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The Different Types of Flaps in the Surgical Relations of the Third Impacted Molars–Literature Review

Guillermo Blanco*, Dianorys Lora and Clovys Marzola

Dentistry University Foundation, Hospital Heli Moreno Blanco, Brazil

Abstract

Third molars can present themselves completely and or partially retained and may be mucosal, submucosal, or completely retained within the jaws or jaw. The surgical technique includes an incision type, playing a key role in wound healing, presenting a series of incisions described over time, by different researchers and authors, in an attempt to minimize their impact, employ professional judgment one according to your needs and convenience.

Keywords: Third molar; Impaction; Flap design

Introduction

The impacted third molar surgery and/or partially impacted is the most common procedure in oral surgery and maxillofacial [1-18], ranging from therapeutic indications, previous history of infection [19-22] periodontal disease [23], pericoronitís [30-33],operating an inexplicable [34] pain associated with the third molar [35-36], pain, intractable caries prevention caries [37-43], tooth root resorption adjacent [35,44-46], orthodontic considerations incisor crowding lowers [47-52], prosthetic considerations [53], prevention and/or association of fractures mandibulars [14,54-58,61-65], prophylaxis [45], systemic considerations health [66-88], cysts and tumors [13,61,90,91], interference with orthognathic surgery or mandibular reconstruction [92] teeth to use transplants [93], teeth involved in the field of a tumor recession [34,94], opposing teeth that serve no role in occlusion [62,95].

The controversy in the treatment of third molars is oriented philosophical currents of professional interventionists who are in favour of prophylactic removal of third complete and/or partially impacted molars symptom -free gives some pathology, covered in the indications for avoid a number of complications, however there is no scientific evidence to affirm or deny that all these procedures promote health patient [91,97-99] .

Among the most common complications are; anxiety pre and postsurgical [100-101], pain, trismus, infection, dry socket [102-107], as a measure to prevent these risks and complications has been proposed that the surgical technique and surgeon experience are essential for the proper management of any complications [1,35].

Inside The surgical technique includes; flap design, technique of bone removal, tooth sectioning method, drain placement, intentional exposure of the socket and suture technique [108], try the incision, many authors have proposed different incisions[109-123] Figures 1-24, each of these has been given to ensure adequate access and decrease the side effects of the procedure such as, pain, trismus, swelling, dry socket and infection, reduce complications has been the purpose of the statements of many studies using these incisions.

Another major concern periodontal defect are likely to arise in the distal surface to 2 molar after the removal of impacted third molars, publications have reported frequency of periodontal disorders, age-related tilt of the molar, visible surface plate 2 molar distal [124]. But these conflicting results have periodontal problems according to studies reported, while some report a decrease in bone height distal to 2 molar after extraction of impacted molar, others state that the height was increased after surgery, this height may be affected by the mere fact of raising a flap without osteotomy [125].

To Nageshwar, The incision should not be performed on bone defects, or cut the muscle or tendon, the incisions should not be very long, and they could influence the unfortunate consequences of extraction [123].

The flap design according Karaca et al., used during surgery for removal of impacted third molars prevents complications related to 2 molar periodontal status [125]. Suarez et al. believe that this design influences healing primary [122]. This prevents wound dehiscence and evaluated the suture technique to achieve this closure to Sanchis et al. [124], believe that primary closure avoids draining the socket and worse postoperative inflammation and pain, choose to place drains, obtaining a less postoperative painful [127].

The envelope flap according to Kirk et al., has an incidence of wound dehiscence, which could lead to a dry socket and postoperative

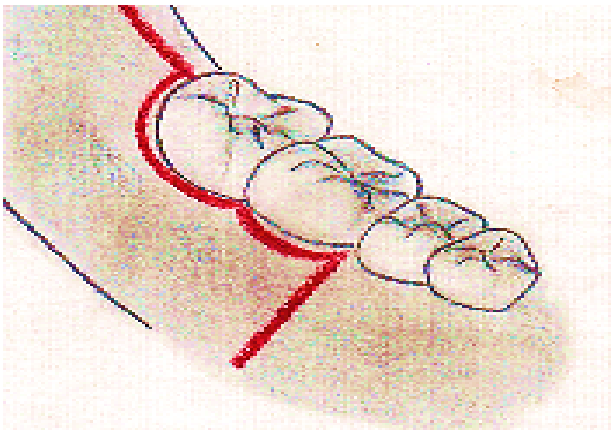

Figure 1: The design proposed by Mead, 1930, to the mandible incision.

***Corresponding author:** Guillermo Blanco, Dentistry University Foundation, Hospital Heli Moreno Blanco, Goiânia, Goiás 74550-120, Brazil, Tel: 55-35-999401646; Fax: 55-35-999401646; E-mail: guillobb@yahoo.com

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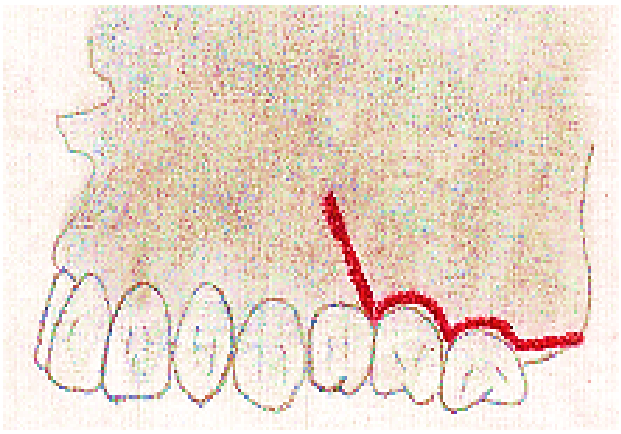

Figure 2: The design proposed by Mead, 1930 maxilla incision.

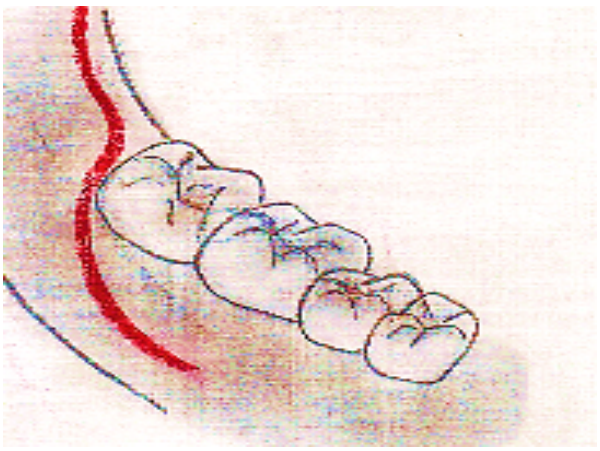

Figure 5: The design proposed by Avellanal, 1946 to the jaw incision.

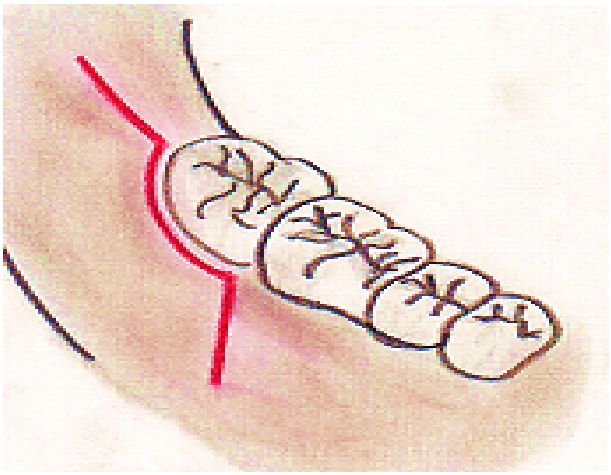

Figure 3: The design proposed by Cogswell, 1933 to the jaw incision.

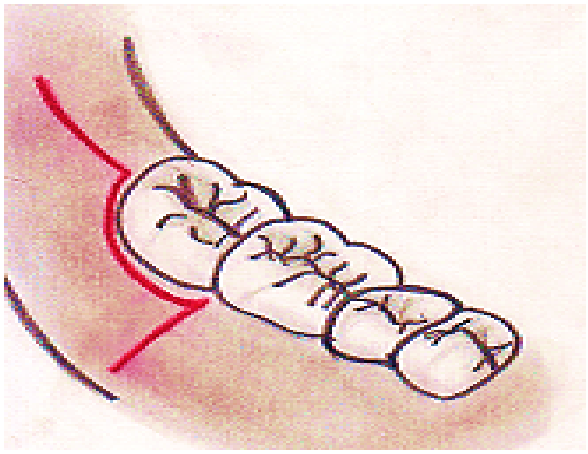

Figure 6: The design proposed by Ward, 1946 to the jaw incision.

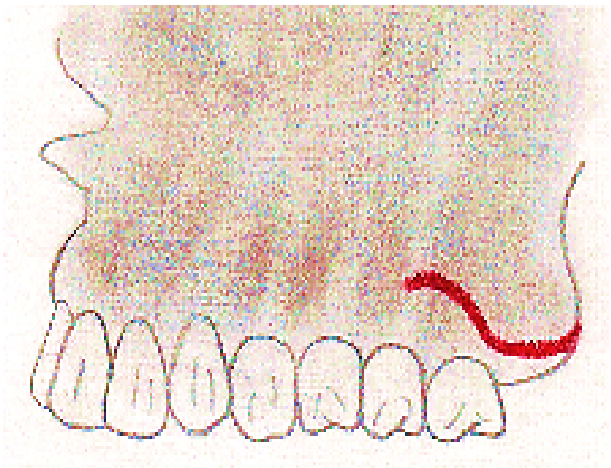

Figure 4: The design proposed by Avellanal, 1946 maxilla incision.

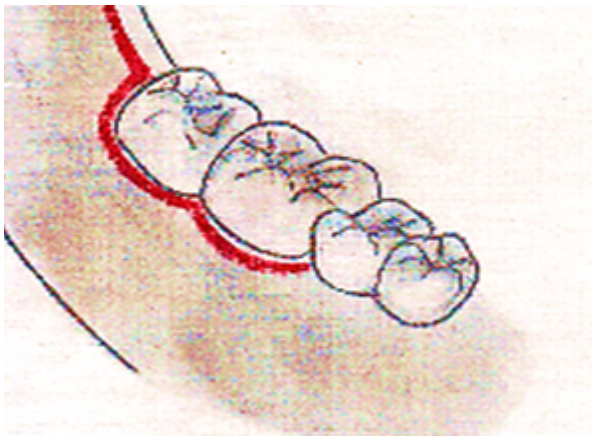

Figure 7: The design proposed by Maurel, 1959 to the jaw incision.

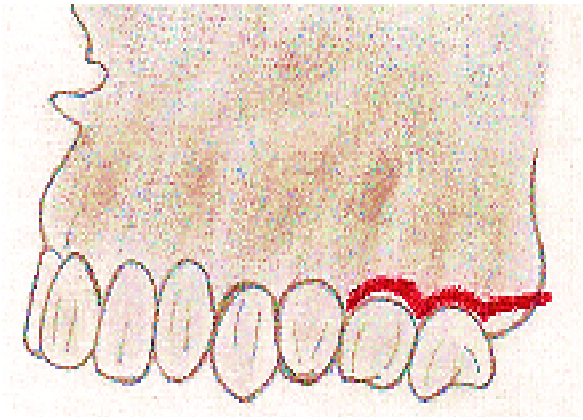

Figure 8: The design proposed by Maurel, 1959 maxilla incision.

Figure 9: The design proposed by Kruger, 1959 to the jaw incision.

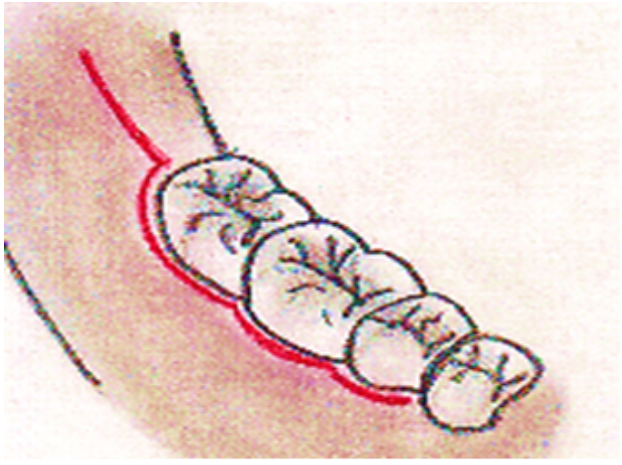

Figure 10: The design proposed by Ries Centeno, 1960 maxilla incision.

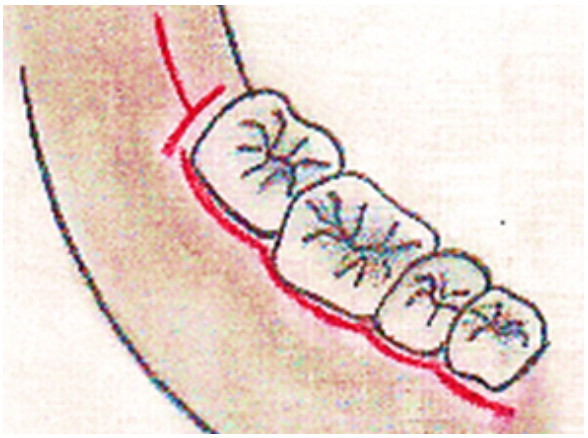

Figure 11: The design proposed by Ries Centeno, 1960, to the mandible incision

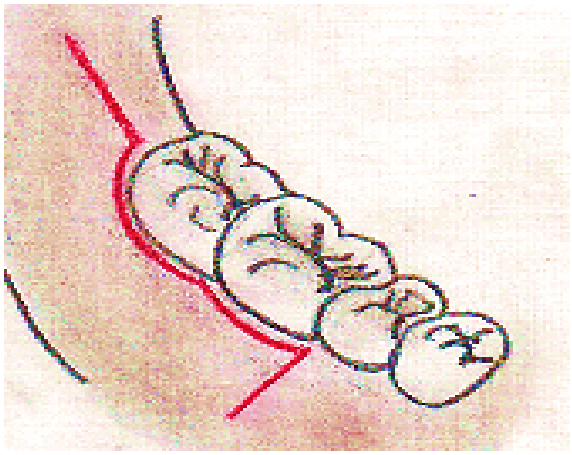

Figure 12: The design proposed by Szymd, 1971 for the mandible incision.

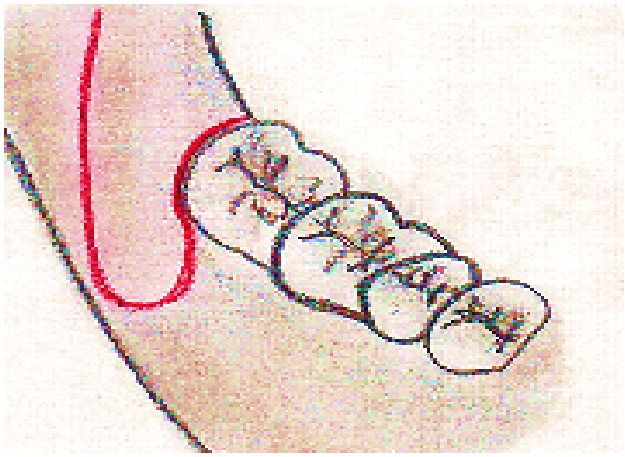

Figure 13: The design proposed by Berwick, 1971 for the mandible incision.

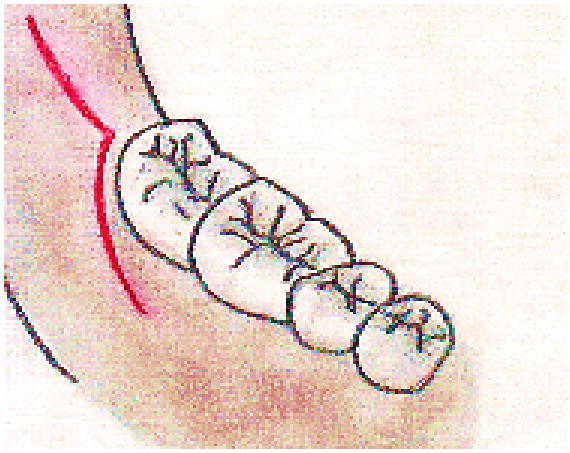

Figure 14: The design proposed by Howe, 1971 for the mandible incision.

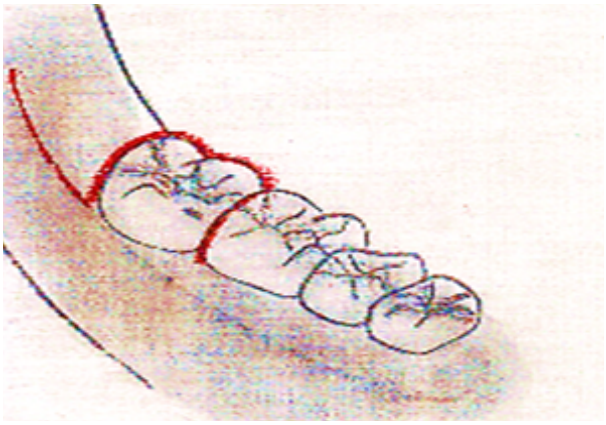

Figure 17: The design proposed by Stevão et al, 1998 to the jaw incision.

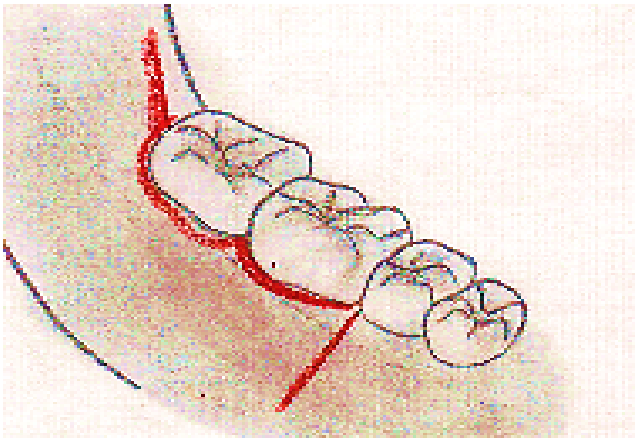

Figure 15: The design proposed by Lotter, 1984, to the mandible incision.

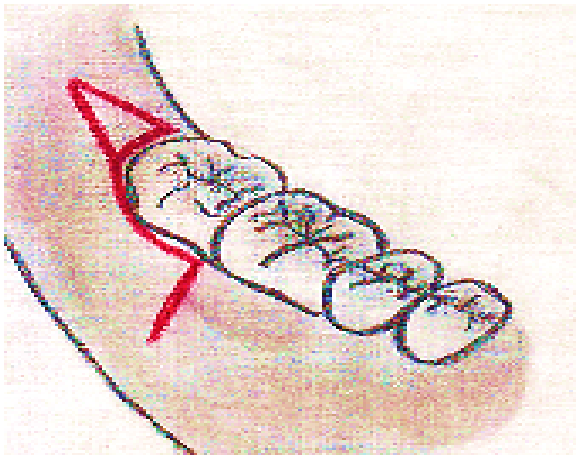

Figure 18: The design proposed by Saad Neto, 2000 to the jaw incision.

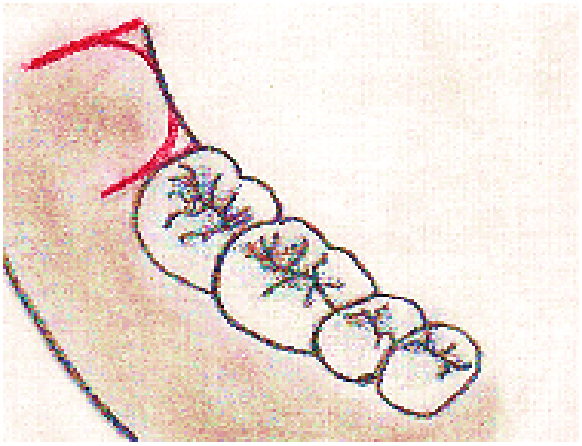

Figure 16: The design proposed by Berzaghi, 1989, to the mandible incision.

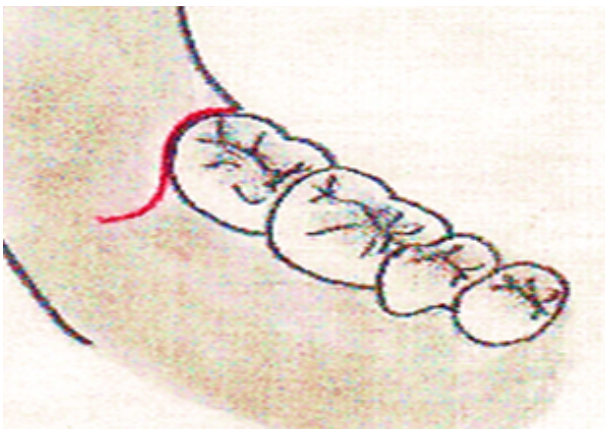

Figure 19: The design proposed by Nageshwar, 2002 to the jaw incision.

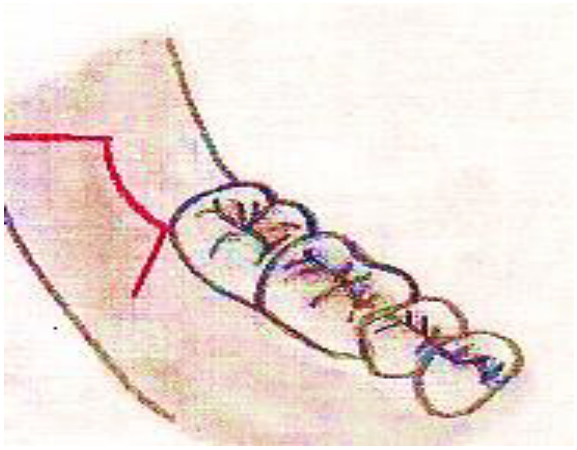

Figure 20: The design proposed by Suarez, 2003 to the jaw incision.

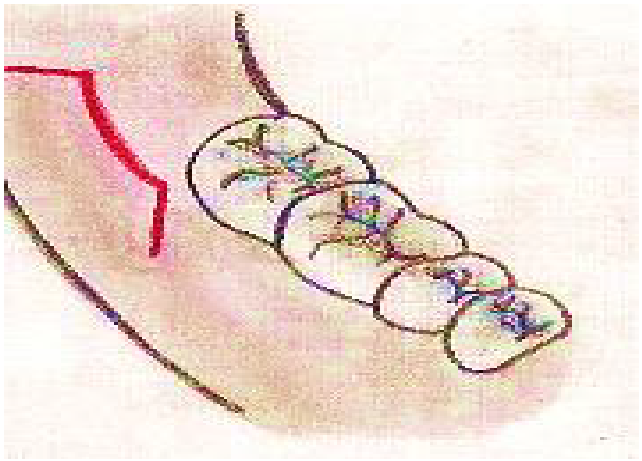

Figure 21: The design proposed by Suarez, 2003 to the jaw incision.

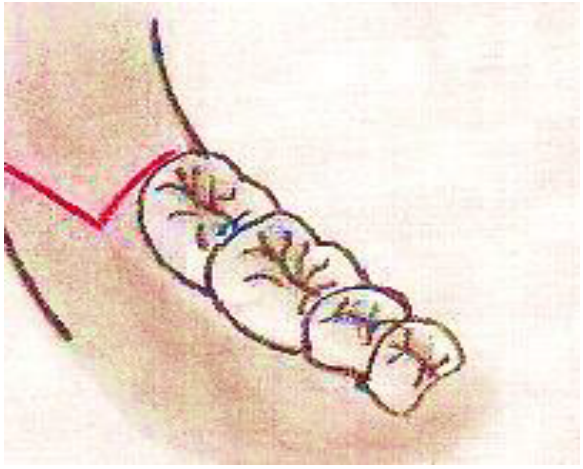

Figure 22: The design proposed by Heitz et al, 2003 to the jaw incision.

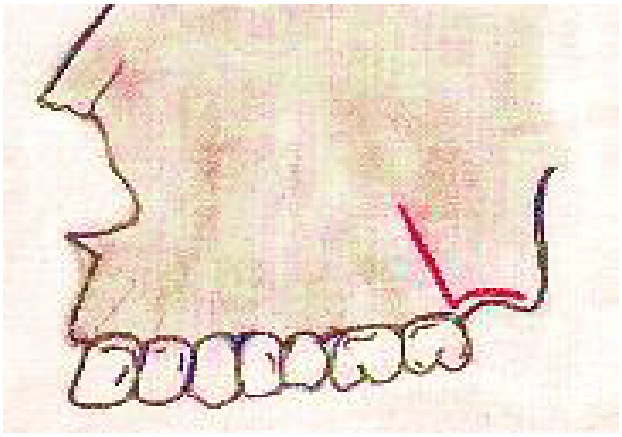

Figure 23: The design of the triangular incision advocated for the maxilla.

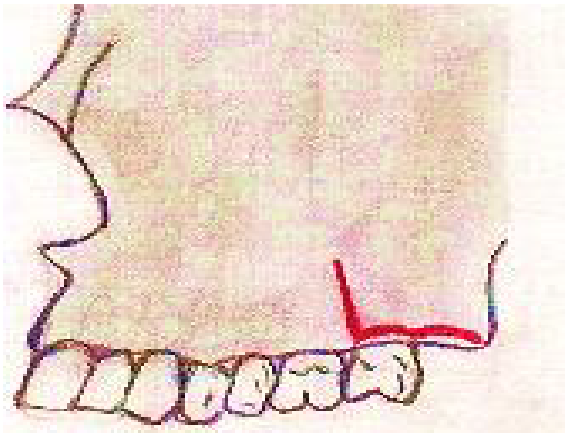

Figure 24: The design of the triangular incision for the maxilla.

period painful and inconfortable, damage at the level of the periodontal fibers to cervical insertion when performed the incision, the triangular flap has higher rate of edema and with better visibility operatory [128].

Sandhu et al. reported in their study comparing two types of flaps, the envelope flap dehiscence had higher inflammation and the bayonet (Triangular) flap used to compare the effects of pain, swelling, trismus, wound dehiscence after extraction of impacted third molars, the degree of inflammation according to various authors is influenced by the degree of eruption (Partial or Total) and angulation, for them there was no difference and there was a very low incidence of inflammation of vertical molars compared with mesio-angle, the degree of inflammation was not related to the duration of the surgery [129] .

Arta et al., incision type has no effect on the second molar distal periodontal health, but may influence the primary wound healing and a degree of alveolar osteitis [130].

Martins et al, conducted a comparison of 2 types of flaps and found no significant differences relating to the second molar periodontal healing and consider other factors as are to be analyzed, patient age, area of contact between 2 and 3 molar pericoronal follicle size, presence of

pre-existing periodontal inflammation, retention rate, amount of bone removed, amount of attached gingiva distal to 2 molar, proximity to the ramus of the mandible and type of suture and skill the professional [111,131].

Erdogan et al., comparing 2 types of flap (Envelope and triangular) and the first has a lower degree of inflammation than the second, there is no significant difference in the degree of trismus between the two flaps, operative time, number of painkillers taken, recommende envelope flap to present inflamation lower rate [108].

Kırtıloğlu et al., comparing 2 types of flap (Szmyd and Triangular or Paramarginal) found no difference in healing, recommend surgical removal with minimal trauma and flap Szmyd a distal intact gingiva to the second molar and periodontal healing compared other flap after completely impacted molar extraction or mesioangular horizontal position [132].

Jakse et al., conclude that the envelope flap produces the flap dehiscence Szmyd and this affects the primary healing, this produces a long, painful and uncomfortable for the patient postoperatively [133].

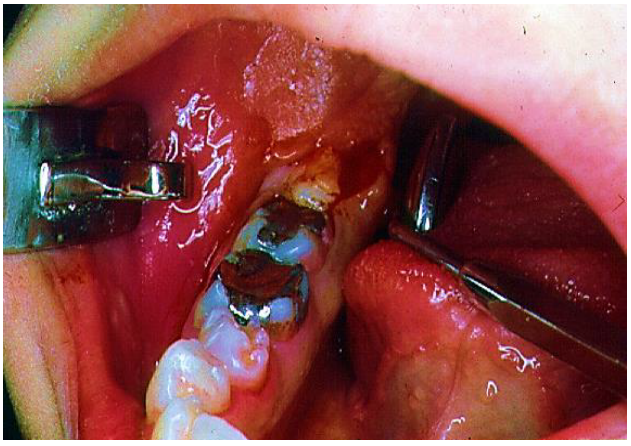

Figure 25: The design of the triangular incision for the jaw advocated by Marzola. The design of the triangular incision in the posterior mandible, with its withdrawal, and an oblique incision in the papilla distobuccal the second molar to the bottom groove (Marzola, 1975).

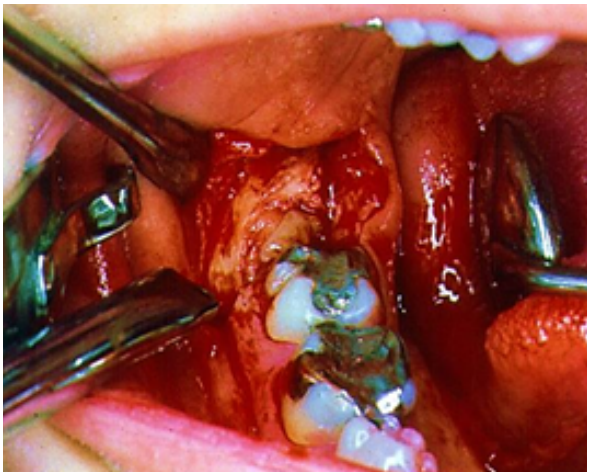

Figure 26: The design of the triangular incision (MARZOLA, 1975) for the jaw, after folding the flap providing an appropriate field for the surgeon without damaging the anatomy of the second molar.

Figure 27: The design of the triangular incision (MARZOLA, 1975) for the jaw, after the folding of the flap ensures a sufficient field for the surgeon without damaging the anatomy of the second molar. The suture is then performed only on that portion where the triangle was removed, leaving open the oblique incision, functioning as a permanent drain in the first days after surgery, avoiding that dreaded swelling of the early days of this surgery.

Pasqualini et al., reported that the secondary closure after extraction of impacted third molars, provides results considering the variables of pain and inflammation , reducing postoperative discomfort and primary closure could be more painful and produce alveolar osteitis [134].

The design of the proposed incision in adherence to techniques Avellanal and a change could bring considerable changes in wound healing with positive with the success of the maneuver results. [99] The triangular incision posterior to the second molar facilitate the vision of the site and also access to the bone region, and a better location for the side that would serve as a natural site drainage oblique incision. This oblique incision was started at the angle distobuccal the second molar and descends to the bottom of the groove (Figures 25 and 26). This incision was sutured only oblique angle together with the back and would not be sewn to the bottom of the groove remaining open and working as a permanent drain in the first postoperative days (Figure 27). Excellent postoperative results were seen for these more than fifty years of observation [93].

Discussion

A variety of proposals for addressing incisions impacted third molars, are unclear but the findings of this work and tend to be controversial , many studies lack a small number of cases and variables under investigation could be exclusive, talks a lot about the experience of the surgeon to avoid complications, operative time, however all procedures reported complications as always, trismus, pain, swelling, difficulty in mouth opening, and others do not take into account factors such as quality of life of patients, affected significantly.

Conclusion

There are a variety of proposals to address incisions of impacted third molars, but the conclusions are not clear and these jobs tend to be controversial and many studies lack a small number of cases and

variables under investigation may be unique, and much talk about the experience of the surgeon to avoid complications and operative times. However all procedures always report complications, trismus, pain, swelling, difficulty opening the mouth, and do not take into account other factors such as the quality of due patients, which was significantly affected.

1. The flaps do not present alterations distal to the second molar periodontal level 6 months after the extraction, so the flap design is a matter of individual preference of the surgeon, and the type of training received [108,123,126-128,130,135,136,137] many techniques require prior training to handle killer [123].

2. If there is a related problem with the soft tissues around the mandibular second molars, is apparently not a result of the surgery or the art, but is the result of another process. Further comparative studies are still needed to determine the best technique [125].

3. The type of flap does not diminish the effects, inflammation, pain and better mouth opening after extraction, the absence of increase in depth is not related to the type used flap is the result of a technical conservative [122-136].

4. The few studies that perform a comparison between different incision techniques do not find a significant difference on the adverse effects of third molar surgery regarding; periodontal attachment loss, plaque index, bone level distal to the second molar, gingival margin, periodontal probing depth, inflammation, pain, trismus, mouth opening, no significant differences can demonstrate that an incision should be used with preference on the other to improve the quality of life of patients [122-136].

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