

# Acute Periodontal Abscess Following Scaling: A Case Report

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## ABSTRACT

**Background:** A periodontal abscess is a localized, purulent infection within the periodontal tissues that can progress rapidly, resulting in attachment loss and systemic symptoms.

**Case presentation:** A 25-year-old female presented with acute pain and swelling in the mandibular left molar region (tooth 36) following scaling. Clinical and radiographic evaluation confirmed a periodontal abscess on the buccal aspect. Due to the presence of fever, systemic antibiotics were prescribed in addition to drainage and subgingival debridement. The lesion resolved completely within one week, and periodontal health was maintained at three-month follow-up.

**Conclusion:** Post-procedural periodontal abscesses, though uncommon, require prompt drainage and antimicrobial therapy when systemic involvement exists. Early diagnosis and elimination of the infection source ensure rapid and uneventful recovery.

**Keywords:** Periodontal abscess; Drainage; Antibiotics; Scaling; Mandibular molar

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## INTRODUCTION

A periodontal abscess is defined as a localized purulent infection affecting the supporting tissues of a tooth, most often arising from pre-existing periodontal pockets, incomplete scaling, or foreign-body impaction [1]. Clinically, it presents as swelling, pain, and pus discharge from the gingival sulcus and may be accompanied by systemic symptoms such as fever and malaise [2].

Acute abscess formation after scaling is infrequent but may occur when the pocket entrance becomes obstructed, trapping residual calculus or debris [3]. This report describes the presentation and successful management of an acute periodontal abscess on tooth 36 following scaling in a 25-year-old female.

## CASE PRESENTATION

A 25-year-old female reported to the Department of Periodontics, Post Graduate Institute of Dental Sciences, with pain and swelling in the lower left back tooth region for two days. She had undergone routine scaling at a private clinic four days earlier. The pain was continuous, throbbing, and localized, associated with gingival swelling and difficulty chewing. She also reported low-grade fever and malaise. Medical history was non-contributory; the patient was systemically healthy and not on regular medication.

### Clinical Examination

Extraoral findings included mild swelling over the left lower face without lymphadenopathy. Intraoral examination revealed a diffuse, erythematous, and fluctuant swelling on the buccal aspect of tooth 36 extending from the mesial to distal line angle.

Probing depth was 7 mm on the buccal surface, with purulent discharge upon pressure (Figure 1). Tooth 36 was vital on pulp testing, exhibited Grade I mobility, and was tender on percussion. Adjacent gingiva showed moderate inflammation.

### Radiographic Findings

A periapical radiograph of tooth 36 revealed angular bone loss extending to the middle third of the root and an intact lamina dura at the apex, consistent with a periodontal origin (Figure 2).

### Diagnosis

Based on the clinical and radiographic findings, a diagnosis of acute periodontal abscess involving tooth 36 following scaling was established. The differential diagnoses considered were periapical abscess and combined endo-perio lesion, but the positive pulp response and radiographic pattern confirmed a purely periodontal origin [1, 4].



**Figure 1:** Pre-operative clinical photograph showing swelling on the buccal aspect of 36



**Figure 2:** Pre-operative periapical radiograph showing angular bone loss with intact apex.



**Figure 3:** Post-operative photograph at 1 week showing resolution.

### Treatment

#### Emergency Phase (Day 1)

- Local anesthesia: 2 % lidocaine with epinephrine 1:80 000.
- Drainage: Achieved through the pocket using a curette to evacuate pus and relieve pressure.
- Irrigation: Performed with sterile saline followed by 0.2 % chlorhexidine.
- Systemic antibiotics: Prescribed due to fever—Amoxicillin 500 mg TDS for 5 days and Metronidazole 400 mg TDS for 5 days, along with Ibuprofen 400 mg TDS for pain. [5, 6]
- Oral hygiene instructions: Soft brushing and warm saline rinses twice daily.

#### Re-evaluation (1 week)

At one-week recall, the patient was afebrile, and pain, swelling, and discharge had completely resolved. Probing depth was reduced to 4 mm, and gingiva appeared pink and firm.

#### Definitive Phase (2–4 weeks)

- Re-instrumentation and subgingival debridement under local anesthesia.
- Occlusal adjustment to eliminate traumatic contacts.
- The patient was placed on a three-month periodontal maintenance schedule.

### Outcome and Follow-Up

The patient showed complete healing within one week following drainage and systemic antibiotics. At the four-week review, probing depth was 3 mm with no recurrence.

At the three-month follow-up, the site remained healthy, and radiographic evaluation revealed stable bone levels.

### DISCUSSION

Periodontal abscess formation after scaling is an unusual but recognized complication when the pocket entrance is sealed, leading to entrapment of bacterial plaque or calculus in the pocket [3, 7]. The primary goal of treatment is drainage and removal of the infection source, which rapidly reduces pain and swelling [4]. Systemic antibiotics are not routinely indicated for localized abscesses; however, they are recommended when there is systemic involvement, fever, or regional lymphadenopathy [5, 6]. In the present case, systemic signs warranted antibiotic coverage alongside mechanical therapy, resulting in rapid resolution. Similar outcomes have been reported in previous studies demonstrating that drainage combined with debridement yields predictable healing [8]. Differential diagnosis from periapical abscess is essential, which can be achieved by pulp vitality testing and radiographic interpretation—periodontal abscesses typically present with a vital pulp and angular bone loss along the root surface [9]. Long-term success depends on patient compliance, plaque control, and regular maintenance to prevent recurrence [10].

### CONCLUSION

An acute periodontal abscess can occur as a complication after scaling, especially when residual deposits or pocket closure trap bacteria. Prompt drainage, thorough debridement, and antibiotic therapy in the presence of systemic symptoms ensure complete recovery. Preventive strategies, including meticulous instrumentation and regular maintenance, are critical to avoid recurrence.

### Patient Consent

Written informed consent was obtained from the patient for publication of clinical information and accompanying images.

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