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# Case Report

## Multiple Periodontal Abscesses as a complication in Diabetic Patient: A Case Report

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***ABSTRACT:***
Diabetes mellitus and periodontal disease are two chronic conditions that exhibit a bidirectional relationship. Diabetes, particularly when poorly controlled, can significantly increase the risk and severity of periodontal disease, including the formation of periodontal abscesses. This increased susceptibility is attributed to impaired immune responses, delayed wound healing, and elevated systemic inflammation associated with diabetes. Conversely, periodontal infections, such as abscesses, can negatively impact glycaemic control in diabetic patients by releasing pro-inflammatory cytokines into the bloodstream, contributing to insulin resistance. Multiple periodontal abscesses can serve as a clinical sign of uncontrolled diabetes. Here, we report a case of acute multiple periodontal abscess due to poor oral hygiene and diabetes mellitus.

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### INTRODUCTION

Periodontal abscesses are the third most common dental emergency, characterized by a localized accumulation of pus within the gingival wall of a periodontal pocket. They can be classified based on their aetiology, location, duration, and number. Periodontitis-related abscesses occur as an exacerbation of untreated periodontal disease or during periodontal treatment, while non-periodontitis-related abscesses are caused by foreign object impaction or root anatomical abnormalities[1].The microbiology of periodontal abscesses is similar to that of periodontal disease, with gram-negative anaerobic bacteria being the most prevalent, particularly Porphyromonasgingivalis. Other implicated bacteria include Prevotella intermedia, Fusobacteriumnucleatum, and Tannerella forsythia. Acute periodontal abscesses present with pain, tenderness, and pus, while chronic abscesses are associated with sinus tracts and mild or absent pain. Single abscesses are usually caused by local obstructions, while multiple abscesses are linked to systemic diseases like diabetes mellitus. The blockage of periodontal pockets, due to calculus accumulation, foreign body impaction, or dislodged calculus during debridement, leads to the accumulation of bacteria and the release of lysosomal enzymes from host neutrophils, causing tissue damage[2].

### CASE REPORT

A 52 years old female patient (figure1) reported to the department of oral medicine and radiology St. Joseph dental college Duggirala, Eluru with the chief complaint of pain in the upper and lower regions of teeth since 1month. Patient gave history of bleeding gums, bad breath and burning sensation. No history of fever and trauma. Patient gives history of diabetes and hypertension since 4 years and under regular medication. Intra oral examination reveals the inspectorfindings multiple periodontal abscesses, extending from lower left 1st premolar to lower right 1st premolar on the buccal surface and upper left lateral incisor to upper right lateral incisoron the buccal surface (figure 2). The swellings were diffuse

involving the marginal gingiva,attached gingiva, and the oral mucosa of the buccal aspect involving the above mentioned areas.Associated teeth were tender to percussion and there was Grade I tooth mobility in relation to 44,34,11,12,21,22 (figure 3). Probing pocket depth of 4–5 mm and purulent exudate were present from 44 to 34.The affected tissues were red in colour, tender to palpation. No secondary changes are evident. Investigations advised OPG;it reveals (figure 4)Periodontal abscess irt 11,12,22,23,26,33,31. Root stumps irt41, 42. Missing tooth irt18,17,16,14,13,24,25,27,35,36,37,38. Dental caries irt 28.Based on the clinical findings a provisional diagnosis of Multiple Periodontal Abscess was given. Patient was referred to the Department of Periodontology for further treatment.

**Figure 1: Showing Patient Profile**

**Figure 2: Multiple Periodontal Abscess**

**Figure 3: Showing Right and Left Side**

**Figure 4: Showing OPG**

## DISCUSSION

Diabetes mellitus, a systemic metabolic disorder, is characterized by elevated blood glucose levels and abnormalities in carbohydrate, protein, and lipid metabolism. Numerous studies have reported a higher prevalence and severity of periodontal diseases in diabetic patients compared to non-diabetic individuals, including increased attachment loss, alveolar bone loss, bleeding on probing, and tooth mobility. This study aims to evaluate the periodontal abscess as a potential oral sign in patients with diabetes mellitus. Periodontal abscesses, recognized as a distinct clinical entity since the late 19th century, are defined as acute, destructive processes in the periodontium resulting in localized pus collection communicating with the oral cavity through the gingival sulcus or other periodontal sites, not originating from the tooth pulp. Factors such as occlusion of the periodontal pocket orifice, diabetes, and clenching or bruxism can alter the tissues adjacent to the affected teeth, leading to acute exacerbation. The reduced defence mechanisms and healing capacities in diabetes mellitus patients contribute to the formation of multiple periodontal abscesses[3]. Decreased levels of cAMP in the gingival fluid of diabetic patients could be another potential factor modifying the severity of periodontal disease. Thorough evaluation for diabetes mellitus should be conducted in individuals seeking dental treatment for periodontal abscesses, followed by prompt treatment and continuous monitoring of both conditions to prevent further systemic complications and tooth loss. Gram-negative bacteria in plaque, high blood sugar levels, and reduced healing capacity are three factors contributing to alveolar bone loss in diabetic patients. Acute treatment includes drainage of the abscess through root surface debridement or incision, accompanied by mechanical scaling and antiseptic rinses. Postoperative care involves warm salt water rinses and copious fluid intake. Exodontia may be necessary for teeth with poor prognosis. Embedded foreign objects should be removed through debridement and drainage. Antimicrobial therapy is recommended only as an adjunct treatment for immunocompromised patients or those with systemic involvement.Amoxicillin with clavulanic acid is the first-choice antibiotic.Early diagnosis and treatment are essential to improve outcomes and prevent tooth loss[4].

## CONCLUSION

Periodontal abscesses may serve as potential oral clinical indicators for diagnosing uncontrolled diabetes mellitus. Dentists need to be vigilant about all oral clinical signs. Systemic diseases can present themselves and should assist patients in achieving accurate diagnosis and treatment[5]. The presence of multiple or recurring periodontal abscesses can indicate uncontrolled diabetes mellitus. This case illustrates that comprehensive periodontal treatment and improved diabetes management can lead to significant enhancements in both periodontal and systemic health.

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