Hereditary gingival fibromatosis: Review of the literature and a case report

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Hereditary gingival fibromatosis is a proliferative fibrous lesion of the gingival tissue that causes esthetic and functional problems. Both genetically and pharmacologically induced forms of gingival fibromatosis exist. This paper reports a case of severe generalized hereditary gingival fibromatosis in a 5-year-old girl. Treatment consisted of surgical removal of the hyperplastic fibrous tissue in a series of conventional gingivectomies. Postoperative examination 35 months after the final procedure revealed no signs of recurrence. (Quintessence Int. 2000;31:415-418)

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Hereditary gingival fibromatosis, also known as idiopathic gingival fibromatosis,¹-⁵ is defined as a rare, benign, asymptomatic, nonhemorrhagic, and nonexudative proliferative fibrous lesion of the gingival tissue. It occurs equally among men and women, in both arches, varying in intensity in individuals within the same family.²⁶-²⁷ Hereditary gingival fibromatosis is usually identified as an autosomal-dominant condition,¹²,⁴,⁵,⁸,¹⁰,¹²,¹³,¹⁵-¹⁹ although recessive forms are described in the literature.¹-⁴,¹⁰,¹³,¹⁷ Consanguinity seems to increase the risk of autosomal-dominant inheritance.⁶,³,¹⁸

Hereditary gingival fibromatosis may appear as an isolated disorder, but in some cases it is associated with other alterations, such as hypertrichosis and epilepsy. It is sometimes associated with other syndromes, such as Zimmermann-Laband, Murray-Puretic-Drescher, Cowden's, Cross, and prune-belly.⁵,²,¹⁰,¹¹,¹⁸ Oikarinen and colleagues,²⁰ Bozzo and colleagues,¹⁸ and Grinspan¹ suggested that there may be a relationship between growth hormone deficiency and gingival overgrowth where dental and skeletal alterations are present along with gingival fibroblasts.

The hyperplastic gingiva usually is roseate, has a firm consistency, and has abundant stippling on the adjacent gingiva. This anomaly is classified in 2 types according to its form. The first, the nodular form, is characterized by the presence of multiple tumors in the dental papillae. The other form, the symmetric form, results in uniform enlargement of the gingiva and represents the most common type. Both forms vary in shape and volume and may cover the dental crowns. There may be a combination of the 2 types. In many cases, there is an exaggerated growth in the tuberosity region.¹⁸

Gingival tissue enlargement usually begins with eruption of the permanent dentition but can develop with the eruption of the primary dentition. It is rarely present at birth.²,³,¹¹ According to a study of Brazilian patients, gingival enlargement occurs mainly in the mixed dentition and may worsen when girls have their first menstrual period.⁸ Enlargement seems to progress suddenly during “active” tooth eruption and decrease with the end of this stage.²,³,¹¹ According to a number of researchers,¹,⁴,⁵,¹⁰,¹¹ hereditary gingival fibromatosis is an atypical disease of infants.

Histologically, the fibrous connective tissue has bundles of coarse collaginous fibers and a high degree of differentiation with young fibroblasts and scarce blood vessels. The epithelium is dense with elongated papillae and hyperkeratosis. The more fibroblasts there are, the greater the chance of recurrence.²,⁴,⁵,¹⁰,¹⁵

The most common effects related to the lesion are diastemas, malpositioning of teeth, and prolonged retention of primary teeth. More severe lesions may cover the dental crowns. Hereditary gingival fibromatosis results in both esthetic and functional problems.¹-³,⁵-⁸,¹¹,¹²,¹⁵,¹⁶,¹⁸,²¹,²² Although gingival hyperplasia occurs, the alveolar bone is not affected.⁶,⁹,¹⁰,¹⁵
Treatment consists of surgical excision of the hyperplastic tissue to restore the gingival contours. Practitioners should consider factors such as puberty, esthetics, and functional needs when contemplating treatment options. Some of the methods available for removing large quantities of gingival tissue are conventional gingivectomy with a scalpel, electrocautery, and carbon dioxide laser. In patients with large-scale lesions, the treatment should be performed in 2 or 3 stages at intervals of 4 to 5 months. There may be a recurrence of the condition in which the gingiva returns to the original state in a couple of years.

CASE REPORT

A 5-year, 8-month-old, girl, born in Rio de Janeiro, presented to the Pedodontics Department at the Rio de Janeiro State University in March 1995. The main complaints were the enlarged gingiva and delayed eruption of the teeth.

The mother was unable to state when the problem began. Although there were no problems during her pregnancy, normal childbirth was delayed, which put the child at risk. The patient's medical history did not reveal any sign of epilepsy or other type of physical or metabolic disorder. Her weight and height were considered to be within normal limits. The patient did not take any medication that could be associated with gingival hyperplasia. She did not appear to have any mental impairment. No other anomaly relevant to the condition was found during the extraoral examination. There were no findings of lymphadenopathy or swelling of the head or neck.

The family history was very important, because it indicated 2 similar cases—the child's mother and maternal aunt, each affected in both dentitions.

The intraoral examination revealed generalized, severe gingival hyperplasia involving both the mandibular and maxillary arches (Figs 1 and 2). The tissue totally or partially covered the crowns of the primary teeth (Fig 3). The gingiva was pink, and its firm, dense,
fibrous consistency caused considerable difficulty with plaque removal (Fig 4). It did not bleed or release exudate. Panoramic radiographic examination revealed no disharmony in the skeletal, dental, and chronologic ages (Fig 5).

Treatment consisted of sextant-by-sextant gingivectomy, performed weekly, except on the mandibular incisal area because these teeth were not covered by gingival tissue. Further surgery was necessary to expose the permanent teeth (16[3], 11[8], 21[9], 26[14], 36[19], 46[30]) (Fig 6). These procedures were carried out after administration of a local anesthetic. Histopathologic examination after an excise biopsy supported the diagnosis of gingival fibromatosis.

The patient has returned periodically for observation, and 36 months after the procedure there has been no recurrence of the lesions (Figs 7 and 8).

**DISCUSSION**

The gingival fibromatosis in this patient was a hereditary condition, because of the existence of the condition in close relatives (the mother and maternal aunt). It was not related to syndromes, endocrine problems, or the use of drugs such as nifedipine, phenytoin, or cyclosporine A.\(^1\)\(^2\)\(^3\)\(^4\) The suggested treatments for this condition vary and include conservative and surgical procedures. Extraction of all teeth and reduction...
of the alveolar bone have been recommended in the past to prevent the lesions from recurring.\textsuperscript{13,17}

The treatment for this patient consisted of surgical removal of hyperplastic tissue in a series of gingivectomies. Growth and development should be taken into account when treatment options are considered. Conservative treatment was chosen in this case based on the patient's condition and reports in the literature.\textsuperscript{2,4,6,7,10,13,14,16,23} This procedure was selected even though there is a risk of recurrence.

There is no consensus among authors with regard to the exact time that surgery should be accomplished. According to Emerson,\textsuperscript{24} the best time is when all the permanent teeth have erupted. Rushton\textsuperscript{25} did not indicate a specific time to treat but recommends that the teeth be free of caries and gingivitis. In this case, early conservative treatment was chosen because the child had a complete primary dentition, exhibited normal bone and root formation, and was cooperative. She was unhappy with the appearance of the gingiva.

The purposes of early treatment were to minimize local problems, such as malocclusions, to improve the function of the teeth, to restore oral health, and to avoid the development of psychologic effects, such as anxiety, in the child and her parents.

CONCLUSION

The recurrence of hereditary gingival fibromatosis cannot be predicted; it is an individual condition. Patients should be given every opportunity to undergo conservative surgical procedures. The aims are to minimize the displacement of erupting teeth, to reduce malocclusion, and to improve oral function. Improved esthetics also diminish psychologic effects in very young patients.

REFERENCES