

# PUBERTAL GINGIVITIS- A CASE SERIES

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## Abstract

The prevalence of gingival inflammation varies significantly with age. Chronic gingivitis has been found in 100% by the puberty. The severity of gingival inflammation is believed to coincide with increases in circulating sex hormones associated with puberty and its immediate aftermath. These changes may lead to altered capillary permeability and increased fluid accumulation in gingival tissues, resulting of edematous, hemorrhagic, hyperplastic gingivitis in the presence of dental plaque. Three female patients with the age of 12years, 13-years and a 14 years old were reported to the department with same problems including bleeding from the gingiva while brushing and increasing the size of gingiva. History reveled no other systemic findings were present. On intraoral examination, there was presence of erythematous, enlarged gingiva in upper and lower anterior teeth region and also bleeding on probing was present with respect to upper and lower front teeth region. On radiographic examination there was no underlying bony defects were revealed. Based on history and clinical findings a provisional diagnosis of puberty gingivitis was made. Scaling and root planning was done and 0.2% chlorhexidine mouth wash and gum astringent were prescribed. In third case the gingival enlargement was persist even after phase I therapy and planned for surgical intervention. Other two cases were resolved totally after phase I therapy. Periodic recall was done and oral hygiene reinforced at regular interval. These cases highlight the clinical features and management of pubertal gingivitis.

**Key Words** Chronic gingivitis, puberty, dental plaque, pubertal gingivitis.

## INTRODUCTION

The most frequent manifestation of puberty gingivitis is bleeding and inflammation in interproximal areas. Inflammatory gingival enlargement may also be noted in both males and females, but it generally subsides after puberty.

The altered gingival response during this development stage is thought to be the result of hormonal changes that magnify the vascular and inflammatory response to dental plaque and that modify the reactions of dental plaque microbes. These cases highlight the clinical features and management of pubertal gingivitis. Puberty associated gingivitis is found in both male and female adolescents.

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Fig-1: Pre-operative



Fig-2: Pre-operative



Fig-3: Post-operative



Fig-4: Pre-operative



Fig-2: Post-operative



Fig-6: Pre-operative



Fig-7: After phase-I therapy



Fig-8: Post-operative

### Etiology of the disease:

Puberty associated gingivitis associated with the influence of endocrine system and fluctuations of sex hormones. Changes in these levels result in an exaggerated response to the presence of bacterial plaque.

### Clinical features:

Clinical signs include inflamed gingiva with swollen papilla in the facial aspect of gingiva. The gingiva may appear red, soft, smooth and shiny. There may have bleeding upon slight provocation.

### CASE REPORT 1:

A 12 years old female patient came to us with a history of bleeding gums since two month without any relevant medical and dental history, the patient also complaint of gum swelling in upper and lower front teeth region which started developing very slowly and later increased to present size. The patient had not previously used any medication known to provoke gingival enlargement.

On intraoral examination there was presence of red, swollen, erythematous marginal and interdental gingiva in upper and lower anterior teeth region, it was also revealed gingival bleeding on slight provocation. Based on history and clinical findings a provisional diagnosis of puberty gingivitis was made

### CASE REPORT 2:

A 13 years old female patient came to us with a history of gum swelling and bleeding and sudden change of gum colour since one month without any relevant medical and dental history. Patient also complaints of gum bleeding during brushing, chewing and spitting. Suddenly she observed the changes of gingiva since one month; initially it was in milder form. Patient also complained of difficulty in chewing and concern for the aesthetics was reported by the patient.

On intraoral examination, gingival enlargement was present which extended from 14 to 24 and 34 to 44. It was also revealed that reddish discoloration of marginal and interdental gingiva with a history of bleeding on mild provocation, gingival consistency

soft and friable in relation to upper and lower anterior teeth region

## TREATMENT

Thoroughly scaling and root planing was done and 0.2% chlorhexidine oral rinse was prescribed. Periodic recall and oral hygiene reinforcement at regular interval was recommended. Routine oral prophylaxis was performed, and the patient was recalled after 1 month. On re-evaluation, the inflammatory component of the enlarged gingiva had subsided in case-1 and case-2 but there was still a presence of fibrous component and gingival enlargement in case-3 even after phase I therapy that compromised the routine oral hygiene measures, and so Gingivectomy was performed to excise the bulge of the tissues and regain the healthy form and consistency of the gingiva.

## DISCUSSION

Steroid hormone-related gingivitis is associated with elevated sex hormone levels that amplify clinical inflammatory changes of gingivitis (Suzuki 1988). Increased levels of estrogen and progesterone during pregnancy (Løe 1965), during puberty, or in patients medicated with oral contraceptives (Kalkwarf 1978) have been reported to result in increased gingival vascularity and inflammation. Removal of local factors is the key to the management of steroid hormone-related gingivitis; however, it is often necessary to surgically excise unresolved gingival overgrowth.<sup>(2)</sup>

The pathogens *Capnocytophaga* sp is associated with puberty associated gingivitis.<sup>(3)</sup> A study confirmed that hormonal changes coincide with an significant increase in the proportion of *P. intermedia* and *P. nigrescens* in puberty.<sup>(4)</sup>

Puberty occurs between the ages of 11 to 14 in most women. The production of sex hormones (oestrogen and progesterone) increases, then remains relatively constant during the remainder of the reproductive phase. Kronman and Loesch postulated that anaerobic organisms may use ovarian hormone as a substitute for vitamin K growth factor. During puberty, periodontal tissues may have an exaggerated response to local factors. A hyperplastic reaction of the gingiva may occur in areas where food debris, material alba, plaque and calculus are deposited. Vitamin K, or an analog such as menadione, is essential to the growth of most strains of *B. melaninogenicus* and *B. asaccharolyticus*. (Structural similarities with regard to electron transfer between estradiol, progesterone, and vitamin K suggested the possibility that steroid hormones might be able to substitute for vitamin K compounds in the growth of pigmented *Bacteroides* species. Therefore, growth of these organisms was

evaluated in the presence of estradiol or progesterone and in the absence of menadione in the medium.<sup>(5)</sup>

## Recommendation:

The goal of the treatment is to reduce gingival inflammation. A dental surgeon can professionally clean the teeth but it is upto the patient to continue to keep the inflammation down. They can do this by carefully flossing and brushing. Patient education and motivation is a very important part in this treatment because of the casualty and lack of sincerity of the patient in this age group. So, It is very important to educate the patient about what gingivitis is, what causes it and what they can do to prevent it. The patient must know how to brush their teeth properly as well as flossing. Patient should continue to brush, floss and use oral rinse. Patient should also schedule dental visits every four months until their gingiva are in good health, then they may schedule dental visits for regular six months interval.

## CONCLUSION

We can conclude by saying that during puberty, gingivitis may be a response to hormonal changes in developing adolescent, though more pronounced when there is plaque accumulation, and it is believed that good oral hygiene practices at this stage may improve gingival health.

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