Gingivectomy and Frenectomy in a 19-Year-Old: A Case Report

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Abstract:
This case report presents the successful management of a 19-year-old male patient with gingival overgrowth and abnormal frenum attachment in the upper anterior tooth region. The patient sought intervention due to aesthetic concerns and difficulty in maintaining oral hygiene. The treatment plan involved gingivectomy to remove excess gingival tissue and frenectomy to correct the abnormal frenum attachment. Under local anaesthesia, precise surgical excision was performed, followed by post-operative care. The patient experienced satisfactory healing and reported improved aesthetics and oral hygiene maintenance during follow-up examinations. This case underscores the effectiveness of gingivectomy and frenectomy in addressing aesthetic and functional concerns in young individuals and emphasizes the importance of interdisciplinary collaboration between periodontists and orthodontists.

Keywords: Gingivectomy, Frenectomy, Gingival Overgrowth, Abnormal Frenum Attachment, Oral Surgery, Periodontal Health, Aesthetic Improvement
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Introduction:

Gingival overgrowth and abnormal frenum attachment represent common oral health issues that can significantly impact an individual's quality of life. Excessive gingival tissue may not only compromise aesthetics but also impede proper oral hygiene practices, leading to an increased risk of periodontal disease. Similarly, abnormal frenum attachment, particularly in the anterior region, can contribute to spacing between teeth, impaired speech, and compromised oral function. Gingivectomy and frenectomy are established surgical interventions aimed at rectifying these issues, thereby restoring both the aesthetic and functional aspects of oral health.[1]

Case Presentation:

The 19-year-old male patient presented with a chief complaint of excessive gingival tissue covering the upper anterior teeth, which not only affected his smile, aesthetics but also posed challenges in maintaining adequate oral hygiene. Past dental history revealed that patient underwent orthodontic treatment due to which he was finding difficulty in maintaining adequate oral hygiene hence there was a inflammatory gingival enlargement. Upon clinical examination, a prominent labial frenum attachment was observed. Because of gingival overgrowth and abnormal frenum (Figure-1)patient had difficulty in brushing teeth.

Method:

Prior to proceeding with surgical intervention, a comprehensive pre-operative assessment was conducted. This included a thorough periodontal evaluation to assess the health of the supporting structures of the teeth. Additionally, the patient's medical and dental histories were meticulously reviewed to identify any underlying conditions that may impact the treatment outcome.

First Procedure: Gingivectomy using Electrosurgery (Figure 3)
Preparation involved ensuring the patient's comfort through local anesthesia and maintaining a sterile environment. Incisions were planned along the gingival margin using a scalpel, marking the boundaries of the excess gingival tissue to be removed; excess gingival tissue was excised using electrocautery. This technique allowed for accurate removal of tissue while minimizing damage to surrounding structures. Following tissue removal and hemostasis, additionally, a periodontal pack was applied over the surgical site to promote healing and protect the area during the initial phase of recovery.

Second Procedure: Frenectomy with Classical Technique
The frenectomy procedure (Figure 2) for upper anterior teeth begins with administering local anesthesia to ensure patient comfort. A precise incision is made using a scalpel by securing the frenum with a hemostat for better control. Excess tissue is carefully excised, minimizing trauma to surrounding structures. Haemostasis is achieved to control bleeding, and the incision is closed with sutures. Detailed post-operative instructions are provided to promote optimal healing, and follow-up appointments are scheduled to monitor progress and address any concerns. After the surgical procedures, the patient was prescribed a course of antibiotics and analgesic to prevent pain, infection and promote healing.

Result:
The patient experienced a smooth post-operative recovery, characterized by minimal discomfort and swelling. He reported a noticeable improvement in smile, aesthetics and expressed satisfaction with the overall outcome. Follow-up examinations conducted at 1 week, 1 month (Figure 4) and 3 months post-surgery revealed favourable healing outcomes, with stable gingival contours and no signs of complications.

Discussion:
Gingival overgrowth, also known as gingival hyperplasia or hypertrophy, can arise from various factors such as poor oral hygiene, genetic predisposition, hormonal changes (as seen in puberty or pregnancy), certain medications (such as anticonvulsants or calcium channel blockers), or systemic conditions like leukaemia or diabetes. [2] This condition not only affects the appearance of the smile but also compromises periodontal health. The increased gingival tissue creates pockets where plaque and bacteria can accumulate, leading to inflammation, bleeding gums, and eventually, periodontal disease if left untreated. Gingivectomy serves as a definitive treatment option to remove the excess tissue, allowing for better access for oral hygiene practices and reducing the risk of periodontal complications.[3]

Abnormal frenum attachment, particularly in the anterior maxillary region, can manifest as a labial frenum that extends too far down or a high maxillary labial frenum. These conditions can result in diastemas (gaps between teeth), restricted lip movement, and altered speech patterns. Frenectomy aims to address these issues by surgically releasing or modifying the frenum attachment, thereby improving the functional and aesthetic aspects of the smile. By enhancing lip mobility and reducing tension, frenectomy facilitates proper tooth alignment, speech articulation, and oral hygiene maintenance.[4]

Interdisciplinary collaboration among periodontists, orthodontists, and oral surgeons is vital for comprehensive patient care, especially when gingivectomy and frenectomy procedures are required. Periodontal treatment is essential before orthodontic interventions to establish a healthy foundation for tooth movement and address any underlying issues that may impede treatment progress. Additionally, post-operative periodontal therapy following orthodontic treatment helps maintain periodontal health and stability, ensuring long-term success. By integrating periodontal care into the orthodontic plan, clinicians can achieve optimal outcomes and enhance overall oral health.[5]

Patient education and compliance with post-operative instructions are essential for successful treatment outcomes. Patients should be advised on proper oral hygiene practices, including regular brushing, flossing, and professional dental cleanings to maintain periodontal health post-procedure. Additionally, lifestyle modifications, such as smoking cessation and dietary changes, may be recommended to promote optimal healing and prevent recurrence of gingival overgrowth.[6]

Gingivectomy and frenectomy procedures play pivotal roles in the management of gingival overgrowth and abnormal frenum attachment, respectively. These surgical interventions not only address aesthetic concerns but also contribute to improved periodontal health and oral function.[7] Through interdisciplinary collaboration and patient-centered care, clinicians can achieve favorable outcomes and enhance the overall quality of life for individuals undergoing these procedures.

Conclusion:

In conclusion, this case report highlights the successful management of excessive gingival tissue and abnormal frenum attachment in a 19-year-old male patient through gingivectomy and frenectomy procedures. By addressing both aesthetic and functional concerns, these surgical interventions have significantly enhanced the patient's quality of life and oral health. This case uses the importance of early intervention and interdisciplinary collaboration in achieving optimal treatment outcomes in young individuals with periodontal problem.

REFRENCES:

1. Devishree, Gujjari SK, Shubhashini PV. Frenectomy: a review with the reports of surgical techniques. J Clin Diag Res 2012;6:1587-1592.
2. Jhaveri H, Jhaveri Hiral. The Aberrant Frenum. Dr. PD Miller the father of periodontal plastic surgery 2006, 29-34.
3. Dibart S, Karima M, Dibart Serge, Karima Mamdouth. Practical Periodontal Plastic Surgery. Germany: Blackwell Munksgaard; Labial frenectomy alone or in combination with a free gingival autograft 53.
4. Fiorotti RC, Bertolini MM, Nicola JH, Nicola EM. Early lingual frenectomy assisted by CO2 laser helps prevention and treatment of functional alterations caused by ankyloglossia. Int J Orofacial Myology 2004;30:64-71.
5. Newman MG, Takei HH, Klokkevold PR, Carranza FA, eds. (2012). Carranza's clinical periodontology (11th ed.). St. Louis, Mo.: Elsevier/Saunders. ISBN 978-1-4377-0416-7.
6. Orozco-Páez J, Méndez-Rodríguez MA, Rodríguez-Cavallo E et al. Protein carbonylation associated with nickel liberation in orthodontic gingival overgrowth. Arch Oral Biol. 2021 May;125:105103.
7. Lindhe, J. (2015). Clinical Periodontology and Implant Dentistry. 6th Edition, Wiley Blackwell.

Figure 1 : Pre-operative view with inflammatory enlargement

Figure 2: Frenectomy procedure using classical method

Figure 3: Post-operative view after gingivectomy (ELECTROSURGERY)

Figure 4: Post-operative view after 1 month.