A CASE REPORT ON IRRITATIONAL FIBROMA
EXCISION BY LASER

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ABSTRACT
Traumatic or irritation fibroma is a common benign exophytic oral lesion that develops secondary to tissue injury. It is the most common benign reactive lesion, affecting the oral cavity. The use of lasers in different dental procedures has become very common. The diode laser which was introduced in dentistry since 1999. Lasers have obvious benefits for all the patients without administering anesthetic shots and that means less time spent in the dental chair. Procedures were performed more conservatively, with less trauma for patients. Laser applications also enable the patient to enjoy a more relaxed dental experience, reducing or diminishing their fears, and resulting excellent post-operation experience for patients. This case describes the use of diode laser on the excision of fibromas. The excision of fibroma using the diode laser was a quick clinical procedure without bleeding. During the days following surgery, the patient reported no pain or discomfort. The wound healing of the soft tissue was satisfactory and no scarring could be seen in the region.
of the surgery. The excision of the fibroma with the diode laser is a safe, quick procedure, with minimum postoperative discomfort and complications.

**KEYWORDS:** Diode laser, fibroma, hemostatic agent.

**INTRODUCTION**

Gingival growths are one of the most frequently encountered lesions in the oral cavity. Most of these lesions, such as irritational fibroma, pyogenic granuloma, peripheral ossifying fibroma and peripheral giant cell granuloma are innocuous and rarely present with aggressive features. In the majority of cases, these lesions are the result of trauma or chronic irritation.\(^1\) Traumatic fibroma, also known as irritation fibroma, is a common benign exophytic oral lesion that develops secondary to tissue injury. The traumatic fibroma is among the most common benign reactive lesions.\(^2,3\) Fibroma is a result of a chronic repair process that includes granulation tissue and scar formation resulting in a fibrous submucosal mass.\(^4\) Recurrences are rare and may be caused by repetitive trauma at the same site.

This lesion does not have a risk for malignancy.\(^5\) The most common sites of traumatic fibroma are the tongue, buccal mucosa, and lower labial mucosa.\(^6\) Clinically, they appear as broad-based lesions, lighter in color than the surrounding normal tissue, with the surface often appearing white because of hyperkeratosis or with surface ulceration caused by secondary trauma.

The growth potential of fibroma does not exceed 10-20 mm in diameter.\(^7\) Irritation fibroma is treated by surgical excision, but the source of irritation and trauma must also be eliminated. Conservative excisional biopsy is curative and its findings are diagnostic; however, recurrence is possible if the exposure to the offending irritant persist.\(^8\)

The role of lasers in dentistry is well-established in conservative management of oral diseases and also in effectively eliminating it.\(^9,10\) The diode laser system has found wide recognition in the areas of lasers as a result of its practical characteristics and is considered as an important tool for a large number of application.\(^11\)

Diode laser has shown satisfactory results when used as an adjunct to conservative methods in the management of inflamed periodontal tissues and peri-implant tissue as well.\(^12\) According to a Deppe and Horch, the use of diode laser systems for the treatment of oral and
maxillofacial diseases has shown efficient removal of premalignant lesion of oral mucosa.\textsuperscript{[13]}
The diode laser which was introduced in dentistry since 1999 is a solid-state semiconductor laser that typically uses a combination of gallium (Ga), arsenide (Ar), and other elements such as aluminium (Al) and indium (In). It has a wavelength ranging from 810 to 980 nm. This energy level is absorbed by pigments in the soft tissues and makes the diode laser an excellent hemostatic agent. Thereby, it is a tool for soft tissue surgeries as well.\textsuperscript{[14]}

The laser surgery can be used for ablation of lesions, incisional and excisional biopsies, gingivectomies, gingivoplasties, soft tissue tuberosity reductions, and certain crown lengthening procedure.\textsuperscript{[15]} This case shows patients with a fibroma in oral cavity and followed by diode laser application for the fibroma excision without infiltrated local anesthesia.

\textbf{CASE REPORT}

A middle age women came to the department with complain of soft tissue overgrowth on right side of the jaw and difficulty in mastication since 15 days. The women was apprently alright 1 month back then she noticed a overgrowth on right side which was small in size which increased to present size of 3 cm(Fig 1). The submandibular lymph node of the right and left side are tender, soft, mobile, roughly oval. There was generalised attrison and generalished cervical abrasion. there was missing tooth in lower front region of the right side. A soft tissue overgrowth was noted on right side of the buccal mucosa at occlusal level in 46,47 region. The lesion is pale in colour, sessile, soft, non tender, approx 3 cm, roughly oval (Fig 1). The lesion was diagnosed as Fibroma and treated by laser. The local anaesthesia is given. Then with laser tip, the base of the overgrowth is excised and the whole overgrowth is removed. (Fig 2). The post operated picture shows was blood less, fast and without scarring procedure.(Fig 3) Then the 15 days follow up is done (Fig 4).
FIGURES

Fig 1: A overgrowth on right buccal mucosa.

Fig 2: Excision of the overgrowth with help of laser tip.

Fig 3: Post operative picture.
DISCUSSION

Sixty-six percent of irritation fibromas are found in females. It is extremely rare during the 1st decade of life. Patients with multiple fibromas may represent cases of familial fibromatosis, fibrotic papillary hyperplasia of the palate, tuberous sclerosis, or multiple hamartoma syndromes (Cowden syndrome). Those with a generalized fibrous overgrowth of the gingival tissues are said to have fibrous gingival hyperplasia or gingival fibromatosis.\(^{[16]}\) In the oral cavity, buccal, labial, and lateral tongue sites account for 71% of all fibromas. The mass may be sessile or pedunculated and usually reaches its maximum size within a few months. Seldom does it exceed 1.5 cm in size. Usually it is an asymptomatic, moderately firm, immovable mass with a surface coloration that is most often normal, but may show pallor due to decreased vascularity, thickened surface keratin, or ulceration from recurring trauma.

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.\(^{[17]}\) In the above mentioned case, patient was satisfied with laser surgery since it was a painless procedure both intra- and postoperatively.
The mechanisms of diode laser that lead to ablation or decomposition of biological materials are photochemical, thermal, or plasma mediated.\textsuperscript{[18]} The diode laser has been approved by the Food and Drug Administration for virtually all the soft tissue procedures. These procedures include soft tissue curettage, incisions, pocket debridement and ablative excisions.

Numerous treatment modalities have been employed for the treatment of gingival fibroma consisting of surgical excision, electrocautery, etc., depending upon the clinical and anatomic considerations. With the advent of lasers in dentistry, lasers like CO2, neodymium-doped yttrium aluminium garnet (Nd: YAG), and erbium-doped YAG (Er: YAG) have been used to treat a number of intraoral soft tissue lesions such as papilloma, pyogenic granuloma, hemangioma, etc.\textsuperscript{[19]} The safety and efficacy of laser systems and especially diode laser is already evaluated for the treatment of facial pigmentation and vascular lesions, fibroma, excision of epulis fissuratum and gingival hyperplasia.\textsuperscript{[20]}

Dental lasers offer a number of clinical advantages (especially for soft tissues), including hemostasis (the sealing of local vasculature), the ability to seal nerve endings and lymphatic vessels, reduced postoperative pain and swelling (thus reducing the need for postoperative analgesics/narcotics), reduced bacterial counts, and a minimized need for sutures in most surgical procedures.\textsuperscript{[21]}

**CONCLUSION**

Case reports described here showed that diode laser treatment was highly effective. Diode laser is used according to the protocol, is a relatively simple and safe method. Easy handling of the fiberoptic tip combined with the properties of diode laser helped in obtaining a clean, thin and fast cut; often without bleeding or scarring. Because of the sterilizing and tissue growth stimulating properties of the laser, we were able to obtain excellent healing in a few days, even without surgical suturing.

**REFERENCES**


