LOBULAR CAPILLARY HEMANGIOMA OF THE TONGUE
EXCISED WITH DIODE LASER

Mukesh Khemchand Asrani¹, Viral Mukesh Parekh², Nilesh Nalinkant Raval³, Sefali Sahu⁴
¹Reader, ²Senior Lecturer, ³Professor and Head, ⁴Post Graduate Student
Department of Oral Medicine and Radiology, Karnavati School of Dentistry, Gandhinagar, Gujarat.

Corresponding Author:
Dr. Mukesh Khemchand Asrani
Reader
Department of Oral Medicine and Radiology
Karnavati School of Dentistry
Gandhinagar
(M) : +91 9879417217
Email : drmukeshasrani@gmail.com

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Abstract:
Lobular capillary hemangioma (LCH) or Pyogenic granuloma (PG) is one of the most common lesions occurring on the gingiva but its occurrence on the non gingival sites is quite rare. Extra gingivally, it can occur on lips, tongue, buccal mucosa, palate as well as other sites. LCH on the tongue not only creates difficulty in mastication, it interferes with aesthetics and phonation as well. There are many methods for management of this lesion which include conventional surgery, electrocautery, laser surgery, injection of sclerosing agents and many more. Laser surgery offers an added advantage of immediate hemostasis, sterile environment, reduced healing time as well as reduced post operative complications. Hereby, we report a rare case of LCH on the dorsal surface of tongue which was excised with diode laser. A detailed case report with a brief review is presented.

Keywords: Lobular capillary hemangioma, Pyogenic granuloma, Diode laser.

Introduction
Lobular capillary hemangioma (LCH) or Pyogenic granuloma (PG) of oral cavity mainly occurs on the gingiva. It is considered to be a benign, non-neoplastic soft tissue lesion thought to be a reactive exuberant tissue reaction to local irritation or trauma. The term pyogenic is used erroneously as this condition does not produce pus and is not related to any infection. It has also been referred by a variety of other names such as granuloma pediculatum benignum, benign vascular tumor, pregnancy tumor, vascular epulis, hemangomatous granuloma, granuloma telangiectaticum, Cocker and Hartzell’s disease.¹,²

Clinically, pyogenic granuloma usually presents as a single exophytic growth, sessile or pedunculated with smooth or lobular surface and is generally deep red to reddish – purple in color. It is more common in second and fifth decades of life with females being affected more than males. Other than gingiva, it can affect cheek, lips, tongue, palate, mucobuccal fold and frenum. Pyogenic granuloma of the tongue is more common on the lateral side of tongue related to trauma from adjacent teeth or dentures. When present on tongue, it causes difficulty in mastication, poor appearance, affects phonetics and is often a cause of anxiety for the patient.³

Surgical excision and removal of underlying cause is the preferred method of treatment. Currently different lasers with adequate parameters are used for the surgery of PG with the added advantage of immediate hemostasis, maintenance of sterile environment and minimal post operative complications.³,⁴

The purpose of this article is to report an unusual case of pyogenic granuloma on the dorsal surface of tongue which was excised with diode laser.

Case Report
A 35 year old female patient reported to the department of Oral Medicine and Radiology with the complaint of a small growth over her tongue since one month with occasional bleeding. She was relatively asymptomatic before one month then she noticed a small growth on her tongue of about pea size which has gradually increased up to the present size. She also complains of occasional bleeding from the growth, difficulty in chewing and poor appearance of her tongue. She was very anxious about it and reported to us seeking treatment for the same.

She could not recollect any history of trauma over her tongue. Her past medical, dental and family history was not significant. On intra oral examination, there was a single, well defined, pedunculated growth present over the dorsal surface of tongue measuring about 1.2 x 1 cm, irregular shape, smooth surface, color was bright red and the borders were pale (Figure 1). It was soft to firm, slightly tender and had bleeding tendency on provocation. Based on the clinical findings, a provisional diagnosis of pyogenic granuloma was made. After obtaining routine blood investigations which were within normal limits and with patients consent, the lesion was excised with a soft tissue diode laser (Cheese DEN7B GaAlAs diode laser, 980nm) at an output energy of 4 W with continuous contact mode. Hemostasis was obtained with the same laser beam at 1W non contact mode. The immediate post surgical photograph
is seen in Figure 2. Patient was advised to take analgesic only if there was pain and was asked to apply topical lignocaine gel only if there was any burning sensation or discomfort.

The excised tissue (Figure 3) was sent for histopathological examination. The H & E section (Figure 4) shows parakeratinized hyperplastic stratified squamous epithelium. Underlying connective tissue shows mature interlacing dense to loose collagen fiber bundles interspersed with diffuse chronic inflammatory cells and granulation tissue. There are large number of small newly forming blood vessels and large capillaries in lobular aggregates suggestive of lobular capillary hemangioma (Pyogenic granuloma). There was good healing as seen two days after the excision (Figure 5). Patient had not felt any need to take analgesic or apply topical lignocaine gel. There were no post operative complications and there was complete healing as seen after two weeks (Figure 6). Follow up was done up to three months and no recurrence was noted.

Discussion

Pyogenic granuloma was first described by Poncet and Dor in 1987 as botryomycosis hominis. The term pyogenic granuloma was coined by Hartzell in 1904 and is mostly used in the literature even though it does not accurately represents the clinical and histopathological features. The term lobular capillary hemangioma is increasingly gaining favor in the literature. Extra orally, the common sites of involvement are skin of face, neck, upper and lower extremeties and mucous membrane of nose and eyelids. The most common sites in oral cavity are gingiva (61%), lip (14%), tongue (9%) and buccal mucosa (7%).

Several etiologic factors have been suggested like trauma, injury to a primary tooth, chronic irritation, hormones, drugs, gingival inflammation, preexisting vascular lesions, chronic irritation due to exfoliation of primary teeth, eruption of permanent teeth, defective fillings near the growth, food impaction and tooth brush trauma. At molecular level, the pathogeneisi of PG may be considered as the imbalance of angiogenesis enhancers and inhibitors. There is over production of vascular endothelial growth factor, basic fibroblast growth factor (bFGF) and decreased amounts of angiostatin, thrombospondin – 1 and estrogen receptors leading to formation of PG.

The clinical appearance of PG depends upon duration and vascularity of the lesion. The usual presentation is of a small, deep red to reddish purple lesion which may be sessile or pedunculated. The surface is generally smooth, lobulated or occasionally warty which may be commonly ulcerated and shows a tendency for hemorrhage upon provocation. The lesion is generally painless, soft to firm in consistency, however older lesions tend to be more collagenized and firm.
Laser offers a new and better approach for excision of soft tissue lesions of oral cavity with very minimal post operative complications. The application of laser can be considered as an effective and safe technique for excision of LCH with minimal invasion and many clinical advantages such as less intra-operative bleeding, hemostasis, reduced pain and reduced time of healing.

Reference


Conflict of interest: Nil
Source of fund: Self

Histologically, PG is partly or completely covered by parakeratotic or non-keratinized stratified squamous epithelium. The connective tissue has a large number of lobulated or non-lobulated mass of angiomatous tissue. The lobulated lesions are composed of solid endothelial proliferation or proliferation of capillary sized blood vessels. The amount of collagen fibers is quite less and the lesion is infiltrated by plasma cells, lymphocytes and neutrophils.8

The differential diagnosis of pyogenic granuloma includes peripheral giant cell granuloma, peripheral ossifying fibroma, peripheral odontogenic fibroma, hemangioma, conventional granulation tissue, hyperplastic gingival inflammation, metastatic growth, Kaposi’s sarcoma, bacillary angiomatisos, angiosarcoma and non Hodgkin’s lymphoma.2,9

The routine treatment includes removal of causative agent followed by surgical excision and curettage of the underlying tissue. Other surgical modalities can also be used like cryosurgery, electro cautery, excision by Nd:YAG, CO2, Diode and flash lamp pulsed dye laser beam. Injection of ethanol, corticosteroid and sodium tetradecyl sulphate sclerotherapy are also used for its management.6

The possibility of recurrence of PG with conventional surgery has been reported to be 16%, however it seems that the use of laser will reduce this recurrence rate. The advantage of lasers include less invasiveness and suture less procedure that produces only minimal post operative pain. Rapid healing can be observed as blood vessels are sealed during the procedure and there is a reduced need for post – surgical dressing. It also depolarizes nerves, thus reducing post operative pain and also destroys many bacterial and viral colonies that may potentially cause infection.4,10

Figure 5: Intraoral photograph two days after excision showing good healing.

Figure 6: Intraoral photograph showing complete healing after 14 days.

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