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# Periodontal Surgery Combined with Multiple Extractions: A Case Report

Authors' Contribution:  
 Study Design A  
 Data Collection B  
 Statistical Analysis C  
 Data Interpretation D  
 Manuscript Preparation E  
 Literature Search F  
 Funds Collection G

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**Patient:** Male, 35-year-old  
**Final Diagnosis:** Periodontitis  
**Symptoms:** Gingival bleeding • tooth displacement • tooth mobility  
**Medication:** —  
**Clinical Procedure:** —  
**Specialty:** Dentistry

**Objective:** Unusual clinical course

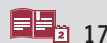
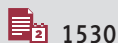
**Background:** Dental extraction is the only treatment option for terminal stage periodontal disease. Remnants of the pathological periodontal tissue can still be present after the extraction. Periodontal flap surgery contributes to achieving a better regeneration process at the extraction site. This case report includes a unique unconventional approach to periodontal therapy, not commonly reported in the literature.

**Case Report:** A 37-year-old man reported mobility and migration of the teeth in both jaws and was referred to the Periodontology Department of the University of Prishtina Dentistry School. The patient had no personal history of any current systemic condition or family history of similar gum conditions. After a clinical and radiographic evaluation (periodontal probing depth and gingival index), most of the front teeth of both jaws were diagnosed with terminal stage periodontal disease (stage 4, grade C). Modified Widman flap periodontal surgery was conducted on the maxilla and mandible to extract most of the front teeth. The sites of tooth extraction underwent profound debridement to remove the pathological soft tissues and sharp bone extrusions. The 4 postoperative follow-up visits at 1, 4, 8, and 10 weeks showed sufficient restitution of the wounds. He received temporary mobile prostheses for the areas with multiple extractions. After 10 weeks, he began treatment for a fixed prosthetic bridge. He had a satisfactory recovery and was followed up over 3 annual visits after his surgery.

**Conclusions:** Multiple extractions can be considered as a treatment option for terminal stage periodontitis.

**Keywords:** Chronic Periodontitis • Surgical Flaps • Tooth Extraction

**Full-text PDF:** <https://www.amjcaserep.com/abstract/index/idArt/930529>



## Background

Tooth loss continues to be a major global health problem [1]. Periodontitis is a disease (in addition to caries, orthodontic treatment, traumatic injuries, prosthetic indications, and tooth impaction) [2] that eventually leads to the loss of teeth, especially in later periods of life [3]. Periodontitis was reported to be the second major cause for tooth extraction [4]. The classification of periodontal diseases has been modified in several international workshops to accommodate up-to-date knowledge of a multitude of research with the more recent classification of 2017, grouping previous chronic and aggressive forms of periodontitis (1999 classification) under the single category of periodontitis [5]. An innovative move in the latest revised classification included a system of staging and grading for periodontitis, with a possible future adaptation with new evidence [6].

The treatment plan for periodontal disease is complex and depends on many underlying local and systemic factors that can interfere with the outcomes. The plan primarily depends on the stage of the periodontal disease, while other factors (including diabetes, smoking, immunodeficient diseases, alcohol abuse) can complicate the plans for improved outcomes. As there are no typical patterns of periodontal disease in the same patient, or even in the same jaw, the treatment plan is usually different for different areas of the mouth.

In the planning phase, an improvisation of techniques with fewer procedures to achieve optimal results can be considered. The combination of periodontal surgery executed simultaneously with multiple extractions is not routine, as the extractions are part of the basic treatment, while periodontal surgery is conducted at a later stage. Some conditions (including Down syndrome) require a team approach with conscious sedation for outpatients and in some cases, general anesthesia to facilitate conditions for multiple extractions [7] to prevent the microbial burden arising from the periodontal foci.

A particularly severe form, periodontal disease of rapid destruction (formerly known as aggressive periodontitis [AgP]) can affect individual teeth (localized) or groups of teeth (generalized) and accelerate tooth loss [8]. In a systematic review of treatment options for AgP, including multiple extractions, it was found that extraction at multiple sites was conducted during active or supportive periodontal treatment [9].

When examining the risk factors for tooth loss due to periodontal disease, authors have excluded cases of multiple extractions, since some teeth (lateral) are more susceptible to caries, and other teeth (front teeth) survive to a later stage when the periodontitis is more advanced or at the terminal stage [10]. The treatment of generalized periodontitis is often compromised if the teeth at the terminal stage (currently classified as stage

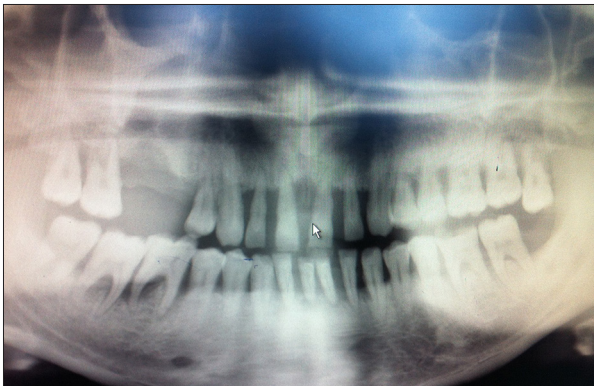
4, grade C) have gone through multiple nonsurgical extractions [11]. Therefore, a comprehensive periodontal treatment, including surgical treatment, can prevent tooth loss during the maintenance phase [12]. The maintenance phase consists of all future appointments to detect and treat early recurrences of the disease. There is little information in the literature that describes multiple extractions during periodontal surgery.

## Case Report

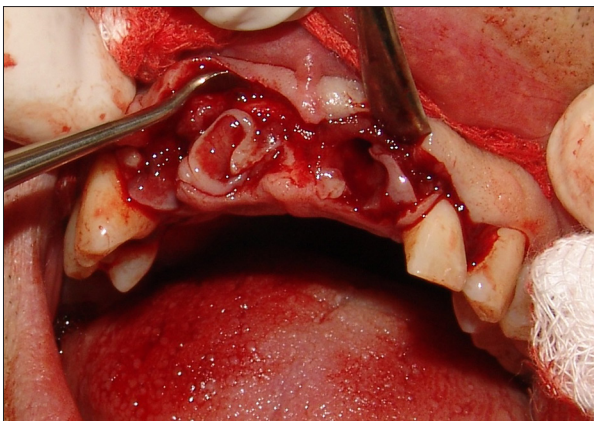
Our patient was a 37-year-old man who was a nonsmoker and had excessive mobility and migration of the front teeth of both jaws. He had no previous periodontal treatment and was referred to the Periodontology Department of the University of Prishtina Dentistry School. His history showed that the mobility and migration of the front teeth had progressed in the last 12 months, with minor gum bleeding and swelling for the past 5 years. The patient had no personal history of any present systemic condition or family history of similar gum conditions. Therefore, no risk for any underlying complications was anticipated. The clinical (**Figure 1**) and radiographic (**Figure 2**) examination revealed that most of the front teeth of both jaws were at the terminal stage of periodontal disease (stage 4, grade C), with an average periodontal pocket depth of 9 mm (normal gingival sulcus is up to 2 mm) and terminal mobility. Given this poor prognostic evaluation, the solution was extraction of the incisors from both jaws. As the extent of the periodontitis involved >30% of his teeth, it was classified as generalized periodontal disease. The other affected regions (apart from the front teeth) were classified as stage 3, grade B periodontitis. No genetic or microbiological profile was performed before or after the treatment. The patient gave verbal informed consent for the treatment plan, which included modified Widman flap periodontal surgery for the maxilla and mandible after the basic therapy regimen (removal of hard and soft deposits on the teeth), and the simultaneous extraction of the upper teeth (International Dental Federation numbers 11, 12, 21, and 22) and lower teeth (International Dental Federation numbers 32, 31, 41, and 42) (American Dental Association teeth numbers 7, 8, 9, 10, 23, 24, 25, and 26). No intraoperative regenerative procedure was planned. For the convenience of the patient, the sequence of the surgery was planned for both jaws on the same day. The maxillary teeth were extracted first and the mandibular teeth were extracted later in the same surgery. To prevent any concomitant bacteremia, a single dose of a commercially available combination of 1 g amoxicillin and clavulanic acid was administered orally 1 hour before surgery. During the surgical procedure, after completion of the planned extraction of teeth, the extraction sites went through a profound debridement to remove the pathological soft tissues and sharp bone extrusions. The regions of the other teeth with periodontitis (not to be extracted) were treated



**Figure 1.** Clinical view revealing the scale of the terminal stage periodontal disease in the front teeth.



**Figure 2.** Radiographic view of the bone resorption.



**Figure 3.** Intraoperative appearance of the site after extraction of the maxillary incisors.

with a standard periodontal surgical approach using modified Widman flap periodontal surgery to access the deep periodontal pockets to remove all the pathological changes from the root surface, bone defects, and gingiva (Figure 3). After the surgery, he was prescribed amoxicillin 500 mg 3 times/day for infection prevention, while instructions for an oral hygiene regimen were given for the day after the surgery. The patient had an uneventful recovery.



**Figure 4.** Restitution of the extraction sites after 4 weeks.



**Figure 5.** Restitution of the extraction sites after 8 weeks, with noticeable negligence of oral hygiene.

The postsurgical follow-ups were at 1, 4 (Figure 4), 8 (Figure 5), and 10 weeks. He was given a temporary mobile prosthesis (upon his request) during the recovery phase of the surgical sites for public appearances and social occasions. The extraction sites showed restitution of the adjacent tissues with normalization of the color and texture of the resilient mucosa. The patient's recovery period was delayed by a month due to moderate negligence of oral hygiene measures (Figure 5), after which he continued the treatment for fixed prosthetic appliances. The repeated instructions for better oral hygiene were necessary at this phase of recovery. The follow-up visits consisted of an annual visit to the Clinical Center for maintenance for at least 3 years after the surgery, and his fixed prosthetic appliances were in satisfactory condition.

The review board of the Dentistry School approved this case report for publication. The patient gave informed consent for the Dentistry School to use the data collected from this case for publication in conferences and journals.

## Discussion

The treatment options for periodontal diseases have been widely discussed in many scientific circles; however, the simultaneous combination of treatments that are otherwise



conducted at different stages of periodontal therapy are rarely found in the literature.

A review of the literature regarding surgical therapy for periodontitis identified a dearth of systematically designed randomized controlled trials; the existing trials have been criticized for their high risk of bias. Nevertheless, this review has acknowledged some innovative steps to enhance the outcomes of surgical treatment, including piezosurgery, video-scope-assisted minimally invasive surgery, regenerative procedures aided with biologic agents, and promising research using stem cells [13].

The patient in the current case report was diagnosed with rapidly advancing periodontitis and some areas of partially terminal stages of periodontitis. Given his persistence to accelerate treatment procedures to improve his appearance due to his public profile, he underwent unconventional, improvised periodontal surgical treatment with simultaneous multiple extractions, which seemed to be a satisfactory solution for him. However, it was not necessarily an improvement on the basic standards of periodontal treatment.

Periodontitis is one of the major causes of tooth loss, especially in the later periods of life. A study in Kuwait found that periodontitis is the second major cause of tooth loss (37.4%), while caries is the first cause, accounting for 43.7% of tooth loss. When compared within the age groups, periodontitis was the major cause of tooth loss for patients >40 years old [3].

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The extraction of teeth compromised by terminal periodontitis is usually planned at the initial phase of basic therapy, while teeth with better periodontal prognosis undergo either non-surgical or surgical procedures to eliminate periodontal pockets. The gravest form of periodontal disease that has rapid onset and progression is AgP. While the tooth loss associated with AgP has been reported to be lower with active periodontal therapy [14,15], it shows an increased tooth loss during supportive (maintenance) therapy [9,16,17].

## Conclusions

It is possible that this case report is the first of its kind, cannot be compared to a similar case, and will serve as a precedent for further investigations of periodontal surgery planning, including multiple extractions.

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## Department and Institution Where Work Was Done

Department of Periodontology and Oral Medicine, University of Prishtina Dentistry School, Prishtina, Republic of Kosovo.

## Conflicts of interest

None.