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. A review of benign oral soft tissue tumors in white Americans older than 35 years identified irritation fibroma as the second most common benign oral lesion. Fibroma is a result of a chronic repair process that includes granulation tissue and scar formation resulting in a fibrous submucosal mass. Recurrences are rare and may be caused by repetitive trauma at the same site. This lesion does not have a risk for malignancy. The most common sites of traumatic fibroma are the tongue, buccal mucosa, and lower labial mu-
CASE REPORT

Case 1: A 32-year-old female patient reported a mass on the tongue increasing in volume. Clinically, the patient presented a lesion on the lateral border of the tongue, with no alteration of the color and no symptoms (Fig 1). The lesion had a sessile base. The patient was norm reactive and presented extreme anxiety related to surgical procedures.

Case 2: A 44-year-old female patient complained of a red-colored mass with increasing volume on the jugal oral mucosa with a sessile base (Fig 2). The patient was norm reactive. The etiology of the trauma was related to absence of a first molar.

Description of clinical procedures (cases 1 and 2)

For the removal of both lesions, a Nd:YAP laser (Lokki DT Laser; Vienne, France) with 1.34 μm wavelength was used. Local anesthesia was applied on the lesion areas. Lesions were removed using the Nd:YAP laser with a 200-μm-diameter optic fiber and the following parameters: 250 mJ and 30 Hz (Figs 3 and 4). The operations were performed without bleeding (Figs 5 and 6). After excision, lesions were fixed in 10% formol and sent to pathology analysis, confirming the clinical diagnosis of fibroma. Immediately following fibroma removal with Nd:YAP laser and 5 days postoperatively, laser phototherapy (LPT) was performed (InGaAlP laser, 670 nm, 40 mW, 3 J/cm², 3 s/point; Dentoflex; São Paulo, Brazil). The irradiation was performed at 6 points above and around the region of the excision, in order to obtain a better postoperative period, with less pain and edema, and to improve wound healing (Fig 7). During the subsequent days after the surgery, no pain medication was required and no pain or discomfort was reported by the patients. The wounds healed properly in both cases and no scarring could be seen in the region of the surgery.

DISCUSSION

This case report described the use of Nd:YAP laser on the treatment of a traumatic fibroma. Different wavelengths of high power lasers have been used to perform oral soft tissue surgery, such as CO₂ (λ = 10.6 μm), Er:YAG (λ = 2.94 μm), Er:YSGG (λ = 2.78 μm) and diode lasers for oral surgery are well established in the literature describing its use in surgical operations. This case report illustrates the excision of a traumatic fibroma using the Nd:YAP laser (1.34 μm) followed by photobiomodulation with InGaAlP laser.
Fig 1  Traumatic fibroma on the lateral border of the tongue.

Fig 2  Traumatic fibroma in oral jugal mucosa.

Fig 3  Excision of the traumatic fibroma on the lateral border of the tongue using a Nd:YAP laser.

Fig 4  Excision of the traumatic fibroma in oral jugal mucosa using a Nd:YAP laser.

Fig 5  Immediately after surgery, showing peripheral zone of edema.

Fig 6  Immediately postoperatively, showing peripheral zone of edema.
better homeostasis and greater potential for cutting, but irrespective of wavelength, all soft tissue healing is by secondary intention.\textsuperscript{16} Shorter laser wavelengths (diode 801, 980 nm; Nd:YAG 1064 nm) pass through the epithelium and penetrate 2 to 6 mm into the tissue, whereas longer wavelengths (Er,Cr:YSGG 2780 nm, Er:YAG 2940 nm, CO\textsubscript{2} 10,600 nm) have minimal penetration. As surgical cutting proceeds, the heat generated by the laser can seal small blood and lymphatic vessels and reduce or eliminate bleeding and edema.\textsuperscript{16} The denatured proteins from tissue and plasma give rise to a surface which protects the surgical wound from frictional or bacteria action. The area of reactive tissue edema surrounding the ablation site shows the penetrating conductive thermal effects related to shorter wavelength lasers. Using longer wavelengths, the risk of deep penetration is minimized and surgical incisions can be deemed less potentially damaging.\textsuperscript{16} Although surgery with Nd:YAP laser showed a peripheral zone of edema (Figs 5 and 6), clinically, this thermal effect did not impair wound healing. In the present cases, Nd:YAP laser proved to be safe for surgical procedures, since postoperative wound healing occurred properly without pain or discomfort, and little edema. No medication was required and no pain was related by the patients.

Low-intensity red laser light was first used to accelerate wound healing in the 1970s.\textsuperscript{17} After that, many studies involving the use of low-intensity lasers showed that the healing process is enhanced by such therapy.\textsuperscript{18-21} In recent years, researchers have described several important biological effects associated with low-intensity laser therapy.\textsuperscript{18,22} It has been shown that this therapy presents advantages such as pain control, anti-inflammatory action, increase of collagen production, fibroblastic proliferation, and increase of local microvascularization.\textsuperscript{18-20,22,23} This biological effect occurs due to the increase of ATP synthesis, increase of nuclear acid production, and gene expression.\textsuperscript{20,24} In the current study, laser phototherapy contributed to wound healing after fibroma excision.

**CONCLUSION**

It can be concluded that the excision of traumatic fibroma with Nd:YAP laser is a safe, quick procedure, and postoperative laser phototherapy can reduce edema and improve wound healing.

**REFERENCES**


ACKNOWLEDGMENTS

The patients visited the Stomatology Clinic of the Dental School of the University of Cruzeiro do Sul (UNICSUL).

Contact address: Irineu Gregnanin Pedron, Departamento de Estomatologia, Faculdade de Odontologia, Universidade de Sao Paulo, Av. Prof. Lineu Prestes, 2227 - Cidade Universitaria, Sao Paulo, SP, Brazil 05508-900. Tel/Fax: +55-11-3091-7813. e-mail: igpedron@usp.br