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Article

Hereditary gingival fibromatosis: A Case Report.

Fibromatosis gingival hereditaria: informe de Caso.

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Abstract: **Introduction:** Hereditary gingival fibromatosis is a rare disorder with a genetic component that may appear during tooth replacement. This condition can cause functional and aesthetic problems such as malocclusions, diastemas, pain when chewing, dental caries, periodontal disease, delayed eruption, among others. **Objective:** To report the multidisciplinary treatment provided to a patient with hereditary gingival fibromatosis. **Case Report:** This report describes the treatment carried out in a thirteen-year-old male patient presenting generalized increase in gingival volume associated with functional and aesthetic compromise and delayed eruption of permanent teeth. After diagnosis, a multidisciplinary intervention was proposed, involving periodontal and pediatric dentistry procedures, which improved the quality of life of the patient both functionally and aesthetically. **Conclusion:** Hereditary gingival fibromatosis not only affects the dental eruption process, but also causes aesthetic and emotional alterations in the patient. The periodontal procedures significantly im-proved the appearance, function, and the psychological state of the patient.

Keywords: *fibromatosis, gingival; gingivectomy; gingivoplasty; adolescent; pediatric dentistry; case report.*

Resumen: **Introducción:** La fibromatosis gingival hereditaria es una alteración poco común, asociada a un componente genético que en ocasiones se hace evidente en el recambio dentario. Este padecimiento puede generar problemas funcionales y estéticos como maloclusiones, diastemas, dolor al masticar, caries, enfermedad periodontal, erupción tardía, entre otros. **Objetivo:** Reportar el caso clínico con manejo interdisciplinario en un paciente con fibromatosis gingival hereditaria. **Reporte de Caso:** Se expone el tratamiento realizado en un paciente de trece años, sexo masculino, con aumento de volumen gingival generalizado con compromiso funcional y estético, conjugado con retraso en la erupción de dientes permanentes. Tras diagnóstico se plantea la intervención multidisciplinaria, integrando áreas como periodoncia y odontopediatría; los procedimientos ejecutados permitieron mejorar la calidad de vida desde el punto de vista funcional y

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estético. **Conclusión:** La fibromatosis gingival hereditaria no solo desencadena alteración en proceso eruptivo dental, sino también alteraciones estéticas y emocionales en el paciente que la padece. Los procedimientos periodontales realizados permitieron de forma categórica la mejora de la estética, función y estado psicológico del paciente.

Palabra Clave: *fibromatosis gingival; gingivectomía; gingivoplastía; adolescente; odontología pediátrica; informe de caso.*

INTRODUCTION.

Gingival fibromatosis consists of an increase in gingival size, caused by systemic diseases, inflammatory factors, genetic conditions, or drug use.[1] It is characterized by progressive, generalized and severe gingival growth, frequently affecting both maxillary arches.[2] Among periodontal diseases, it is classified into the gingival alterations of genetic origin not associated with the presence of dental biofilm.[3] It is a non-neoplastic infiltrative condition,[4] and has a low prevalence of 1:750,000.[5] It generally appears in the first decades of life regardless of gender and race.[6]

The association of this lesion with an autosomal dominant or recessive component may cause an isolated pathological condition or be associated with other disorders such as hypertrichosis, epilepsy, mental retardation, soft tissue tumors, enlargement of facial bones, and the Klippel-Trenaunay-Weber syndrome.[7,8] On histopathological examination, the gingiva shows an increase in fibrous connective tissue, with thick collagen fibers, active fibroblasts, and few blood vessels.[9] These tissue characteristics are typical of gingival enlargement and, as they are nonspecific findings for a definitive diagnosis, it is important to complement the diagnosis with an adequate clinical and radiographic evaluation, and sometimes with genetic studies.[10]

In view of the above, this report aims to describe the multidisciplinary treatment of a clinical case of a patient with hereditary gingival fibromatosis. Knowledge of the etiology and pathophysiology of the condition is essential when it comes to avoiding future complications such as poor dental position, delay in tooth eruption, dental displacement, and diastema. In addition, excessive gingival growth hinders oral hygiene, resulting in periodontal disease, infections and/or tooth loss.[11]

CASE REPORT.

A thirteen-year-old male patient attended the university clinic at Universidad UTE, Quito, Ecuador, in the company of his mother, reporting concerns about "increased gum growth" that began approximately 7 years previously during the tooth replacement stage. The patient reported the absence of a personal and family history, stated he was not under pharmacological or psychological medical treatment.

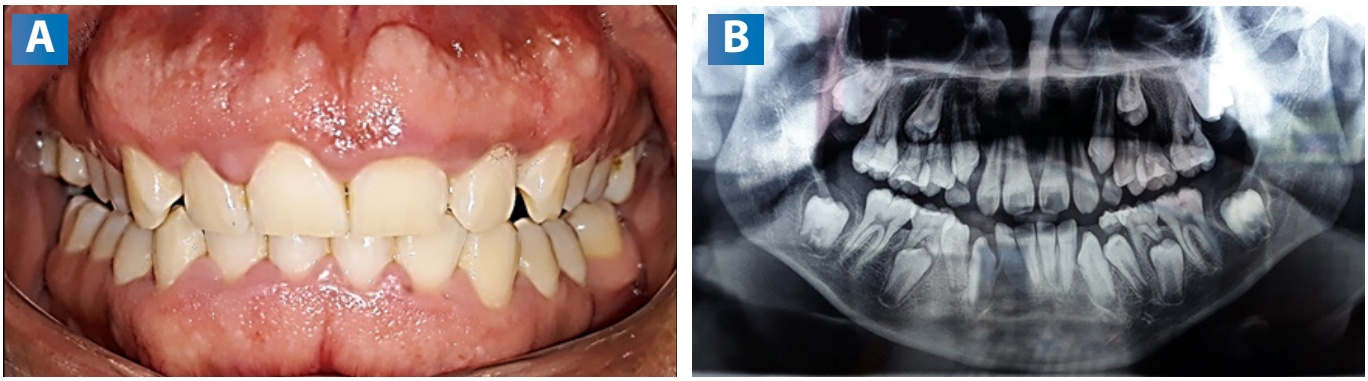
The mother reported that the patient's father had generalized gingival enlargement. A clinical evaluation of the father was carried out to confirm the diagnosis. (Figure 1A)

The intraoral clinical examination of the patient showed vestibular and palatal/lingual gingival enlargement, interincisal papilla of a larger than normal size. In the extraoral physical evaluation, no relevant clinical findings were observed in skin, nails, or hair. The radiographic study, using panoramic and periapical radiographs, revealed the presence of permanent teeth under gingival tissue. (Figure 1B)

The anatomical-pathological examination showed the presence of a fragment of mucosa formed by parakeratinized stratified squamous epithelium and areas of acanthosis covered by a fibrous connective tissue, with thick collagen bundles and dystrophic calcifications. These images are compatible with fibrous gingival hyperplasia, fibromatosis. (Figure 2)

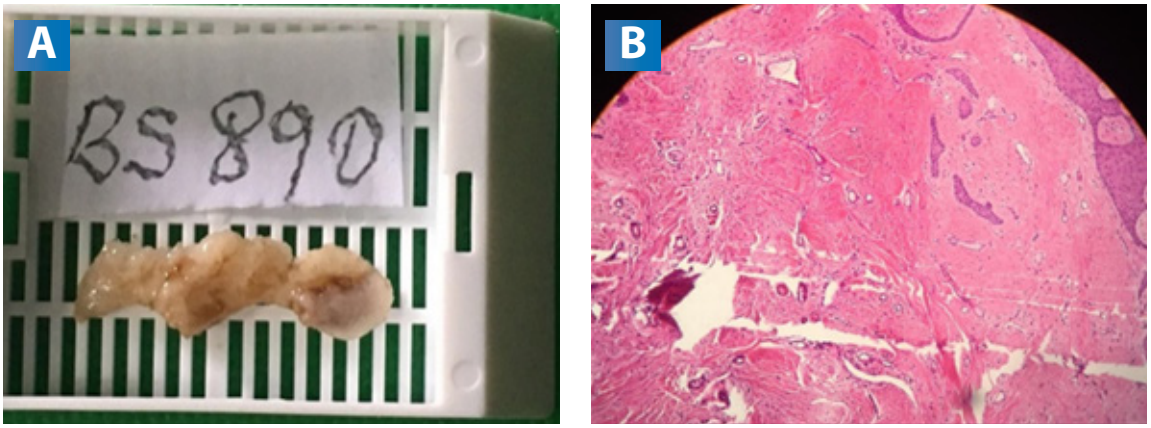
The clinical, histological, and radiographic findings were discussed with the patient and his parents. The treatment plan was presented and approved. After being asked to sign the informed consent, they were given instructions on oral hygiene habits, highlighting the importance of correctly performing the Bass brushing technique, flossing, and using mouthwash. Dental biofilm control records according to the O'Leary index were performed weekly, achieving

Figure 1. Intraoral photograph of the patient's father and Radiographic evaluation.



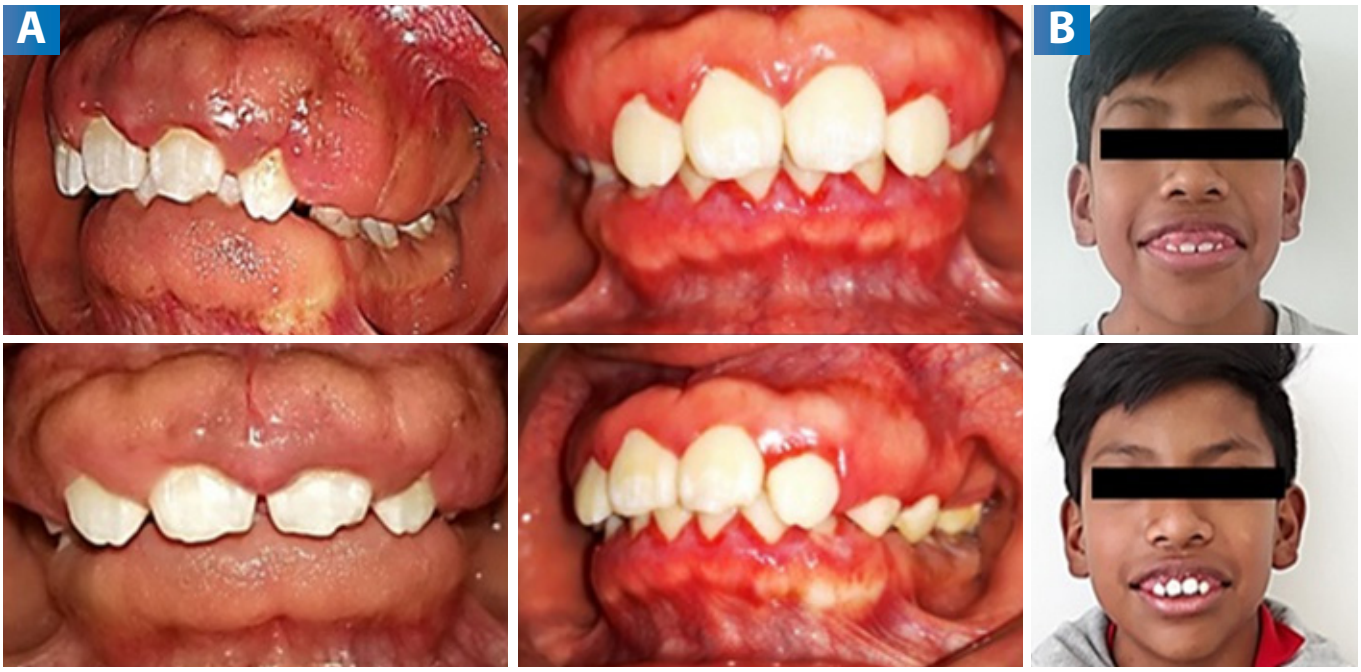
A. Amarked gingival enlargement is observed in the lower jaw. **B.** Panoramic radiography.

Figure 2. Anatomical-pathological examination.



A. Macroscopic appearance of the sample. **B.** Microscopic histological analysis with hematoxylin and eosin staining; Fibrous connective tissue with thick collagen bundles can be observed. (original magnification: x100; 10x ocular lens, and 10x objective lens)

Figure 3. Healing process.



A. Intraoral photographs before the surgery and ten days after. **B.** Extraoral photographs before the last surgical intervention and ten days after.

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an evident decrease in dental biofilm: 37.71%, 21.42%, and 16.66% at the time of the third record. The commitment and adherence of the patient to the treatment was verified. Operative procedures were performed to remove dental caries and repair restorations which were in poor condition, using adhesive materials, after which it was determined that the patient was ready to undergo surgical procedures.

After applying local anesthesia with infiltrative technique at the vestibular, lingual, and intrapapillary levels, quadrant I was subjected to continuous measurements with a WHO periodontal probe, marking the points at the gingival level to plan the surgery. Gingiva resection was performed by means of gingivectomy and gingivoplasty with conventional technique using an external and internal bevel with a #15 scalpel, following the marked points. The soft tissue wall was removed using Gracey curettes.

Bone recontouring was performed with medium and fine-grained diamond burs. After the surgical procedure, the patient was prescribed ibuprofen 400 mg every 6 hours for 3 days and amoxicillin 500 mg every 12 hours for 7 days, mouthwash with 0.12% chlorhexidine for 7 days, and then with an alcohol-free mouthwash twice a day. A similar surgical procedure was performed in each of the quadrants with an interval of 10 days between procedures.

A good healing process was observed (Figure 4), as well as an improvement in the social interactions of the patient.

DISCUSSION.

Hereditary gingival fibromatosis is considered a rare gum disease characterized by the presence of firm and enlarged gingival tissue covering the anatomical crowns of the teeth.[12] It usually occurs during the onset of the eruption of the permanent incisors,[11] behavior that agrees with the present report. However, other studies show that it may appear with deciduous dentition.[12,13] This slow and progressive growth of the gingiva can be associated with inflammation, leukemic infiltration, mental retardation, epilepsy,[6] or in association with other hereditary syndromes, such as:

Zimmerman-Laband syndrome, Murray-Puretic-Drescher syndrome, Rutherford syndrome, Cowden syndrome, and Cross syndrome.[4,14] Some drugs such as phenytoin, calcium channel blockers, and cyclosporine also produce fibrous enlargement.[10] None of these factors are associated with the pathology of this patient.

In the present case, the patient's family history was key, but it was not considered as an exclusive diagnostic criterion for hereditary gingival fibromatosis. The pathological examination associated with the radiographic analysis and an adequate clinical evaluation were essential to establish a definitive diagnosis.[4] However, a limitation of this case was the lack of a genetic analysis due to the limited access to such tests in Latin America.

Treatment for gingival fibromatosis involves surgical excision of the gingival tissue.[13] However, the basic periodontal therapy performed on the patient helped in the initial management of the disease. The various surgical treatment alternatives for this pathology include conventional scalpel surgery, electrocautery, and carbon dioxide laser ablation.[15,16] To choose the surgical treatment, the severity of the gingival enlargement, age of the patient, as well as the accessibility to procedures and operator experience were considered. A conventional surgical excision and the surgical technique consisting of an internal bevel scalpel were chosen. The gingivectomy allowed for the bone crest and its relationship with the cementum-enamel line to be observed. The external bevel technique allowed to perform gingivectomy and gingivoplasty without lifting a flap, eliminating the need for suture,[4] with the aim of causing less pain and postoperative bleeding in the patient.[1,14]

Gingival fibromatosis, although not a dental emergency, disturbs functions such as swallowing, causing difficulty in chewing, and limiting the movement of the tongue.[11] It also affects facial appearance, lips shape and contour, speech and communication,[4] resulting in psychological damage in those who suffer from it. Hence the importance of an immediate intervention with the interaction of various medical-dental specialties to minimize the damage in terms of functional development and improve the aesthetics of the patient.[7,17]

Ultimately, the procedures resulted in a functional, aesthetical, and psychological improvement of the patient.[4]

Although the procedure was successful, it is difficult to prevent recurrences, which is why periodontal maintenance therapy is required to achieve greater control and supervise the process. Recurrence is very common during some periods.[10,19] However, studies show that there is less chance of recurrence if gingivectomy is delayed until the permanent dentition is in place.[20]

Studies have shown that recurrence is faster in areas with accumulation of dental biofilm.[21] Consequently, keeping good oral hygiene and receiving professional cleaning and home care are necessary to prevent recurrence.[14] Since few cases of patients with gingival fibromatosis have been reported in the literature, the extent of the functional or cosmetic phases of surgical treatment of hereditary gingival fibromatosis cannot be determined.[1]

There are a series of causes of gingival enlargement, which is why it is important to always make a differential diagnosis between hereditary gingival fibromatosis and inflammatory gingival enlargement, drug-induced gingival enlargement, gingival enlargement conditioned by hormonal or nutritional factors, pyogenic granuloma, neoplastic gingival enlargement, and gingival enlargement related to systemic diseases,[4] with the aim of clarifying the etiological factor that differentiates each one in order to design an adequate treatment plan.

Hereditary gingival fibromatosis, reported in this manuscript, not only caused alteration in the dental eruption process, but also aesthetic and emotional alterations in the patient. The periodontal procedures significantly improved the appearance, function, and the psychological state of the patient. During the follow-up appointments, a totally different attitude was observed in the patient, who seemed to be much more energetic and happier.

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