

Inflammatory Gingival Enlargement and its Treatment: A Case Report

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ABSTRACT

Gingival enlargement is defined as an increase in size of gingiva. Various different types of gingival enlargements are classified based on the aetiology and pathologic changes. Inflammatory gingival enlargement can be caused by various factors such as plaque and factors which favour plaque accumulation like orthodontic treatment. Treatment is based on the aetiology of disease and is done by initial phase followed by surgical therapy (Gingivectomy). Case in this report was treated orthodontically and non maintenance of oral hygiene during treatment resulted in gingival enlargement.

Keywords: Gingival enlargement, Gingivectomy.

INTRODUCTION

Gingival diseases are plaque induced and non plaque induced. Most common feature of gingival disease is increase in the size of gingiva. Gingival enlargement can be Inflammatory enlargement, Drug-induced enlargement, Enlargements associated with systemic diseases and Condition depending on the etiologic factors and pathologic changes.¹ Plaque induced inflammation of the adjacent gingival tissues and interdental papillae causes most common form of Inflammatory enlargement, It may be localized or generalized. The majority cases being treated orthodontically experience the problem of gingival enlargement either due to the orthodontic forces or non maintenance of hygiene.

INFLAMMATORY ENLARGEMENT

Gingival enlargement may result from chronic or acute inflammatory changes.

Chronic form of inflammatory enlargement is most common form of Gingival enlargement.²

Such gingival enlargement may be complicated by orthodontic treatment, certain systemic medications and can be exaggerated by hormonal effects, such as puberty and pregnancy creating a combined gingival enlargement.³

CHRONIC INFLAMMATORY ENLARGEMENT

Clinical Features. Clinical examination reveals poor oral hygiene. It originates as a slight ballooning of the interdental papilla and/or the marginal gingiva. In the early stages a life preserver-shaped bulge is produced around the involved teeth and this bulge can increase in size until it covers part of the crowns. This enlargement progresses painless and slowly, unless it is complicated by acute infection or trauma.⁴

Chronic inflammatory gingival enlargement can occur on interproximal, the marginal or the attached gingiva, as a pedunculated or discrete sessile mass. The lesions are slow growing and usually painless. Followed by exacerbation and continued enlargement, may undergo remission.

Etiology. Chronic inflammatory gingival enlargement is caused by long term exposure to dental plaque. Various different factors favour the plaque accumulation and retention such as, improper restorative and orthodontic appliances, anatomical anomalies, tooth displacement.⁵

This case report presents a clinical presentation and treatment of Chronic inflammatory gingival enlargement in an orthodontically treated case.

CASE REPORT

A 23 year old female patient underwent orthodontic treatment for the complaint of irregular teeth. She underwent a non extraction orthodontic treatment but she faced gingival enlargement during the treatment due to non maintenance of oral hygiene. She reported department of Periodontology, Manav Rachna Dental College with a complaint of swelling in her gums in the upper and lower front tooth region. The patient had noticed the swelling 1 year prior and reported that it has not increased in size since then. She also complained of bleeding from her gums while brushing which subside occasionally on its own.

On clinical examination marginal, papillary and attached gingiva appeared red and increased in size in both maxillary and mandibular arches. Enlargement was more in anterior region on buccal aspect of both the jaws. Gingiva appeared soft with smooth and shiny surface. Further assessment revealed pathologic bleeding on probing on all teeth, and generalized pockets.

Before treatment it is important to understand the aetiology and treat adequately. Inflammatory Gingival enlargements which are induced by plaque are soft and are caused principally by oedema and cellular infiltration resolve with debridement of plaque and calculus and improved oral hygiene, whereas resolution of fibrotic gingival tissue may not occur, resulting in persistence of periodontal pocket and oral hygiene is also impeded.⁶

A treatment plan consisted of initial periodontal therapy comprising of supragingival and subgingival scaling and root planing followed by surgical therapy to improve esthetics and function. Oral hygiene instructions were given to the patient and the use of chlorhexidine mouthwash advised twice a day for 2 weeks. The gingival enlargement showed a generalized reduction in size and tissue was firm at the next visit. Clinical examination showed need of gingivectomy of maxillary and mandibular anterior region. Hematological investigations were carried out which included complete blood count, bleeding time, and clotting time.

GINGIVECTOMY

Gingivectomy means excision of the 'gingiva'. Pierre Fauchard in 1742 designed a special instrument for removal of excessive tissue. Robicsek in 1884 modified the procedure.⁷ Pickerill in 1912 coined the term gingivectomy. Zentler in 1918 modified gingivectomy procedure by scalloped incisions to achieve fine gingival margin followed healing.⁸ The Gingivectomy procedure used now a days was described by Goldman in 1951. Earlier gingivectomy was widely performed. However, now a days it remains an effective form of treatment when indicated.⁹

Gingivectomy is done by various different methods such as Conventional by scalpel, Electrocautery, Laser, Chemosurgery.

We have done Gingivectomy by conventional scalpel method because it could give better precise incision with well defined margins, faster healing at lower cost and casues lack of tissue damage beyond the edge of the incision.¹⁰

Procedure of gingivectomy by scalpel

Local anesthesia was given to the patient. The pockets were marked with a pocket marker on several areas i.e three surfaces mesial, middle and distal on buccal aspect of maxillary anteriors (Figure 2). Bard-Parker blade no #15 was used. Either interrupted or continuous incisions can be given by scalpel. In this case a Continuous incision was given. The incision was started apical to the points of marking and directed coronally to a point between the base of the pocket.¹¹

A continuous incision was given starting from the distal surface of maxillary left canine to distal of maxillary right canine to follow the contour of the gingiva by placing the blade at approximately 45 degrees to the teeth. Thick band of tissue came out by single continuous incision. The excised tissue was removed (Figure 4). Remaining calculus was removed to leave a smooth and clean surface. A periodontal dressing was applied (Figure 5).

Postoperative pain was managed with 600 mg ibuprofen three times daily for 3 days. Patient was instructed to avoid hot drinks for the first 24 hours and apply ice pack post-operatively. The periodontal dressing was removed after one week and was advised to rinse with 0.2% Chlorhexidine Gluconate twice daily for 2 weeks. The patient was instructed for extensive plaque control regimen.



Figure 1: Pre-operative



Figure 2: Pockets Marked



Figure 3: After Continuous Incisions

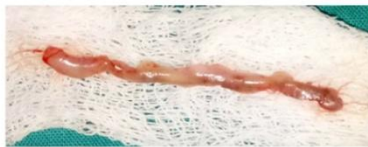


Figure 4: Excised Tissue



Figure 5: Periodontal Dressing Placed



Figure 6: Post-operative 1 month

DISCUSSION

Main causative factor for chronic inflammatory gingival enlargement is long-standing exposure to dental plaque. Various factors that favour plaque accumulation and retention include poor oral hygiene, improper restorations, orthodontic therapy, Trauma and habits such as mouth breathing.¹²

Treatment of gingival enlargement is based on the aetiology of the enlargement and the underlying pathologic changes. If enlargement is resulting from inflammation alone and gingival is red, swollen and oedematous, It can be treated with scaling and curettage procedure. Goldman (1951) observed that fibrous pockets required to be treated by gingivectomy procedure.¹³

Gingivectomy is suitable only for relatively rigid fibrous tissue, and is contraindicated where the tissue is oedematous. Gingivectomy is very effective in the treatment of thick fibrous hyperplastic tissue, where it is often difficult to achieve physiological gingival contour with other surgical techniques.¹⁴ The procedure is also useful for the localised correction of thickened margins or papillae following the use of periodontal flap procedures. Gingivectomy is done by various different methods such as Conventional using scalpel, Electrocautery, Laser, Chemosurgery. In this case gingivectomy was done by conventional method because Scalpel has advantages such as ease of use, precise relatively fast and uneventful healing, a better option in terms of precise incision with well defined margins, no unwanted lateral tissue damage, can be used to bone proximity and is economical.

Advantages of laser are less discomfort to patient, less bleeding due to sealing of capillaries by protein denaturation and stimulation of clotting factor VII production, shorten healing time potentially lower pain and inflammation, and

improved wound healing.¹⁵ Disadvantages of laser includes eye damage by laser light, so protective glasses are required. Disadvantages of electrocautery such as unavoidable burning-flesh odor, low tactile sense, may cause gingival recession, bone necrosis, dangerous in an explosive environment, contraindicated in pacemakers, poor postoperative healing who have undergone irradiation, diabetes or blood dyscrasias.

Laser and electrocautery have various other demerits like lateral heat damage, delayed wound healing, skill of the operator and higher cost.

Funde S assessed the initial healing after 7 days of gingivectomy and revealed that healing of the quadrant operated by scalpel was best among Laser and electrocautery operated quadrant.¹⁰

Stanton G concluded that complete epithelial repair takes about 1 month after the gingivectomy procedure.¹⁶

One of the most important determinants of treatment outcomes is the patient compliance. It is essential for the patient to practise a high standard of oral hygiene following periodontal surgery procedure. Regular oral prophylaxis and maintenance therapy is essential for a successful outcome.

CONCLUSION

In the present case chronic inflammatory gingival enlargement was due to poor oral hygiene and presence of plaque and calculus as there was more of inflammatory component. A good diagnosis is very important for a good treatment planning. After initial periodontal therapy there was drastic reduction in enlargement and the residual was corrected by internal bevel gingivectomy procedure. Thus, understanding the cause and pathogenesis is very important for the treatment planning.

This case report helps to highlight the importance of oral hygiene to the patient and helps in patient motivation. Oral hygiene education and instruction should be started at the initial phase of therapy itself and regular maintenance phase to be done to obtain favourable outcomes.

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