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Mini Review

Flap's Design about Surgical Treatment of Impacted Teeth

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Abstract

The extractions of the included or semi-included dental elements is one of the most frequently performed clinical procedures by the odonstomatological surgeon. This practice can be relatively simple or extremely difficult in relation to many variables related to the element to be extracted such as localization, anatomy of the dental crown and root, depth and type on inclusion. In on the one hand dental avulsion can be considered a routine dental procedure, the extraction of included dental elements requires a considerable technical preparation, an accurate knowledge of all the noble anatomical structures and a matured surgical experience. It is essential to perform a proper treatment planning that, on the one hand, allows to minimize the risk of post-surgical complications (pain, edema, truisms, alveoli's, etc.) and on other to be able to manage the latter in correct way, always with lowest biological cost for the patient.

Keywords: *Flap; Impacted Teeth; Wisdom Teeth*

Introduction

The soft tissue incision is the first step of each surgery to achieve a good surgical access and better surgical view. During this approach we have an interruption of the vascularization of the flap, which has a free part outlined by the incisions and a base that improve the blood supply.

In the oral cavity all the flaps have a random vascularization, so there isn't main vascular axis, but many multiple secondary branches, so if the base of the flap is narrower than the free part, this could cause vascular suffering with resulting necrosis.

Ideal flap's characteristics:

- Allow sufficient surgical access.
- Preserve important anatomical structures (lingual nerve, alveolar nerve, facial artery).

- To allow an adequate repositioning without tension avoiding dehiscence, for this reason it is necessary to suture over healthy and vascularized tissue.

Flap's design in extractive surgery

About the surgical approach in the extractive surgery we will use always the full thickness flap including the periosteum. In this type of flap, the vascular and nerve structures are included in a supraperiosteal plane, with the exception of the points of entry or exit of vessels and nerves from the bone plane, so with this flap it's possible to avoid the neurovascular lesions, to reduce the edema, obtaining a sufficient blood supply [1,2] (Figure 1 and 2).

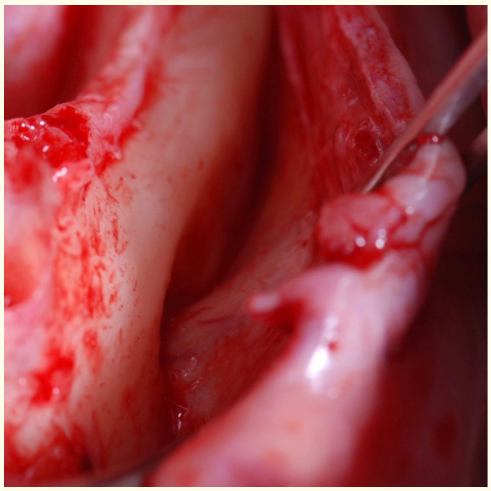

Figure 1: *Full thickness flap that to see the emergence of mental nerve.*

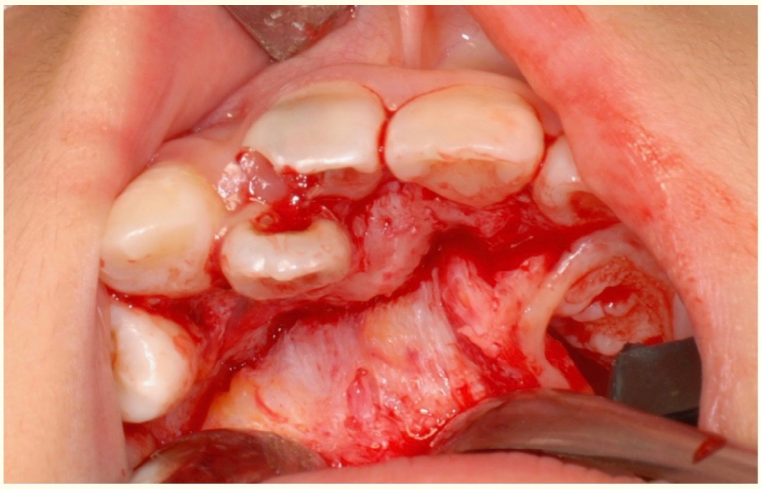

Figure 2: *Isolation of the nasopalatine canal with full thickness flap.*

There are different type of surgical flap:

- Envelop flap without vertical incisions
- Triangular flap with only one vertical incision
- Trapezoidal flap with two vertical incisions.

Envelop flap

It is made with a single linear incision, allowing the maximum blood supply, but has the disadvantage of being difficult to spread as there are no vertical incisions, so to obtain a better surgical view is necessary to increase a linear incision, it is easy to be sutured and can be extended in both directions during surgery.

Finds application on the maxillary and lingual palatal side of the jaw, (extraction of palatal impacted teeth, surgical-orthodontic recovery) (Figure 3-5).

Figure 3: *Envelop flap's design.*

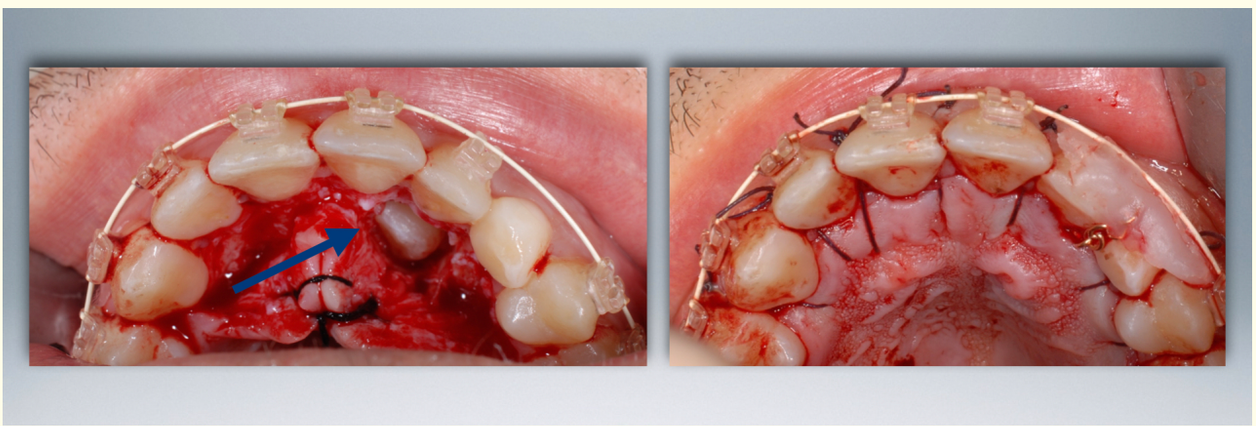

Figure 4: *Envelop flap for surgical orthodontic recovery.*

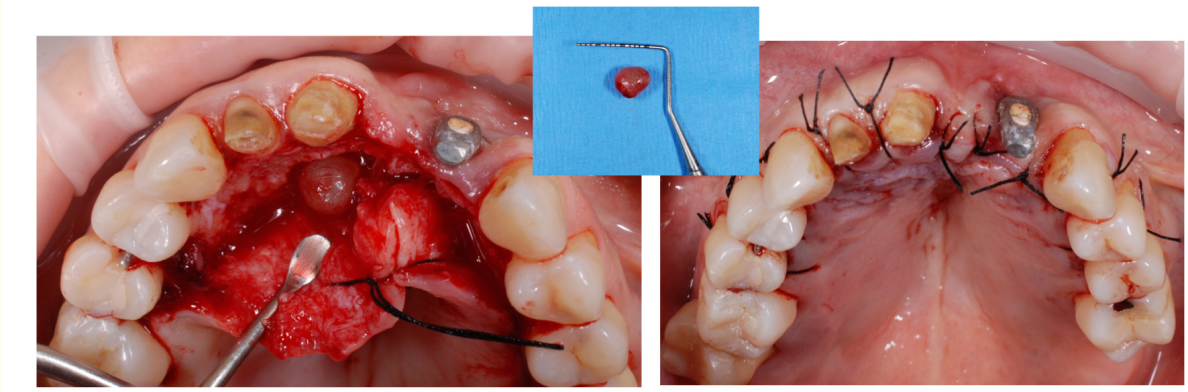

Figure 5: *Envelop flap to remove palatal lesion.*

Triangular flap

It is made with a horizontal incision in the ridge in the presence of teeth or a marginal intrasulcular and a vertical incision that after not allow to increase the flap in mesial direction. The angle created between linear incision and vertical incision should never be less than 90° to avoid vascular reduction of the flap.

In the presence of teeth, the vertical incision must never done on the bisector of the papilla, but medially or distally. This is the flap that we should use in the surgery of the included third molars (Figure 6-9).

Figure 6: *Triangular flap.*

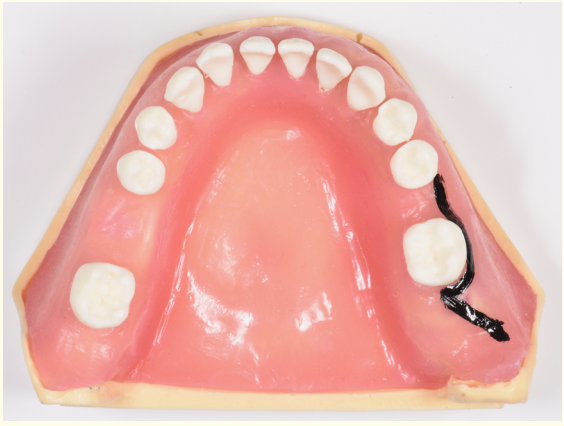

Figure 7: *Triangular flap occlusal view.*

Figure 8: *Triangular flap for wisdom tooth extraction.*

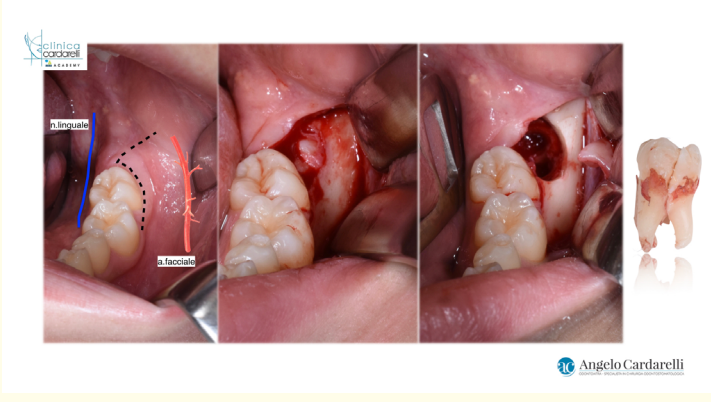

Figure 9: *Triangular flap on wisdom tooth.*

Trapezoidal flap

It is made with an horizontal and two vertical incision, mesial and distal, that allow an excellent surgical view it cannot be extended in the mesiodistal direction during surgery. The presence of a double incision makes the sutures procedure more difficult and reduces blood supply to the apical peduncle. It is the typical flap used in oral surgery (Figure 10-12).

Figure 10: *Trapezoidal flap.*

Figure 11: *Trapezoidal flap on apicectomy.*

Figure 12: *Trapezoidal flap on mandible.*

Conclusion

The choice of correct flap's design is very important to reduce the risks for our patients, to obtain a good surgical view, to reduce the postoperative complications like edema, pain, swelling, because the management of soft tissue is very important to allow a good healing and a good primary closure of the wounds [3,4].

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