

Case Report

Excision Of Pyogenic Granuloma By Laser Application: A Case Report

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ABSTRACT

Pyogenic granuloma is a primarily reactive hyperplasia which appears in the oral cavity as an overgrowth of tissue due to physical trauma or hormonal factors & irritation. Pyogenic granuloma is a non specific gingival overgrowth seen as a response to underlying irritating factors. The growth is mainly seen in young but it may occur in any age group especially in individuals with poor oral hygiene. Females are far more susceptible than males because of the hormonal changes that occur in women during pregnancy, puberty and menopause. The peak prevalence is in teenagers and young adults, the treatment is excision of the lesion in toto.

INTRODUCTION

Pyogenic granuloma was for the first time described in 1897 by two French surgeons, Poncet and Dor. They coined the term botryomycosis hominis. Since pyogenic granuloma is not a true granuloma, the name may be misleading. (1,2). Originally it is a capillary hemangioma histopathologically. Vilmann et al stated that pyogenic granulomas are mostly confined to the marginal gingiva, with the incidence of their occurrence on the alveolar part to be only 15 % (3). Pyogenic granulomas are mostly associated with appreciable amount of bone loss. Hormonal variations in females occurring during puberty, pregnancy and menopause increase the susceptibility of females for

Pyogenic granuloma. In many cases, mastication on the lesion causes bleeding and pain and requires surgical intervention before parturition. Any physical trauma like as produced during mastication over the lesion may aggravate the symptoms of pain and bleeding, which may then need surgical intervention before parturition. While some cases of pyogenic granuloma may show a marked reduction in size after the child birth, and hence may not require any surgical intervention. The gold standard treatment for the Pyogenic granuloma is the complete surgical excision of the lesion. Cases of recurrent pyogenic granuloma are not a rare finding. Recurrence rate for pyogenic granuloma has been reported to be 16% of the treated

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Preoperative intraoral image showing pyogenic granuloma



Image showing results after 7 days and subsequent healing



Immediate post operative image showing the results after the excision of the lesion via laser



Image showing the excised tissue dimensions

lesions. The recurrent cases may require re-excision. Being a non-neoplastic growth, excisional therapy is the treatment of choice. Other alternative approaches such as cryosurgery, excision by Nd:YAG. Laser, flash lamp pulsed dye Laser, injection of corticosteroid or ethanol, and sodium tetradecyl sulphate sclera therapy have been reported to be effective in the treatment of pyogenic granuloma.⁴

So, this case report explains the use of Diode Laser (K Laser) for the management of pyogenic granuloma.

CASE REPORT

A 33 years old female patient reported to the department of periodontics, Peoples college of dental sciences, Bhopal. with a chief complaint of painless growth of gum in the upper back teeth region since 6 months. She also complained of the lesion being associated with bleeding while brushing. The patient was apparently all right when she first noticed the

lesion in relation to buccal aspect of upper back teeth region six months back. Initially, the lesion was peanut in size and gradually progressed to attain the present size. There was no history of swelling in any other part of the body and had no relevant medical history.

Clinical examination

Extraoral examination

No abnormality detected.

Intraoral examination

Inspection: A solitary discrete gingival over growth was visible at the maxillary molar area on left side, measuring 2/3 mm.in size The growth was roughly oval in shape, colour is varying from pinkish red, and surface was smooth. The oral hygiene status was found to be poor. Pathologic migration was not seen.

Palpation: The inspectory findings regarding number, site, shape and size were confirmed & the lesion was found to be pedunculated with stalk. The lesion was bleeding on probing.



Image showing the excised tissue dimensions



Image showing the K LASER, used during the procedure

Blood examination :

Revealed normal values.

HISTOPATHOLOGICAL EXAMINATION

The histopathological examination of the excised tissue reported it to be of Pyogenic granuloma, was characterized by tissue showing overlying inflamed vascular connective tissue stroma. Low power and high power view showed parakeratinized stratified squamous epithelium with pseudoepitheliomatous hyperplasia in few areas. Stroma also showed plump to spindle shaped fibroblast, with loose to dense collagen fibre bundles suggestive of pyogenic granuloma.

TREATMENT

The treatment comprised of oral prophylaxis and excisional biopsy of the growth with diode Laser (unilase) 4 Watts. The treatment was initiated with thorough scaling & root planning & the response to the same was evaluated after 3-4 weeks of time. Then the excisional biopsy of the lesion was done by using diode LASER (K Laser) 4 watts in toto, under local anaesthesia. Following excision the surgical site was irrigated with normal saline & covered with periodontal dressing (Coe-Pack). Post-operative instruction were given to the patient along with prescription of antibiotics and analgesics. (amoxicillin 500 mg TID, analgesics 500 mg SOS). Patient was also prescribed chlorhexidine

mouth wash, 10 ml twice a day for 10 days. The patient was recalled after 1 week, the healing of the operated site was uneventful & the patient was kept under long term maintenance. After 6 month again the patient was recalled for follow up, the healing was focus to be uneventful & satisfactory without any sign of recurrence.

DISCUSSION

The pyogenic granuloma is a relatively common, tumor like, exuberant tissue response, which mostly manifests as a tissue reaction to localized irritation or trauma. Pyogenic granulomas may occur at any age, but they most frequently affect young adults. The maxillary gingiva (especially in the anterior region) is involved more frequently than the mandibular gingiva; the facial gingiva is involved more than the lingual gingiva. Three quarters of all oral pyogenic granulomas occur on the gingiva, with the lips, tongue (especially the dorsal surface), and buccal mucosa also affected. A history of trauma is common in extragingival sites, whereas most lesions of the gingiva are response to irritation. Individual's with poor oral hygiene and chronic oral irritants most frequently are affected.^{6,7} Early lesions bleed easily due to extreme vascularity. Pyogenic granulomas can have a rapid growth pattern, which can be a trouble to the patient. If left alone, a number of pyogenic

granulomas undergo fibrous maturation and resemble and/or become fibromas. A number of lesions affect both the facial and lingual gingivae. Pyogenic granulomas usually present as smooth or lobulated tissue overgrowths, which may be red-to-purple masses that may be either pedunculated or sessile. As lesions mature, the vascularity decreases and the clinical appearance is more collagenous and pink.⁴ Pyogenic granulomas vary in size from a few millimetres to several centimetres and are mostly painless.⁶ These tumors are soft to palpation. A history of trauma is common in extragingival sites, whereas most lesions of the gingiva are a response to irritation. Individuals with poor oral hygiene and chronic oral irritants (eg, over-hanging restorations, calculus) most frequently are predisposed to pyogenic granuloma.

Histologic examination reveals sectioned soft tissue consisting of a lesion composed of ulcerated mucosa covering a core of cellular fibrous connective tissue admixed with proliferating vascular channels and a mixed inflammatory infiltrate. This lesion is a reactive/inflammatory process. Differential diagnosis for Pyogenic granuloma is fibroma, peripheral ossifying fibroma, irritation fibroma, peripheral giant cell granuloma. The treatment of choice is conservative surgical excision. For gingival lesions, excising the lesion down to the periosteum and scaling adjacent teeth to remove any calculus and plaque that may be a source of continuing irritation is recommended.⁵ Pyogenic granuloma occasionally recurs, and a re-excision is necessary. There recurrence rate is higher for pyogenic granulomas removed during pregnancy. The only outpatient care is observation of the surgical healing 1 week after removal. Prevention consists of routine scaling and home care, especially during

pregnancy. No complications are anticipated with removal of this lesion other than the chance of a cosmetic gingival defect. The prognosis is excellent, and the lesion usually does not recur unless inadequately removed. Lesions removed during pregnancy may have a higher recurrence rate. Focus patient education on better oral hygiene (1)

Laser therapy using continuous and pulsed CO₂ and Nd:YAG systems have been used for a variety of intraoral soft tissue lesions such as haemangioma, lymphangioma, squamous papilloma, lichen planus, focal melanosis, and pyogenic granuloma, because they carry the advantage of being less invasive and sutureless procedures that produce only minimal postoperative pain. Rapid healing can be observed within a few days of treatment, and as blood vessels are sealed, there are both a reduced need for post-surgical dressings and improved haemostasis and coagulation. It also depolarizes nerves, thus reducing post-operative pain and also destroys many bacterial and viral colonies that may potentially cause infection. Reduced post-operative discomfort, oedema, scarring and shrinkage have all been associated with its use.⁸

CONCLUSION

Pyogenic granuloma is a reactive hyperplasia/non-specific conditional gingival over growth. Diagnosis should be made with clinical and histopathological findings. Excision by Laser is a successful treatment option for this kind of lesion with rare chances of recurrence.

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