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Excision of enlarged gingival tissue using a diode laser: A case report

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Abstract
Inflammatory reactions can cause hypertrophy in the gingival tissue which can also be termed as gingival hyperplasia or gingival hypertrophy. It is often associated with chronic periodontitis.
This case report describes a case of an enduring gingival enlargement in a young female who is systemically healthy, confined to the anterior region of the lower arch. Using a diode laser surgical therapy was done to provide a good healing & favourable aesthetic outcome.

Keywords: Gingival enlargement, gingival hyperplasia, hypertrophy, periodontitis

Introduction
Gingival enlargement is a complex condition which ascends due to various inducements and communications between the environment and host. This frequently occurs due to responses to injuries like calculus, fractured teeth, food lodgment, overhanging restorations and overextended denture flanges. It can also be a cause of plaque retention, systemic hormonal disturbances etc. Speech, mastication and functional disruption may also occur depending on the extent and severity of the lesion.
Plaque-induced inflammatory hyperplasia is the most common form of enlargement. It can be generalized, localized, and can be exaggerated by hormonal effects.
This paper offers a case of inflammatory gingival hyperplasia and its management using a diode laser.

Materials and Methods
A 16 years old female reported to the Department of Periodontology & Implantology, D.J College of Dental Sciences and Research, with the chief complaint of pain in the lower front tooth region in the last 6-7 days. She also gives a history of slight gingival enlargement in the lower front tooth region for 5-6 years which started as a small nodule that gradually increased in size and was not painful (fig.1). No history of drug intake is known to provoke gingival enlargement. Neither family history was present. Intra-oral examination revealed grade III enlargement about mandibular anterior teeth. The growth was diffuse and fibrotic. The anterior region showed a probing depth of more than 5 mm (fig.2). There is no evidence of bone loss radiographically (OPG) (fig.3).

Management
After phase I therapy, oral hygiene instructions were enforced. For re-evaluation the patient was recalled after seven days (fig.4). The decision to perform gingivectomy with Diode Laser was made for aesthetic purposes based on the amount of tissue present after phase I therapy.
Infiltration anaesthesia was given before the surgery. Afterwards, gingivectomy was performed using a diode laser with a wavelength of 980 nm in contact mode using a power of 1.37w (fig.5 and 6), ensuring that the lesion was excised entirely (fig.7) by trimming up the remaining soft tissue endwise to the tooth to prevent the recurrence of the lesion. Postoperatively, the lesion had no bleeding (fig.8). The excised mass (fig.9 & 10) was sent for biopsy.

Histopathological examination revealed the polypoid outline of tissue lined by hyperplastic squamous epithelium, dense chronic inflammation in many areas, and focal calcification, based on the histopathological examination final diagnosis of inflammatory gingival hyperplasia was established (fig.11).

After one week, the patient was recalled and examined thoroughly, which showed favourable healing of the excised lesion with a marked reduction of probing pocket depth and no post-operative pain (fig.12).

Fig 1: Clinical picture of the lesion

Fig 2: Probing depth

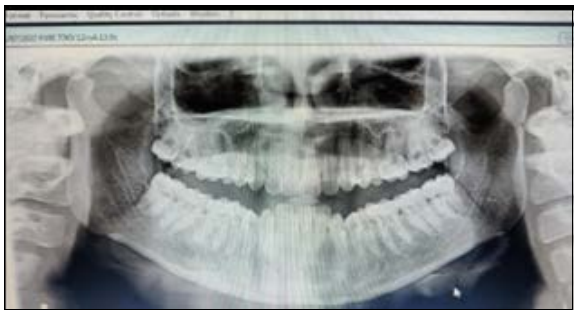

Fig 3: OPG

Fig 4: Clinical picture after phase 1 therapy

Fig 5: Laser application in contact mode

Fig 6: Incisions given by laser

Fig 7: Excision of the enlarged tissue

Fig 8: Immediate post-op

Fig 9: Width of the excised tissue

Fig 10: Length of the excised tissue

Fig 11: Histopathologic report

Fig 12: One week post op picture

Fig 13: Two months follow-up

Results
A 2-month follow-up of the case (fig.13) showed favourable healing, markedly reduced probing depth, and no post-operative pain.

Discussion
Chronic inflammatory changes are common causes of gingival enlargement. These are inflammatory responses to local irritants associated with gingiva. Prolonged exposure to dental plaque is one of the major causes of such enlargement.

A clinical manifestation is engorged gingival tissue and increased exudates. It can also manifest as oedema and color changes to red or blueish-red. There are various treatment modalities to treat chronic gingival enlargement, initially, it can be treated with conventional phase I therapy. If it persists and does not shrink after Scaling and Root planing and includes a fibrotic component, surgical intervention should be initiated to remove the excess tissue.

The conventional surgical approach can result in problems such as surgical trauma, blood loss during surgery, postoperative pain and swelling, and low patient satisfaction. Laser treatment is a minimally invasive treatment that reduces these problems.

Per our observation, there was reduced bleeding during surgery and hemostasis was rapid postoperatively.

Conclusion
Inspite of innumerable aetiology, gingival enlargement can be carefully diagnosed by proper history, location or clinical presentation. An excisional/incisional biopsy or histologic examination should be carried out to correctly diagnose uncommon cases. It is imperative to enforce oral hygiene measures at the beginning of treatment. After the case is evaluated by dentist, a one-year follow-up is recommended to ensure a good prognosis for the patient.

Conflict of Interest
Not available

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