



## Research article

# Gingival Curettage for the Management of Chronic Periodontitis: A Case Report

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### Abstract.

**Background:** The current therapy for periodontitis entails periodontal debridement, which involves the removal or disruption of bacterial plaque, its byproducts and retained calculus deposits from the coronal surfaces, root surfaces and the tissue walls of the periodontal pocket. Gingival curettage was designed to promote new connective tissue attachment to root surfaces by removing the pocket lining and junctional epithelium with a curette.

**Objective:** This case report discusses the gingival curettage for periodontitis treatment on upper right posterior of a 25-year-old female patient with a chief complaint of occasional bleeding while brushing the teeth.

**Case Report:** Intraoral examination showed bleeding on probing and 4-mm periodontal pocket on the upper right posterior. Periapical radiographic examination of the upper right posterior displayed alveolar crest reduction.

**Conclusion:** The accomplishment of the treatment was proven by gingival curettage after the second visit.

**Keywords:** chronic periodontitis, curettage, periodontal regeneration

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## 1. Introduction

Periodontitis is a disease of the supporting tissues of the teeth involving the gingiva, periodontal ligament, cementum, and alveolar bone due to an inflammatory process [1]. Inflammation came from untreated gingiva (gingivitis), and if the process continues it will invade the underlying structures so that pockets will form which causes inflammation to continue and damage the bones and tissues supporting the teeth [1][2]. Bacteria are the main etiology that can cause periodontal destruction directly through the action of their components, particularly lipopolysaccharide (LPS present in the cell walls of gram-negative bacteria) [3].

The severity of periodontitis is proportional to the extent of tissue damage caused by the host response, environmental or genetic risk factor [4]. Non-surgical periodontal therapy is the first stage of therapy in a series of procedures that define periodontal

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treatment. The removal of biofilms and mineral deposits from the tooth surface is a basic and defining aspect of periodontal therapy [5]. Current therapy for periodontitis involved periodontal debridement, which involves the removal of bacterial plaque and its products, and calculus deposits that are severed from the coronal surfaces, root surfaces, and the tissue walls of periodontal pockets [6].

Mechanical root debridement is the basic of periodontal therapy aimed at removed of subgingival biofilm and calculus, which together with the maintenance patient's oral hygiene will prevent bacterial recolonization and supragingival biofilms [7]. For many years, gingival curettage a popular periodontal-treatment modality. As originally described, gingival curettage was designed to induce new connective tissue attachment to root surfaces by removing the pocket lining and junctional epithelium with a curette [4]. This debridement is usually used with hand instruments (curettes and scalers). This conventional protocol is gold standard of periodontal therapy for most patients with chronic periodontitis. Gingival curettage is well documented in many reviews showed of gains in clinical attachment levels (CAL), reductions in probing pocket depths (PPD), and in the frequency of bleeding on probing (BOP) [8].

## 2. Case Report

A 25-year-old female patient came to the Periodontics Clinic of Rumah Sakit Gigi dan Mulut, Universitas Gadjah Mada Prof. Soedomo, Yogyakarta, Indonesia. The patient feels that her tooth look dirty, bad breath and sometimes bleeding when brushing. Extra-oral examination showed no significant findings. On intra-oral examination, was found bleeding on probing and 4 mm periodontal pocket on teeth 15 16 17 (Fig.1). The patient indicated relatively good oral hygiene (Silness and Loe). Periapical radiographic examination of the upper right posterior displayed reduction alveolar crest (Fig. 2).

Based on a through examination, the diagnosis of this case was confirmed as chronic periodontitis e.c plaque and calculus. There are no diagnostic challenges, such as access to testing, financial, and cultural, in determining the diagnosis.

After guiding a dental health education (DHE) followed by scaling and root planing at the first visit and control at second visit, a curettage gingival treatment plan was formulated. After discussing the clinical examination results, treatment plan, and risks associated with the surgical procedure, the patient gave verbal and written consent as evidenced by signing informed consent. Local infiltration anesthesia (Articaine hydrochloride 4% and Epinephrine in a ratio of 1:100,000) were administered in labial sides (Fig 3). The curette is selected so that the cutting edge is against the tissue



**Figure 1:** Intra-oral examination Figure 2. Periapical radiographic examination.



**Figure 2:** Periapical radiographic examination.

(Gracey no. 11-12 for mesial surfaces, Gracey no. 13-14 for distal surfaces). The instrument is inserted to engage the inner lining of the pocket wall, and it is then carried along the soft tissue, usually in a horizontal stroke (Figure 4). The pocket wall may be supported by gentle finger pressure on the external surface. The curette is then placed under the cut edge of the junctional epithelium to undermine it. During subgingival curettage, the tissues attached between the bottom of the pocket and the alveolar crest are removed with a scooping motion of the curette to the tooth surface. The entire surgical area was irrigated with saline solution (Fig 5) and adapted the tissue to the tooth by gentle finger pressure (Fig 6) followed by applying a resorbable periodontal dressing (Resopac) (Fig 7). The patient has prescribed an antibiotic (Amoxicillin 500 mg) every 8 hours for five days, the analgesic (Mefenamic acid 500 mg) orally if necessary, and the antimicrobial mouthwash Chlorhexidine 0.12% twice a day for two weeks starting after the periodontal dressing was absorbed to take care personal oral hygiene status.



**Figure 3:** Anesthesia.



**Figure 4:** Curette is inserted to engage the inner lining of the pocket wall.

### 3. Discussion

Gingival curettage is a surgical procedure to removal of pocket lining and junctional epithelium with a currettes. Gingival curettage is a different procedure that may be performed in conjunction with, or subsequent to, scaling and root planing (SRP) [1]. Many research and review showed clinical advantage of curettage over SRP alone was



**Figure 5:** Irrigated with saline solution.



**Figure 6:** Tissue adapted to the tooth by gentle finger pressure.



**Figure 7:** Application of periodontal dressing (Resopac).

eliminated when new connective tissue attachment was shown to be an unexpected goal. Gingival curettage, although surgical in nature, is a closed procedure [4]. Many research and review have confirmed that gingival curettage give some benefit when

compared to SRP alone in terms of probing depth reduction, attachment gain, or inflammation reduction [6].

Curettage resolve the removal of the chronically inflamed granulation tissue that forms in the lateral wall of the periodontal pocket. This tissue contains components of granulation and it may also contain pieces of unseen calculus and bacterial colonies [7]. This inflamed granulation tissue is lined by epithelium, and deep strands of epithelium penetrate into the tissue. The presence of this epithelium is construed as a barrier to the attachment of new fibers in the area [9].

Curettage can be performed as part of new attachment attempts in moderately deep intrabony pockets located in accessible areas in which a nonflap type of “closed” surgery is indicated [8]. Curettage can be attempted as a nondefinitive procedure to reduce inflammation when aggressive surgical techniques (e.g., flaps). It should be understood that, in these patients, the goal of pocket elimination is compromised, and their prognosis is impaired [10]. The clinician should attempt this approach only when the indicated surgical techniques cannot be performed and both the clinician and the patient have a clear understanding of its limitations [8]. Curettage is also frequently performed on recall visits as a method of maintenance treatment for areas of recurrent inflammation and pocket depth, especially where pocket reduction surgery has previously been performed. Careful probing should establish the extent of the required root planing and curettage [5].

## 4. Conclusion

Gingival curettage consists of the removal of the inflamed soft tissue lateral to the pocket wall and the junctional epithelium. Curettage as a nondefinitive procedure to reduce inflammation when surgical techniques (e.g., flaps) are contraindicated in patients as a result of their age, systemic problems, psychologic problems, or other factors. It should be understood that, in these patients, the goal of pocket elimination is compromised, and their prognosis is impaired.

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