

Case Report

## Non-Surgical Management of Gingival Enlargement with Vitamin C - A Case Report

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### ABSTRACT

Gingival Enlargement (GE) is one of the most common conditions seen in the oral cavity. Etiology can be multifactorial like presence of local and various systemic factors. Chronic inflammatory GE is a plaque induced condition which can affect only the interdental papilla to diffuse enlargement of the marginal gingiva as well. GE is usually managed by surgical excision of the enlarged gingiva. The clinical significance of the article here is a case of GE treated only by non surgical approach of mechanical removal of local factors and adjunct vitamin C given orally with a one year follow up.

**KEY WORDS:** Gingival Enlargement, Plaque Induced, Non Surgical, Vitamin C.

### INTRODUCTION

Gingival enlargement (GE) is a condition where there is an increase in the size of gingiva. It is quite a common condition and the etiology can be due accumulation of plaque, various systemic disorders, and adverse effects of few medications as well as genetic origin.

The degree of GE has been scored by Bokenkamp A and Bohnhorst B (1994) as follows: <sup>[1]</sup>

- *Grade 0:* No signs of gingival enlargement
- *Grade I:* Enlargement confined to interdental papilla
- *Grade II:* Enlargement involves papilla and marginal gingiva
- *Grade III:* Enlargement covers three quarters or more of the crown

One of the most frequently encountered GE is the plaque induced

inflammatory condition. It can either be from chronic or acute inflammatory changes, although chronic is seen more commonly. Chronic inflammatory enlargements start as slight ballooning of interdental papilla and marginal gingiva. This continues to increase in size if the local factors are not removed to a stage where the crown may be covered fully by this growth. <sup>[2]</sup> Untreated cases can cause difficulty in functioning, during speech and mastication. And since they are inflammatory in nature, usually spontaneous bleeding is present with sometimes ulcerations of the outer epithelium due to continuous trauma and friction. Plaque induced enlargement may be modified by various hormonal imbalances, puberty, pregnancy and various systemic conditions.

The management of GE can be done in 2 phases – non-surgical and surgical. Under non surgical, first and foremost the

etiologic factor has to be removed along with mechanical therapy consisting of scaling and root planning. This phase usually helps in resolution of the inflammatory component. Surgical procedures like gingivectomy and gingivoplasty can then be performed to remove the fibrotic component and restore normal gingival contour. [3]

## CASE REPORT

A 33 year old female patient reported to the Department of Periodontology, Sri Hasanamba Dental College and Hospital, Hassan, Karnataka with a chief complaint of swollen and bleeding gums since 4 years. The patient had sought treatment in private clinics in these 4 years where she had undergone scaling of her teeth after which the swelling used to reduce for few days and again recur. The patient was systemically healthy and not under any medication. She also gave a history of trauma to her front teeth when she was a child.

A complete intraoral examination was done. There was presence of generalized Grade III GE involving the buccal and palatal aspect and Grade II enlargement of the lingual aspect. The gingiva appeared soggy and edematous and local factors like plaque and calculus was present. There was generalized profuse bleeding on probing with probing depth of more than 7mm. Root stumps were present irt 16, 17,18,27,46. 36 had distal proximal caries. Generalized grade I mobility of the teeth were present. Ellis class III fracture was present irt 11, 21 with discolouration (Figure 1).

Complete blood investigations were done to rule out any predisposing systemic disorders. Orthopantomograph was taken to assess the bone level (Figure 2). The treatment plan was explained to the patient and a written consent was obtained.



FIGURE 1: Intraoral clinical presentation on 1<sup>st</sup> visit.



FIGURE 2: Pre Operative Orthopantomograph

On the first visit, phase I therapy was initiated which consisted of ultrasonic scaling, extraction of the root stumps. Proper oral hygiene instructions were given and the patient was advised to use 0.2% Chlorhexidine gluconate mouthwash twice daily and come after 1 week.

On the second visit, there was not much change in the clinical presentation (Figure 3).

Ultrasonic scaling was done along with the temporary restoration of 36. Vitamin C tablets consisting of 100mg - Vitamin C and 450mg - ascorbic acid was prescribed twice daily for 15 days. Reinforcement of the oral hygiene instructions was done and the patient was recalled after 15 days.

On the third visit, the inflammatory component had reduced considerably but fibrotic component was persisting. Therefore deplaquing was done and the prescription of Vitamin C tablets was extended to another 15days.



FIGURE 3: Clinical Presentation on the 2<sup>nd</sup> Visit

On the fourth visit i.e.; three months after the initiation of treatment, dramatic resolution of the GO was seen with significant reduction in bleeding on probing and probing depth reduction was seen to 4mm (Figure 4). Mobility of teeth also reduced from grade I to grade 0 except 11 and 21 which was still grade 1 mobile. We did not proceed to surgical phase of gingivectomy and gingivoplasty since it seemed unrequired after the 4<sup>th</sup> visit. The patient was compliant and followed oral hygiene instructions rigorously. We advised the patient for extraction of 11 and 21 with prosthetic rehabilitation since endodontic prognosis was poor due to compromised bone support. But patient did not comply with our treatment plan. So we decided to maintain it with supportive therapy.



FIGURE 4: Clinical presentation three months after the initial visit

The patient was recalled every three months and followed up till one year to check for any uneventful healing. During

each of the recall visits, deplaquing was done with ultrasonic scalers.

One adverse effect seen during the treatment phase was staining of teeth due to 0.2% chlorhexidine gluconate mouthwash. Therefore we had replaced the mouthwash with 1% betadine mouthwash.

There was no recurrence during the follow up period. The gingiva presented with signs of clinical health on the 1 year recall visit (Figure 5). The patient was able to maintain a good oral hygiene and regularly came for recall appointments.



FIGURE 5: One year follow up

## DISCUSSION

Chronic inflammatory GE is caused due to prolonged exposure to local factors like plaque and poor oral hygiene. This can lead to imbalance in the pro-inflammatory cytokine levels in the gingival tissues leading to degenerative changes. [4] Polymorphonuclear leukocytes are activated which cause increased production of free radicals and oxidative stress in the tissues. [5] In chronic inflammation, level of antioxidants decrease which necessitates external supplementation.

Vitamin C is a strong redox agent with therapeutic effect on biology and physiology of disease. It has the ability to regulate the resolution of the inflammatory process and stimulate the tissue repair. It modulates the release of catabolic inflammatory cytokines, chemotaxis of the immune cells, and activation of the phagocytosis.



It also helps in keeping balance between collagen I and collagen III, and also inhibits cross linking of collagen fibers and fibrosis. [6,7]

There are also few cases which have reported gingival hypertrophy related to deficiency of Vitamin C. [8]

In the present case, along with thorough mechanical removal of the local factors, we have administered Vitamin C as an adjunct to help in resolution of the inflammatory GE. Compared to the standard protocol of surgically removing the excessive gingiva by gingivectomy or gingivoplasty, here we were able to treat the enlargement nonsurgically with any further recurrence. The present case reflects the significance of non surgical approach for the management of GE. It also ponders on the importance of Vitamin C administration as well as patient education, motivation and compliance during the treatment and the follow up period.

## CONCLUSION

Gingival enlargement can compromise the esthetics and function of the patient. Identification of the etiological factor is necessary to initiate proper treatment plan. Local factors like plaque and calculus are responsible for chronic inflammatory enlargement of gingiva. This case report draws special attention to the clinical significance of nonsurgical management of gingival enlargement with mechanical debridement and Vitamin C administration.

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