Case report

Laser excision of a focal fibrous hyperplasia –A case report

Abstract :

Background: The fibroma appears as a nodular growth mainly on buccal mucosa along the occlusal plane. Other sites are gingiva, palate, lips, and tongue. The management of this lesion can be done through conservative surgical approach. The effects of chronic local irritation have been seen commonly in the form of fibroma or mucocele in children.

Case presentation: We report a 12-year-old girl with the chief complaint of swelling in the lower lip which was diagnosed both clinically and histologically as fibroma. Diode laser excision was done under local anesthesia (LA) with no post-operative complications. The wound healing of the soft tissue was satisfactory.

Conclusion: fibroma in most cases are benign and self-limiting conditions, diagnosed based on clinical and pathological examination. Diode laser treatment is highly effective and is relatively simple and safe method.

Keywords: Focal fibrous hyperplasia, traumatic fibroma, diode laser

Introduction:

Inflammatory hyperplastic lesion may be defined as "an increase in the size of an organ or tissue due to an increase in the number of constituent cells, as a local response of tissue to injury.[1]

It is also known as a traumatic fibroma, focal fibrous hyperplasia (FFH), fibrous nodule or oral polyp, or irritational fibroma. The growth has a smooth surface, normal-coloured mucosa, a sessile or pedunculated base, and a firm consistency. Due to decreased vascularity, the lesion appears as a round or oval, sessile, broad-based swelling that is painless and has a lighter colour than the surrounding tissue. A smooth-surfaced, hard, asymptomatic nodule with a pink or flesh-coloured tint is the outward manifestation of a clinically traumatic fibroma.[2]

Treatment plan includes complete excision and removal of the cause of irritation. Excision can be done by scalpel, electrocautery or Laser. The term LASER is an acronym for "Light Amplification by Stimulated Emission of Radiation." Miaman introduced the laser in dentistry in 1960. Diode lasers have a high affinity for melanin and hemoglobin, enabling it to cut precisely and coagulate the target tissue providing excellent hemostasis, better field visibility, and better acceptance by the patients. [3,4,5]

The laser surgery can be used for ablation of lesions, incisional and excisional biopsies, gingivectomies, gingivoplasties, soft tissue tubersosity reductions, and certain crown lengthening procedure.[6]

Few studies have comprehensively reported the incidence of oral soft tissue lesions:

Of the 1290 soft-tissue reactive lesions of the oral cavity, 193 were confirmed histologically as FFH, a prevalence of 15%. The most common affected sites were the buccal mucosa, lower lip and dorsal tongue.[7]

From a total of 412 records evaluated, 197 (48%) of the lesions were reactive hyperplasia. Of these, 124 (62.8%) cases were females (mean age, 39.35 ± 18.37) and 73 (37.2%) cases were males.[8]

The lesion in the first patient had occurred at the age of 18 years. The high female predilection and a peak occurrence in the second decade and declining incidence after the third decade of life suggested the possibility that female hormones contribute to an increased production and accumulation of collagen by fibroblasts in the presence of a chronic injury.[9]

Case Report :

A 12 year old girl visited to Department of Oral Medicine and Radiology with chief complaint of small painless overgrowth in the lower lip. Patient also complained of discomfort associated with overgrowth. Patient gives history of swelling being small at first with gradual enlargement.

Clinically - Solitary, nodular, pink colored swelling seen on lower left Labial mucosa around size of 1 × 1 cm approximately.

On palpation - nodular, movable, soft in consistency, pedunculated, non tender, compressible, absence of discharge. No submental or submandibular lymph nodes were palpable.

Considering history and clinical findings, differential diagnosis of irritation fibroma was noted

Figure 1: Preoperative pictures

Pre-op CBC showed all blood counts to be within normal limits. Excision biopsy was planned and patient's consent was taken.

Management - laser diode excision was done under LA. Lesion was held with help of tissue forceps for convenient handling and was separated from base with help of diode laser.Laser stop LX 16 laser with peak power 6 W, frequency 10 Hz, duty 50%, time 20S, valid power 3.0 W, energy 60J, 976 nm wavelength (fibroma excision mode) was used.

Figure 2: Postoperative picture

Figure 3: Excised tissue

Specimen was stored in formaline and sent to oral pathology department for confirmation of diagnosis.

Histopathology –tissue revealscovering of stratified squamous epitheliumalong with shortening of stratified squamous epithelium and abundant of collagen fibers deposited in connective tissue suggestive of fibroepithelial hyperplasia (fibroma).

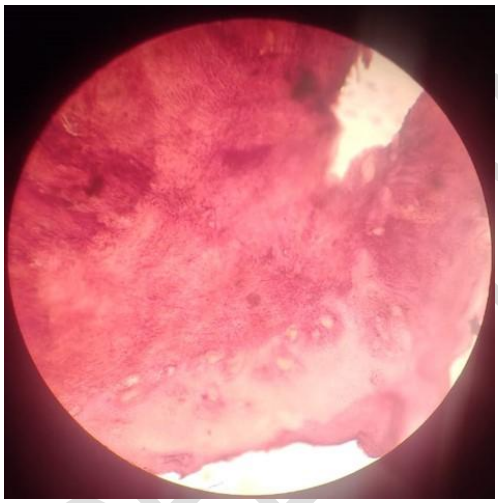

Figure 4: Histopathology

Follow up done after 1 week.

Figure 5: 1 week follow up

Discussion :

Fibroma is the most common benign soft tissue tumor in the oral cavity. Most fibromas represent reactive FFHdue to trauma or local irritation. An interesting point to be noted is that the fibroma is a neoplasm of connective tissue origin and microscopically similar to inflammatory hyperplasia. Hyperplasia is a self-limiting process unlike neoplasia and hyperplastic cells sometimes show regression after removal of the stimulus. Neoplastic tissue sometimes resembles that of hyperplastic tissue that do not regress; hence, it can be said that neoplasm can also occur from chronic irritation.[10] The general literatures have cited the reason for a few of the oral lesions like irritation fibroma and mucocele, arising as a result of oral habits such as lip biting/sucking.[11] Unhealthy habits, when repeated excessively become harmful, contributing to orofacial muscular imbalance associated with alterations in bone growth, dental malposition, and dentofacial abnormalities. Biting, licking, or sucking of lips and cheeks is frequently accompanied by chapping, dryness, erosion, irritation of one of both lips and/or vermilion borders.[12] Diode laser radiation is an excellent, simple, and safe form of treatment of oral lesions. This procedure is virtually bloodless, postoperative edema, and discomforts are minimal. With laser irradiation, there is less damage to adjacent tissues and better visibility. 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.[13]

According to Zarei et al., the lesion is mostly found on the gingiva. The lesion is usually symptomless, most common in the fourth to sixth decade of life, and the male to female ratio is almost 1:2.[11]

According to Thiago de et al., mechanical trauma is closely related to the development of FFH indicating that it is a true neoplasm.[7]

Conclusions:

fibroma in most cases are benign and self-limiting conditions, diagnosed based on clinical and pathological examination.

Complete excision has been the choice of treatment and recurrence has been associated with incomplete removal of the lesion. Our patient reported good prognosis and an uneventful post-operative recovery.

Diode laser treatment was highly effective. Diode laser is used according to the protocol, is a relatively simple and safe method.

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AUTHORS' CONTRIBUTIONS

‘Author 1’ designed the study, contributed to conception and design

drafted manuscript and revised the manuscript.

‘Author 2,3,4,5’ critically revised manuscript, gave final approval and

contributed to analysis and interpretation

CONCENT:

Patient concent was taken

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