

## Occult Maxillary Actinomycosis Diagnosed after Persistent Post-Extraction Discharge in an Elderly Patient: About a Case

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## Abstract

## Case Report

Actinomycosis is a rare, chronic granulomatous infection caused primarily by *Actinomyces israelii*. Although cervicofacial involvement is the most common presentation, intraoral manifestations without clinical or radiologic signs are uncommon and may lead to delayed diagnosis. We report the case of an 87-year-old male patient who complained of intermittent white oral discharge one year after maxillary tooth extraction. Clinical examination revealed intact mucosa without signs of inflammation, fistula, or sinus communication. Cone beam computed tomography (CBCT) excluded oroantral communication and sinus pathology. Definitive diagnosis was established after collection and histopathological examination of the discharge, which revealed actinomycotic colonies. This case highlights the deceptive nature of oral actinomycosis and emphasizes the importance of pathological analysis in persistent unexplained post-extraction complaints.

**Keywords:** Actinomycosis; Maxilla; Post-extraction complication; Chronic infection.

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### INTRODUCTION

Actinomycosis is a chronic suppurative and granulomatous infection caused by filamentous, Gram-positive, anaerobic bacteria of the genus *Actinomyces*, most commonly *Actinomyces israelii* [1,2]. These organisms are normal commensals of the oral cavity and oropharynx but may become pathogenic when the mucosal barrier is disrupted, allowing invasion into deeper tissues [3].

Cervicofacial actinomycosis represents the most common clinical form, accounting for approximately 50–60% of reported cases [4]. The disease typically presents with indurated swelling, abscess formation, draining sinus tracts, and the presence of sulfur granules [5]. However, atypical presentations without classical clinical signs have been described, often leading to delayed or missed diagnosis [6].

Although actinomycosis can affect individuals of all ages, it is more frequently observed in adults and demonstrates a slight male predominance [7]. Tooth extraction, poor oral hygiene, trauma, and periodontal disease are recognized predisposing factors due to their role in compromising the integrity of the mucosal barrier [3,5].

Diagnosis may be challenging because clinical and radiologic findings are often nonspecific. Histopathological examination remains the gold standard for definitive diagnosis, particularly in cases where microbiological cultures are inconclusive or difficult to obtain [2,6].

We report an unusual case of maxillary actinomycosis in an elderly patient with no clinical or radiologic abnormalities, diagnosed solely through pathological examination of intermittent discharge.

### OUR CASE

An 81-year-old male patient presented to our department with a chief complaint of intermittent white liquid discharge in the oral cavity, which he had been noticing sporadically over the past several months. The patient reported that the episodes began approximately one year after extraction of a maxillary posterior tooth, which had been performed due to extensive decay. The discharge was painless, occurred without associated swelling, bleeding, or foul odor, and was intermittent in nature. His medical history was notable for benign prostatic adenoma, for which he was under regular medical management; he had no history of diabetes, immunosuppression, malignancy, or long-term corticosteroid therapy. He denied any recent fevers,

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malaise, or systemic symptoms. The patient was otherwise independent in daily activities, with good overall general health.

On extraoral examination, there were no signs of facial asymmetry, swelling, erythema, or tenderness, and no lymphadenopathy was palpable in the cervical, submandibular, or preauricular regions. Intraoral examination revealed a clinically healed extraction site in the maxilla, with intact mucosa and no evidence of erythema, edema, fistula, or sinus tract formation. Palpation of the area did not elicit tenderness, fluctuance, or induration, and the surrounding teeth and gingiva appeared healthy. There was no visible discharge at the time of examination, and the patient's oral hygiene was adequate. Despite the absence of clinical findings, the patient's persistent complaint raised concern for a possible delayed post-extraction complication, with oroantral communication considered as a potential etiology.

To investigate this possibility, a cone beam computed tomography (CBCT) scan was performed to assess for any communication between the oral cavity

and maxillary sinus, sinus pathology, or osseous changes. The CBCT demonstrated an intact sinus floor, no mucosal thickening, no sinus opacification, and no evidence of bone destruction or other radiologic abnormalities. With both clinical and imaging evaluations negative, the origin of the patient's intermittent discharge remained unclear. Given the persistence of symptoms, the patient was advised to collect a sample of the white fluid during an episode and submit it for pathological examination.

Histopathological analysis of the collected sample revealed filamentous basophilic bacterial colonies surrounded by eosinophilic material, consistent with actinomycotic colonies, confirming the diagnosis of occult maxillary actinomycosis. There was no associated inflammatory swelling, and no sinus tract formation was observed, highlighting the atypical and subtle presentation of this infection. The patient was started on an appropriate long-term antibiotic regimen targeting *Actinomyces* species. Subsequent follow-up demonstrated complete resolution of the intermittent discharge, with no recurrence and stable intraoral findings, confirming a favorable response to treatment.



**Figure 1: Healed maxillary extraction site with intact mucosa**



**Figure 2: Cone beam computed tomography (CBCT) of the maxilla showing an intact sinus floor, no mucosal thickening, and no evidence of bone destruction or oroantral communication, despite the patient’s intermittent oral discharge**

**DISCUSSION**

Actinomycosis is a chronic bacterial infection caused primarily by *Actinomyces israelii*, which normally resides as a commensal in the oral cavity,

gastrointestinal tract, and female genital tract [7–9]. Cervicofacial actinomycosis is the most common form, accounting for 50–60% of cases, typically presenting with firm, indurated swelling, abscesses, draining sinus tracts, and the occasional presence of sulfur granules

[7,10,11]. However, rare atypical presentations, such as the one observed in this patient, pose a significant diagnostic challenge [12,15].

In the present case, the patient, an 81-year-old male, presented with intermittent white oral discharge one year after maxillary tooth extraction, without clinical signs of inflammation, fistula formation, or mucosal disruption, and with negative CBCT imaging. Such occult presentations are exceedingly rare [12,15]. Most reported cases of post-extraction actinomycosis involve visible induration, abscess, or radiographic evidence of bone involvement [13,15]. In contrast, this case illustrates a “silent” form of the disease, in which the pathogen remained localized, producing minimal or intermittent symptoms that could easily have been attributed to normal post-extraction healing or minor oral secretions [15,16].

The pathogenesis of actinomycosis in this scenario likely involves subclinical mucosal barrier disruption during extraction, allowing bacterial invasion of the underlying connective tissue [7,9]. The organism’s slow-growing, filamentous nature permits chronic colonization without triggering acute inflammation, explaining the absence of typical signs such as erythema, swelling, or tenderness [8,12]. This aligns with literature suggesting that actinomycosis can persist asymptotically for months before clinical manifestations become apparent [7,12]. Elderly patients may be particularly susceptible to such subtle presentations due to reduced immune responsiveness and age-related tissue changes [7,16].

This case highlights the limitations of clinical and radiologic assessment in diagnosing occult actinomycosis [12,15]. CBCT, while excellent for detecting bone defects or sinus communication, revealed no abnormalities. Definitive diagnosis was achieved only through histopathological analysis of the collected discharge, which demonstrated filamentous basophilic colonies surrounded by eosinophilic material, characteristic of actinomycotic infection [8,12]. This underscores the importance of maintaining a high index of suspicion and obtaining tissue or discharge samples for pathological evaluation in persistent, unexplained post-extraction complaints [10,12].

Treatment of actinomycosis requires prolonged antibiotic therapy, typically with high-dose penicillin or alternative agents active against *Actinomyces* [7,10,13]. Early recognition is critical, as delayed diagnosis may lead to extensive local tissue involvement, fistula formation, and prolonged morbidity [11,17]. In this patient, timely identification and antibiotic therapy resulted in complete resolution of symptoms without recurrence, demonstrating a favorable prognosis even in atypical, elderly presentations [12,17].

In conclusion, this case illustrates that actinomycosis can present occultly, with intermittent discharge and no clinical or radiologic findings, particularly in elderly patients. Clinicians should be aware of such atypical presentations and consider histopathological evaluation when persistent oral symptoms are unexplained. Recognition of these subtle forms is essential to ensure prompt, effective treatment and to prevent chronic complications [7,8,12,15].

## CONCLUSION

This case illustrates that actinomycosis can present in a subtle, atypical manner, even long after dental extractions, with intermittent oral discharge and no obvious clinical or radiologic findings. Occult presentations like this pose a diagnostic challenge, as the infection may remain localized without swelling, erythema, fistula formation, or bone involvement. Clinicians should maintain a high index of suspicion for actinomycosis in patients with persistent unexplained oral symptoms, particularly in the elderly or those with prior dental procedures.

Definitive diagnosis relies on histopathological examination of collected samples, which remains the gold standard in the absence of classic signs. Early recognition and appropriate long-term antibiotic therapy, tailored to patient factors and disease severity, can achieve complete resolution and prevent chronic complications. This case emphasizes the importance of patient-centered investigation and vigilance, reminding clinicians that even rare, subtle infections like actinomycosis can be effectively managed with timely intervention.

**Consent:** Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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