

Surgical Management of Plaque-Induced Non-Syndromic Gingival Fibromatosis: A Case Report

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Abstract

Gingival enlargement is defined as an increase in the size of the gingiva. It can be caused by various etiologies. The most common cause for gingival enlargement is prolonged exposure of the gingiva to dental plaque. This report describes the case of a 14-year-old female patient with extensive gingival enlargement in the maxillary and mandibular arch. It was associated with malaligned teeth which resulted in poor esthetics. The patient was not having any medical and drug history. Clinical, radiographic, and hematological investigations were performed. The case was treated with internal bevel gingivectomy under local anesthesia in all four quadrants resulting in good results without any recurrence after a 6-month follow-up. The histopathological report confirmed the diagnosis of chronic inflammatory gingival enlargement.

Keywords: Biopsy, Dental plaque, Gingival enlargement, Internal bevel gingivectomy.

INTRODUCTION

Gingival enlargement is considered to be a common feature of gingival diseases which are characterized by an increase in the size of the gingiva. Gingival enlargements are most commonly associated with the interdental papillae to segmental and marked enlargements affecting the maxilla or mandible or both.^[1] This condition develops mostly due to host-microbial interactions or in response to various factors such as environmental and genetic.^[2] It may be dental plaque-induced, drug-induced, idiopathic, or those associated with systemic conditions or diseases and neoplastic or false enlargements. It can also occur as a gingival manifestation of leukemia and thrombocytopenia.^[3]

Gingival enlargements may cause functional disturbances such as speech alteration, difficulty in mastication, esthetic concern, and sometimes psychological problems depending on its severity and extent. Inflammatory gingival enlargement is classified as acute or chronic. Chronic inflammatory gingival enlargement is more commonly seen in patients. It is caused due to prolonged exposure of gingiva to dental plaque accumulation. It may get resolved with mechanical debridement of dental plaque and calculus, along with improved oral hygiene maintenance by the patient. If the gingival tissue is fibrotic, then resolution does not occur which, in turn, results in an impediment to oral hygiene and leads to more persistent gingival inflammation.^[3,4] The treatment

aspects for chronic inflammatory gingival enlargement involve a thorough intraoral examination, along with detailed medical history and phase I periodontal therapy, followed by surgical management.

CASE REPORT

A 14-year-old female patient visited the Department of Periodontology of Nanded Rural Dental College and Research Center, Nanded with a chief complaint of swollen gums in the upper and lower jaw for 2 years. She was also reported that the swelling of gums had increased in size since then; covering the crown portion of a few teeth Figure 1. Her complaint was also associated with mild, intermittent bleeding from gums while tooth brushing. There was no significant medical, dental, and family history. Intraoral examination revealed enlargement of marginal, interdental, and attached gingiva in the maxillary and mandibular arches; more prominent in the facial aspect as compared to the palatal/lingual aspect. Gingiva was pale red, smooth, shiny, and soft in consistency.

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Figure 1: Gingival enlargement (pre-operative)



Figure 2: OPG radiograph



Figure 3: Excised gingival tissue sent for histopathologic examination

Further, the assessment revealed pathologic migration of teeth, generalized bleeding on probing, generalized gingival pockets, and over-retained deciduous maxillary right canine. Orthopantomogram showed incipient generalized horizontal bone loss Figure 2. Hematological investigations (complete blood count, bleeding time, clotting time, and blood glucose estimation) were carried out and findings were within normal limits. A provisional diagnosis of chronic inflammatory gingival enlargement was given.

At the first visit, intensive plaque control periodontal therapy consisting of supragingival and subgingival scaling was performed. Oral hygiene instructions were given and the use

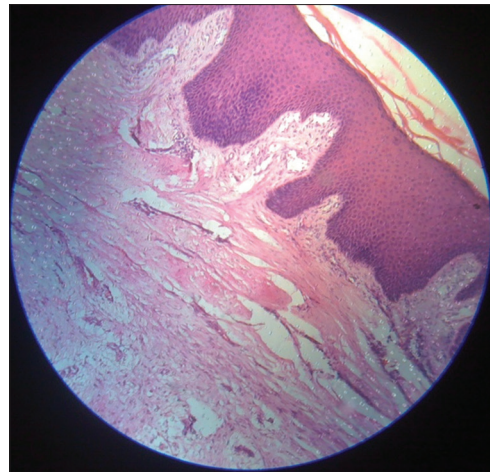


Figure 4: Epithelium and connective tissue of chronic inflammatory gingival hyperplasia (H and E)



Figure 5: 6 months (post-operative)



Figure 6: Undergoing orthodontic treatment

of 0.2% chlorhexidine gluconate mouthwash twice a day for 2 weeks was advised. The gingival enlargement showed a slight reduction in size in the next visit. During the second visit, gingival curettage was performed. Oral hygiene instructions were reinforced and the patient was again recalled after 2 weeks. At the third visit, there was the reduction in gingival enlargement to more extent, but the tissues appeared to be firm in consistency.

The surgical management was performed under local anesthesia under aseptic condition. Internal bevel gingivectomy was

performed quadrant-wise. After initial incisions, thinning of the flap was done with the help of surgical blade no. 15 and 12. The full-thickness mucoperiosteal flap was reflected with a periosteal elevator and complete mechanical debridement was done using Gracey curettes. The approximation of the flap was done using a non-resorbable silk suture and a periodontal pack was placed. Antibiotics and analgesics were prescribed. The patient recalled after 1 week for suture removal. Oral hygiene instructions were reinforced. Healing at all the surgical quadrant sites found to be satisfactory without any adverse outcome. The extirpated tissue was sent for histopathological analysis which revealed hyperparakeratinized stratified squamous epithelium and dense fibrous connective tissue stroma with chronic inflammatory cell infiltrate consisting of lymphocytes, plasma cells, and adequate number of endothelial lined blood vessels Figures 3 and 4. The final diagnosis was given after histopathological examination suggestive of chronic inflammatory fibrous hyperplasia. The patient was followed up for the next 6 months Figure 5 and referred to the Department of Orthodontics for correction of malaligned teeth Figure 6.

DISCUSSION

Chronic inflammatory gingival enlargement is a common clinical finding. Dental plaque accumulation and retentive factors include poor oral hygiene, malaligned teeth, non-functional tooth, improper restorations, orthodontic appliances, and some parafunctional habits.^[3] Chronic inflammatory changes most commonly represent a reactive gingival hyperplasia in response to dental plaque which leads to tissue edema and infective cellular infiltration. The clinical picture of plaque-induced gingival enlargement shows enlarged gingiva due to edema or fibrosis, color changes to red or bluish red, bleeding on probing, and sometimes exudate. The treatment plan basically depends on the understanding of the etiology and pathologic changes associated with gingival enlargement.^[5-7]

In the present case report, phase 1 periodontal therapy (scaling and root planing) was performed. There was a transition in the consistency of gingival tissue evident from soft to firm and fibrous. The fibrotic components of gingival/pseudo pockets

make difficulty in accessibility and visibility required for the elimination of local factors resulting in the compromised success of non-surgical periodontal therapy. The present case was treated surgically by internal bevel gingivectomy (undisplaced flap surgery). Good patient compliance for maintenance of proper oral hygiene and successful recall visits is the key factors for the successful outcome of such a case.

CONCLUSION

In this case, gingival enlargement was found to be occurring due to the poor oral hygiene of the patient. This chronic gingival inflammatory condition treated by non-surgical and surgical periodontal therapy. The basic knowledge and understanding of the etiopathogenesis of different gingival enlargements are important to come to the conclusion of provisional diagnosis and also to decide the necessary treatment plan. The final diagnosis is always based on the histopathologic examination of biopsied gingival tissue. This case report helps to understand the importance of oral hygiene maintenance. The patient needs to be educated and motivated positively for oral hygiene maintenance before the start of periodontal treatment to obtain predictable treatment outcomes.

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