Inflammatory Reactive Hyperplasia of Upper Lip due to Abnormal Tooth Position: A Case Report

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Abstract

Introduction: Aim of this study is to describe case of inflammatory reactive hyperplasia of upper lip treated by Carbon Dioxide (CO₂) Laser.

Case Report: 12 young male patient came to our observation since sessile lesion, corresponding to malposed tooth on internal aspect of upper lip. After accurate clinical examination, surgical excision with CO₂ laser was performed. Control at 7, 30 and 90 days showed complete healing of lesion and histological diagnosis was Inflammatory reactive hyperplasia.

Discussion: Inflammatory reactive hyperplasia is common lesion by traumatic origin of oral mucosa. When clinician provide to elimination of traumatic stimulus and to excision of the lesion, it’s possible to obtain restitution integrum of oral mucosa. If it removed only one of these factors, there may be recidivate lesion.

Conclusion: The CO₂ laser demonstrated surgical effectiveness and caused little peripheral damage to the cut edges, therefore would always allow a safe histological diagnosis to be obtained. This kind of oral biopsy on the use of CO₂ laser ensures the compliance of patient, the absence of bleeding and suture.

Introduction

Inflammatory Reactive lesions are tumor-like hyperplasia that are produced in association with chronic local irritation or trauma (1) . These proliferations are painless pedunculated or sessile masses in different colors, from light pink to red (2) . The surface appearance is variable from non-ulcerated smooth to ulcerated mass. These lesions are more localized in oral soft tissue, though in literature are reported cases of localization on hard tissue. The dimensions of these lesions varies from a few millimeters to several centimeters (1) . The histology components are represents by fibrous tissues, multinucleated giant cells, calcified material, or small vessels hyperplasia. For the study, was used a CO2 laser (Smart US20D®, DEKA - Florence, Italy) with a wavelength of 10,600nm via an articulated arm; the dimension of the laser pointer can be either 0,2mm or 0,4mm; the field of action of the articulated arm covers a radius of approximately 80cm, the transfer efficiency of power is greater than 85%.

Case Report(s)

A male patient of 12 years old, came to the observation of the UOC of Orthognatodontics, then he was referred to the UOC of Oral Pathology. At the clinical examination, it observed a presence of a lesion on the upper lip. The lesion located at the internal aspect of the upper lip at right side. This lesion was 1,5 centimeters of diameter, with sessile base, pink in colour, soft in consistency, regular surface; it is related to malposition of lateral incisor (figure 1).

According to recommendations of the Orthodontist, it was decided to remove the lesion with excisional biopsy laser (figures 2,3). It was utilized a CO₂ superpulsed laser, wavelength of 10600nm. After topical anesthesia with EMLA cream and perilesional anesthesia without adrenaline, lesion was immobilized thought Ellis clamp and finally the lesion was excised by a Carbon Dioxide laser set 3 watt in continuous wave at frequency of 50 Hz, making a circular incision around the lesion. Control at 7 days showed an optimum healing of the surgical wound. The post operative period lacked of negative events (figures 4,5). Control at 30 days showed a recurrent lesion due to persistent presence of malposed tooth creating a chronic trauma on the upper lip (figures 6,7). In fact, it was not possible to move the malposed tooth in a so short period of time (30 days) with orthodontic appliance. A new surgical intervention was scheduled after 7 days. Control at 90 days showed the complete healing of the surgical wound (figure 8). The histological analysis of the surgical specimen confirmed the clinical diagnosis of inflammatory reactive hyperplasia. This lesion, histologically represent chronic inflammation, granulation tissue and proliferation of endothelial cells and fibroblasts (3).

Discussion

Patients undergoing orthodontic treatment have an increased risk of oral problems such as plaque formation, white lesions, gingivitis, various kind lesions...
of oral mucosa (4). In this study, we treat a singular case report, on a dental malposition that caused very important traumatic injury of upper lip oral mucosa, that has been removed by CO2 laser. Most common injuries of oral mucosa (5,6) that can be encountered in course of orthodontic treatment include: traumatic injuries of various kinds (7,8), aphthous (9), frictional hyperkeratosis (10,11), gingival hypertrophy (12,13). The carbon dioxide (CO2) laser, thanks to its affinity to water-based tissues, has become one of the favourite instruments for oral surgeons for the treatment of pathologic lesions of the oral mucosa (14-15-16). Three months after the recurrence, an optimal tissue healing was obtained, due to the conjunction with orthodontic treatment. The lesion did not relapse.

Conclusion

This case report shows inflammatory reactive hyperplasia of upper lip mucosa caused by malposition of tooth no. 1.1. Recognition of these clinical situation is done by orthodontist and determines more rapid therapeutic choices and solutions of condition which have high compliance for the patients. The CO2 laser demonstrate surgical effectiveness and cause little peripheral damage which always allows safe histological diagnosis. The large diffusion of this device induced also a deep analysis about the positive outcomes of surgical procedures performed by CO2 laser; different comparisons, are reported in literature, about the healing of mucosal tissue after the use of the scalpel or of other common instrument vs. this device (17).

In favor of the latter, it was reported that it enhances collagen formation and better deep capillary proliferation, so promoting beneficial effects in the wound healing with minimal scarring and, an effective control of intra and post-operative bleeding guaranteed by the intra-operative cauterization of the superficial vessels; its antiseptic characteristic also facilitates protection from infective processes in the surgical area, that are positive for the postoperative course too. Under the conditions analyzed in this study it is possible to affirm that the use of CO2 laser optimize operating times permitting to create lower stress for the patient; it reduces also inflammatory reactions, pain and post-operation edema, as stated by many Authors, thus increasing the overall compliance of patients.

References

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Illustrations

Illustration 1

Inflammatory reactive Hyperplasia of upper lip

Illustration 2

Immediately post-operative side
Illustration 3

Particular of oral mucosa after excision of lesion with laser CO2

Illustration 4

Control at 7 days
Illustration 5

Particular at 7 days

Illustration 6

Recurrent lesion at 30 days
Illustration 7

Recurrent lesion due to persistent presence of malposed tooth

Illustration 8

Complete healing of the surgical wound