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Case Report

Puberty Induced Gingival Enlargement: A Clinical Case Report

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ABSTRACT:

Introduction: Gingival enlargement during puberty has all the clinical features that are associated with chronic inflammatory gingival disease. Usually, a conventional periodontal therapy comprising of oral prophylaxis, scaling and root planing is sufficient to treat the condition. However, in some cases where there is more amount of fibrotic tissue along with the inflammation, then surgical means is a key to management. **Case Presentation**: A female patient aged 17 years with a chief complaint of swollen gums and spontaneous bleeding from the anterior maxillary and mandibular region since one year. The purpose of this case report is to present the clinical features and treatment of puberty induced gingival enlargement which disturbed the aesthetics and masticatory function of the patient by electrosurgery after a non-surgical periodontal management. **Conclusion**: Electrosurgery can be used as an alternative to conventional surgery in gingivectomy and gingivoplasty procedures.

Keywords: Electrosurgery, conventional surgery, Gingival Enlargement.

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INTRODUCTION

Gingival enlargement, one of the frequent attributes of gingival disease, is characterized by an increase in the size of gingiva. It is a multifactorial condition that develops as a response to noxious stimuli because of unfavourable interactions between host and environment.[1]

The types of gingival enlargement can be classified according to etiologic factors and pathologic changes as follow:[2]

a) Inflammatory enlargement (Acute and Chronic).
b) Drug induced Enlargement (Drugs like: anticonvulsants, immunosuppressants and calcium-channel blockers).
c) Systemic diseases (Leukemia, granulomatous diseases) or conditioned enlargement (Pregnancy, puberty, Vitamin C deficiency, plasma cell gingivitis, nonspecific conditioned enlargement).
d) Neoplastic enlargement (benign tumors, malignant tumors).
e) False enlargement (osseous lesions, dental tissues).

The most common form is due to plaque induced inflammation of the adjacent gingival tissues. It may be a disfiguring side effect of anti-convulsants, immunosuppressants, and calcium channel blocking agents, or associated with hormonal disturbances as found in puberty and pregnancy.[3] It also occurs as a manifestation associated with systemic diseases or syndromes in different types of genetic disorders.[1]

Puberty marks the initiation of changes from maturation into adulthood.[4] It is associated with a major increase in the secretions of the sex steroid hormones: testosterone in males and estradiol in females.

The therapeutic approaches related to gingival enlargement are based on the etiology and underlying pathological change which has occurred. The prime treatment modalities involve obtaining a detailed medical history and non-surgical periodontal therapy.

Surgical excision of the lesion is provided secondary to retain esthetical and functional demands.[5]
Gingivectomy can be done using electrosurgical unit. It provides hemostasis and proper contouring of the tissue. Use of electrosurgery also facilitates easy tissue incision accompanied with a strong hemostatic effect. However, it is contraindicated in patients with cardiac pacemaker. Any contact to bone or cementum should be avoided as it causes irreparable damage.[6]
The following case highlights a presentation of pubertal gingival enlargement encountered in our practice.

CASE REPORT

A female patient aged 17 years was referred to the Department of Periodontology and Implantology, Subharti Dental College & Hospital, Meerut with a chief complaint of swollen gums and spontaneous bleeding from the anterior maxillary and mandibular region since one year. Local factors, like plaque and calculus were also present. Patient was apparently well four years back when she started complaining of the gingival swelling, which started as an enlargement in the interdental region with blunt and rounded marginal gingiva which was seen on the facial surface and gradually extended to involve the entire maxillary and mandibular anterior region. The patient also presented with a history of reduced brushing frequency due to the associated bleeding and discomfort. There was no history of drug intake reported and the personal history revealed that she had entered her menarche two years back.
Intraoral examination revealed poor oral hygiene. A diffuse gingival enlargement involving the marginal, interdental and attached gingiva was observed. (Fig.1)

Fig.1- Pre-OP Diffuse gingival enlargement

Gingival enlargement, nodular in appearance was confined to the labial aspect of maxillary anteriors (Fig.2)

Fig.2- Pre-OP labial aspect of maxillary anteriors

and posteriors as well as palatal aspect of right 1st quadrant. (Fig.3 a,b)

Fig.3a- Pre-OP Posteriors Right 1st Quadrant

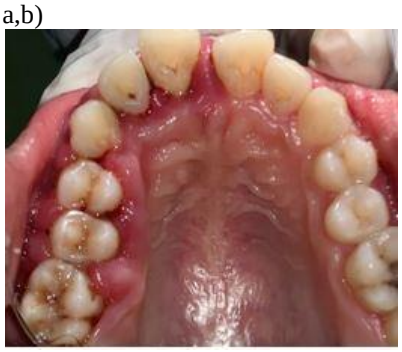

Fig.3b- Pre-OP Palatal aspect of right 1st quadrant

Similarly labial and lingual aspects of mandibular anteriors. (Fig.4 a,b)

Fig.4a- Pre-OP Labial aspect of mandibular Anteriors

Fig.4b- Pre-OP Lingual aspect of mandibular anteriors

It appeared reddish pink in colour. Bleeding on probing occurred with the slightest provocation. Radiographically no bone loss was evident. (Fig.5)

Fig.5-- Pre-OP Radiographically no bone loss

In phase 1 therapy oral prophylaxis including thorough removal of supragingival and subgingival plaque and calculus was performed. Patient was given oral hygiene instructions post scaling. She was advised to use chlorhexidinedigluconate mouthwash i.e Dr. Reddy's Clohex ADS twice a day for 14 days. After 10 days patient was recalled and on clinical examination there was a gradual reduction in the size of the enlargement, with a definitive improvement in the gingival status. However due to the persistence of gingival overgrowth, surgical intervention was planned. Gingivectomy with gingivoplasty was performed by using electrosurgery. (Fig.6)

Fig.6- Electrosurgery Unit

Needle type tip of electrode was used (for incision of gingiva) (Fig.7 a,b,c,d)

Fig.7a- Needle type tip for maxillary Anteriors

Fig.7b- Needle type tip for maxillary posteriors 1st quadrant

Fig.7c- Needle type tip for mandibular anteriors

Fig.7d- Needle type tip for palatal aspect of 1st quadrant

and loop type (for planning tissue & for lowering the interdental papilla. Electrosurgery unit consists of foot control, adjustable setting of electric power, passive electrode, active electrode handle and attachment. Different types of electrode tips are used for different purposes. Excision of gingival overgrowth was carried out as well as shaping of gingiva using electrosurgery. (Fig.8 a,b,c,d,e)

8a

8b

8c

8d

8e

Fig.8a-e- Excision of gingival overgrowth

Patient was prescribed with antibiotics, analgesics, antacid and probiotic for 5 days then recalled after 7 days for review followed by 20 days (Fig.9 a,b)

Fig.9a-Post-OP after 20 days

Fig.9b-Post-OP after 20 days

and 1 month for post- operative follow up.(Fig.10 a,b,c)

Fig.10a-Post-OP after 1 month

Fig.10 b-Post-OP after 1 month

Fig.10c- Post-OP after 1 month

The healing was uneventful and no relapse was seen. After one month, the patient had an aesthetically satisfactory gingival appearance and no sign of recurrence. (Fig.11)

Fig.11-Before (upper)&After(Lower

DISCUSSION

Puberty associated gingival enlargement is one of the gingival diseases categorized as dental plaque induced gingival diseases modified by endocrine system, in the currently accepted periodontal disease classification.[7] Sex steroid hormones wield their effects on the gingiva by influencing the cell division, vascularity, growth and differentiation of fibroblasts and keratinocytes. At this sexual maturation period the exaggerated response of the gingival tissues to plaque and hormonal influence in microbial flora leads to gingivitis or gingival growth.[8] Nakagawa S. [9] in 1994, in a study confirmed that there was a statistically significant increase in gingival inflammation and in the proportion of P. intermedia and P. nigrescens in puberty. Increase in gingivitis have been reported in cross-sectional and longitudinal studies of several systemic conditions such as puberty.[10,11]

Tomar N et al[12] in 2014 stated that the most widely employed surgical approaches for the treatment of gingival enlargement is gingivectomy, flap technique by laser, electrosurgery or conventional means. Gingivectomy was defined by Grant et al.[13] in 1968 as being the excision of the soft tissue wall of a pocket. The procedure is usually combined with the recontouring of hyperplastic tissue by gingivoplasty to restore physiological gingival form.

Electrosurgery has many advantages over conventional therapy. Regular users of Electrosurgery know from experience, that when Electrosurgery is applied according to principles, predictable and good wound healing can be achieved. Comparative studies by Aremband, D. & Wade, A. B. [14] in 1973 and Schneider, A. R. & Zaki, A. E.[15] in 1974 between the use of electrosurgery and periodontal knives for gingivectomy have demonstrated that the rate of soft tissue healing was similar with the two procedures. In another study by Kumar P et al.[16] in 2015, it was concluded that there is no advantage of diode laser over electrosurgery in performing gingivectomy. Elif ON[17] in a study showed that the diode laser has more advantages than conventional surgery in the gingivectomy procedures. Gingival enlargement in puberty is treated by performing scaling and curettage, removing all sources of irritation and controlling plaque. Surgical removal is required in severe cases.

RESULT AND CONCLUSION

Electrosurgery can be used as an alternative to conventional surgery in gingivectomy and gingivoplasty procedures. Successful results can be obtained with careful usage and having proper knowledge. As in our case excellent results were achieved with uneventful healing. For the management of such cases, regular professional oral prophylaxis and patient compliance is also necessary.

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