

Gingival Pyogenic Granuloma Excised With Diode Laser: A Case Report

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Abstract

Pyogenic granuloma is one of the localized gingival enlargement of oral cavity. It is inflammatory hyperplasia arising in response to stimuli such as chronic tissue injury, hormonal factors, certain drugs and bacterial infections. The most common affected site is gingiva followed by buccal mucosa, tongue and lips. Clinically, it is a well circumscribed, reddish lobulated lesion, could be sessile or pedunculated. The colour of the lesion ranges from pink to red to purple, depending on the age of the lesion. The treatment of choice the pyogenic granuloma is surgical removal and can be done with the help of excising the lesion as whole using surgical blades, laser, flash lamp pulsed dye laser and cryosurgery. The aim of the article is to discuss the non hemorrhagic excisional removal of pyogenic granuloma with the help of diode laser.

Keywords: Inflammatory hyperplasia, Oral cavity, Pyogenic granuloma, Diode laser.

INTRODUCTION

I On oral examination, a localized gingival swelling of 1.5cm × 1cm size was observed in relation to 42, 43 region and poor oral hygiene was observed. The swelling was a smooth exophytic lesion manifested as a small erythematous papule on a pedunculated base which was hemorrhagic with spontaneous bleeding on probing. The lesion was painless and asymptomatic except for the slight discomfort to the patient due to the growth.

Physical examination revealed no other sign's or symptoms including no cervical lymphadenopathy. There was moderate supra and subgingival calculus with moderate gingivitis.



Fig No. 1: Pre-operative photograph



Fig no. 2-Pre-operative radiograph

Radiographically: The periapical radiograph showed improper root canal filled tooth in relation to 43.

Treatment

Initial examination phase I therapy was started consisting of oral hygiene instructions, scaling and root planning especially 42,43 region to remove all the inflammatory component. There was severe bleeding while doing scaling and curettage Phase 1 therapy lead to slight improvement in clinical condition of the gingival tissue, but for the complete resolution of lesion., surgical excision was planned. Blood investigations were advised to the patient before performing the surgery. The patient was recalled after one week for surgical excision of the lesion. The patient was motivated to maintain oral hygiene. The patient was advised to perform and maintain their oral hygiene by brushing twice a day and to use a chlorhexidine mouth rinse of 0.2% twice daily.

Surgical Procedure

The treatment protocol was surgical excision under local anesthesia, 840-nm diode laser in continuous wave mode at 1 watt was chosen for excision of the lesion.

The whole lesion was excised successfully with a diode laser

Post-operative instructions

The patient was given instructions to avoid intake of spicy food and maintain oral hygiene. In case if any swelling develops, patient was instructed to apply cold packs extra-orally. After 24 hours, warm saline rinses for 3-4 times daily were advised and was asked to rinse with 0.2% Chlorhexidine mouthwash twice daily for 14 days starting the next day of the surgical excision of the lesion. Patient was recalled after 1 week for the follow-up appointment.

Tablet Combiflame analgesic was prescribed for three times daily for 3 days. After 1 week healing was satisfactory. The patient was kept under observation through recall checkups.

The excised tissue was 1.5 x 0.8 x 0.8 cm in size, reddish pink in color and firm in consistency. The tissue was sent for histopathological examination.



Fig no. 3: Post-operative photograph



Fig no. 6: During procedure

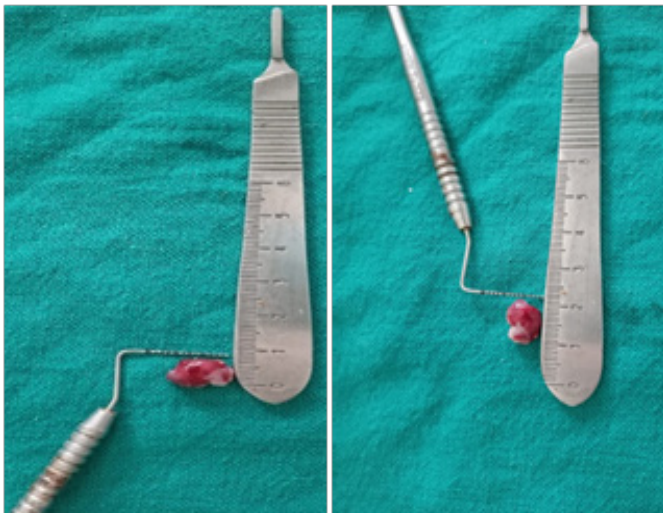


Fig no. 4: Excised tissue



Fig no. 7: Healing after one



Fig no. 5: Diode laser

Histopathology

The H&E stained section shows epithelium and connective tissue stroma. The epithelium is parakeratinized stratified squamous with areas of hypertrophy and atrophy. Underlying connective tissue stroma shows loose collagen fibers interspersed with chronic inflammatory cells, predominantly being lymphocytes and plasma cells. There are numerous small and large blood vessels with extravasated RBCs.

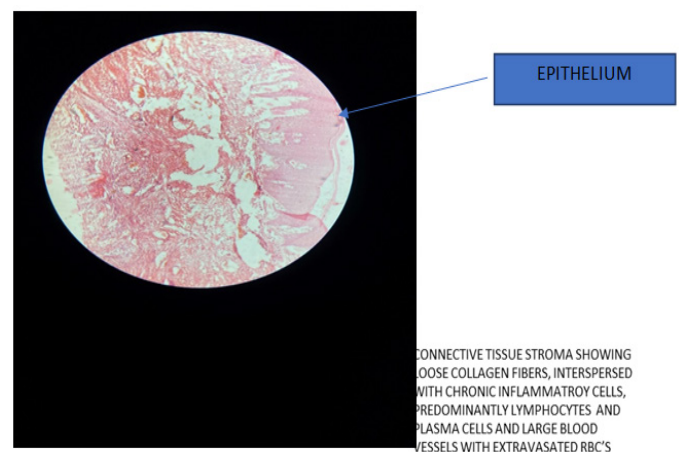


Fig no. 8: Histopathological slide view of proliferating epithelium under microscope

Discussion

An inflammatory hyperplasia that affects the oral tissues is called a pyrogenic granuloma. It is quite probable that Hullihen's 1844 account was the first in the English literature to describe a pyogenic granuloma. Hartzell in 1904 coined the name "pyogenic granuloma" [6]. Everyone now agrees that an excessive localized connective tissue reaction to a slight injury or any underlying irritation is what causes this lesion to emerge [7]. Calculus, poor dental care, general infections, overhanging restorations, biting one's cheek, etc. are some examples of the irritating factors. A pyogenic granuloma forms as a result of the irritation-induced hyperplasia of the underlying fibrovascular connective tissue and the granulation tissue's proliferation [8]. Although pyogenic granuloma can develop at any age, it is most common in young adult females during their second decade of life, perhaps as a result of the vascular effects of female hormones [9]. Most frequent site is gingiva and the next most often areas are tongue, lip buccal mucosa [6].

Clinically, a smooth or lobulated exophytic lesion with a sessile or pedunculated base is typically observed as a pyogenic granuloma. The dimensions of a pyogenic granuloma can range from a few millimeters to several centimeters, but they may exceed than 2.5 cm. A significant number of pyogenic granulomas grow quickly and attain larger size [10]. Some times bone loss may occur with pyogenic granulomas [11].

In the treatment of pyogenic granuloma requires total surgical excision; in this case, a diode laser is employed to aid in appropriate bleeding and a blood-free outcome.

To distinguish pyogenic granuloma from other benign soft tissue lesions, a differentiation is necessary. Peripheral giant cell granuloma, pregnancy tumor, and typical granulation tissue are a few of these [6, 9]. Clinical and histological characteristics are used to differentiate cases, which aids in appropriate therapy and, consequently, a favorable prognosis. Histologically, the surface epithelium could be hyperkeratosis, have foci of ulcerations, or be intact, thickened mass of connective tissue with a high concentration of fully mature collagen are seen.

If pyrogenic granuloma is correctly diagnosed and treated appropriately, it can be effectively managed.

Conclusion

The presentation of this work leads to the conclusion that the inflammatory tissue may have crossed the line from normal gingivitis to the production of granulomas due to a combination of several etiological variables. Since nerves do not develop within

the reactive hyperplastic tissue, the lesion was painless. One effective therapeutic option for reducing the likelihood of a lesion recurrence is surgical excision. Therefore, appropriate treatment planning and a correct diagnosis should also be taken into account. The mucogingival complex should be preserved and improved while the lesion is carefully managed.

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Conflict of interest

No Conflict of Interest

References

1. Bhaskar SN, Jacoway JR. Pyogenic granuloma: clinical features, incidence, histology, and result of treatment: report of 242 cases. *J Oral Surg* 1966; 24(5): 391-8.
2. Vilmann A, Vilmann P, Vilmann H. Pyogenic granuloma: evaluation of oral conditions. *Br J Oral Maxillofac Surg* 1986; 24(5): 376-82.
3. Regezi JA, Sciubba JJ, Jordon RCK. Oral pathology: clinical pathological considerations. 4th ed. Philadelphia, Pa, USA: WB Saunders 2003.
4. Mussalli NG, Hopps RM, Johnson NW. Oral pyogenic granuloma as a complication of pregnancy and the use of hormonal contraceptives. *Int J Gynaecol Obstet* 1976; 14(2): 187-91.
5. Miller RAW, Ross JB, Martin J. Multiple granulation tissue lesions occurring in isotretinoin treatment of acne vulgaris: successful response to topical corticosteroid therapy. *J Am Acad Dermatol* 1985; 12 (5): 888-9.
6. Jafarzadeh H, Sanatkhani M, Mohtasham N. Oral pyogenic granuloma: a review. *J Oral Sci* 2006; 48(4): 167-75.
7. Mathur LK, Bhalodi AP, Manohar B, Bhatia A, Rai N, Mathur A. Focal fibrous hyperplasia: a case report. *Int J Dent Clin* 2010; 2(4):56-7.
8. Kerr DA. Granuloma pyogenicum. *Oral Surg Oral Med Oral Pathol* 1951; 4(2): 158.
9. Lawoyin J, Arotiba J, Dosumu O. Oral pyogenic granuloma: a review of 38 cases from Ibadan, Nigeria. *Br J Oral Maxillofac Surg* 1997; 35(3): 185-9.
10. Parisi E, Glick P, Glick M. Recurrent intraoral pyogenic granuloma with satellitosis treated with corticosteroids. *Oral Dis* 2006; 12(1): 70-2.
11. Goodman-Topper E, Bimstein E. Pyogenic granuloma as a cause of bone loss in a twelve-year-old child: report of case. *ASDC J Dent Child* 1994; 61(1): 65-7.