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Idiopathic gingival enlargement: A case report

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Abstract
Idiopathic gingival enlargement is a rare condition characterized by massive enlargement of the gingival tissue that causes aesthetic and functional problems. Other forms of gingival enlargement also exist such as genetic, drug induced etc. This case report addresses the diagnosis and treatment of a case of idiopathic gingival enlargement in a 21-year-old male. 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 teeth resulting in difficulty in speech and mastication since last 10-12 years. Biopsy report confirmed the diagnosis of fibro-epithelial hyperplasia. Gingivectomy was carried out in all four quadrants.

Keywords: Gingival enlargement, Idiopathic, Gingivectomy, Fibromatosis

Introduction
Idiopathic gingival enlargement (IGE) is a rare condition characterized by massive enlargement of the gingiva. The enlargement of gingiva is slow and progressive in nature. It is also known as elephantiasis, idiopathic fibromatosis, gingivomatosis, and hereditary gingival fibromatosis [1]. It may occur as an isolated disorder or may be associated with conditions like tuberous sclerosis [2] and hypertrichosis [3]. Various drugs such as calcium channel blockers [4] immunosuppressants [5] and anticonvulsants [6] can lead to massive gingival enlargement. It may also occur as a part of syndromes like Zimmerman–Laband syndrome [7], Jones syndrome [8], Murray‐ Peretic‐ Drescher syndrome [9], Cross syndrome [10], Ramon syndrome [11] and Prune belly syndrome [12].
Several ongoing investigations are ongoing to establish the exact genetic linkage and heterogeneity associated with the disease, however the exact etiology is still not known. IGE is now an established hereditary gingival enlargement (HGE) and the terms IGE and HGE are used interchangeably [13]. Hereditary gingival enlargement displays both an autosomal dominant mode of inheritance in some patients and an autosomal recessive in other cases. Males and females are equally affected in this disease [14].
Clinically IGE is characterized by gingival overgrowth, pink coloured gingiva which is firm in consistency, and non‐ haemorrhagic [15]. IGE can affect both deciduous as well as permanent dentition, however it has been shown to worsen during adolescence.
This anomaly is classified as two types according to its form. The localized nodular form is characterized by the presence of multiple enlargements in the gingiva. The most common symmetric form results in uniform enlargement of the gingiva. Hyperplastic gingival enlargement may occur during or after the eruption of primary or permanent dentition and rarely present at birth [16]. The most common effect related to gingival enlargement is mal-positioning of teeth, diastemas, and prolonged retention of primary teeth. In cases of massive enlargement the teeth are completely submerged, and the enlargement projects into the oral vestibule resulting in facial disfigurement, difficulty in mastication, and speech.
Treatment of idiopathic gingival enlargement consists of surgical excision of the hyperplastic tissue to restore gingival contours, but the recurrence rate is very high following surgical excision [17]. Usually, these types of enlargements are associated with minimal local factors and minimal alveolar bone loss; however, there have been few reports on this rare lesion where it was associated with aggressive periodontitis.

Case report

A 21-year-old male patient reported to the outpatient department of Periodontics with a chief complaint of swollen gums since 10-12 years involving all his teeth. The swelling was aesthetically unpleasing and also causes problem during speech, articulation, mastication, and causing inadequate lip apposition. Patient did not undergo any kind of dental treatment for the above problem. He did not give any history of drugs intake, fever, anorexia, weight loss, seizures, hearing loss, nor having any physical or mental disorder. Also familial and postnatal history was non-contributory.

Clinical examination

Extra-oral examination showed that the patient had bilaterally symmetrical facial profile and lymph nodes were not palpable, TMJ movements were normal with incompetent lips and a convex profile. An intraoral examination revealed generalized, diffuse, nodular enlargement of the gingiva involving the upper and lower arches, which were pale pink in colour, and had a firm and fibrous consistency. The two-third of the teeth surfaces were covered with enlarged gingiva, fig. 1, 2, 3.

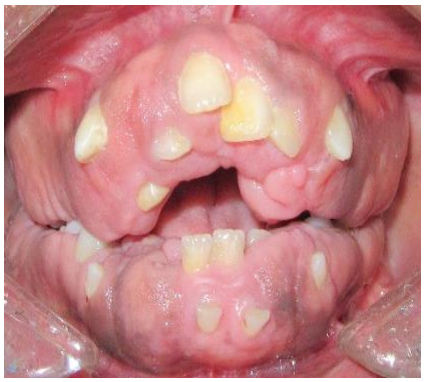


Fig 1: Frontal view

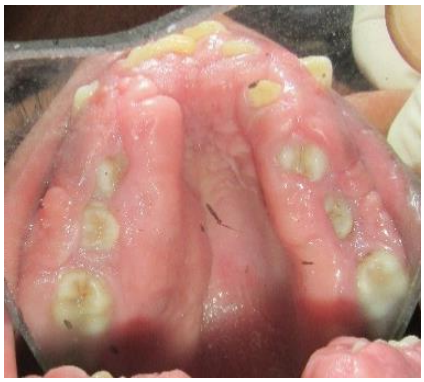


Fig 2: Palatal view

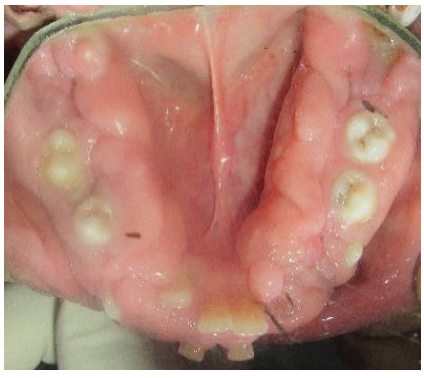


Fig 3: Lingual view

Investigations

Panoramic radiograph showed no bone loss, fig. 4. Carious lesion were present in 46, 47, 36 and 37. Over-retained deciduous teeth 53, 71 and 81 were present. Routine blood investigations were done which was within normal limits. Excisional biopsy was carried out which was sent for histopathological evaluation, fig. 5. The Histopathology revealed the presence of dense connective tissue fibrils and mild inflammatory cells infiltrates suggestive of fibro-epithelial hyperplasia, fig. 6.

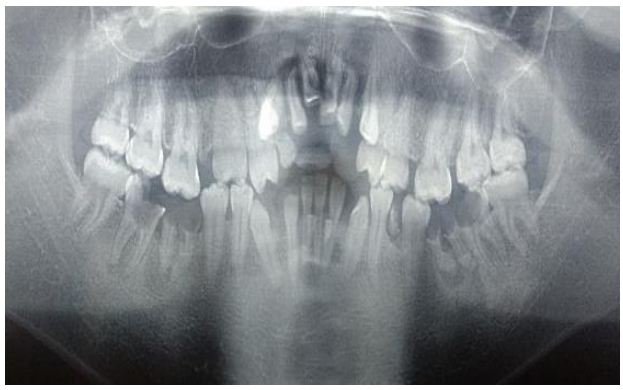


Fig 4: Panoramic radiograph

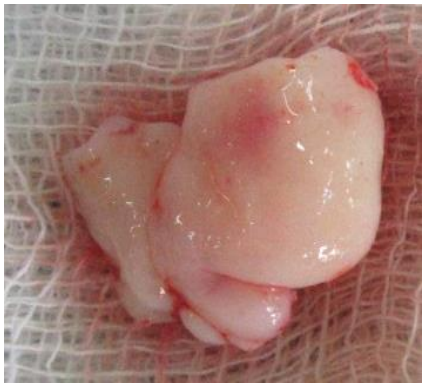


Fig 5: Excised

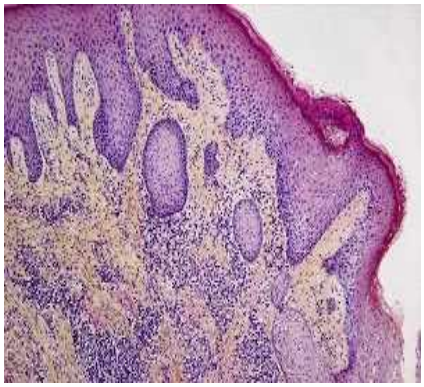


Fig 6: Histopathological slide

Differential diagnosis

Drug-induced enlargement, hereditary gingival enlargement and idiopathic gingival enlargement.

Diagnosis

The family, medical, and drug histories were non-contributory in this case; hence it was diagnosed as idiopathic gingival enlargement.

Treatment

After completion of Phase I treatment, a quadrant-wise gingivectomy was performed under local anaesthesia using Kirkland knives for incisions on the facial and lingual surfaces and Orban periodontal knives were used for interdental incisions. After achieving haemostasis periodontal dressing was given in all four quadrants to reduce patient discomfort, fig. 7-12. Post-operative follow-up was done for the next 6 months which showed no sign of recurrence

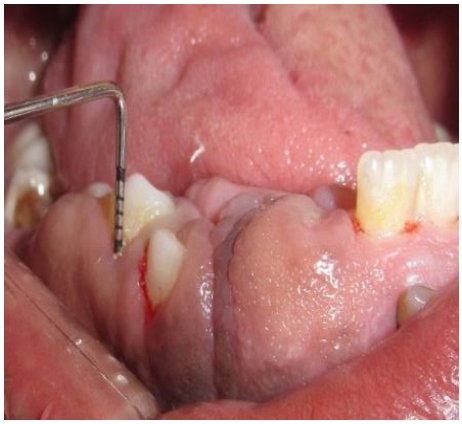


Fig 7: Probing depth.

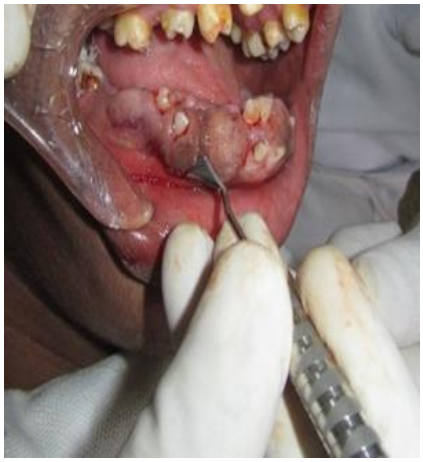


Fig 8: Gingivectomy with Kirkland knives.

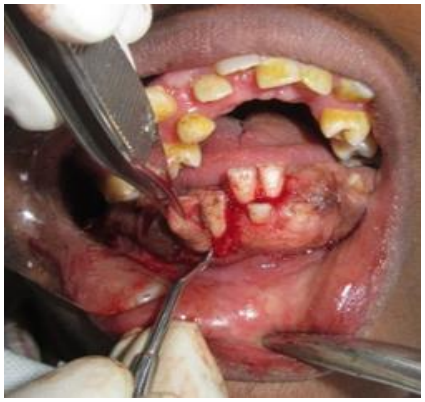


Fig 9: Interdental incision with Orban knives.

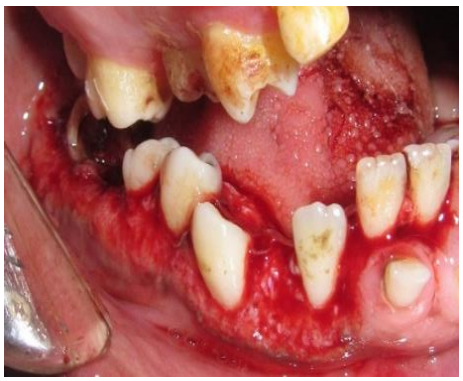


Fig 10: Haemostasis achieved

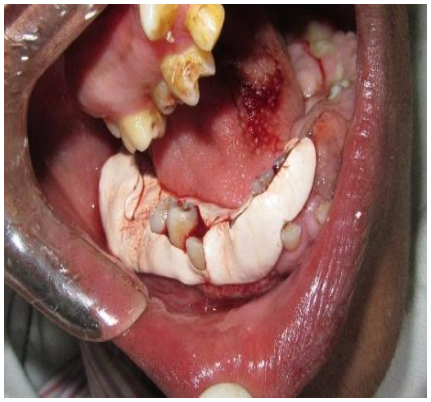
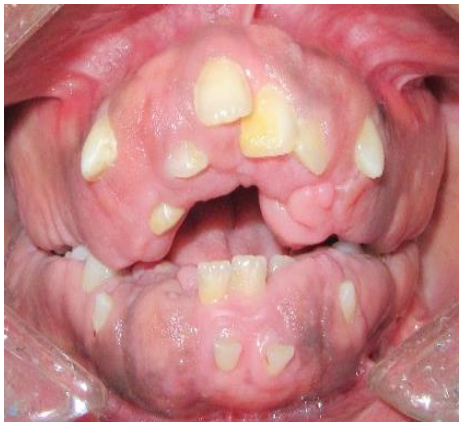
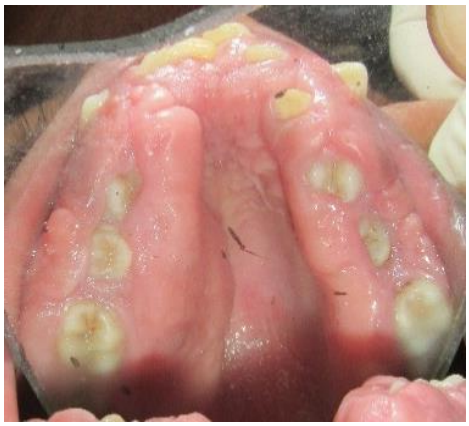
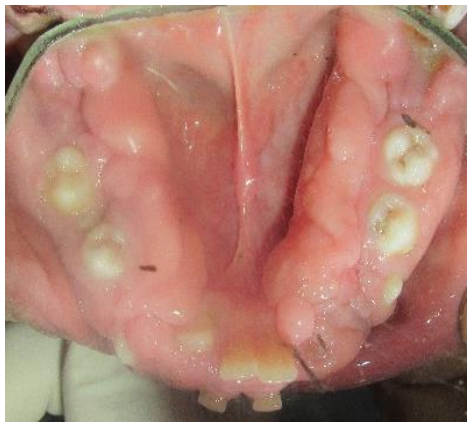


Fig 11: Periodontal dressing







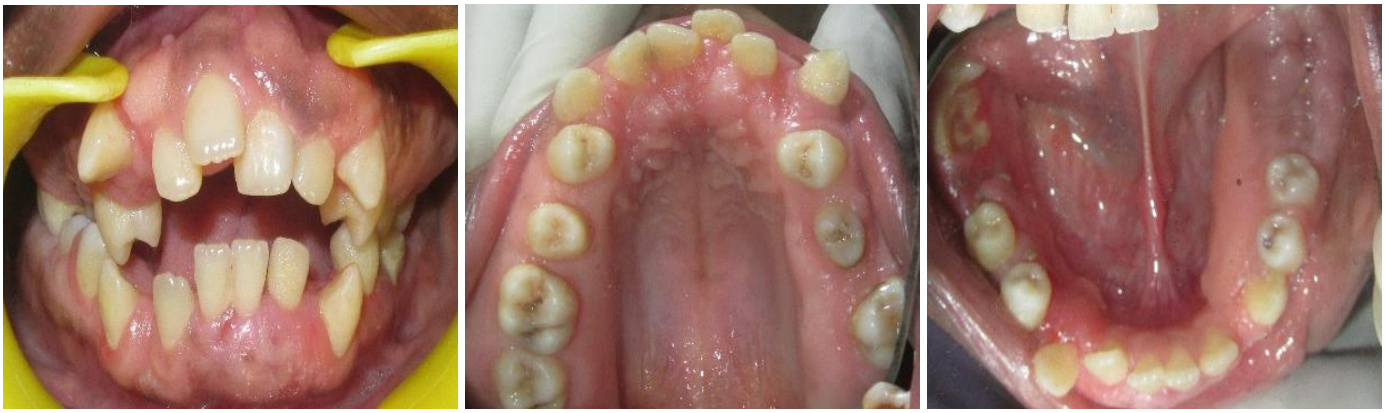


Fig 12: Preoperative and postoperative comparison after six months

Discussion

Gingival fibromatosis may be congenital or hereditary, the causes of which are not clearly understood. Hence, the terms idiopathic gingival fibromatosis and hereditary gingival fibromatosis are often used interchangeably [14].

Fibrotic gingival enlargement can also occur after long duration therapy with drugs like phenytoin [6] cyclosporine [5], nifedipine [4]. Hence use of these drugs should be ruled out. Gingival fibromatosis may be associated with physical development, retardation, and hypertrichosis [3]. Enlargement usually begins with the eruption of the permanent dentition but can develop with the eruption of the deciduous dentition; rarely it may be present at birth or arise in adulthood [16]. Maximal enlargement occurs either during loss of deciduous teeth or in the early stages of eruption of permanent teeth and progresses rapidly during "active" eruption and decreases with the end of this stage[11]. It has been suggested that gingival enlargement may be due to nutritional and hormonal factors; however, these have not been completely substantiated. The constant increase in the tissue mass can result in delayed eruption and displacement of teeth, arch deformity, spacing, and migration of teeth [12]. All these features may create problem in normal mastication and in oral hygiene measures. Maintaining good oral hygiene is important as the presence of inflammation and infection can be associated with a risk of recurrence of the gingival enlargement. However, gingival fibromatosis recurrence is not only due to the presence of local factors, but also due to genetic predisposition. Therefore, it is not possible to predict the long-term results of gingival fibromatosis treatment even when associated with good oral hygiene.

Histologically, the gingival fibromatosis is mainly due to an increase in numbers of fibroblast in the connective tissue stroma. The nodular appearance can be attributed to the hyperkeratinized epithelium. The treatment of choice in this condition was gingivectomy as bony intervention was not required. Since recurrence can occur within a few months after surgery and may return to the original condition within few years, the patient may have to undergo repeated gingivectomy procedures. However, in this patient there was no sign of recurrence for the six months follow up period.

Conclusion

Therefore, long-term follow-up is mandatory for maintenance and to evaluate the predictability of the surgical treatment and the recurrence of the gingival enlargement. IGE is an enlargement of genetic predisposition and unknown etiology and hence the rate of recurrence is very high impending the normal functions and esthetics of the patient.

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