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CASE REPORT

An Unusual Presentation of Gingival fibromatosis: A case report and Review of Literature

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ABSTRACT

Gingival fibromatosis refers to a rare and diverse group of conditions characterized by slow, progressive enlargement of the marginal and attached gingiva or interdental papilla. In severe instances, the overgrown tissue can extend to cover the tooth crowns, leading to functional, aesthetic, and periodontal complications such as bone loss and bleeding, often caused by pseudopockets and plaque buildup. Diagnosis of gingival fibromatosis primarily relies on the patient's history, clinical findings, and histopathological examination of the affected tissues. The condition involves fibrous overgrowth of gingival tissue and is often categorized as idiopathic when the cause is unknown. Various terms, such as gingivomatosis and elephantiasis, have been used by different authors to describe these lesions. Differential diagnosis should consider all oral pathologies that result in excessive gingival enlargement.

Keywords: *Fibromatosis gingival, Gingival enlargement, Gingival hyperplasia.*

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INTRODUCTION

Enlargement of keratinized gingival tissues is a relatively common condition, described under various terms. The causes of such overgrowth may include medications, hereditary factors, or local irritants.[1] Gingival fibromatosis (GF) is a rare disorder characterized by abnormal, diffuse, or localized overgrowth of the gingiva. Both maxillary and mandibular gingival tissues can be affected, leading to partial or complete burial of the teeth beneath excessive hyperplastic tissue. This can result in significant aesthetic and functional challenges. [2-4]

In severe cases, gingival fibromatosis can lead to functional, periodontal, aesthetic, and psychological challenges. The condition may have a hereditary basis, presenting either as non-syndromic hereditary gingival fibromatosis (HGF) or as part of a syndrome. It can also arise in predisposed individuals as a side effect of systemic medications, such as antiseizure drugs, immunosuppressants, or calcium channel blockers. In some instances, the cause of the enlargement remains unclear. The pathological changes are thought to involve excessive accumulation of extracellular matrix (ECM) components, although the molecular mechanisms underlying this process are yet to be fully understood.[4, 5]

Case report:
A 20-year-old male patient referred to the department with a complaint of gingival swelling since 2 years. On clinical examination, the gingival enlargement was generalized in maxillary and mandibular arch on both buccal and lingual side. It was covering upto middle third in some teeth and upto incisal or occlusal edge of the other teeth. The enlargement was rose red to pink color at some areas. It was boggy swelling and firm in consistency. (Fig. 1,2,3,4 and 5) Patient was not having any family history or medical history and not taking any medications. For radiographic examination, OPG was taken and it shown horizontal bone loss. (Fig. 6) A provisional diagnosis of idiopathic gingival enlargement was made and gingivectomy was planned. After surgical intervention, the biopsy specimen (Fig. 7) was sent to the department of oral pathology. On histopathological examination, the epithelium present was keratinized stratified squamous epithelium with elongated rete ridges and at places flat rete ridges. The underlying connective tissue was dense fibrocellular with presence of bundles of collagen fibers. (Fig. 8) Based on clinical and histopathological features, a final diagnosis of gingival fibromatosis was made.

DISCUSSION
Gingival fibromatosis (GF) is a condition marked by the abnormal growth of gingival tissue. It is commonly referred to as "gingival enlargement," which includes both gingival hyperplasia and hypertrophy. [2]
Gingival fibromatosis is a gradually progressing condition characterized by the overgrowth of collagenous fibrous tissue within the gingival connective tissue. Idiopathic gingival fibromatosis (IGF) affects approximately 1 in 750,000 individuals and can occur in both males and females, affecting either the upper or lower jaw.[5, 6]
Gingival fibromatosis is also referred to by various names, including gingivomatosis, gingival enlargement, gingival hyperplasia, gingival overgrowth (GO), elephantiasis gingivae, familial elephantiasis, gigantism of the gingiva, congenital macrogingivae, diffuse fibroma, idiopathic fibromatosis, hereditary gingival fibromatosis, and congenital familial fibromatosis.[7, 8]
The primary clinical characteristics of hereditary gingival fibromatosis include extensive, progressive gingival overgrowth. This condition can affect the attached gingiva, marginal gingiva, and interdental gingival papilla, often leading to partial or complete coverage of the teeth.[9]
The gingiva appears smooth, firm, and typically has a normal color. This condition usually manifests during childhood and may occasionally delay the eruption of teeth.[10] The gingiva presents with a rosy hue, a fibrous texture, and pronounced stippling, but without signs of inflammation. It may cover the teeth partially or completely and can be either localized or generalized, with varying severity.[1, 5, 7] However, it does not affect the bone. The condition often impacts speech, lip closure, and chewing, and at the age it typically occurs, it can significantly affect the patient's psychological well-being and self-esteem.[11, 12]
The exact mechanism behind the gingival enlargement in hereditary gingival fibromatosis (HGF) remains unknown. However, it is generally agreed that the condition involves increased sub-epithelial fibroblast proliferation, along with elevated collagen and fibronectin synthesis, while the activity of matrix metalloproteinases (MMPs), responsible for collagen degradation, is reduced.[6, 7]
Histopathological and ultrastructural findings indicate an increased presence of collagen fiber bundles in all directions, with few fibroblasts. Electron microscopy studies have also revealed collagen fibrils with structural abnormalities, including variations in diameter and an abundance of oxytalan fibers, along with fewer elastin fibers. Since the histopathological characteristics of HGF are not specific, a definitive diagnosis is usually made based on family history and clinical presentation.[2, 4, 5]

Types
Gingival fibromatosis can be either familial or idiopathic. The familial form may occur alongside other inherited syndromes, including Zimmermann-Laband syndrome, Murray-Puretic-Drescher (juvenile hyaline fibromatosis), Rutherfurd syndrome, Cross syndrome, Cowden syndrome, multiple hamartomas, and tuberous sclerosis. While it often presents as an isolated condition, it can also be associated with multisystem disorders such as Zimmermann–Laband syndrome, Jones syndrome, Ramon syndrome, juvenile hyaline fibromatosis, and systemic infantile hyalinosis [2,5, 8, 13] Genetic studies suggest that the inheritance pattern for these conditions is typically autosomal dominant, with mutations in the SOS1 gene identified as a key factor in the disease.[14]

Syndromes
Gingival fibromatosis, when associated with corneal opacities and delayed tooth eruption, is recognized as an autosomal dominant condition known as Rutherfurd syndrome.[1, 5, 8] Cross syndrome, most likely an autosomal recessive disorder, is characterized by gingival fibromatosis, microphthalmia, intellectual

disability, athetosis, and hypopigmentation. Ramon syndrome, also an autosomal recessive disorder, is defined by gingival fibromatosis, cherubism, hypertrichosis, developmental delay, epilepsy, and growth retardation. [15, 16]

Classification

This condition is categorized into two forms based on its presentation. The localized nodular form is identified by multiple gingival enlargements, while the more common symmetric form is characterized by uniform gingival overgrowth, though its exact cause remains unclear. Both forms can vary in shape and size, often extending to cover the dental crowns.[2, 4] When occurring on the palate, the gingival masses typically have a pear-shaped appearance and are attached to the underlying gingiva by a pedunculated base.[6]

Complications

Gingival enlargement can lead to challenges such as difficulties with mastication, speech impairments, tooth displacement, aesthetic concerns, and psychological distress for the patient, highlighting the importance of proper treatment and postoperative care. As a periodontal tissue reaction, this condition can also present a significant challenge to periodontists. Minimal and localized enlargements are typically managed with good oral hygiene and root scaling, while severe and diffuse cases often necessitate surgical intervention. Recurrence of the condition may occur anywhere from several months to several years following surgery.[5,8, 11]

This type of enlargement can lead to issues such as diastemas, tooth malpositioning, delayed exfoliation of primary teeth, crossbite, open bite, prominent lips, and alterations in lip and facial profile.[5,7, 14]

Treatment

The preferred treatment remains internal or external bevel gingivectomy. The choice of surgical technique does not appear to significantly impact the likelihood of recurrence. In the absence of more defined guidelines in the literature, the decision is typically based on factors such as the patient's age, stage of tooth eruption, and the surgeon's clinical judgment and preferences [14, 15].

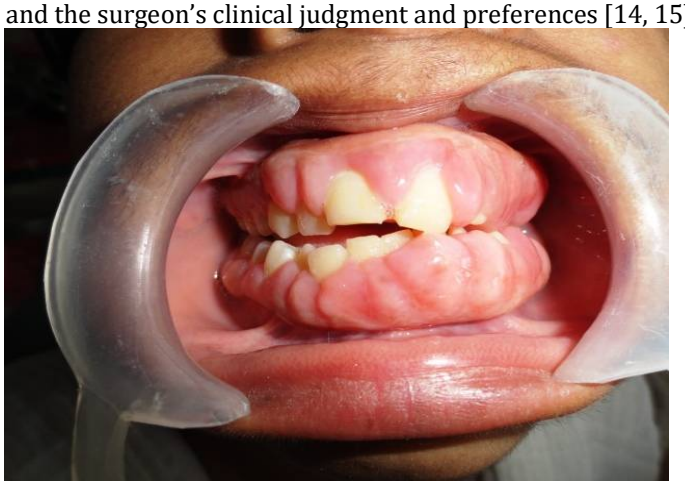

Fig. 1: Clinical picture showing generalized enlargement of gingival (Front view).

Fig. 2: Clinical picture showing generalized enlargement of gingival (Right side).

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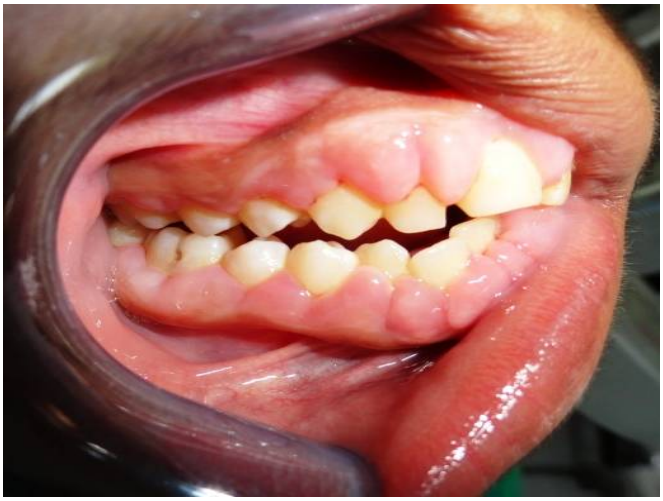

Fig. 3: Clinical picture showing generalized enlargement of gingival (Left view).

Fig. 4: Clinical picture showing generalized enlargement of gingival (Maxillary lingual view).

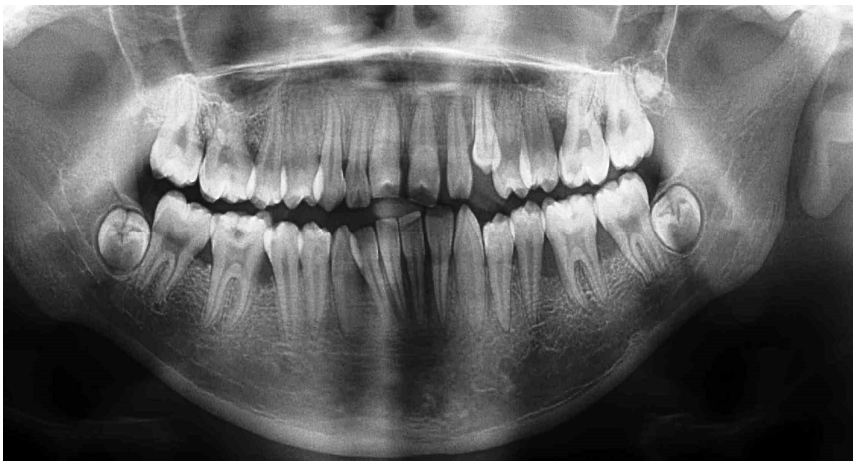

Fig. 5: Clinical picture showing generalized enlargement of gingival (Mandibular lingual view).

Fig. 6: OPG showing horizontal bone loss at certain areas.

Fig. 7: Excisional biopsy specimen.

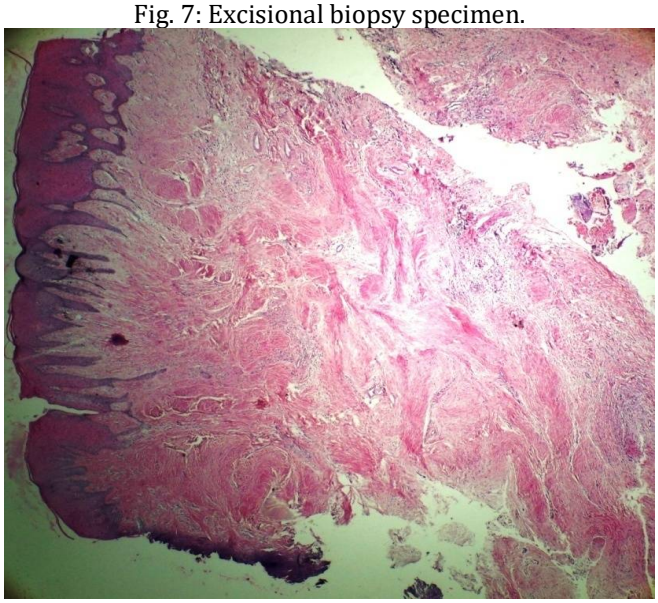

Fig. 8: Histopathological picture showing long, tortuous rete ridges and dense collagen fiber bundles in the connective tissue.

CONCLUSION

Idiopathic gingival fibromatosis is marked by proliferative fibrous overgrowth of the gingival tissue, with varying levels of involvement. This case exhibited the typical clinical features of gingival fibromatosis, which were managed through gingivectomy. Surgical intervention offers significant benefits, including improved quality of life by resolving difficulties with eating, speaking, and maintaining oral hygiene.

Additionally, it provides psychological advantages due to enhanced aesthetics. Regular follow-up visits and diligent oral hygiene are essential for the early detection and management of any recurrence.

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