CASE REPORT

Surgical Management of Reactive Hyperplastic Lesions in the Oral Cavity: Case Series

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Abstract

Introduction: Reactive hyperplastic lesions are a category of oral mucosal lesions that develop in response to local irritants, hormonal changes, and specific drugs. The purpose of this article is to highlight the surgical options available for these lesions and to discuss the advantages, drawbacks, and indications of each technique.

Case presentation: We present a series of cases of reactive hyperplasia of the oral mucosa that were managed using surgical methods in our department.

Management and Prognosis: The treatment of the reactive hyperplastic lesions consists of excision of the lesion and elimination of the etiological factors. The surgical removal of hyperplasia can be accomplished through conventional scalpel procedures, electric scalpels, or lasers.

The choice of therapeutic method depends on several parameters and must be combined with etiological treatment to avoid recurrence.

Conclusion: Reactive hyperplasia of the oral mucosa can be treated using scalpel techniques, electrosurgery, or lasers. A careful evaluation of the advantages and disadvantages of each approach allows for the selection of the appropriate technique.

Keywords: Reactive hyperplasic lesions; treatment; laser therapy; electrosurgery.

Introduction

The term "reactive inflammatory hyperplasia" refers to a group of non-neoplastic fibrous growths. They are often the result of a local irritant, hormonal changes, or certain medications.[1]

This group includes epulis fissuratum (EF), pyogenic granuloma (PG), peripheral ossifying fibroma (POF), giant cell granuloma (GPCG) and traumatic fibroma (TF). Determining a differential diagnosis among these lesions can be challenging due to their clinical resemblance. Therefore, the findings of a biopsy are decisive in establishing a diagnosis.[2-4]

The management of these lesions is twofold: surgical treatment by excision of the lesion using either a scalpel, electrosurgery or laser and etiological treatment by suppression of local irritants.[1-2]

In this article, we examine the effectiveness of scalpel, electrosurgery and laser in the treatment of reactive oral mucosal hyperplasia, presenting several clinical findings regarding the advantages and disadvantages of each technique.

Case Presentation

Case 1: A woman aged 48 years was referred to the oral surgery department of the Dental Consultation and Treatment Center in Rabat (Morocco) for a gingival lesion that had been enlarging for approximately a year, causing discomfort and bleeding when she ate and brush her teeth. The patient's medical history was unremarkable, and no abnormalities were discovered during the extra-oral examination.

Clinical examination revealed that the patient had poor oral hygiene, with moderate plaque and tartar deposits. A reddish, lobulated lesion of firm consistency has been detected in the vestibular side of 14, 15, and 16 with a broad base, and erythematous overlying mucosa bleeding on contact. (Figure 1)

Radiographic evaluation revealed absence of bone

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resorption.

The treatment consists of scaling and oral hygiene instruction, followed by scalpel removal of the lesion with curettage of roots 14, 15, and 16, and a coronary advanced flap to cover the tissue loss. Use of analgesic for 72 hours was prescribed, as well as 0.12% Chlorhexidine rinses.

An ossifying fibroma was identified during a pathological examination. (Figure 2)

Case 2: A 40-year-old patient with no notable pathological history that was referred to our department for a nodule that had been present for 1 years on the inner surface of the right cheek.

Examination of the mucosa revealed a sessile nodule 2 cm in diameter with a firm consistency and normal overlying mucosa. On palpation, the lesion was insensitive and non-bleeding. (Figure 3)

The diagnosis of traumatic fibroma was suggested.

Complete surgical removal of the nodule was planned under local anesthesia using laser CO2, and the surgical specimen was sent for pathological examination, which confirmed the diagnosis. (Figure 4) Healing was complete after 7 days.

Case 3: A 71-year-old woman was presented to our department with growth in the region of the alveolar ridge of the left mandible for 2 years. The patient's medical history was unremarkable, and the extra-oral examination revealed no abnormalities.

Intraoral examination revealed a 3 x 2 cm growth associated with the residual anterior ridge of the left mandible, corresponding to the region of teeth 33, 34, and 35. The lesion is bluish-red, sessile, and painless. (Figure 5)

Radiographic examination showed bone resorption at the site of the lesion.

Under a local anesthesia, a complete excision of the lesion with bone curtage was accomplished. Pathological investigation revealed that the specimen was a peripheral giant cell granuloma.

One week after the procedure, the postoperative checkup showed that the lesion was healing well.

Case 4: A 39-year-old woman, without systemic disease or allergy, presented to our department with a mucosal growth behind the upper left molars that had been present for over a year. Physical examination revealed no other abnormalities, and there was no cervical lymphadenopathy.

On clinical examination, a localized gingival swelling of 1.5cm X 2cm size with clear signs of inflammation was present in relation to 16, 17 (Figure 6). The swelling was a lobulated exophytic lesion which was hemorrhagic with spontaneous bleeding on probing the area. The lesion was painless and asymptomatic except for the slight discomfort to the patient due to the growth.

Case 1 :

Fig. 1: Buccal aspect of the lesion.

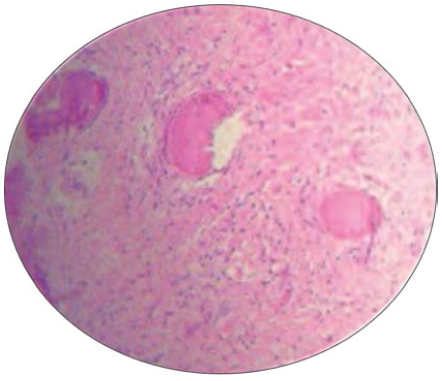

Fig. 2: Fibrous connective tissue organized in intertwining bundles.

Case 2:

Fig. 3: Removal of the lesion with CO_2 laser

Fig. 4: Immediate postoperative view

Under local anesthesia, the lesion was completely excised with an electric scalpel. (figure 7) The surgical specimen was sent for pathological examination, which revealed a pathogenic granuloma.

The postoperative check-up one week following the operation revealed that the lesion had healed well.

Discussion

Reactive hyperplasia could be manifested as painless, sessile or pediculated, smooth or lobulated swellings that are red, bluish, or pale pink. They may be observed on any region of the oral mucosa.[2-3-5]

The treatment for these hyperplasias is twofold:

-First, the etiological factors must be treated by installing strict hygienic measures and teaching brushing at home, as well as scaling techniques then follow-up procedures. These approaches help to reduce the size of the lesion and, in certain circumstances, its total regression.

-Second, the lesion excision: various approaches to eradicate these lesions have been reported in the literature, and the selection of an appropriate approach can be difficult and mainly determined by the nature, extent, and predisposition to bleed. [1-6]

The main prerequisites for any surgical procedure are good visibility and access to the site, minimal bleeding, rapid and pain-free healing. With technological advances, the arsenal of oral surgical procedures has expanded.

The use of alternative methods to the traditional scalpel, such as electrosurgery and laser, has been widely experimented.[5-7]

Surgical scalpel removal: This approach has favorable outcomes and a low recurrence rate, and it is characterized by the possibility to combine it with flaps or grafts to correct tissue loss.

The scalpel approach has the advantage of being simple to use and does not require additional equipment. However, this technique has certain disadvantages, such as bleeding, which can be difficult to control in some cases, and the associated post-operative symptoms (pain, edema…). [8-9]

Electrosurgery: Electrosurgery consist of the use of electrical currents carried through metal-electrode tools to heat them to the point where they may easily cut tissue while also cauterizing it.

The electric scalpel technique has the benefits of shorter treatment time, no sutures and spontaneous hemostasis. Flexible electrodes on the scalpel can also be bent to treat tough locations and ensure clean tissue separation.[5-13]

However, there are several limits to this treatment, including heat injury to the surgical site, which generates artifacts during histological investigation, and production of smoke during surgery.

Although most modern pacemakers are compatible with electrosurgical devices, the older ones are not safeguarded against external interference or in the presence of combustible materials.[4-13]

Laser (CO2, ER: YAG): Laser is a monochromatic, climate, coherent light produced by stimulated emission of radiation of a light source. Common lasers used in oral surgeries are CO2, Diode and ER: YAG.[7-10]

Lasers are an appropriate choice for treating these lesions, as they offer excellent control of bleeding during excision, rapid and easy use with a low dose of anesthesia, no sutures, accelerated healing and a comfortable post-operative period. However, the major drawback of this technique is that thermally induced tissue damage causes artifacts that can interfere with histological analysis.[9-11]

A study by Monteiro and al. (2019) evaluated the presence of histological artifacts in the surgical margins of lesions excised with lasers of different wavelengths, as well as with electrosurgical scalpels and cold scalpels. The results show that the instrument with the highest degree of charring is the electrosurgical scalpel, followed by the CO_2 laser. The Er: YAG laser proved to be the laser with the lowest capacity to cause thermal tissue damage with good incision regularity and was the instrument of choice for surgical removal of these lesions.[12-13]

These results are identical to those reported by Gundlapalle and al. (2022) who recommend the use of a pulsed mode laser with a healthy tissue margin to minimize tissue damage.[8-17]

It is imperative to note that, at present, other treatment protocols replacing excision have been proposed. The conservative method entails cryotherapy as well as intralesional injections of different medications, including corticosteroids, ethanol, monoethanolamide oleate for sclerotherapy or penicillin G. The lack of clinical hindsight and the nature of the therapeutic approach, which has yet to be explained, are

Case 3 :

Fig. 5: Occlusal view of the lesion.

Case 4:

Fig. 6: Preoperative view

Fig. 7: Lesion resection with electric scalpel

characteristics that must be considered before popularizing these techniques.[14-15-16]

Prognosis

Except in cases of incomplete removal or persistence of local irritants, the recurrence rate is low. However, regular follow-up is recommended.

It is also essential to highlight the role of hormonal imbalances is vital in understanding tissue changes, the development, and recurrence of these lesions.[2, 3]

Conclusion

Reactive hyperplasia of the oral mucosa is treated mainly with scalpel, electrosurgery or lasers. Before selecting which surgical approach to employ, it is critical to analyze both the advantages and drawbacks of these techniques and select based on case-specificity, surgeon's convenience, and the patient's comfort.

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