groups as p value was more than 0.05. The mean swelling scores on day 7 amongst cases was 11.54 +/-0.61. The mean swelling scores on day 7 amongst controls was 11.90+/-0.64. There was no significant difference between the two groups as p value was more than 0.05.

## DISCUSSION

Surgical extraction of third molars causes significant pain and discomfort to the patients.<sup>3,4</sup> Difference in rate of postoperative complications is due to difference in suturing techniques.<sup>2,12-14</sup> The kind of suturing to be followed is only dependent on the surgeon.<sup>12</sup> Hermetical seal causes impairment in drainage of exudates and leads to accumulation of debris leading to inflammatory rection.<sup>2</sup> Since the surgical technique greatly influences the outcome of

surgery, the entire study was performed by a single operator.<sup>15</sup> Inflammatory reaction also varies amongst different individuals, therefore a split mouth study was performed in this case. According to our study, The mean pain scores on day 1 in cases was 1.12+/-0.24. The mean pain scores on day 1 in controls was 1.23+/-0.31. There was no significant difference between the two groups as p value was more than 0.05. The mean pain scores on day 4 in cases was 4.93+/-1.10. The mean pain scores on day 1 in controls was 5.33+/-1.22. There was no significant difference between the two groups as p value was more than 0.05. The mean pain scores on day 7 in cases were 2.76 +/-0.88. The mean pain scores on day 1 in controls was 3.01+/-0.65. There was no significant difference between the two groups as p value was more than 0.05. The pain scores were lesser in sutureless group compared to suturing group but there was no significant difference. In a study conducted by Danda et al, there was reduced swelling and pain in sutureless group after third molar surgery. In his study, he measured swelling from external canthus to oral commissure.<sup>4</sup> Secondary intention of wound healing is favoured by many studies. The results were similar to the study done by Pasquelini's research, who conducted study amongst 200 patients.<sup>16</sup> According to our study; the mean swelling scores on day 1 amongst cases was 11.42+/-0.52. The mean swelling scores on day 1 amongst controls was 11.25+/-0.41. There was no significant difference between the two groups as p value was more than 0.05. The mean swelling scores on day 4 amongst cases was 12.11+/-0.48. The mean swelling scores on day 4 amongst controls was 12.48+/-0.56. There was no significant difference between the two groups as p value was more than 0.05. The mean swelling scores on day 7 amongst cases was 11.54 +/-0.61. The mean swelling scores on day 7 amongst controls was 11.90+/-0.64. There was no significant difference between the two groups as p value was more than 0.05. In a study conducted by Hashemi et al, the pain and swelling were more on the sutured sites compared to sutureless sites.<sup>5</sup> In another study conducted by Osunde, there was a statistically significant

difference in the pain and swelling score amongst both the groups. Swelling and pain were significantly less in sutureless group. Trismus scores were also lesser in sutureless group.<sup>17</sup>

Studies were also conducted to evaluate the advantages of drains following third molar extraction. They concluded that the use of drains also significantly reduces pain and swelling.<sup>18,19</sup> In a similar study conducted by Maria et al.<sup>20</sup>, the postoperative values were comparatively lesser in the group that healed by secondary intention compared to the group in which complete closure was done. The size of hematoma was also larger in the group with sutures. In a study conducted by Waite and Cherala<sup>2</sup> amongst 366 subjects, they raised a small V shaped flap and found that postoperative complications were lesser in the sutureless group.

## CONCLUSION

From the above study we can conclude that though there was no significant difference between healing by primary and secondary intention but the pain and swelling scores were lesser in patients with healing by secondary intention. Therefore in cases of minimal trauma during surgery, sutureless technique can be considered as an alternative,

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