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RESEARCH ARTICLE

IDIOPATHIC GINGIVAL ENLARGEMENT: A RARE CASE REPORT

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Abstract

Introduction:-

Gingival enlargement (GE) is an overgrowth characterized by an expansion and accumulations of the connective tissue with seldom increase in a number of cells.(Takagi M.,1991)Gingival hyperplasia is a peculiar condition causing esthetic, functional, psychological, and masticatory disturbances of the oral cavity. Many cases are iatrogenic; some are inherited while others are idiopathic. (Pappachan B., 2002) Several etiologies have been reported including plaque accumulation, due to inadequate oral hygiene, nutritional deficiency, drug induced gingival enlargement, hereditary gingival enlargement or hormone related gingival enlargement. (J.A.Regezi., 1999)Gingival enlargements are also seen in several blood dyscrasias such as leukaemia, thrombocytopenia, or thrombocytopathy. (F.Cekmez et al., 2009)

Idiopathic gingival fibromatosis (IGF) is a rare hereditary condition with no definite cause.(Carranza FA., 2002) IGF is synonymous with nomenclatures like gingivomatosis, elephantiasis gingivae, diffuse fibroma, familial elephantiasis, hereditary gingival hyperplasia, hereditary gingival fibromatosis (HGF). (F.Cekmez et al., 2009)Investigations are in evolution to establish the genetic linkage and heterogeneity associated with it. (T.C. Hart., 1998;T.C. Hart., 2000) It appears as an isolated disorder or may sometimes develop as a part of syndromes such as the Laband, Rutherford, Ramon or Cross syndrome. (Brightman VJ., 1997)

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Oral manifestations may vary from minimal involvement of only the tuberosity area and the buccal gingiva around the lower molars to generalized enlargement inhibiting eruption of teeth. The hyperplastic 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. There may be a combination of both types.

This report presents the clinical features and the management of 7 year old male child with non-syndromic, idiopathic gingival enlargement.

Case Report:-

A 7 year old boy reported to the Department of Paediatric and Preventive Dentistry, Narsinhbhai Patel Dental Collage and Hospital, Visnagar with the chief complaint of swollen gums in the upper and lower front and back region of jaw since 6 month, which was initially small in size and gradually increased after the eruption of permanent teeth. The medical history revealed that the patient had hypoparathyroidism and was on medication 2 years ago currently patient is asymptomatic and not on any medication. Familial and postnatal history was non-contributory.

The intra- oral examination revealed a mixed dentition with poor oral hygiene and generalized diffuse enlargement of gingivae that involves both the maxillary and mandibular arches. (Fig1. A, B & C) Enlargement extends from marginal gingiva to attached gingiva, gingiva appears pale pink and with loss of stippling. Gingival enlargement covered up to the middle third of crown of teeth both labially as well as lingually. Gingiva was firm and non-tender on palpation and there was slight bleeding on probing. On hard tissue examination there was multiple carious teeth present. A scanty amount of plaque and food debris was entrapped into the almost all teeth which were partially visible amongst the entire dentition with no significant inflammation present around them.

As the patient exhibited negative family history with no sign of hypertrichosis, mental retardation and history of epilepsy or intake of any medication, which are known to cause gingival enlargement, hence a provisional diagnosis of idiopathic gingival enlargement was made.

Investigations:-

Radiographical examination included orthopantomograph (OPG) in which no evidence of bone loss was observed. Routine blood investigations, thyroid and parathyroid function tests, serum calcium and phosphorus and other routine urine examinations were found to be within normal physiological range.

Incisional biopsy of the enlarged gingiva performed under local anesthesia and the excised tissue sample was then sent to the laboratory for further histopathological investigation. Multiple serial sections were prepared and stained with hematoxylin & eosin. Microscopic examination revealed hyperplastic Para keratinized stratified squamous epithelium and elongated sharp rete ridges. Underlying tissue stroma shows collagen fibers arranged in thick bundles and varying amount of chronic inflammatory cell infiltration. (Fig.2)

Final Diagnosis:-

Based on medical and family history of the patient, and clinical, radiographic and histological examination case was diagnosed as Idiopathic gingival enlargement.

Treatment:-

After the establishment of the final diagnosis, details about the condition and formulated treatment plan was explained to the patient and parents. At the initial phase thorough supra gingival scaling was performed followed by sub gingival scaling and repeated at subsequent weekly follow-up visits. Patient and parents were counseled and motivated to maintain optimum oral hygiene. In addition prescription of 0.2% Chlorhexidine (REXIDINE^{TM}) mouth wash was added as an adjunct. Thus a gradual regression of the enlargement was observed, ultimately achieving a normal size and contour over a period of one month. (Fig.3 A, B & C) In order to improve and eliminate nutritional deficiency factors supplements of Multi Vitamin B complex and Vitamin C was advised.

Fig.1 Pre-operative Photograph showing gingival hyperplasia (A) Frontal view (B) Mandibular occlusal view (C) Maxillary Occlusal view

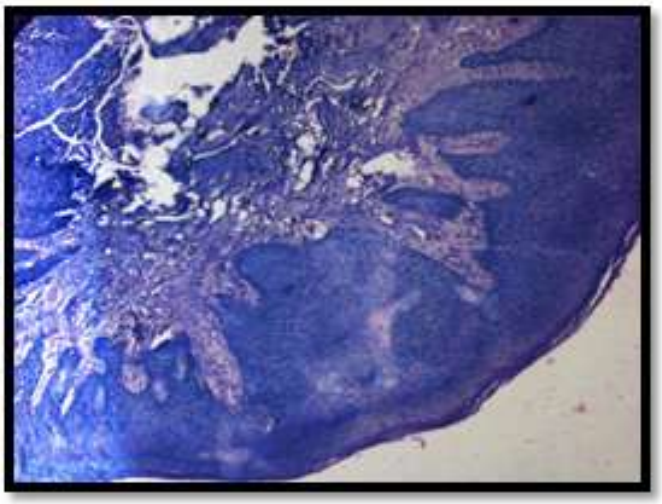
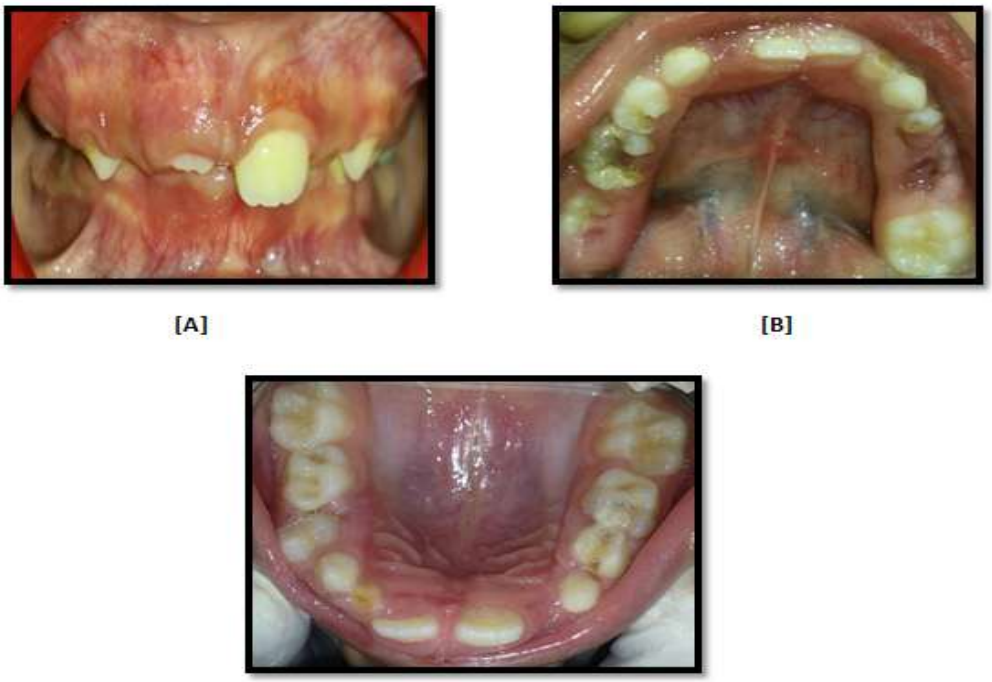


Fig. 2 Histo-pathologic Picture



[A] [B]

[C]

Fig. 3 Post-operative Photograph (A) Frontal view (B) Mandibular occlusal view (C) Maxillary Occlusal view

Discussion:-

Gingivitis is a common occurrence among children due to the inadequate performance of the oral hygiene measures, either due to poor manual dexterity or lack of due prominence for the brushing. However, gingival enlargement in children is uncommon. Gingival enlargement in children can be localized or generalized.

In the present case, there was no applicable family, medical and drug history which could contribute to gingival overgrowth and hence it was termed as Idiopathic gingival fibromatosis (IGF).Idiopathic gingival enlargement may be inherited or genetic. The condition may manifest as an autosomal dominant or very rarely as an autosomal recessive mode of inheritance. Autosomal dominant non-syndromic form has been genetically linked to the chromosome 2p21-p22 and 5q13-q22. (Indushekar KR., 2003)

Gingival hyperplasia may be associated with physical development, mental retardation, and Hypertrichosis. (Shafer WG., 1993)Gingival hyperplasia can occur after drug therapy like Phenytoin, Cyclosporine, Nifedipine, and Nitrendipine. (Putnam T et al., 1937; Daley TD et al., 1986; Lucas RM., 1985) It has been suggested that gingival enlargement may occur due to nutritional and hormonal factors; however, these have not been completely substantiated. Although gingival tissue may appear normal at birth, gingival enlargement may become evident with the eruption of primary or permanent dentition which may be suggestive of a trauma induced reaction caused by the tooth eruption.(Gupta N.,1996) In some cases, gingival enlargement starts with the eruption of permanent dentition and ceases once the completion of growth occurs.(Stewart RE., 1982) Gingival enlargement does not cause any pain until the tissue enlarges to cover the occlusal surface of the teeth and may become traumatized and painful. Gingival enlargement may also cause displacement of teeth, arch deformity, spacing and migration of teeth and in the severe cases, may lead to esthetic problems, difficulties in speech and mastication, and also abnormal swallowing patterns(Mcdonald RE.,2000) These factors will favor accumulation of materia alba and plaque, which further complicates the existing hyperplastic tissue.

Gingival hyperplasia of different etiologies may have different mechanisms of 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.(Coletta RD.,2006)

Management of gingival hyperplasia depends on the cause of the condition. In general, reinforcement of good home care oral hygiene regimens and periodic oral prophylaxis and surgical excision of gingival tissue where indicated are the treatments of choice. In the present case management by professional supra and sub gingival scaling, 0.2% Chlorhexidine mouth wash and additional nutritional supplements was performed. Patient was recalled every week, a gradual gingival regression was observed over a period of 1 month. Scrupulous follow up and oral hygiene maintenance are essential to monitor and prevent recurrence of the gingival enlargement.

Conclusion:-

The present case of Idiopathic gingival enlargement was managed with professional and patient executed plaque control. Although recurrence cannot be predicted, vigilant follow-up and monitoring, particularly during tooth eruption would prevent functional disturbances caused by plausible recurrence of gingival hyperplasia.

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