Case Report

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Management of Puberty Gingivitis in 13 Year Old Girl: A Case Report

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ABSTRACT

Background: Children are exposed to various gingival diseases, similar to those found in adults, yet differ in some aspects. It is crucial to diagnose and manage gingival diseases as early as possible as they can progress further. As it causes a severe breakdown of periodontal support, therefore greater emphasis is given to the prevention, early diagnosis, and treatment planning of gingival disease in children. This condition finds a unique place in literature, because it has been associated with a variety of local and systemic factors that may aggravate the condition. The aim of publishing this case report is to present the clinical feature and treatment of puberty gingival enlargement.

Keywords: Puberty. gingival enlargement. Gingival disease.

INTRODUCTION

The most prevalent type of gingival (gum) disease in childhood is known as chronic marginal gingivitis or puberty gingivitis. In this condition the inflammation is very similar to adult gingivitis except for a few clinical variations that characterize this condition. It is believed that the periodontal diseases in adulthood are at least in part, precipitated by gum inflammation in the formative years of childhood and adolescence.[1] The non-destructive or minor gum inflammation in childhood, without appropriate intervention, may progress in to the more significant periodontal diseases in adult life. Inflammatory enlargement of gingiva usually results from prolonged chronic inflammation of the gingival tissue. In most cases, the enlargement results because of local irritations such as poor oral hygiene, accumulation of dental calculus or mouth breathing and represents a variation in host tissue response to dental plaque accumulation. Gingival enlargement may cause discomfort, interfere with speech or chewing, result in halitosis and it may look unsightly.[2,3]

CASE REPORT

A 13 year old female patient came to the Department of Pediatric and Preventive Dentistry with a chief complaint of swollen gums in left maxillary and right mandibular arches associated with bleeding and pain since last one year. Bleeding and inflammation of the gums at the embrasure between 6 adjacent teeth was evident. History of gradual enlargement of the swelling which was initially red and spongy with spontaneous bleeding was reported. There was difficulty in chewing food from the affected side because of discomfort, pain and bleeding. On general examination the patient was slightly under built for her age. No relevant medical history of intake of drugs, nutritional deficiency or a family history indicating any underlying genetic mechanism was recorded.She had a habbit of tobacco chewing last year which is

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Fig 1 Labial view of the enlarged gingiva.

Fig 2 Buccal view of the enlarged gingiva on the right side.

Fig 3 Buccal view of the enlarged gingiva on the left side.

Fig 4 View of the site after excision.

Fig 5 Post operative follow-up after one and half month.

now discontinued. On clinical examination the extra oral findings revealed incompetent lips and the enlarged gingiva could be palpated over right and left cheek. (Fig 1,2,3). Intraoral examination showed a diffuse, rounded and tombstone appearance of gingiva.

The color of the gingiva appeared to be reddish. It was soft and edematous and slight bleeding on provocation was noted. Calculus deposits were seen on exposed tooth surfaces. Radiographically bone loss with displacement of teeth could be appreciated. From this clinical and radiographic examination, a provisional diagnosis of inflammatory gingival enlargement was made and the patient was subjected to a thorough medical examination. Hormonal investigations were normal. The medical and family history was noncontributory. After assessing the complete status of the patient,

First Visit

- Complete supra gingival scaling was done.
- Patient was asked to maintain proper oral hygiene and to discontinue the habbit of tobacco chewing.
- Advice to brush twice daily and chlorhexidine mouthwash was prescribed.

Second Visit

- Maxillary arch sub gingival scaling (gross) was done under local anesthesia.
- Antibiotic and analgesics were prescribed.

Third Visit

- Mandibular arch sub gingival gross scaling was done under L.A under antibiotic cover.

Fourth Visit

- Complete sub gingival scaling was done.
- Evidence in decreased inflammation and bleeding was evident.

Fifth Visit

Surgical Phase

- Excisional gingivectomy was done with respect to lower anterior teeth by giving continuous incision with no. 16 B.P. blade (Fig 4)

Preventive Phase

- Adolescents should spend more time in preventing the accumulation of dental plaque by practicing good oral hygiene.
- It is advisable to brush at least twice a day, using proper brushing techniques for three minutes at a time.
- The interdental plaque should be removed using dental floss.
- Mouthwashes can be used as per the prescription of the dentist.
- In already developed cases of puberty gingivitis, it is best to control the condition as soon as it is noticed to avoid further periodontal problems from developing. Periodontal therapy is advisable, which includes scaling and root planning procedures.
- Mouthwashes containing chlorhexidine can be used to reduce the infection.
- Patients suffering from puberty gingivitis should maintain a strict protocol for good oral hygiene maintenance.

Follow up

- After supra and sub gingival scaling the patient was reported after one and a half months with marked reduction in swelling and bleeding Pain was reduced but occurred while chewing food (Fig .5).

DISCUSSION

The onset of puberty can bring about changes in the hormonal levels which in turn may affect the gingival tissues in both males and females leading to altered tissue response to dental plaque and can lead to conditioned enlargement. Such overgrowths can bring about various problems like difficulty in speech, bleeding gums and even aesthetic problems.[4]

Hormones have been found to have strong effects on mucosal, connective tissue and bones. For an individual, birth is a borderline between the sterile intrauterine life and the extrauterine existence with a continous exposure to microorganisms (Kononen, 1999).[5] The microbial community is further shaped by diet, personal oral hygiene (Crielaard et al, 2011) and other parameters such as hormones and various systemic conditions.[6] The microbiome analysis by Crielaard et al (2011) showed that the salivary microbiome of children is already complex by the age of three years matures with increasing age, but at the age of puberty, still differs from the adult microbiome.[7]

Pubertal gingivitis has been seen with increasing frequency in young teenagers and has been ascribed to the “rush” of sex hormones which also affects the reaction of tissues to corticosteroids. The same pattern has been described in pregnant women who are more predisposed to gingivitis during pregnancy.[8] A higher amount of plaque has also been found in the primary dentition compared with the mixed and permanent dentitions, but the prevalence and severity of inflammation of the oral tissues (gingivitis and periodontitis) is low in healthy young children and gradually increases with increasing age (Papaioannou et al, 2009).[9] A study conducted by Sutcliffe P and colleagues showed a peak prevalence of gingivitis at 12 years, 10 months in females and 13 years, 7 months in males, which is consistent with the onset of puberty.[10] On careful history taking, it was found that our patient also had started observing her gum swelling and bleeding gums when she was 12 years of age, and it also coincided with the onset of her puberty. The papillary and marginal gingiva is involved in puberty associated gingival enlargements. Clinically, puberty associated gingival enlargement may be characterized by prominent bulbous interproximal

papillae in the facial gingiva with the lingual surfaces most often remaining relatively unaltered probably due to the action of the tongue and the excursion of food would also prevent a heavy accumulation of local irritants on the lingual surfaces.[11]

On clinical examination, a very similar gingival condition was observed in this case. This clinical picture may be due to increased amount of P. Intermedia and Capnocytophagia species that are found in cases of Puberty associated gingival enlargements, and both these species possess the ability to substitute progesterone and estrogen for menadione (Vitamin K) as an essential growth factor for this microorganism.[12] In most of the cases of enlargements associated with puberty, a conventional periodontal therapy comprising of scaling and root planing is sufficient to treat the condition.9 However, in some cases where there is more amount of fibrotic tissue along with the inflammatory component, the inflammation can get subsided with conventional scaling and root planing but the fibrotic component that persists after scaling has to be removed by surgical means. Gingivectomy is the treatment of choice in such cases, and it can be performed by a conventional method with a scalpel or periodontal knives, Electro surgery, LASER, etc.[10]

In the present case, Gingivectomy was performed by scalpel by an externalbevel incision. The wound area was covered with periodontal pack for 1 week. The healing was uneventful. The patient was recalled periodically at 1 week, 1 month, 3 months and 6 months after the procedure to assess the healing and also to check for recurrence. No recurrence was noted. There was a scalloped contour of gingiva with firm and resilient consistency after 6 months of the procedure.

CONCLUSION

Gingivitis and gingival enlargements in puberty are caused by plaque which are aggrevated byhormonal variations(sex steroid hormones). Several factors such as genetics, systemic conditions, medications, diet and individual host response to infection have been identified in the etiology of gingivitis in children. Thus, maintenance of good oral hygiene is the key when it comes to prevention and management of such conditions. Parents, relatives and care givers should be educated on the need for effective plaque control to prevent the condition.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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