

Case report

Conventional Gingivectomy for the Management of Gingival Enlargement: A Case Report

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ABSTRACT

Background: Gingival enlargement is an increase in gingival tissue volume that may result from inflammatory, systemic, medication-induced, or local factors. Tooth malposition can promote plaque accumulation and chronic gingival inflammation, leading to gingival enlargement. **Purpose:** This case report discusses the management of gingival enlargement using conventional gingivectomy. **Case:** A 40-year-old male presented with a chief complaint of enlarged gingiva. Intraoral examination revealed gingival enlargement in the anterior mandibular region. **Case Management:** Initial periodontal therapy consisting of scaling and root planning was performed, followed by conventional gingivectomy and Dental Health Education (DHE). The surgical procedure aimed to remove excess gingival tissue, restore physiological gingival contours, and facilitate effective plaque control. **Conclusion:** Conventional gingivectomy successfully resolved the gingival enlargement in the affected teeth. Clinical evaluation demonstrated satisfactory gingival healing and improved oral hygiene status, as evidenced by a good Oral Hygiene Index (OHI) score.

Keywords: Gingivectomy, Gingival Enlargement, Periodontal Surgery, Gingival Overgrowth, Gingiva

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INTRODUCTION

Gingival enlargement is an overgrowth of the gingival tissue beyond its normal size, resulting in an increase in gingival

dimensions that manifests as a clinical sign in the gingiva¹. It commonly occurs as a direct consequence of dental plaque accumulation, which induces gingival

inflammation². Gingival enlargement can be classified based on pathological changes and etiological factors. From a pathological perspective, gingival enlargement may occur due to acute or chronic inflammatory changes; however, it is more commonly associated with chronic inflammation. Based on etiology, gingival enlargement caused by the systemic use of medications is referred to as drug-induced gingival overgrowth (DIGO). Any form that cannot be classified within these categories is known as idiopathic gingival enlargement³.

In the early stages, gingival enlargement begins as localized protrusions or balloon-like swellings involving the interdental papillae and gingival margins³. These enlargements may progressively increase in size and eventually cover portions of the tooth crowns². The condition is generally associated with mild discomfort, although pain may become more pronounced in patients with secondary infectious complications⁴.

The objectives of periodontal treatment are not only to eliminate periodontal disease but also to improve aesthetic outcomes⁵. Aesthetics plays a significant role in an individual's self-confidence and quality of life. Gingivectomy is a surgical procedure involving the excision of gingival tissue⁶. Comprehensive

management of gingival enlargement includes conservative measures, such as patient education, reinforcement of oral hygiene practices, and periodontal therapy⁷. However, in many cases, particularly those characterized by progressive enlargement or fibrotic tissue changes, surgical intervention is required. Conventional gingivectomy remains an effective treatment modality for restoring healthy gingival contours and achieving optimal periodontal function⁸.

CASE

A 40-year-old male presented to the dental clinic with a chief complaint of gingival enlargement in the anterior mandibular region that had persisted for approximately two years. The enlargement was asymptomatic. The patient had previously attempted self-treatment using traditional herbal remedies; however, no improvement or changes were observed. No previous dental treatment had been performed for this condition. The patient reported brushing his teeth twice daily and denied any history of systemic disease or allergies to medications, foods, or environmental factors. He also stated that he had never undergone professional dental treatment before.

Extraoral examination revealed no abnormalities. Intraoral examination showed gingival enlargement in the anterior mandibular region involving teeth 32, 31, 41, and 42, with positive Bleeding on Probing (BOP). Periodontal probing revealed pocket depths of 4–3–4 mm on tooth 32, 4–4–4 mm on tooth 31, 5–6–6 mm on tooth 41, and 6–6–6 mm on tooth 42. Oral Hygiene Index (OHI) assessment yielded a score of 6.3, indicating poor oral hygiene.



Figure 1. Intraoral condition

Based on the subjective and objective findings, the patient was diagnosed with gingival enlargement associated with tooth malposition. The proposed treatment plan consisted of initial periodontal therapy, including scaling and root planing, followed by conventional gingivectomy. The prognosis was considered favorable due to the absence of systemic disease and the patient's cooperative attitude and high motivation to maintain good oral hygiene.

CASE MANAGERMENTS

At the first visit, the patient received Dental Health Education (DHE) regarding his condition and the objectives of the proposed treatment. During the consultation, the diagnosis and etiology of the condition were explained, emphasizing that the gingival enlargement was associated with the malposition of the mandibular anterior teeth. The patient was informed that the treatment plan would include scaling and root planing (SRP) using an ultrasonic scaler, followed by conventional gingivectomy. Education was provided on the importance of removing dental plaque and calculus, as their persistence may exacerbate the condition of the periodontal supporting tissues. The patient was therefore instructed to maintain proper oral hygiene by brushing all tooth surfaces correctly, chewing on both sides of the mouth, and attending routine dental check-ups every six months. Subsequently, the patient was asked to sign an informed consent form as authorization for the planned dental procedures. Scaling and root planing were then performed using an ultrasonic scaler, followed by polishing of the tooth surfaces with a prophylactic paste–pumice mixture applied using a polishing brush. The patient was scheduled

for a follow-up visit seven days after SRP for clinical evaluation.

At the second visit, a follow-up evaluation was conducted after scaling and root planing (SRP). Subjective examination revealed persistent gingival enlargement in the anterior mandibular region. Based on the findings of the clinical evaluation, the patient's gingival condition was determined to be an indication for gingivectomy. The patient was informed about the surgical procedure, and informed consent was obtained prior to treatment.

At the third visit, conventional gingivectomy was performed on teeth 32, 31, 41, and 42. The procedure was initiated by asepsis of the operative field using povidone-iodine. Local infiltration anesthesia was then administered in the mucobuccal fold region of teeth 32, 31, 41, and 42 using a Citoject syringe. After adequate anesthesia had been achieved, the area was tested with a dental explorer to confirm complete numbness of the surgical site.

Periodontal pocket depths were subsequently measured using a periodontal probe in a systematic manner from the distal to the mesial aspect of each tooth. A pocket marker was then used to identify the base of the periodontal pockets by inserting its pointed tip into the pocket and

applying pressure toward the gingival surface, thereby creating bleeding points that served as guides for the incision. This procedure was also performed systematically from distal to mesial.

Gingival incision was carried out using a No. 15 scalpel blade and blade handle. An external bevel incision was made from distal to mesial, approximately 2 mm apical to the bleeding points and directed coronally on the facial surface using a Kirkland knife. The incision was initiated slightly apical to the bleeding points at an angle of approximately 45°. Interproximal gingival tissue was excised using an Orban knife.

Following tissue excision, scaling and root planing were performed using a Gracey curette No. 1–2 or a universal curette to remove granulation tissue and residual calculus until the root surfaces were smooth and free of deposits. Gingivoplasty was subsequently carried out to recontour the gingival tissues and restore a physiologic gingival architecture. This procedure was performed using a No. 15 scalpel blade along the cervical region of the teeth in a continuous distal-to-mesial direction. The scalpel blade was positioned at approximately 90° to the gingival surface and moved with a scraping motion until a normal gingival contour was

achieved, extending to the basal layer (approximately 1.5–2 mm).

Finally, the surgical site was irrigated with a sterile solution to remove tissue debris and ensure adequate cleansing of the operative field. The surgical site was subsequently irrigated with sterile saline solution and povidone-iodine. The area was then gently dried using sterile gauze while gingival adaptation was performed by applying pressure to the gingival tissues against the tooth surfaces for approximately 2–3 minutes to achieve hemostasis. Once the surgical field was clean and dry, a periodontal dressing (Coe-Pack) was applied to protect the wound, assist in hemorrhage control, and reduce the risk of postoperative infection. The dressing was prepared by mixing the base and catalyst in a 1:1 ratio using a wooden spatula, with the addition of iodine glycerin to prevent adhesion during manipulation.

The patient was prescribed antibiotics and analgesics for postoperative management. Before discharge, postoperative instructions were provided, including avoiding hot and spicy foods that could provoke bleeding, refraining from eating or drinking for one hour following the procedure, maintaining oral hygiene by brushing twice daily while avoiding the

treated area, abstaining from smoking, and taking the prescribed medications as directed. The patient was scheduled for a follow-up visit 14 days after surgery.



Figure 2. Preparation and Asepsis of the Surgical Site



Figure 3. Infiltration Anesthesia of Teeth 32, 31, 41, and 42 Using a Citoject Syringe



Figure 4. Bleeding Points Marked with a Pocket Marker



Figure 5. Gingival Incision Using a No. 15 Scalpel Blade



Figure 6. Irrigation



Figure 7. Gingival Contour After Gingivoplasty



Figure 8. Coepack

At the fourth visit, a follow-up examination was conducted to evaluate the outcome of the gingivectomy procedure. Subjective assessment revealed that the patient had no complaints. Extraoral examination showed no abnormalities, while intraoral examination demonstrated periodontal pocket depths of 2–1–1 mm on tooth 32, 2–1–2 mm on tooth 31, 1–1–2 mm on tooth 41, and 2–1–2 mm on tooth 42. The Oral Hygiene Index (OHI) score was 0.8, indicating good oral hygiene. The gingival enlargement had completely resolved, and no signs of gingival edema or erythema were observed. Clinical

evaluation revealed satisfactory gingival contour and healthy periodontal tissue healing. The patient was advised to maintain optimal oral health by brushing twice daily with fluoride-containing toothpaste, using a soft-bristled toothbrush, rinsing with an antimicrobial mouthwash, and cleaning the interdental areas with dental floss. In addition, the patient was encouraged to attend regular dental check-ups at least once every six months to ensure long-term periodontal health and prevent disease recurrence.



Figure 9. Postoperative Gingival Condition at 14 Days

DISCUSSION

The discussion of gingival diseases is generally associated with dental plaque accumulation, endogenous hormonal fluctuations, the use of certain medications, systemic diseases, and malnutrition⁴. The most common clinical features of this condition include signs of inflammation accompanied by gingival enlargement due to edema or fibrosis, changes in color

ranging from erythematous to bluish-red, bleeding on probing, and increased gingival exudate⁶. This clinical condition may be further exacerbated by hormonal factors, such as puberty and pregnancy, as well as by the use of specific medications. Chronic bacterial irritation triggers an inflammatory response that leads to gingival enlargement⁵. Excessive gingival overgrowth can compromise esthetics and result in significant adverse effects, particularly when associated with the use of anticonvulsants, immunosuppressants, and calcium channel blockers.

Gingival enlargement is a common periodontal condition, and its management depends on the underlying etiology⁹. In cases of tooth malposition, such as crowding or tooth displacement, as observed in the present patient, effective oral hygiene maintenance becomes more difficult because certain tooth surfaces are inaccessible to routine toothbrushing¹. Consequently, plaque and calculus accumulation may occur, predisposing the gingival tissues to chronic inflammation and enlargement. Gingival enlargement associated with plaque and calculus accumulation should be managed through professional plaque and calculus removal by scaling and root planing, accompanied by reinforcement of the patient's oral

hygiene practices to prevent disease progression and recurrence.

Periodontal therapy consists of four phases: Phase I (non-surgical therapy), Phase II (surgical therapy), Phase III (restorative therapy), and Phase IV (maintenance therapy)¹⁰. In the present case, the primary etiological factor was slight tooth malposition, which hindered effective toothbrushing and facilitated the accumulation of bacterial plaque and calculus¹. Therefore, the removal of plaque and calculus deposits from the tooth surfaces was essential for controlling the disease process¹¹.

Initial therapy represents the first stage of periodontal treatment and plays a crucial role in determining the subsequent treatment approach. During this phase, scaling and root planning are performed to eliminate plaque and calculus from the tooth surfaces⁶. In cases of gingival enlargement, scaling and root planning may be sufficient when the gingival tissues appear soft, exhibit color changes associated with inflammation, and demonstrate edema and cellular infiltration¹⁰. This approach is generally indicated when the degree of gingival enlargement is mild and does not interfere with the removal of deposits from the tooth surfaces¹¹.

However, when gingival enlargement is predominantly fibrotic and shows little or no regression following scaling and root planning, or when the enlarged gingival tissue obscures plaque and calculus deposits and limits access for adequate debridement, surgical intervention becomes necessary⁵. In such cases, gingivectomy is indicated to remove the excessive gingival tissue, restore normal gingival contours, and facilitate effective plaque control⁸.

Conventional gingivectomy performed with a scalpel remains the gold standard for the management of gingival enlargement due to its numerous clinical advantages⁸. The use of a No. 15 or 15C scalpel blade allows for precise and well-defined incisions while minimizing damage to the surrounding tissues, which may occur as a result of the thermal effects associated with laser and electrosurgical techniques¹². Furthermore, the conventional approach has been shown to provide predictable and favorable esthetic outcomes, promote relatively rapid epithelial healing, and offer a more cost-effective treatment option for patients⁸.

CONCLUSION

In the present case, gingivectomy treatment resulted in a significant improvement in gingival appearance,

enhanced oral hygiene status, and a high level of patient satisfaction. These outcomes demonstrate that satisfactory esthetic improvement can be achieved without complex interventions, provided that an accurate diagnosis is established and appropriate treatment indications are identified. Furthermore, the patient's compliance with the oral hygiene instructions and postoperative recommendations played a crucial role in the success of the treatment and the maintenance of periodontal health.

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REFERENCES

1. Safira S, Faizah A. Gingivektomi Pada Enlargement Gingiva Karena Malposisi Gigi Individual. - [Internet]. 2026 Jan. 9 [cited 2026 Jul. 29];8(1):20-27.
2. Andriani I, Nureza R , Davina A., (2025). Gingivectomy In Altered Passive Eruption As An Aesthetic Gingival Correction Approach: A Case Report. *B-Dent: Jurnal Kedokteran Gigi Universitas Baiturrahmah*, 12: 2;

- 158-164.doi:
<https://doi.org/10.33854/jbd.v12i2.2027>.
3. Artika, M. deby. (2022). Gingivectomy In Gingival Enlargement Cases Using Conventional Technique : Gingivektomi Pada Kasus Gingival Enlargement Menggunakan Teknik Konvensional . Interdental Jurnal Kedokteran Gigi (IJKG), 18(2), 62–66. <https://doi.org/10.46862/interdental.v18i2.5090>.
 4. Tomar N, Jain G, Sharma A, Wadhawan A. Inflammatory Gingival Enlargement - A Case Report. International Journal of Oral Health Dentistry. 2015; 1(3):146-148
 5. Watri D, How KC, Susanna H. Management of gingival enlargement in patient with non surgical treatment: A case report. *SCIENCE: J Inovasi Pendidikan Matematika dan IPA*. 2025;5(1).DOI: <https://doi.org/10.51878/science.v5i1.474>.
 6. Intan S.M & Ariyani F., (2025). Perawatan Gingivektomi Pada Pasien Enlargement Gingiva, Natural: *Jurnal Pelaksanaan Pengabdian Bergerak bersama Masyarakat*, 3(3).
 7. Negara M.C, Revina D.W.M., (2022), Surgical Management of Plaque Induced Gingival Enlargement: A Case Report, *Sriwijaya Journal of Dentistry (SJD)*, Volume 3 Issue 2; 70-76. <https://doi.org/10.32539/sjd.v3i2.37>.
 8. Dalal A.M, Oza R.R, Unnati S, Tikeshwari G, Shirbhate U, (2024) Conventional Gingivectomy Procedure in the Management of Orthodontic-Induced Gingival Overgrowth: A Case Report. *Cureus* 16(7):e64556. <https://doi.org/10.7759/cureus.64556>.
 9. Tiwari, A.V, Suwarna D, Swapnil M., (2024). Chronic Inflammatory Gingival Enlargement: A Case Report, *Cureus*, 16(2):e64556. <https://doi.org/10.7759/cureus.64556>.
 10. Carranza, F.A., Newman, M.G., Takei, H.H., Klokkevold, P.R., 2015, Textbook Carranza's. Clinical Periodontology, 12th Ed, China, Saunders Elsevier.
 11. Andriani I, Ana M, Amallia N.F, Clearesta A.A., (2026). "Case Report" Gingivectomy and Gingival Scraping for Aesthetic Enhancement in a Fixed Orthodontic Patient. Improve Quality in Dentistry (IMUNITY). Volume 3, Issues 1. <https://doi.org/10.18196/imunity.v3i1.152>.
 12. Fany M., Maria F, Depi P., (2025), Clinical Management of Conventional Gingivectomy in an Adult Patients with Gingival Enlargement, *Sriwijaya Journal of Dentistry*, Volume 6 Issues 2 : 79-89. <https://doi.org/10.32539/9h1jeq33>.