

A Comparative Study of Effect of Primary and Secondary Closure Technique Following Impacted of Removal of Third Molar

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ABSTRACT

Background: Mandibular third molar removal often causes considerable post operative discomfort. The present study was conducted to compare effect of primary and secondary closure technique following removal of impacted mandibular third molar. **Methods:** The present study was conducted on 74 patients with impacted mandibular third molar of both genders requiring surgical extraction. Patients were divided into 2 groups. In group I patients, primary closure was done and in group II patients, secondary closure was done. Patients were prescribed analgesics and antibiotics for five days. Patients were recalled regularly and pain and swelling was recorded postoperatively on 1st, 3rd, 5th and 7th day using VAS. **Results:** Out of 74 patients, males were 34 and females were 40. The mean VAS on 1st day in group I was 2.15 and in group II was 2.86, on 3rd day was 1.67 in group I and 2.06 in group II, on 5th day was 1.12 in group I and 1.60 in group II, on 7th day was 0.54 in group I and 1.2 in group II. The difference was significant ($P < 0.05$). The mean VAS of swelling on 1st day in group I was 1.45 and in group II was 1.65, on 3rd day was 2.15 in group I and 2.54 in group II, on 5th day was 1.04 in group I and 1.72 in group II, on 7th day was 0.62 in group I and 1.04 in group II. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that there was significantly less pain and swelling in patients in which primary closure was done as compared to patients with secondary closure.

Keywords: Primary closure, Secondary closure, third molar.

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INTRODUCTION

The removal of lower third molars is one of the most frequently performed procedures in oral and maxillofacial surgery. Mandibular third molar removal often causes considerable post operative discomfort.^[1] Many methods and drugs have been tried in order to relieve this post operative discomfort so that the patient does not lose working man hours and the quality of life is not affected.^[2]

There is a certain amount of controversy regarding the type of healing based on whether it is of the primary or secondary type. Conflicting opinions have been expressed in the literature concerning these two types of healing. Some authors are in favor of closed healing, whereas other authors report that primary healing frequently causes greater pain and swelling than secondary healing. Other authors are of the opinion that postoperative progress does not differ in the two types of healing.^[3]

Different anti-inflammatory and antibacterial drugs have been tried on the mandibular third molar surgery model to assess relief in post operative complications. Authors have also compared the insertions of cones or drains saturated with antimicrobial agents in third molar sockets with primary closure and found that in most studies there was a significant decrease in post operative discomfort in the medicated group.^[4] The present study was conducted to compare effect of primary and secondary closure technique following removal of impacted mandibular third molar.

MATERIALS & METHODS

The present study comprised of 74 patients with impacted mandibular third molar of both gender requiring surgical extraction. Only mesio-angular impacted molar were included in the study. Ethical clearance for the study was taken from institutional ethical committee. All patients were informed regarding the study and written consent was obtained in their language.

Data such as name, age, gender etc. was recorded. A thorough oral examination was done. Patients were subjected to OPG to assess type of impaction. Third

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molar was extracted following aseptic surgical technique. Patients were divided into 2 groups. In group I patients, primary closure was done and in group II patients, secondary closure was done. Patients were prescribed analgesics and antibiotics for five days. Patients were recalled regularly and pain and swelling was recorded postoperatively on 1st, 3rd, 5th and 7th day using VAS. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table 1: Distribution of patients

Total- 74		
Gender	Males	Females
Number	34	40

[Table 1] shows that out of 74 patients, males were 34 and females were 40.

Table 2: Distribution of patients in both groups

Groups	Group I	Group II
Technique	Primary closure	Secondary closure
Number	37	37

[Table 2] shows that in group I patients, primary closure was done and in group II patients, secondary closure was done. Each group had 37 patients.

Table 3: Assessment of pain on VAS

VAS (Mean)	Group I	Group II	P value
1 st day	2.15	2.86	0.32
3 rd day	1.67	2.06	0.01
5 th day	1.12	1.60	0.02
7 th day	0.54	1.2	0.01

[Table 3] shows that mean VAS on 1st day in group I was 2.15 and in group II was 2.86, on 3rd day was 1.67 in group I and 2.06 in group II, on 5th day was 1.12 in group I and 1.60 in group II, on 7th day was 0.54 in group I and 1.2 in group II. The difference was significant ($P < 0.05$).

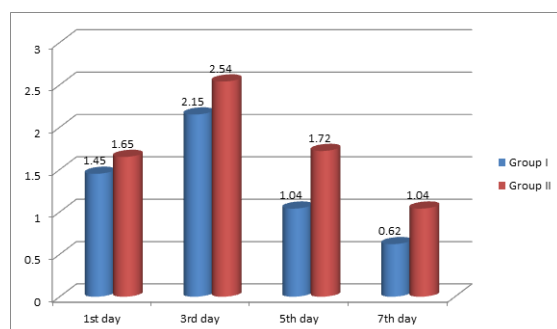


Figure 1: Assessment of swelling on VAS

[Figure 1] shows that mean VAS of swelling on 1st day in group I was 1.45 and in group II was 1.65, on 3rd day was 2.15 in group I and 2.54 in group II, on 5th day was 1.04 in group I and 1.72 in group II, on 7th day was 0.62 in group I and 1.04 in group II. The difference was significant ($P < 0.05$).

DISCUSSION

Acute inflammation is the immediate and early response to injury. A critical function of the response is to deliver leucocytes to the site of injury, where they can help clear the invading bacteria, as well as degrade the necrotic tissues resulting from damage. In primary healing, the socket is covered and sealed hermetically by a mucosa flap. Immediately after injury, the space between the approximated surfaces of incised wound is filled with blood which then clots and seals the wound against dehydration and infection. Acute inflammatory response occurs within 24 h with the appearance of neutrophils from the margins of the incision. By the 3rd day, polymorphs are replaced by macrophages.^[5] The basal cells of epidermis from both the cut margins start proliferating and migrating towards incisional space in the form of epithelial spurs. A well approximated wound is covered by layer of epithelium in 48 h. By the 5th day, a multilayered new epithelium is formed which is differentiated into superficial and deeper layers. By 3rd day, fibroblasts also invade the wound area. By 5th day, new collagen fibrils start forming which dominate till healing is completed.^[6] The present study was conducted to compare effect of primary and secondary closure technique following removal of impacted mandibular third molar.

In present study, group I patients, primary closure was done and in group II patients, secondary closure was done. Each group had 37 patients. There were 34 males and 40 females in the study.

In secondary healing, the socket remains in communication with the oral cavity. After removal of the tooth, the blood which fills the socket coagulates, within first 24–48 h after extraction, there is vasodilatation and engorgement of blood vessels in the remnants of the periodontal ligament and mobilization of leucocytes to the immediate area around the clot.^[7] Within the first week after tooth extraction, proliferation of fibroblasts from connective tissue cells in the remnants of periodontal ligament is evident, and these fibroblasts begin to grow into the clot around the periphery. This clot forms an actual scaffold upon which cells associated with healing process may migrate. It is only a temporary structure, however, and is gradually replaced by granulation tissue. The epithelium at the periphery of the wound exhibits evidence of proliferation in the form of mild mitotic activity even at this time.^[8]

We found that mean VAS on 1st day in group I was 2.15 and in group II was 2.86, on 3rd day was 1.67 in group I and 2.06 in group II, on 5th day was 1.12 in group I and 1.60 in group II, on 7th day was 0.54 in group I and 1.2 in group II. We found that mean VAS of swelling on 1st day in group I was 1.45 and in group II was 1.65, on 3rd day was 2.15 in group I and 2.54 in group II, on 5th day was 1.04 in group I and 1.72 in group II, on 7th day was 0.62 in group I and 1.04 in group II.

and 1.72 in group II, on 7th day was 0.62 in group I and 1.04 in group II.

A study by Maria et al,^[9] showed that the patients with primary closure experienced significantly greater pain, swelling and trismus than that was experienced by patients with secondary closure. When the subsequent findings were analyzed there was statistically significant difference in pain, swelling and trismus experienced between both the groups.

Chaudhary et al,^[10] showed that pain was greater in group A patients in which primary closure was done, although it decreased over time similarly in the two groups. Pain and swelling was less severe with secondary healing than with primary healing.

CONCLUSION

Authors found that there was significantly less pain and swelling in patients in which primary closure was done as compared to patients with secondary closure.

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