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An unusual case of idiopathic gingival enlargement and its management- A case report

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Abstract

Idiopathic gingival enlargement is a rare gingival overgrowth, which is of an undetermined cause. This unknown etiology has now been linked to specific genes and idiopathic gingival enlargement is at times referred to as hereditary gingival enlargement. This case report addresses the diagnosis and treatment a case of idiopathic gingival enlargement in an 8 year old girl. The patient presented with generalized diffuse gingival enlargement involving the maxillary and mandibular arches extending on buccal and lingual/palatal surfaces and covering incisal / occlusal third of the tooth resulting in difficulty in speech and mastication. Gingivectomy was carried out in all four quadrants. The results were esthetically pleasing and improved the psychological wellbeing of the patient.

Keywords: Idiopathic Gingival enlargement, hereditary gingival enlargement, gingivectomy.

Introduction

Generalized gingival enlargement can have a variety of etiological factors, and it can at the same time also have an undetermined etiology. The generalized gingival enlargement with an unknown etiology is termed as idiopathic gingival enlargement (IGE). Idiopathic gingival enlargement is a rare type of gingival enlargement that has no definite cause and is also known as gingivomatosis [1], diffuse fibroma [2], idiopathic fibromtosis, hereditary gingival fibromatosis, familial elephantiasis. [3] Clinically IGE is characterized by gingival overgrowth, pink colored gingiva which is firm in consistency, and non-hemorrhagic. [4] IGE can affect both deciduous as well as permanent dentition, however it has been shown to worsen during adolescence. [5,6] IGE is a slowly progressive benign overgrowth affecting all anatomic parts of the gingiva and causing esthetic and functional problems. [7,8,] The gingiva is usually pale pink, firm, leathery in consistency, and presents a characteristic pebbled surface. The condition has been classified into two types: Nodular form characterized by presence of multiple tumors in the dental papillae and other form which is symmetric resulting in uniform enlargement of gingiva and represents the most common type. [9] There may be a combination of both types. The hyperplastic gingival tissues appear normal at birth but begin to enlarge with eruption of primary teeth. General histological findings include normal overlying

epithelium, rete pegs extending deep into underlying connective tissues with some areas of hyperplasia, proliferating dense fibrous CT with increased cellularity and coarse collagenous fiber bundles and hyperkeratosis and acanthosis with elongated papillae.[10]

Here we report an unusual case of a non-syndromic, idiopathic gingival enlargement.

Case Report

An 8 year-old female patient reported to the Department of Periodontics,Maulana Azad Institute of Dental Sciences,Delhi with a chief complaint of swollen gums involving all her teeth since last two years , preventing proper speech, articulation and mastication, causing inadequate lip apposition and poor esthetics. She did not give any history of drug intake, fever, anorexia, weight loss, seizures, hearing loss , any physical or mental disorder. Also familial and postnatal history was non-contributory. Intra-oral examination revealed pink, firm, and fibrotic gingival enlargement involving both maxillary and mandibular arches. The teeth were barely visible as the enlarged gingiva covered till the incisal/occlusal third of the teeth.

On the basis of medical, family, drug history and clinical findings it was diagnosed as a case of idiopathic gingival enlargement.

Treatment

After taking a written consent from patient, Phase I treatment was completed (figure 1 and 1(a)). Pre-surgical mouth rinse using Chlorhexidine (0.2%) was done . Prior to the surgical intervention.periodontal pockets were marked using a pocket marker.(figure 2) Gingivectomy by ledge wedge procedure using scalpel was done sextant wise on both the arches under local anesthesia (2% lignocaine with 1:80,000 adrenaline) (figure 4&5) . After each gingivectomy, periodontal dressing was placed. Antibiotic (Amoxicillin 500 mg three times a day (TID) for 3 days) and non-steroidal anti-inflammatory drug (NSAID) was prescribed. Postoperative instructions were given and the patient was recalled after 7 days(figure 6 & 7). After 7 days, periodontal dressing was removed and patient was instructed for proper oral hygiene maintenance. The postoperative course was uneventful. The patient was recalled for regular follow up after every three months The oral hygiene instructions were reinforced at every visit.

Discussion

Gingival hyperplasia can occur as an isolated form or part of a syndrome and also can be localized or generlized. Several etiologies have been reported including drug-induced (cyclosporine, phenytoin, and nifedipine), hormones-related (pregnancy, growth-hormone), inflammation, systemic (leukemia, neurofibromatosis), idiopathic, and syndrome-associated. Depending on the cause, the overgrowth may vary in clinical presentation, severity, onset, and duration. Idiopathic gingival enlargement may be congenital or hereditary. Though the genetic mechanism is not well understood, the majority of the reported cases have attributed the condition of fibrous enlargement of gingiva to hereditary factors. The mode of transmission is mainly autosomal dominant. The first polymorphic marker for HGF phenotype is chromosome 2p21[11,12]. Many cases are sporadic with no familial background.

Hereditary gingival hyperplasia is a slowly progressive, generalized, severe gingival enlargement involving maxillary and mandibular arches. The pink firm gingiva is fibrotic and non-hemorrhagic. Severity varies and may cover part/all of the crowns of the erupted teeth. It usually develops around the eruption of permanent teeth and is rarely present at birth.

Gagliano *et al.*,[13] suggested that gingival hyperplasia of different etiologies may have different mechanisms of

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overgrowth. These include an increase in proliferation of resident tissue fibroblasts, a reduced level of metalloproteinase synthesis (matrix metalloproteinases (MMP)-1 and MMP-2), resulting in low levels of extracellular matrix degrading, an increase in collagen type I production, heat-shock protein 47 (hsp47) production, and other extracellular matrix components. [14]

As the family, medical, prenatal, and drug histories were non-contributory to this case; and the clinical appearance of bilateral uniform enlargement of gingiva led to the diagnosis of a generalized idiopathic gingival enlargement (IGE) in the present case. IGE manifests due to congenital/hereditary causes which is not understood accurately. Due to massive gingival enlargement an affected person usually develops abnormal swallowing pattern and experiences difficulty in speech and mastication. The clinical presentation of the gingiva was similar to that of hereditary gingival hyperplasia.

Enlargement usually begins with the eruption of deciduous or permanent teeth; it may rarely present at birth or arise at adulthood. The most extensive enlargement appears to occur at the loss of deciduous teeth or early stage of eruption of permanent teeth. It progresses rapidly with the stage of active eruption and decreases with the end of this stage. The continued recurrence of the enlargement following surgery and a permanent remodelling of tissue after extraction suggests the importance of the presence of teeth and the environment of gingival crevice for the pathogenesis.

Management of gingival hyperplasia depends on the cause of the condition. In general, reinforcement of good home care oral hygiene regimens and periodic professional surgical excision of gingival are the treatments of choice. The treatment performed in this condition was external bevel gingivectomy. Recurrence rate in IGE is very high after surgery and because of this the patient should be followed for considerable period of time and may require repeated surgeries. Appropriate time of the removal of recurrent gingival enlargement varies; Emerson [15] recommended that the best time is when all the permanent teeth have erupted. Appropriate time for removal of gingival enlargement is at the age of 3, 6, and 12 years to have effective plaque control and to maintain oral hygiene after gingivectomy procedures.

Conclusion

Even though recurrence cannot be predicted, the psychological and functional benefits far outweigh the risk of recurrence. Oral hygiene and the superimposition of plaque accumulation have a crucial effect on the prognosis after gingivactomy procedure. Long-term follow-up will be required to evaluate the predictability of the different surgical techniques.

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Legend Figures

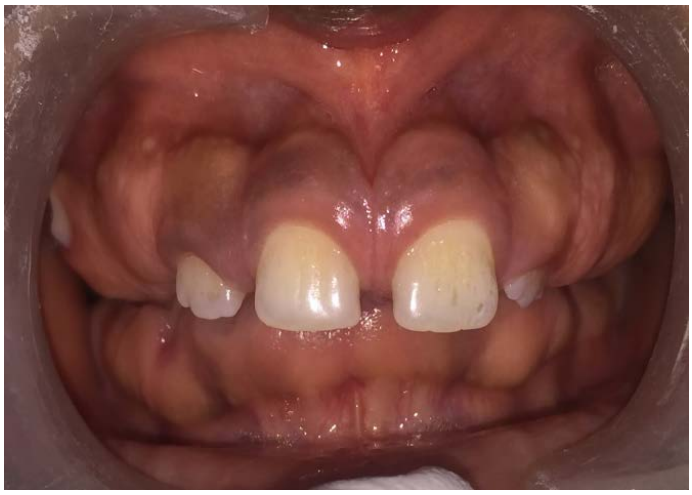

Figure 1: Pre-operative photo in anterior deep bite and showing fibrotic gingiva

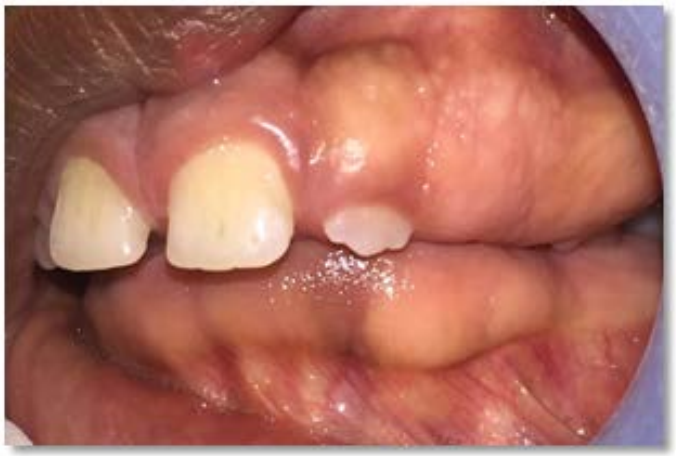

Figure 1(a): Pre-operative photo: lateral view

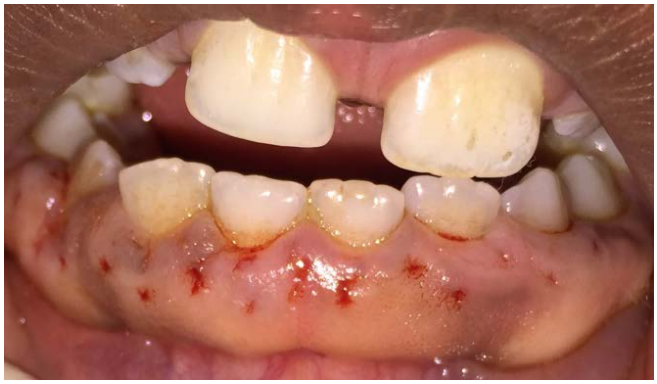

Figure 2: Pocket marked using pocket marker

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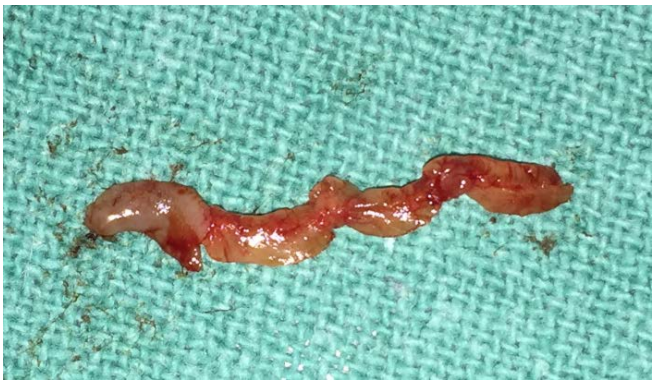

Figure 3: Excised tissue

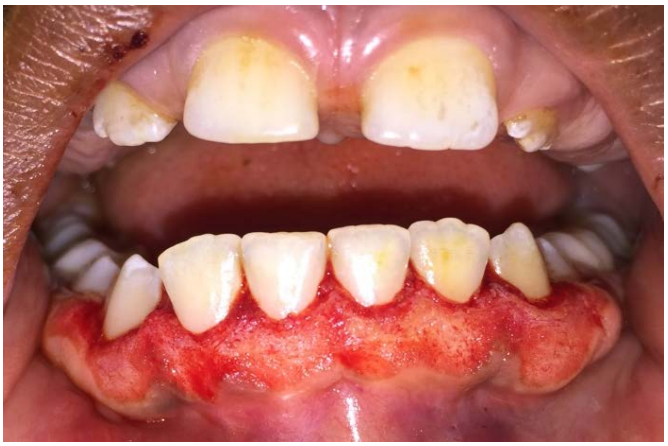

Figure 4: Gingivectomy by ledge and wedge procedure in mandibular arch

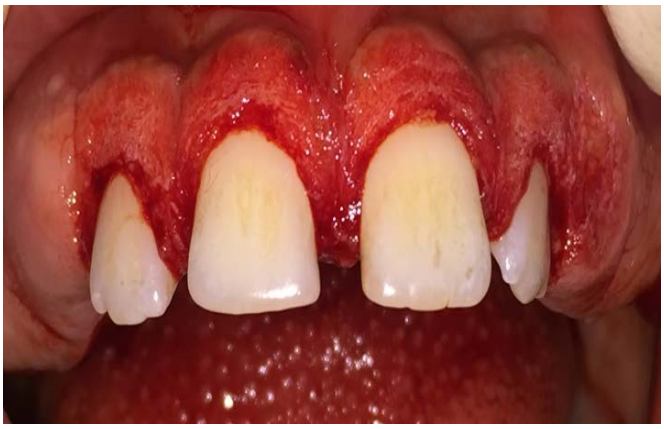

Figure 5: Gingivectomy by ledge and wedge procedure in maxillary arch

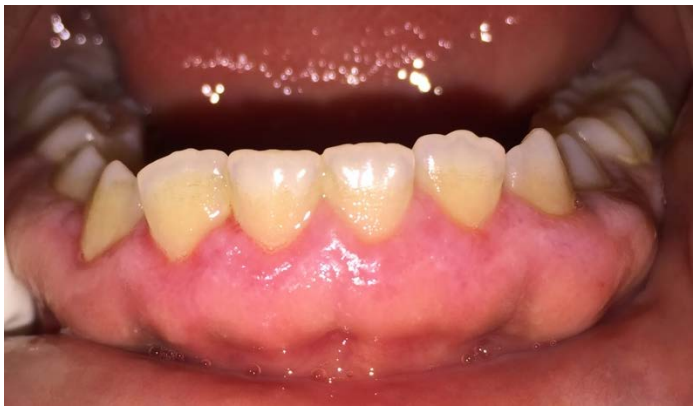

Figure 6: Post operative photo of mandibular arch healed

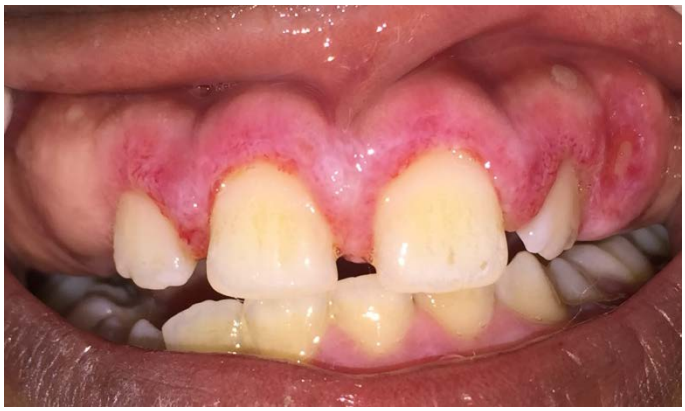

Figure 7: Post operative photo of maxillary arch-healing after 1week

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