"Whisking of ugly tissue"… A surgical management of gingival fibromatosis in a 15-year-old girl: A rare case report

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Abstract

Gingival fibromatosis is a condition characterized by a slow, progressive increase in the gingival tissue that develops as either an isolated disorder or as part of the clinical characteristics of diverse syndrome. The present case report describes a rare case of gingival fibromatosis and its management using scalpel in combination with electrosurgery. A 15-year-old girl patient presented with a chief complaint of gingival overgrowth covering all the surfaces upper and lower teeth. The growth was excised with periodontal knife in combination with electrosurgery under local anesthesia. After 1-year of follow-up, healing was uneventful with no recurrence. Combined technique for the removal of gingival overgrowth represents a unique treatment approach where minimal postoperative bleeding and discomfort were observed.

Keywords: Electrosurgery, gingival fibromatosis, gingival overgrowth, gingivectomy, periodontal knife

Introduction

Gingival overgrowth is characterized by an expansion and accumulation of connective tissue with the occasional presence of increased number of cells.[1] Gingival fibromatosis is a heterogenous group of disorders characterized by proliferative fibrous overgrowth of the gingival tissue caused by an increase in the sub-epithelial connective tissue elements.[2]

The gingival overgrowth usually begins at the time of eruption of permanent dentition but can develop with the eruption of deciduous dentition and exhibits a pale pink color, firm and leathery consistency that is nonhemorrhagic, nonexudative, and asymptomatic.[3] Males and females are equally affected at a phenotype frequency of 1:175,000.[4]

According to its form, it can be classified into two types: In generalized form, there will be uniform enlargement whereas in localized form multiple enlargements typically in the maxillary tuberosities and labial gingiva of the mandibular molars are present.[5]

The overgrowth is most frequently associated with hypertrichosis, mental retardation, and epilepsy; although progressive sensorineural hearing loss, supernumerary teeth, and abnormalities of the extremities, particularly of fingers and toes, have also been reported.[6] It may also be associated with certain syndromes like Murray-Puretic-Drescher syndrome, Rutherford syndrome, Laband syndrome, Jones syndrome, etc.[3]

Case Report

A 15-year-old girl patient reported to Department of Periodontology, Rungta College of Dental Sciences and Research Bhilai, Chhattisgarh India, with a chief complaint of overgrowth of gingiva covering entire surface of upper and lower teeth. History revealed slow growth of the gingiva that started with the eruption of permanent teeth and led to difficulty in speech and mastication with poor esthetics. The patient's medical history and family history were noncontributory with no drug intake.

On extraoral examination, patient had bilaterally symmetrical face with incompetent lips and convex profile. Intraoral examination revealed generalized severe overgrowth of gingiva with pink melanin pigmentation involving both the maxillary and mandibular arches. The gingiva was firm and leathery in consistency [Figure 1].

Orthopantomogram [Figure 2] revealed complete permanent dentition and malpositioning of the teeth with minimal alveolar bone loss. Hematological parameters were within normal range. Based on the available data regarding the

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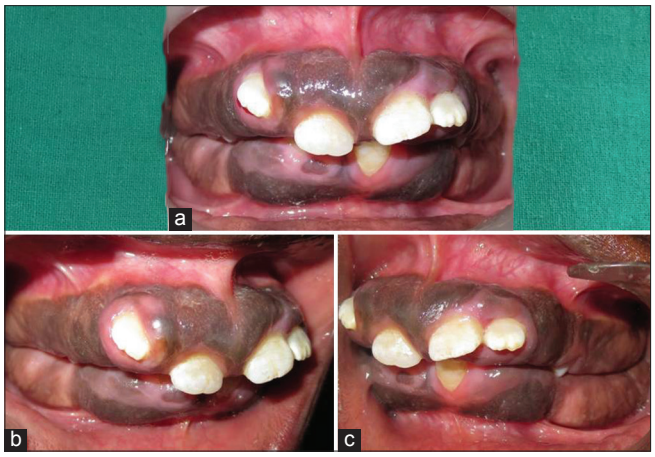

Figure 1: (a) Preoperative front facial view. (b) Preoperative facial view right side. (c) Preoperative facial view left side

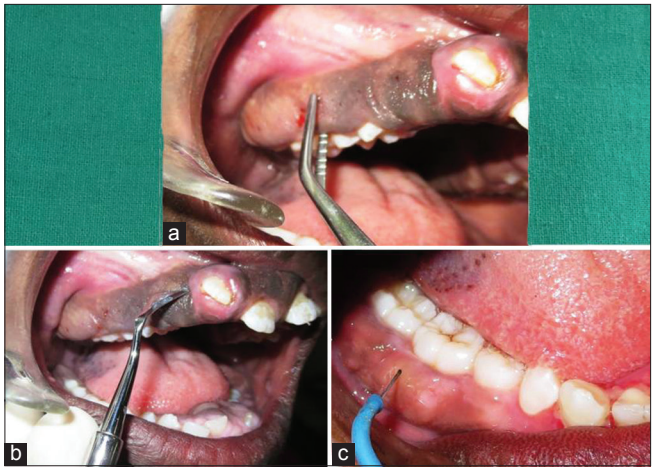

Figure 3: (a) Bleeding points marked with a pocket marker. (b) Incision being placed with Kirkland knife. (c) Gingivoplasty with electrosurgery tip

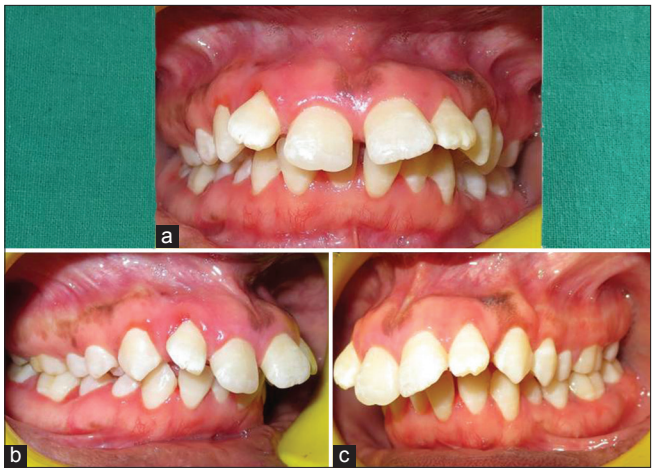

Figure 5: (a) One year postoperative front facial view. (b) One year postoperative facial view right side. (c) One year postoperative facial view left side

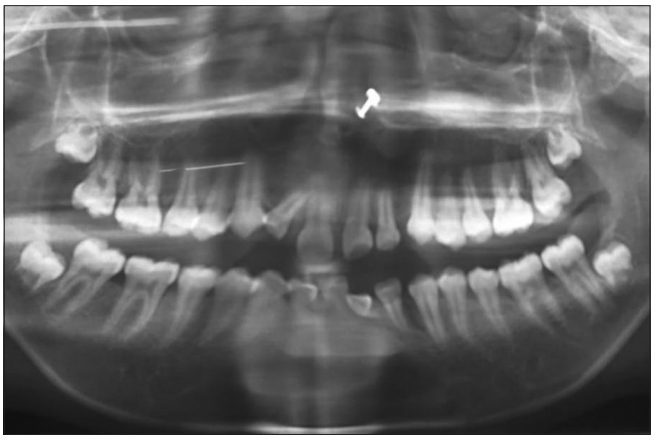

Figure 2: Orthopantamogram

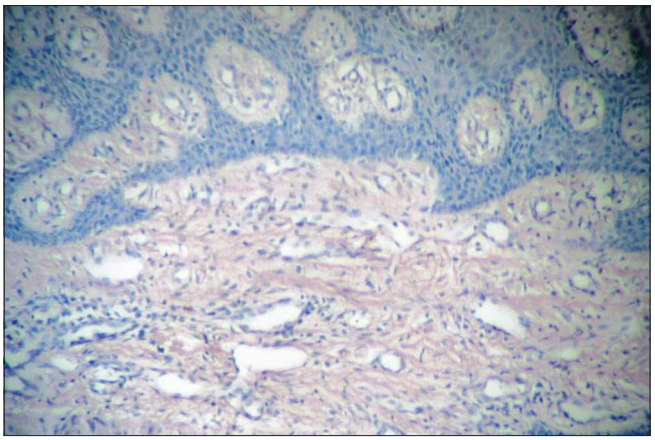

Figure 4: The photomicrograph showing hyperkeratotic stratified squamous of variable thickness with irregular rete ridges, highly fibrous connective tissue with dense collagen bundles arranged in haphazard manner with numerous fibroblasts (H and E, ×100)

history and clinical features, a provisional diagnosis of gingival fibromatosis was made, and sextant wise gingivectomy with combination technique was planned.

The patient was operated under 2% lignocaine hydrochloride with 1:80,000 adrenaline, after securing profound anesthesia the bleeding points were created by using Crane-Kaplan pocket marker [Figure 3]. An external bevel gingivectomy incision was given by using periodontal knives (Kirkland and orbans knife) [Figure 3], then the excessive gingival tissue was removed by surgical curettes, followed by gingivoplasty with electrosurgical unit [Figure 3]. The area was thoroughly irrigated with normal saline and hemostasis was achieved followed by periodontal dressing (Coe-pak) for the comfort to the patient. The postoperative instructions were given, and the patient was prescribed to take antibiotics and analgesics followed by 0.2% chlorhexidine mouthwash twice daily for a week after each surgery. The biopsy tissue was sent for the histopathological evaluation which revealed stratified

squamous epithelium with focal keratinization, long slender rete pegs and the sub epithelium showed a dense collagen stroma in connective tissue [Figure 4]. Considering the history clinical, radiographic features and microscopic picture, a final diagnosis of gingival fibromatosis was made.

Patient reported after 1-week then the pack was removed and the area was thoroughly irrigated with normal saline. The oral hygiene was reinforced, and the patient was called for checkups at regular intervals. After 12 months observation so far there was no evidence of recurrence [Figure 5].

Discussion

Gingival fibromatosis is a slowly progressive disease involving excessive collagen deposition. The enlarged tissues may partially or totally cover the dental crowns, can cause diastemas, pseudo-pocketing, delay or impede tooth eruption. In severe cases, it may lead to mastication and speech impediments or lip closure difficulties.[7]

The precise mechanism of idiopathic gingival fibromatosis is unknown, but it appears to confine to the fibroblasts which harbor in the gingiva. The hyperplastic response does not involve the periodontal ligament and occurs peripheral to the alveolar bone within attached and marginal gingival.[8]

There is no consensus of the cellular and molecular mechanisms involved in the etiology of gingival fibromatosis. In this regard, transforming growth factor ß1, an important cytokine that stimulates the synthesis and reduces the degradation of extracellular matrix, reduces proteolytic activities of fibroblasts, favoring accumulation of components of the extracellular matrix and thought to play a major role in gingival fibromatosis.[9]

There is a large consensus on the modality of treatment to be performed in patients with gingival fibromatosis, there are controversies among the authors with regard to the exact period in which it should be accomplished. According to several studies, the best time is when all of the permanent dentition has erupted, because the risk of recurrence is higher before it.[2,4,10] In our case, all the permanent teeth were erupted. However, in some cases, a delay in the surgical treatment may cause significant consequences for the patient, such as primary dentition retention with delay in the eruption of the permanent teeth, difficulties in mastication and phonation, malpositioning of teeth, esthetic effects, and psychological problems for the patients and relatives.[2,5,6,11,12]

Treatments vary according to the degree of severity of gingival enlargement. When the enlargement is minimal thorough scaling of the teeth and home care may be sufficient, however, excessive gingival tissue esthetic and functional impairment dictate the need for surgical intervention. Currently, conventional gingivectomy with periodontal knifes; scalpel, electrosurgery, and laser are available for the excision.[13] In our case, periodontal knives and electrosurgical unit were used.

In this case, gingival fibromatosis showed moderate hyperplasia of a dense hyperkeratotic epithelium with elongated rete ridges. These findings are similar to other case reports.[13]

Recurrence of hyperplastic tissue following gingivectomy, necessitates a repeat of treatment procedures,[14] but in our case, no recurrence was observed after a period of 12 months follow-up.

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