Diode laser excision of irritation fibroma: A Case Report

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ABSTRACT:
Isolated soft tissue enlargements seen in the oral cavity are generally a reactive hyperplasia
and rarely neoplastic. Irritation fibroma is a benign tumor of fibrous connective tissue that
can be considered a reactionary connective tissue hyperplasia in response to trauma and
irritation. It is a gingival lesion of reactive nature with unknown etiology. As the lesion
occurs due to continuous trauma and irritation, it important to remove the source of the
irritation and then treat it by conservative surgical excision otherwise it will recur. The use
of lasers in different dental procedures has become very common. This paper reports a case of
Irritation fibroma in a 46 year old female patient on left buccal mucosa which was managed
by Diode Laser biopsy and was diagnosed as irritation fibroma after histological analysis.

Keywords: Buccal, Diode Laser, Fibroma, Irritation, Reactive.

INTRODUCTION:
Local reactive focal overgrowths are frequently found in the oral cavities, the
causative etiology for whose can be attributed to the local irritants like plaque,
calculus, overhanging margins, trauma and dental appliances. Irritation fibroma
represents a reactive focal fibrous hyperplasia due to trauma or local
irritation.¹ The lesion is hyperplastic proliferation of the oral mucosa and
classified as reactive tumor of fibrous connective tissue.² It is the most common
benign “tumor” of the oral cavity.³ Daley et al, suggested the term “focal fibrous
hyperplasia”, which implies a reactive tissue response therefore preferable than
the term “fibroma”. It is also known as irritation fibroma /traumatic
fibroma/fibrous nodule/fibro-epithelial polyp.⁴ Although the irritation fibroma can occur
anywhere in the mouth, the most common location is the buccal mucosa along the
bite line. The labial mucosa, tongue, and gingiva also are common sites.⁵ Fibromas
are asymptomatic lesions. Because nerve
tissue does not proliferate with the reactive
hyperplastic tissue, these lesions are
painless.⁶ They present a smooth surface,
nodular appearance, hard consistency and
a sessile base.⁶ They range in size from
tiny lesions that are only a couple of
millimeters in diameter to large masses
Irritation fibromas are most common in the fourth to sixth decades of life, and the male-to-female ratio is almost 1:2. Microscopically, fibroma consists of bundles of interlacing collagenous fibers interspersed with varying numbers of fibroblasts or fibrocytes and small blood vessels. The surface of the lesion is covered by a layer of stratified squamous epithelium which frequently appears stretched and shows shortening and flattening of the rete pegs. Treatment is generally surgical excision and removal of the irritating factor(s). With the advent of Diode surgical Laser for intraoral surgery, the successful surgical control of fibroma, especially when large areas are involved, has been improved. In this study we present a case of fibroma of buccal mucosa which was removed through laser diode.

CASE REPORT
A female patient aged 46 years reported with a complaint of growth on the left side of cheek since 2 to 3 month. She was apparently asymptomatic 3 months back when she noticed a small swelling on her left buccal mucosa which has gradually increased up to the present size. The swelling was painless and totally asymptomatic in nature. There was positive history of associated trauma during mastication but no significant medical and dental history was found. Family history was also non contributory. Extraoral examination revealed facial symmetry with normal overlying skin. A comprehensive intraoral examination revealed a solitary, well defined growth over left buccal mucosa at the occlusal plane level, opposite premolar tooth region, measuring approximately 1.1 x 0.9 cm. On palpation the growth was non-tender and firm in consistency. Cervicofacial lymph nodes were not palpable. Based on the clinical findings, a provisional diagnosis of fibroma was made.

Complete blood count was within normal ranges. No lesion was found on panoramic radiograph. The lesion was treated with diode laser under local anaesthesia.(Figure 2 & 3)

Gross specimen revealed a solitary soft tissue, brownish white in color, round in shape measuring about 1.1 x 0.9 cm in dimensions. The tissue was sent for
Histopathological examination and was diagnosed as focal fibrous hyperplasia of the left buccal mucosa. (Figure 4) Patient was recalled after one week and follow up period was uneventful. (Figure 5)

Figure 4: Photomicrograph (H&E x40X)

Figure 5: Post operative follow up after one week

**DISCUSSION**

Irritational fibromas are the most common benign soft tissue tumors seen in the oral cavity. It is also known as Focal fibrous hyperplasia, oral fibroma or as fibromatosis fibroma. Although the term focal fibrous hyperplasia more accurately describes the clinical appearance and pathogenesis of this entity, it is not commonly used. These are not true neoplasms, but merely fibrous overgrowths. The traumatic irritants include calculi, overhanging margins, restorations, foreign bodies, chronic biting, margins of caries and sharp spicules of bones and over extended borders of appliances. They occur more frequently in females than in males between third and fourth decade of life, which is also as in the present case of a 46 years old female.

Clinically, it appears as an elevated nodule of normal color with a smooth surface and a sessile or, occasionally, pedunculated base. The tumor may be small or, in rare instances, may range up to several centimeters in diameter. Projecting above the surface, the tumor sometimes becomes irritated and inflamed and may even show superficial ulceration or hyperkeratosis. The reported case was of 1.1 x 0.9 cm. in diameter with an non-ulcerated surface.

On the basis of only the clinical features, it is difficult to differentiate fibroma from peripheral ossifying fibroma, pyogenic granuloma or peripheral giant cell granuloma due to lack of unique clinical appearance. The Irritational fibroma and peripheral ossifying fibroma both appear pale, firm and non-tender. However, peripheral ossifying fibroma appears exclusively on gingiva, and they may be firmer to palpate because of calcified material in the stroma. Furthermore, they have the tendency to displace the adjacent teeth. The pyogenic granuloma and peripheral giant cell granuloma generally appear more vascular and may bleed when palpated or probed. Lipoma can also be considered in the differential diagnosis but it is rarely seen in the oral cavity which has a pale yellow color soft and has slip sign positive on palpation.

Histopathologically, irritation fibroma can exhibit as an intact or ulcerated stratified squamous epithelium along with shortening and flattening of rete pegs. IF exhibit two patterns of collagen arrangement depending on the amount of irritation and the site of the lesion; (a)
Radiating pattern has been found to be associated with sites, which are immobile in nature (e.g. palate) and have a greater degree of trauma, (b) circular pattern is found to be associated with sites that are flexible in nature and have lesser degree of trauma (e.g. cheeks) whereas true fibroma does not show any of the patterns. They are capsulated as well sharp demarcation can be made from the surrounding normal tissue.

Histological examination is needed to confirm that an epulis is fibrous and not a giant-cell lesion, pyogenic granuloma or a malignant tumour, which can very rarely form on the gingival margin and simulate a non-neoplastic epulis. Irritation fibroma does not hold a risk for malignancy. Treatment of irritation fibroma consists of elimination of etiological factors, scaling of adjacent teeth and total aggressive surgical excision along with involved periodontal ligament and periosteum to minimize the possibility of recurrence. Other protocols have also been proposed like the use of electrocautery, Nd: YAG laser, flash lamp pulsed dye laser, cryosurgery, intralesional injection of ethanol or corticosteroids or sodium tetradecyl sulfate sclerotherapy. However, it is important to submit the excised tissue for microscopic examination because other benign or malignant tumors can also mimic the clinical appearance of fibroma.

In the present case, we have treated the lesion by using Diode Laser technique. The advantages of laser application are relatively bloodless surgery, minimal swelling, scarring and coagulation, no need for suturing, reduction in surgical time and less or no post surgical pain. Also, the laser instantly disinfects the surgical wound as well as allow a noncontact type of operative procedure thereby avoiding mechanical trauma to the tissue. The diode laser was introduced in dentistry and oral surgery in the mid-90s. Compared to conventional methods, laser surgery is less time consuming, less painful, more precise in the treatment of soft tissue lesions, produces less scar-tissue contraction, and maintains the elastic tissue properties. In the above mentioned case, patient was satisfied with laser surgery since it was a painless procedure both intra- and postoperatively.

CONCLUSION
Oral cavity is an ideal niche for manifestation of various reactive soft tissue overgrowths which poses a diagnostic dilemma due to their similar clinical presentations. As they occur due to continuous trauma and irritation. It is therefore also important to manage the source of the irritation and then is treated by conservative surgical excision. If the lesion is treated without removing the irritation source, the lesion will recur. Irritation fibroma clinically resembles as pyogenic granuloma, peripheral giant cell granuloma or odontogenic tumors, so radiographic and histopathological examination is essential for accurate diagnosis.

REFERENCES
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