

Suture-Less Third Molar Surgery: Review of 30 Cases

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Abstract- Purpose: The purpose of this study is to identify surgical outcomes in third molar surgery when no sutures are used for primary closure.

Patients and Methods: A total of 30 third molars were removed from 30 patients in an outpatient setting using local anesthesia. A small V-shaped flap was raised in all cases and no sutures were placed over a 1 and ½ year period. Follow up was done on regular basis and protocol of 1 day ,1 week and 1 month.

Results: Normal healing in 75.75% cases, AO was seen in 10.7% cases, Pain more than 3 on VAS scale in 4.93% cases , Other complaints in 3.25% cases.

Conclusions: Small flap third molar surgery without sutures is less invasive and saves time. Delayed healing in oral surgery is not new. The outcome of 30 extractions demonstrates good results.

I. INTRODUCTION

The surgical removal of impacted third molars is a common procedure associated with a diversity of technique and anecdotal opinion. Most surgeons agree that surgical time, trauma, and difficulty are important factors in postoperative complications¹⁻⁵.The surgical objective is to quickly and carefully remove the impacted tooth with reduced complications. Over the years, there have been different opinions regarding primary and secondary closure techniques. Primary closure of a third molar flap is derived from basic surgical principles and recommended by Howe⁶, Archer⁷, Guralnick⁸, Kruger⁹, Waite¹⁰, Thoma¹¹, Killey¹² and Peterson¹³. Other authors such as Hunter¹⁴, Bourgoyne¹⁵, Blair and Ivey¹⁶, Padgett¹⁷ and Mead¹⁸ recommend secondary intention to facilitate irrigation and drainage. Some authors have recommended either primary or secondary closure and believe a small v-opening over the third molar facilitates drainage and irrigation¹⁹⁻²¹.

The purpose of this retrospective study is to report surgical outcomes of one surgeon's standard third molar procedure (of a very small incision, and no sutures at all to reposition the flap) and compare results to the existing literature. An attempt was made to evaluate routine or average outpatient surgery carried out in a private practice setting.

II. PATIENTS AND THE TECHNIQUE

A group of patients were selected from the routine OPD of our department of oral and maxillofacial surgery .

Patient selection:-

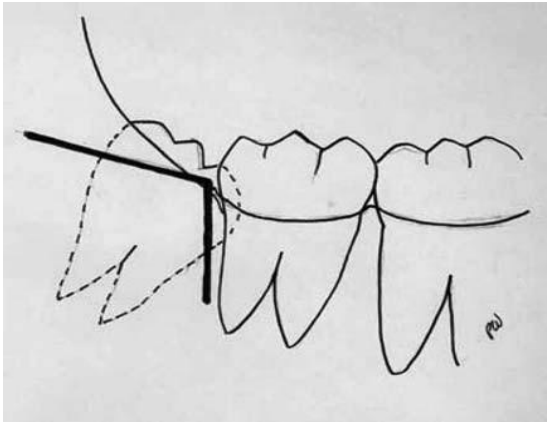
- 1)Male or Female patient with impacted 3rd molar on either side with no age limit.
- 2)Absence of active infection both pericoronally and periapically at time of surgery.
- 3)There should be no general contraindication to anesthesia and surgical procedure.
- 4)The difficulty level of the impacted 3rd molar was calculated as per Pederson et al difficulty index scale.
- 5) Patients with a medical history of smoking or birth control were not excluded.

III. SURGICAL TECHNIQUE

- 1)The standard surgical technique is followed.
- 2)2% chlorhexidine rinse for 20 secs.
- 3)Prophylactic I.V. antibiotics (1 gm cephalosporins)
- 4)Followed by I.V. 8 mg dexamethasone.
- 5)Lignocaine 2% with Adrenaline 1:2,00,000 used for local anesthesia.

IV. INCISION

A small "V" shaped incision was made with 1 point at the distobuccal line angle of the second molar. One vertical limb followed the external oblique ridge, and the other avoided the gingival sulcus and extended down to the mucogingival junction. This provided soft tissue release and was much smaller than the incision described by Szymd²⁵. No attached gingival tissue was excised over the third molar area. The flap was reflected slightly toward the distal and lingual so that greater access could be achieved. The apex of the flap was reflected and protected with a Minnesota retractor . Bone was removed with a rounded fissure bur under constant saline irrigation. The impacted tooth was exposed and distal bone was removed or the tooth sectioned as deemed necessary. The socket was briefly curetted and irrigated. The flap was repositioned and allowed to passively fall into a natural position often leaving the socket slightly open. A sterile sponge was placed to obtund bleeding and stabilize the flap.



Incision



Incision

V. ADVANTAGES

- 1) No need to detach the facial free gingival tissue around the second and first molar;
- 2) Decreased amount of reflected periosteum

- 3) Broad based blood supply to the flap
- 4) Adequate exposure and visibility
- 5) Good bony support for the soft tissue flap
- 6) No periodontal problems with 2nd molar.



Surgical exposure of the site



bed after removal of 3rd molar



Approximation of the over lying flap

- Pain more than 3 on VAS scale in 4.93% cases.
Other complaints in 3.25% cases.

VI. RESULTS

- Normal healing in 75.75% cases.
- AO(Alveolar osteitis) was seen in 10.7% cases.

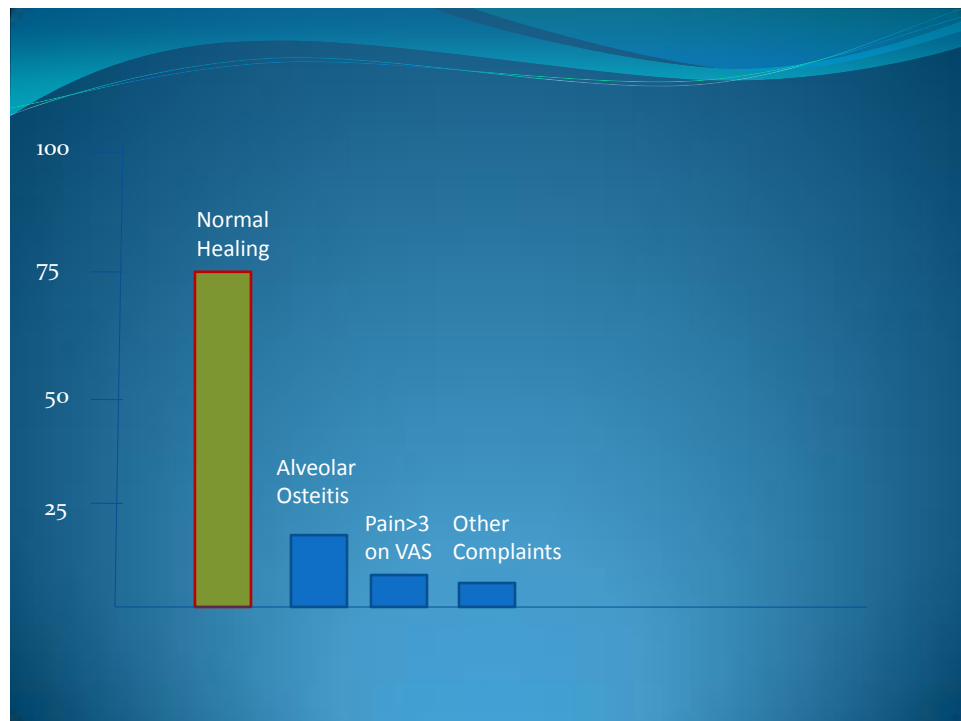


Table 1: complication

VII. DISCUSSION

No previous third molar studies have reported on the surgical outcome of a suture-less technique. Although Dubois et al²² and Stephens et al²⁶ have investigated the concept of primary and secondary closure, the prevailing surgical technique taught in modern textbooks is to reposition, and stabilize mucoperiosteal flaps with sutures¹³. Stephens et al²⁶ reported on the periodontal evaluation of 2 mucoperiosteal flaps used in removing impacted mandibular third molars and found there was no significant difference. The type of closure is the surgeon's choice. They described 2 flap techniques, both described by Szymd²⁵ which included a distal wedge excision and either an envelope flap in the gingival sulcus or a papilla sparing vertical release down to the mucogingival junction²⁶. Both flap designs were larger than our technique and sutured in at least 2 positions.

Szymd recommended the second modification for the following advantages:

- 1) no need to detach the facial free gingival tissue around the second and first molar;
- 2) decreased amount of reflected periosteum;
- 3) broad based blood supply to the flap;
- 4) adequate exposure and visibility;
- 5) good bony support for the soft tissue flap; and
- 6) closure can be effected with a single suture and the distal aspect of the third molar socket²⁷.

These principles still apply to our flap design, which is smaller, and without suturing essentially leaves an open area over the socket for secondary intention therefore not necessitating a distal wedge. Other studies by Magnus et al²⁸ and Woolf et al²⁹ found no significant difference in the periodontal status. Apparently, the flap design and suture technique even with an exposed area distal to the second molar did not result in a periodontal defect if properly carried out. This is an important point because in the suture-less flap technique attached gingiva is not pulled up tightly behind the second molar. Based on these reports this study did not evaluate the periodontal status after surgery. Szymd and Hester recommend the open techniques and often report less edema and reduced pain²⁵.

Sutures in dentoalveolar surgery certainly have application and are often necessary. This study does not imply that sutures should not be used to reposition a flap. However, in the posterior area of the dental arch, the anatomy of the ramus, tuberosity, gingiva, and buccal mucosa will passively fall together during the healing phase of third molar surgery if a small "V" shaped incision is carried out. This may be due to decreased mobilization, soft diets, and surgical contracture. In general Halsted's surgical principles of wound healing applies but there are often exceptions³⁰. It seems that tight closure over a large bony socket or defect does not facilitate drainage and oral hygiene. Suturing may create a one-way valve that allows food debris to enter the socket but not easily escape. This leads to local infection, inflammation, edema, clot necrosis, alveolar osteitis, and pain. Avoiding suture closure in this area is not illogical when one considers that the treatment for alveolar osteitis (dry socket) is irrigation, debridement, and dry socket dressing to create a constant opening. A small flap left open may

actually facilitate drainage, improve hygiene, and reduce the risk of alveolar osteitis pain.

VIII. CONCLUSION

Sutures in dentoalveolar surgery certainly have application and are often necessary. This study does not imply that sutures should not be used to reposition a flap. Due to the local anatomy of posterior area of dental arch the tissues will passively fall into the socket during the healing phase. This may be due to decreased mobilization, soft diets, and surgical contracture. It is important for all surgeons, and especially training programs, to assess surgical outcomes and test traditional logic. Evidence-based medicine is the academic charge. Is it possible the surgical art of suturing in some situations is not as important as we have traditionally thought it to be?

Perhaps the English dentist, Mr Hunter, was correct in his text, "It is also a common practice, to close the gum as it is termed: this is more for show than use: for the gum cannot be made to close as to unite by the first intention."

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