CASE REPORT

Establishing Aesthetics by Purposeful Autoreimplantation in Inflammatory Fibrous Hyperplasia: A 12-Month Follow-up Case Report

Anshul Gangwar[1], Jean N Murry[2], Mhao P Jungio[3], Mongshithung N Murry[4]

Abstract

This article aims to describe purposeful reimplantation and inflammatory fibrous hyperplasia cases caused due to poor dental health and malpositioning of teeth. A 17-year-old male patient was referred to a dental specialty hospital for soft tissue growth in the lower anterior tooth region. Anamnesis and clinical examination revealed that tooth #31 was severely hypoplastic. A surgical procedure and purposeful reimplantation were carried out, and a histological examination revealed inflammatory fibrous hyperplasia. During the follow-up appointments, it was feasible to see progress and the patient's satisfaction. Despite the low occurrence of inflammatory fibrous hyperplasia, it is important to note that tooth positioning outside of its normal alignment in the arch can contribute to plaque and calculus accumulation, which can then become etiological factors for inflammatory fibrous hyperplasia. As a result, dentists must be attentive in order to establish a diagnosis and therapeutic therapy as well as monitor these instances.

Keywords: Case report, Gingival overgrowth, Gingivectomy, Tooth reimplantation.

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Introduction

In a healthy mouth, gingival tissues fill the interproximal spaces between teeth, beginning near the contact area and gradually increasing apically and laterally in a smooth curve. However, the gingiva in the mouth frequently expands, causing soft tissue to fill up the interproximal spaces, spread out across the surfaces of the teeth, and extend into the oral cavity.[1] These enlargements may cause functional problems such as difficulty in chewing, altered speech, and aesthetic and psychological issues.[2]

Gingival enlargement is a complex condition that can be caused by host–environment interactions or several stresses. It can be caused by plaque, linked to hormonal imbalances in the body, or a symptom of one of the various blood dyscrasias, including leukemia, thrombocytopenia, and thrombocytopathy.[3]

Chronic inflammatory enlargement of the gingival tissue is the most prevalent kind of enlargement, which is caused by plaque-induced inflammation of the gingival tissues. It can be localized or generalized, and hormonal factors can increase it, particularly in puberty or pregnancy. It can be further complicated by certain systemic medicines and is treated with conventional periodontal therapy, such as scaling and root planing. If chronic inflammatory gingival enlargements contain significant fibrotic components that do not respond to or minimize when treated with scaling and root planing, the extra tissue is surgically removed.[4]

Case Description

A 17-year-old male outpatient reported to the Department of Pediatric and Preventive Dentistry, Institute of Dental Sciences, Bareilly, with the main complaint of enlargement in the mandibular anterior area for 1 year. The patient had difficulties cleaning and chewing food.

The patient also gave a history of surgical excision for the same problem 2 years ago, but the lesion recurred after 1 year.

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Plaque and calculus were seen on oral examination, as well as crowding of the mandibular teeth, with tooth #31 out of alignment and situated buccally, and a hypoplastic left lateral incisor (Figs 1A and B). The lesion had lobulated and fibrotic gingiva, with extensive gingival overgrowth that covered clinical crowns to a large extent suggestive of grade II gingival enlargement with depth and clinical attachment loss of the periodontal pockets ranging from 3 to 6 mm (Fig. 2). On palpation, the gingiva was firm and resilient in consistency. Intraoral periapical (IOPA) radiograph revealed marked radiolucency in relation to teeth #31 and #32 (Fig. 3).

Hence, based on clinical features, a provisional diagnosis of peripheral ossifying fibroma was made.

During the anamnesis, no family member had a similar history of gingival enlargement or any drug history. To rule out any

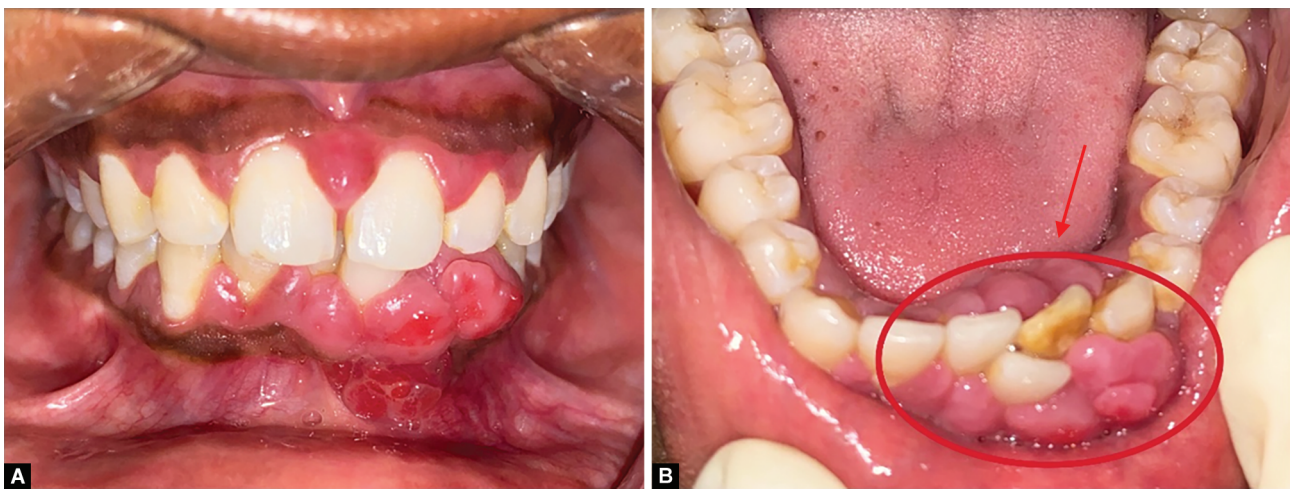
hematologic problems, the patient was advised to get a general blood picture (GBP) and a complete blood count (CBC). Laboratory tests revealed low red blood cells (RBCs) (3.80 million/mm^3) and platelet counts (0.80 lakhs/mm^3), necessitating the patient's problem to be discussed with the general physician.

The therapy was administered in three stages. The first stage included medications and an iron-rich diet to boost blood count for 15 days.

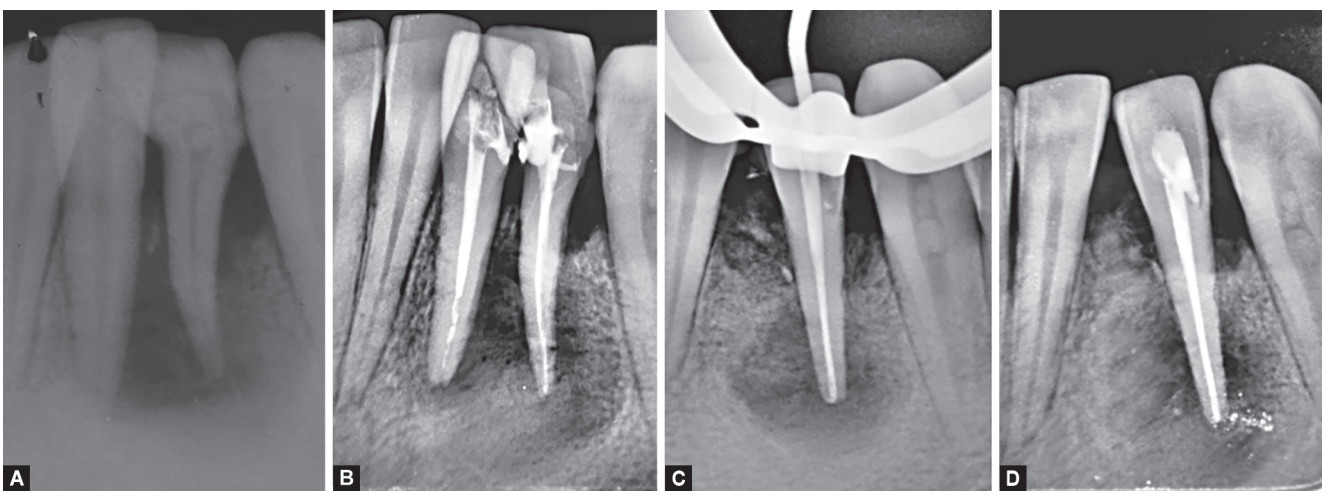
The second stage consisted of counseling, planning, plaque and calculus control using supra and subgingival scaling, and root canal therapy in relation to teeth #31 and #32. Access opening was done followed by working length determination, biomechanical preparation, and Metapex (Meta Biomed) dressing in relation to teeth #31 and #32 for periapical healing (Fig. 3B). The patient was recommended for orthodontic treatment for the malalignment of mandibular anterior teeth; however, the patient refused the treatment. At the same time, he desired aesthetics.

Following the reduction of the inflammation, a final surgical excision was planned. Concurrent use of 0.12% chlorhexidine

Fig. 2: Gingival enlargement covering almost two-thirds of crown and probing depth >5 mm



Figs 1A and B: Clinical presentation at initial stage. (A) Gingival hyperplasia on the labial surface; (B) Gingival hyperplasia on the lingual surface with hypoplastic enamel in relation to tooth #32 with red arrow indicating labial and lingual gingival hyperplasia



Figs 3A to D: Root canal therapy step-by-step procedure. (A) Preoperative radiograph showing radiolucency involving teeth #31 and #32; (B) Metapex dressing placed after working length determination and biomechanical preparation in relation to teeth #31 and #32; (C) Final obturation with gutta-percha; (D) Follow-up after 6 months

digluconate solution twice daily was indicated as an aid to mechanical control, in addition to warm saline rinse and correct brushing techniques.

The patient was recalled after 15 days, and there was a significant reduction in inflammation. The radiolucency of teeth #31 and #32 was revealed by IOPA. The Metapex dressing was replaced in relation to teeth #31 and #32. After 1 month, the blood count was within normal range. Surgical excision followed by external bevel gingivectomy was performed after marking the bleeding points (Fig. 4), followed by intentional extraction of teeth #31 and #32. The extracted tooth was placed in saline until it was reimplanted (Fig. 5). Tooth #32 was discarded because it was profoundly hypoplastic. After properly cleaning the sockets with betadine and saline, tooth #31 was reimplanted in the socket of tooth #32 followed by a radiograph to confirm the position of the reimplanted tooth (Figs 6A to C). Sutures were then used to secure the platelet-rich fibrin (PRF) and bone graft (Figs 7A and B). Lower incisors were labially stabilized with Interlig (Angelus Interlig) and

Fig. 4: Surgical excision under local anesthesia

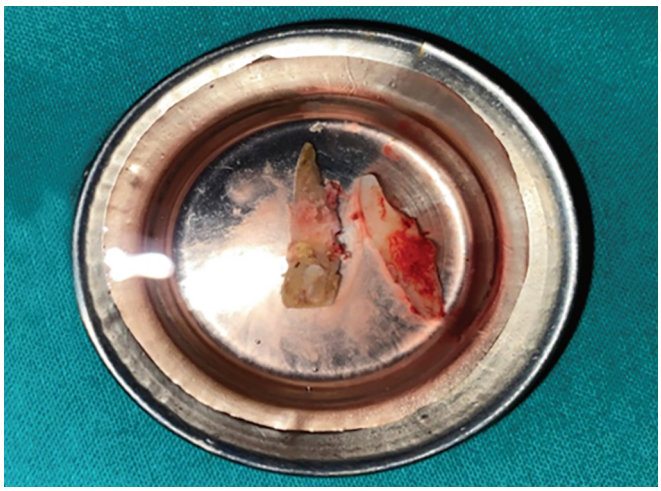
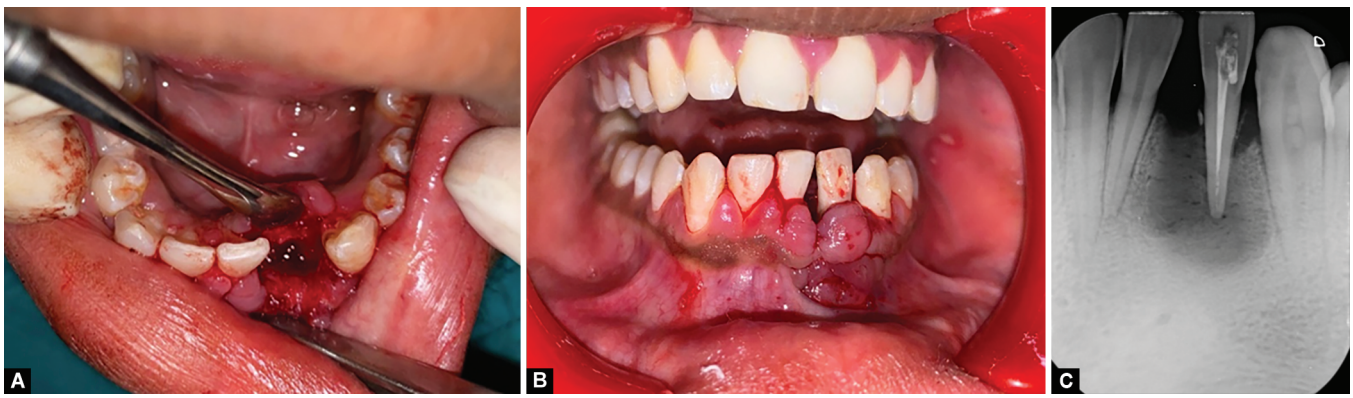
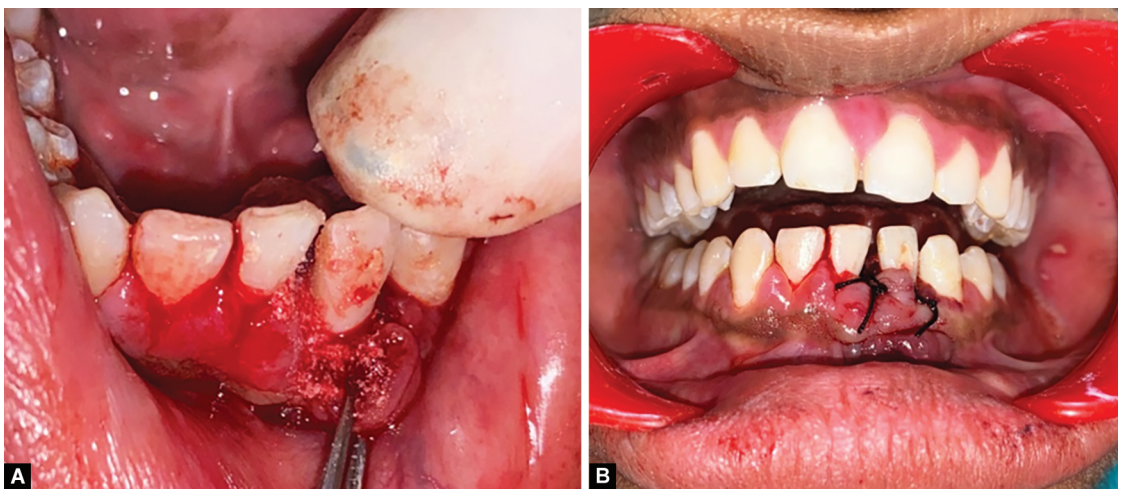


Fig. 5: Extracted incisors kept in saline



Figs 6A to C: (A) Location of tooth #32 socket; (B) Reimplantation of tooth #32 in tooth #31 socket; (C) Position checked on radiograph



Figs 7A and B: (A) Bone graft placement; (B) Interrupted sutures placed

lingually stabilized with 21 gauge stainless steel wire (Fig. 8). The periodontal dressing was given, and the excised tissue was sent for histopathological examination. The patient was advised to consume soft foods and practice good dental hygiene.

Histological examination showed parakeratinized hyperplastic stratified squamous epithelium with connective tissue stroma comprising a loose to dense arrangement of collagen fibers with plump to spindle-shaped fibroblasts. Aggregates of inflammatory infiltrate predominantly comprise lymphocytes and mononuclear cell components evident in the stroma (Fig. 9). Hence, based on histological and clinical features, a final diagnosis of inflammatory fibrous hyperplasia was made.

Suture removal was done on the 10th day after surgical excision. After 1 month, the patient was recalled, and the Metapex dressing was changed. There was no evidence of mobility; therefore, the splinting was removed. After 2 months, the final step, canal obturation, was completed, and oral hygiene instructions were reinforced again (Fig. 3C).

After 6 months of follow-up, IOPA demonstrated that radiolucency had decreased and the formation of trabecular bone was seen (Fig. 3D). There was a complete reduction in radiolucency after a time interval of 12 months (Fig. 10). The patient was pleased with the therapy and aesthetics achieved without the use of orthodontics.

Discussion

The terminology "inflammatory hyperplasia" refers to a wide spectrum of typically occurring oral mucosal nodular growths that histologically indicate inflamed fibrous and granulation tissue.[5]

A benign soft tissue reaction to local irritation is inflammatory fibrous hyperplasia or fibrous hyperplasia. It could be caused by calculus, fractured filling, a sharp tooth, excessive plaque, or other irritants.[6]

The gingival overgrowth in this case report was caused by poor dental hygiene and crowding of the lower anterior teeth. A

Fig. 10: Follow-up after 12 months

Fig. 8: Tooth stabilization labially and lingually

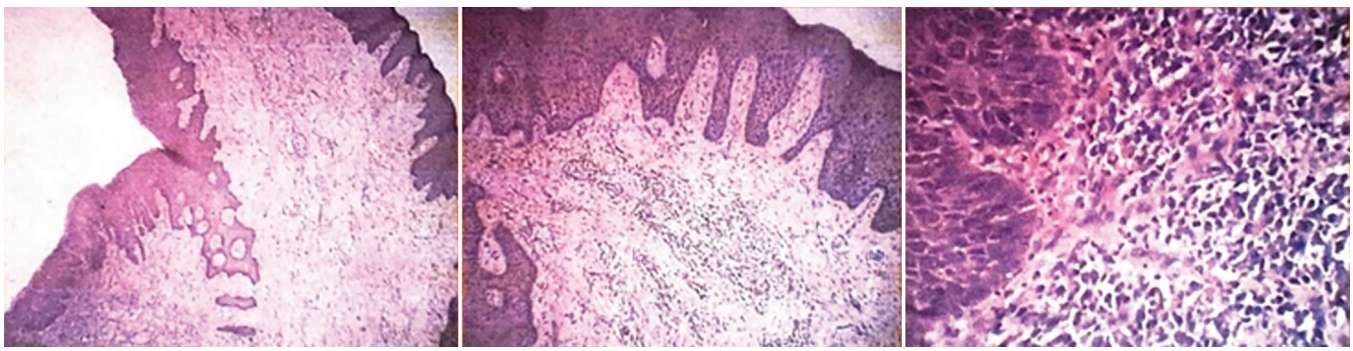


Fig. 9: Histological aspect of growth

condition like crowded teeth causes issues for the patient. Crowded teeth are difficult to brush because food debris in the interdental region is difficult to reach with a toothbrush, resulting in plaque collection and calculus formation. This will lead to further dental cavities and gingivitis, as well as more deterioration of periodontal tissue, resulting in tooth mobility.[7–12]

The patient's guardian's lack of understanding and failure to recognize immediate symptoms and signs resulted in a missed opportunity for early professional analysis and follow-up. According to Reddy et al.,[13] the need for specialist care comes only when a lesion causes symptoms or impacts oral appearance.

A biopsy is very important to obtain an accurate diagnosis.[8,9] However, due to the identical clinical characteristics observed in hyperplastic growth, making a diagnosis in cases like this one is difficult. Peripheral giant cell granuloma and giant cell fibroma, for example, are in the differential diagnosis of inflammatory fibrous hyperplasia. Mucocele, neurofibroma, and benign and malignant salivary gland tumors are among the other possible diagnoses. Certain fibromas, typically those of the gingiva, exhibit zones of widespread or localized calcification and on occasion ossification, and these lesions are sometimes referred to as ossifying fibroid epulis, peripheral ossifying fibroma, peripheral odontogenic fibroma, or peripheral cementifying fibroma.[14]

The primary instruments for soft tissue surgery are lasers, scalpels, and conventional electrosurgery units. Scalpels have been widely used for many years due to their ease of use, precision, and minimal tissue damage.

The preferred therapy is surgical excision, which includes the removal of local irritants to avoid recurrence. Hyperplastic lesions should be managed conservatively. Irritating contaminants should be eliminated locally. Any lesions that fail to subside must be eliminated through surgery. The patient should be followed up on as the condition tends to recur.[15]

This course of action had been employed in the current case and was supplemented with gingivoplasty for aesthetically pleasing reasons. The removed tissue was sent for histological analysis, and the findings were identical to those published in the scientific literature for the diagnosis of inflammatory fibrous hyperplasia.[16–18] Researchers believe the prognosis is outstanding if the etiological source is eradicated[16,17] as indicated in the current case, in which there was no recurrence during the 12-month follow-up period.

Conclusion

Gingival overgrowth may disrupt mastication and speech, and it is exceedingly debilitating, making it unattractive if located in the anterior region. Local factors, such as dental plaque and calculus, promote gingival enlargement. As a result, patient encouragement and participation in the treatment process play a key role in favorable case management and outcomes.

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