

Esthetic Management of Mucogingival Defect after Excision of Epulis Using Double Papilla Flap Technique associated to Connective Tissue Graft

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Case Report

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Abstract: Epulis is a benign hyperplasia of the oral soft tissues. Most of cases represent a reactive hyperplasia as a direct result of the presence of some chronic irritations due to dental calculus or other iatrogenic factors. In the case of non-regression of this gingival growth, after non-surgical periodontal treatment, surgical excision can be the treatment of choice. However this approach may result in an esthetic and functional soft tissue defect, especially in the maxillary anterior area which requires adequate management is necessary. This report describes the case of a 51 years old female, with gingival enlargement in the maxillary anterior area, since one year. The treatment offered consisted of an excisional biopsy with immediate soft tissue grafting to prevent esthetic complications, concurrently with the biopsy procedure. Two years later, the surgical areas were healthy and stable. The treatment of chronic infectious, suppressions of local irritations and maintenance of regular followup are important factors to prevent longterm recurrence of the gingival overgrowth.

Keywords: Epulis, excision, excision, laterally positioned flaps, connective tissue graft, maintenance therapy.

INTRODUCTION

Epulis is a non-specific term used for reactive hyperplastic lesion (RHL) or localized tumor of the gingiva or alveolar mucosa. On histologic examination, the vast majority of these lesions can be fibromas, peripheral ossifying fibromas(POFs), pyogenic granulomas(PGs), or peripheral giant-cell granulomas(PGCGs) [1, 2]. The etiology is unclear, but it can be a consequence of chronic inflammation, trauma or local irritants such as plaque, calculus, excessive masticatory forces or overhanging restorations [3].

These lesions can occur over a wide age range; but the peak incidence in males is in the second decade compared to the fifth decade for females[4] with a male to female ratio of approximately 1:2[5].

Clinically, an epulis usually appears as a nodular mass, either pedunculated or sessile. The color ranges from pink to red (depending on the quantity of collagen and vascularized granulation tissue). Its Development is slow, asymptomatic and painless. These overgrowth have a similar appearance, thus, differential diagnosis is always performed by histologic evaluation [5].

Treatment options are suppressions of local irritation factors, followed by surgical excision in case of non regression of the lesion by non surgical approach. The recurrence rate for epulis is said to range from 16 % to approximately 20 % after conservative excision [1]. To avoid this recurrence, lesions should be excised with a border of 1mm of normal tissue, and the surgical wound bed should be curetted. However the

extensive surgical excision can lead to muco-gingival defect, postoperative soft-tissue recession, root sensitivity and caries, which can be difficult to be handled by the dentist especially in maxillary anterior region.

This article describes a case report of management of muco gingival defect after epulis surgical excision.

CASE REPORT

In May 2015, a 51-year-old female was referred to the Department of Periodontology, School of Dental Medicine, Mohammad V University, Rabat, Morocco, for treatment of a localized gingival enlargement in the left maxillary incisors area. The patient stated that gingival overgrowth had begun 11 months earlier, causing frequent discomfort when brushing his teeth. She had no history of systemic diseases.

On extra-oral examination there were no palpable lymph nodes, face was bilaterally symmetrical and lips were competent. On intra-oral examination, poor oral hygiene with abundant supra and subgingival plaque and calculus were revealed. A single painless oval shaped well circumscribed gingival

overgrowth, measuring about 9 mm by 12 mm in the buccal attached gingiva of 21, was observed. This lesion was a red, sessile, firm, and prone to bleeding, pulp testing of tooth indicated that it was vital (Figure-1).



Fig-1: Intra oral view showing localized gingival growth around left maxillary central incisor with poor plaque control

Firstly, was educated on oral hygien using adequate materials, followed by scalling and polishing. Patient was prescribed 0.2% chlorhexidine mouthwash twice daily and was motivated to follow a good plaque

control. Two weeks later, she was reviewed, the lesion showed marked improvement in surface characteristics and there was a reduction in the size of the lesion (Figure-2).



Fig-2: Intra oral view showing showing clinical presentation after non-surgical periodontal therapy

Explanation was given to the patient about surgical excisional biopsy. However she was concerned about the esthetic and dental sensibility, due to possible loss of gingiva during excision. For this reason, we proposed an esthetic management by double papilla flap technic associated to connective tissue graft.

Under aseptic conditions, after achieving adequate local anaesthesia using 2% lidocaine with 1:80,000 adrenaline infiltration, an incision, by blade n^o 15, was made, extending 1mm beyond the growth on the facial side of 21. A complete excision of the growth was achieved and sent for histopathological examination (Figure-3).



Fig-3: photography showing excision of epulis

After debridement of exposed root, a n° 15C blade was used to make a V-shaped incision on the recipient site. A horizontal incision was made on the mesial and distal interdental papilla coronally. Two vertical incisions reaching the alveolar mucosa were

made on the line angle area of the adjacent teeth. A split thickness pedicle flap, that included sufficient interdental papilla bilaterally, was prepared. Then, interrupted suturing was done across the medial area of the two papilla flaps (Figure-4).



Fig-4: photography showing incisions

Following this, connective tissue graft of optimal thickness was harvested from the tuberosity region, was placed and stabilized with 5-0 vicryl suture materials (Figure 5).

Interrupted sutures were realized to stabilize the mesial and distal papillae using a 5-0 vicryl suture (Figure-6). Hemostasis was achieved by applying

pressure for 5min. After surgery, patient was instructed to discontinue tooth brushing at the surgical area for two weeks and to rinse with 0.12% chlorhexidine solution twice daily for 15 days. Two weeks later, sutures were removed. At that time, soft tissue heelling was uneventfull, both in the donor and recipient sites (Figure-7).



Fig-5: photography showing connective tissue graft placed at the site



Fig-6: photography showing sutures



Fig-7: photography showing healing at two weeks

Histopathological analysis of the excised tissue revealed circumscribed mass of connective tissue comprising of dense collagen fibers with inflammation cells covered by para-keratinised stratified squamous epithelium. That led to propose diagnosis of inflammatory epulis.

Oral hygiene instructions were reinforced and the patient was recalled each three months for periodontal maintenance therapy. At two years follow up, the surgical site showed satisfactory esthetic outcome without any recurrence of the overgrowth (Figure-8).



Fig-8: photography showing healing at 2 years follow up

DISCUSSION

Epulis are commonly seen along the occlusal line of buccal mucosa, labial mucosa, tongue and gingiva [5]. Mandibles are more frequently involved than maxillae[6]. Gingival growths can be sessile or pedunculated and attached to the underlying tissue by a stalk or pedicle [7]. Sessile growths are attached to the underlying tissue with a wide base as it is in the present case report. Indeed, the lesion was pink, firm and sessile to attached gingiva in the maxillary anterior region.

The technique of excision depends on whether the growth is sessile or pedunculated. Pedunculated growths are excised at the base of the stalk/pedicle whereas the sessile growths are excised from the base with some amount of normal tissue to decrease the risk of recurrence [7-10]. Flaitz *et al.* suggested that growth may recur with superficial resection and recurrences may be related to lack of inclusion of periosteum or periodontal ligament in the excised specimen [11]. However, a wide excision including attached gingiva exposes to the risk of creating an aesthetic defect.

In the reported case, the treatment plan included suppression of irritating factors followed by complete surgical excision along with the underlying periosteum to prevent recurrence. of the lesion and double papilla Flap with Connective Tissue Graft(CTG) for esthetic management. The complete excision of the lesion (Flaitz *et al.*) Chaparro-Avendano *et al.*

described resection by either a scalpel or a carbon dioxide laser, the latter being of limited applicability in lesions with adjacent bone involvement where careful surgical curettage is required [12]. A more aggressive resection was suggested by Eronat *et al.* describing complete excision including the base of the lesion, with resection of the affected bone and removal of bordering teeth [13].

However, such excisions, especially in esthetic area, can induce soft tissues defects. To overcome that, an additional periodontal plastic surgery procedure can be dictated. A variety of procedures to achieve this goal have been documented including pedicle flaps, coronally positioned flaps and autogenous tissue grafting depending on quality and quantity of gingiva nearby. A subepithelial connective tissue graft(CTG) was considered to be advantageous for root coverage with a concurrent gain of keratinized tissue [14,15]. Furthermore, in the present case, especially in view of the good potential papillae donor sites of the patient, we chose a double papilla flap, associated to tissue connective graft for optimal esthetic outcome. Since that, the patient has undergone regular periodontal maintenance. 2 years later, surgical site was stable and healthy, covered with sufficient keratinized gingiva. The use of split-thickness flaps preserved the periosteum, which was helpful for the migration of epithelial cells from the adjacent gingiva, resulting in the formation of keratinized gingiva.

CONCLUSION

Epulis excision can cause of gingival defects, which may compromise the aesthetic result, especially in anterior region. The present case shows that the adjunctive use of the CTG associated to double papilla flap can yield satisfactory soft tissue esthetic result. Regular follow up with adequate plaque control are keys to prevent any recidive.

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