Case Report

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Excision of Traumatic Fibroma with Diode Laser: A Case Report

Abstract:

Background: Fibromas are considered as benign tumors arising from mesenchyme tissue that are composed of fibrous or connective tissue.Out of all the fibromas, irritative or traumatic fibromas have been reported to be the most prevalent in the general population.

Most common site is tongue but it can also been seen in other sites such as buccal mucosa, gingiva and on lower lip. Usually nodule shaped, firm, painless and integrating in colour with the surrounding tissue. Oral fibromas typically grow to a maximum size of 1 cm in diameter, although occasionally they can grow larger over the course of weeks or months. The ideal course of treatment is total excision and elimination of the irritant source. The use of

LASER in a variety of dental procedures has increased in relevance as a treatment method. The primary benefits of implementing a soft tissue Diode LASER on patients with better surgical outcomes, less invasiveness, fast and effective hemostasis. It is a rapid and secure process that makes tissue manipulation easy and leaves no scars.

Methods: An entirely removed lesion under local anesthesia (2% Lignocaine HCL with Adrenaline bitartrate 1: 80,000) using a Diode LASER with a wavelength of 445 nm, power of 2W, and continuous mode for 3 X 60 seconds. The fiber tip was in contact with the lesion during the procedure, and if required, analgesics were prescribed. After 1 week, 1 month, and 3 months, the patient was examined.

Conclusion: After three months of assessment, patient showed complete satisfactory healing with no reoccurrence.

Key-words: Diode LASER,Traumatic or Irritational Fibroma, lateral border of tongue.

Introduction:

The most frequent location for localized reactive overgrowths is within the oral cavity. Oral fibroma, also called traumatic fibroma, focal fibrous hyperplasia, or irritational fibroma, is a benign exophytic lesion that develops as a result of trauma. The most prevalent benign soft-tissue tumor in the oral cavity is fibroma.[1] The surface may become rough, scaled, or ulcerated as a result of trauma. Traumatic fibromas are typically found in the tongue, lower lips, gingiva, and buccal mucosa. They have a dome-like structure and resemble pedunculated polyps.[2] Habits such as lip biting, occlusal trauma, misaligned teeth, sharp or uneven tooth edeges, broken restorations or dental calculus are examples of traumatizing causes[3].Oral fibroma, fibrous nodule, fibroepithelial nodule, localized fibrous hyperplasia, and oral polyp are different terms for traumatic fibroma. The tongue, lower labial mucosa, and buccal mucosa are the common sites of traumatic fibroma. Traumatic fibromas can occur in people of any age or gender, however they are more common in middle-aged adults. It is typically characterized by a slow, unpleasant growth that builds up over several months or years. Clinically, they appear as broad-based lesions that are lighter in color than the surrounding normal tissue.

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Hyperkeratosis or surface ulceration caused by secondary trauma frequently causes the surface to appear white[4].Fibroma may result after a protracted rehabilitation process that involves scarring and vascularized connective tissue, leading to a fibrous aggregation underneath the mucosa. Periodic recurrences are rare and happen when the same area sustains damage repeatedly. There is no chance of malignant change in this state[5].

Case Report:

A 35-year-old female patient reported to the Department of Periodontology with the chief complaint of swelling in her right side of tongue since two months. No significant medical history or dental history was present. Traumatic fibroma of tongue was diagnosed after taking into account a history of sharp cusps. The lesion, which was round, oval, painless, and lighter in color than the surrounding tissue, was located on the tongue's right lateral border.

Clinical Finding:

During intraoral examination one reddish-pink oval growth was observed on the right lateral border of tongue.(Fig.1).The growth had an uneven surface, was painless, sessile, and well-circumscribed. It was firm in consistency, non-tender on palpatation, and approximately 4x4x3 mm in size neither associated with bleeding nor ulceration(Fig .2).Sharp lingual cusps of the mandibular posterior teeth were found during hard tissue examination, and that could had contributed to the lesion's growth(Fig. 3). There was no lymphadenopathy or extraoral edema. According to the patient's medical history and clinical findings, traumatic fibroma was the provisional diagnosis. The differential diagnosis included peripheral giant cell granuloma, pyogenic granuloma, peripheral ossifying fibroma, and chronic fibrous hyperplasia.

The patient gave informed consent after understanding about the treatment method. Results from blood tests fell within normal limits.

Fig .1-Pre operative view

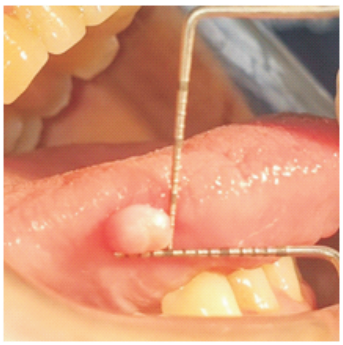

Fig. 2.Dimension 4X3 mm

Fig .3 Grossly decayed 47 tooth

Surgical Procedure:

Around the lesion, a local anesthetic infiltration (2% Lignocaine HCL with Adrenaline bitartrate 1: 80,000)was injected. During the procedure, the lesion was held in place using sutures to immobilize the tongue(Fig.4).Using a soft tissue diode laser unit (Densply Siro LASER Blue) in continuous mode with a constant wavelength of 445 nm, a power of 2 W, and a surgical tip of 0.3 µ diameter causing ablation, the lesion was completely removed from its base(Fig .5). Following selective cuspal grinding of mandibular right lower molar. No sutures were required. The surgical site did not have any bleeding(Fig.6).The sample was sent for histological examination after being put in a container containing 10% formalin solution(fig 7).A follow-up was done 1 week, 1 month(Fig.8), 3 months. The patient experienced no discomfort or pain following the procedure. Post-operative healing was uneventful. There were no indications of relapse throughout the 3 months follow-up (Fig 9).

Fig .4 Immobilization of tongue by suture

Fig .5 During the procedure

Fig .6 Immediate Post Operative

Fig .7. Specimen in 10% formalin solution

Fig .8. Follow up 1 month

Fig .9,Follow up 3 months

Histological Examination:

Haemotoxylin and Eosin stained sections show fibrosis with bland looking fibroblastic proliferation overlying mucosa shows ulcerated hyperplastic keratinized stratified squamous epithelium invested into the down growth .The sub epithelial zone shows mixed inflammatory infiltrate and proliferating blood vessels. There is no evidence granulomatous pathology or malignancy(Fig.10).

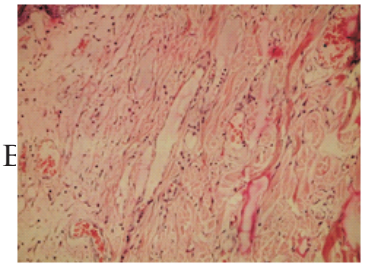

Figure 10.Histologic image depicts- A,Dense collagen fibers and fibroblast proliferation. B, Increased and dilated vascular tissue

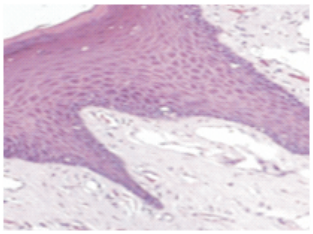

Figure 11.A- Hyperparakeratinized epithelium

Discussion:

The most common benign soft tissue tumor in the oral cavity is fibroma. It originates from connective tissue. A reactive hyperplastic lesion is typically the result of either trauma or continued irritation.[6] In response to the damage, the oral cavity's tissues undergo an uncontrollable healing process. Consequently, an excess of fibrous connective tissue is generated, which causes a nodule or mass to form[7].The etiological factors that contribute to the recurrence of traumatic fibroma include lip-biting habits, dental calculus, fractured restorations, occlusal trauma, and sharp or uneven tooth edges. The lesion is more prevalent in middle-aged people, with a 1.2% prevalence rate and a 66% predilection for females. After appropriate treatment approaches, this lesion has the benefit of having no visible post-operative scars[8]. Diode laser radiation has shown itself to be an excellent, simple, and secure method for treating oral lesions. This has a number of benefits over conventional surgical methods, such as minimal damage to surrounding tissues, improved vision, a shorter recovery period, less pain, and improved accuracy when treating soft tissue lesions, minimal development of scar tissue, and tissue elasticity preservation[9] Since there was no pain during or following the procedure, the patients in this study reported being satisfied with the laser surgery. Biological materials were ablation or decomposition-induced by the diode LASER's photokinetic, thermal, or plasma-mediated mechanisms[10].

Conclusion:

This case study shows that using a diode laser to surgically remove a traumatic fibroma was found to be an easy, effective, and cost-efficient to treat the condition and provide the patient with both functional and aesthetically resolution. Compared to the conventional scalpel method, the diode laser removal shows no bleeding and less pain and discomfort during the procedure. The patient should be evaluated, and their clinical history and other aetiologic aspects should be considered, to make sure that the lesion does not reoccur.

References:

1. Shafer's Textbook of Oral Pathology, 7th edition, Ch. 2 – Benign and Malignant Tumors of the Oral Cavity
2. Gonsalves WC, Chi AC, Neville BW: Common oral lesions: part II. Masses and neoplasia . Am Fam Physician. 2007, 75:509-12.
3. Jain G, Arora R, Sharma A, et al. Irritation fibroma: report of a case. J Curr Res Sci Med 2017;3(2):118–121.
4. Rathva VJ. Traumatic fibroma of tongue. BMJ Case Rep 2013;2013: bcr2012008220.
5. Esmeili T, Lozada-Nur F, Epstein J. Common benign oral tissue masses. Dent Clin North Am 2005;49(1):223–240.
6. De Santana Santos T, Martins-Filho PR, Piva MR, de Souza Andrade ES (2 0 1 4) "Focal fibrous hyperplasia: A review of 193 cases". J Oral Maxillofac Pathol. 18(Suppl 1): S86-9.
7. Esmelli T, Lozada-Nur F, Epstein J (2005) "Common benign oral soft tissue masses". DentClin North Am. 49(1): 223-40.
8. Salaria SK, Kalra P, Belkhede SG, Vinnakota G: Successful management of recurrent irritational fibroma and associated residual soft tissue defect in the posterior teeth through single-stage surgery: a rare case report. J Indian Soc Periodontol. 2021, 25:258-61.
9. J.B.S. Pai, R. Padma, M. Divya, K. Sachin, S. Vinesh, M. Alex Annaji, Excision of fibroma with diode laser: a case series, J. Dent. Lasers 8 (1) (2024) 34–38.
10. A.M. Luke, S. Mathew, M.M. Altawash, B.M. Madan, Lasers: a review with their applications in oral medicine, J. Lasers Med. Sci. 10 (4) (2019) 324–329.