

Management of Dental Plaque Induced Periodontal Abscess- A Case Report

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ABSTRACT:

Periodontal abscesses are purulent infections of the periodontal tissues that are localized to the area around the affected tooth. Because of the high occurrence rate and violent symptoms, it is classified as a dental emergency; urgent care is required to ensure the patient's overall health and well-being. To successfully treat an acute periodontal abscess, it's important to examine its location and access to drainage. This case report covers the treatment of a patient who developed an acute periodontal abscess as a result of poor oral hygiene. Clinically and radio graphically, the lesion resembled an acute periodontal abscess. Periodontal treatment was immediately carried out and prescribed medicines for 3 days after the treatment. The clinical presentation of the illness and recovery outcomes, as well as a brief review of pertinent research, are discussed.

KEYWORDS: Periodontal abscesses, Abscess Drainage, Periodontitis, periodontal therapy

perforation or fracture and foreign body impaction.³

The microbiota of periodontal abscess is polymicrobial and dominated by non-motile, Gram-negative, strict anaerobic, rod-shaped species. *Porphyromonas gingivalis* is probably the most virulent and relevant microorganism.⁴ Other anaerobic species that are usually found include *Prevotella intermedia*, *Prevotella melaninogenica*, *Fusobacterium nucleatum*, and *Tannerella forsythia*.⁵

The management for a periodontal abscess includes elimination of the acute signs and symptoms as soon as possible. Resolution of the acute phase may result in partial regaining of attachment that had been lost. Areas where the acute condition does not resolve may be characterized by recurrence of the abscess and/or continued loss of periodontal attachment. In patients where the condition does not resolve, additional evaluation and therapy may be required.⁶

I. INTRODUCTION:

Periodontal abscesses are a common and painful dental emergency, described as a localized accumulation of pus within the gingival wall of a periodontal pocket and caused by bacterial buildup or foreign body impaction in the periodontal pockets. It develops rapidly by destroying periodontal tissues and depicting clear symptoms.¹

The abscess' development can be attributed to one of two causes: associated with periodontitis or non-periodontitis-related. Periodontitis-related abscesses typically arise as a result of untreated periodontal disease or during periodontal therapy¹ and association with moderate to deep periodontal pockets. They often arise as acute exacerbations of preexisting pockets.² Abscesses of non-periodontitis origin are typically caused by the impaction of foreign items, such as a piece of dental floss, defects in root structure tooth

II. CASE PRESENTATION:

In January 2024, a 43-year-old male patient reported to the Department of Periodontology, School of Dental Sciences, Sharda University with the chief complaint of severe toothache of mandibular right premolar teeth since a few weeks and occurrence of a painful swollen gums in his lower back teeth region for 1 month that had gradually increased with time. No significant past medical, family history or history of drug and food allergies was found. The extraoral examination revealed a symmetrical face. He did not smoke and did not take alcoholic beverages. However, he consumed smokeless tobacco and betel nut (pan masala) since last 10 years [Fig. 1].

The patient presented with a single abscess in respect to 44 and 45; with severe pain, swelling, excessive gingival bleeding, reddish gingiva, tenderness to even slight palpation on the right mandibular region, which was interfering with

normal eating, brushing and speaking. [Fig.2] There was a considerable deposit of calculus and subgingival plaque in the region, indicating that the patient maintained poor dental hygiene. The provisional diagnosis of Periodontal Abscess was made based on the patient's age, gender, clinical data.

Intra oral periapical radiograph showed significant bony changes and a localized alveolar bone resorption with localized angular defects on the lower right posterior teeth sites thus, confirming the diagnosis. [Fig. 3] Therefore, non-surgical periodontal therapy which also included counselling of the patient to quit tobacco, along with abscess drainage was planned for the treatment. Following a thorough explanation of all treatment methods, the patient gave written informed consent.

Thereafter, comprehensive supra- and subgingival scaling and root planning were carried out. Following which, the patient was injected with local anesthesia in the inferior alveolar nerve and lingual nerve area. Subgingival irrigation with povidone-iodine solution was carefully performed to remove any local irritating substances that could have caused the gingival inflammation.

Through the periodontal pocket present in teeth 44 and 45, abscess drainage followed by compression and debridement of soft tissue wall was done [Fig. 4]. The pocket epithelium and granulation tissue were removed. Then the site was irrigated with saline solution till there was no granulation tissue present. [Fig. 5] Periodontal dressing had been applied on the surgical site to protect it, [Fig. 6] and was removed 7 days later.

The patient was prescribed with antibiotics (amoxicillin 500mg, every 8 hours, 3 days), analgesics [Aceclofenac (100mg) + Paracetamol (325mg) + Serratiopeptidase (15mg), every 12 hours, 3 days] and instructed to rinse twice daily with 0.2% chlorhexidine digluconate mouthwash twice a day for 2 weeks. Patient is recalled after 10 days for follow-up. [Fig. 7]

III. DISCUSSION:

The periodontal abscess is the third most common dental emergency, affecting 6–7 % of all patients seen in a dental clinic and accounting for 7–14% of all dental emergencies. Common periodontal pathogens have been observed in this lesion and some other etiologic factors may be responsible for its recurrence. Its higher prevalence has been calculated in retrospective studies on selected groups i.e. 59.7% in untreated patients;

13.5% during the active treatment; furthermore, 37% during the maintenance stage.³ Periodontal abscesses can also develop in the absence of periodontitis, due to impaction of foreign bodies (Kareha et al. 1981), such as an orthodontic elastic (Pini Prato et al. 1988), a piece of dental floss (Abrams & Kopczyk 1983), a popcorn kernel (Rada et al. 1987), a dislodged cemental tear (Haney et al. 1992), a piece of a toothpick (not confirmed) (Fuss et al. 1986), a corn husk in peri-implant tissues (Ibbott et al. 1993), or an unknown object (Emslie, 1978, Palmer 1984).²

Formation of periodontal abscess might occur primarily through localization of the infectious inflammatory process occurs along the lateral surface of the root, which can further penetrate into the connective tissue of the pocket wall, depending on the pathway of least resistance. In two walled defects as seen in cul-de-sac furcation defect, the periodontal abscess generally follows a tortuous course along the root. It can also occur due to occlusion of the pocket orifice which results in the shrinkage of the gingival wall, as a result of incomplete removal of the calculus during periodontal pocket treatment. Periodontal abscess can also occur in the absence of periodontal disease in situations of perforations of lateral wall of the root during endodontic therapy.^{4, 6}

The goal of therapy for a periodontal abscess is elimination of the acute signs and symptoms as soon as possible. Its significance stems from the potential requirement for immediate care, the impact on tooth prognosis, and the risk of infection spreading.

Periodontal abscesses are treated with drainage, mechanical debridement, conventional surgical techniques followed by antibiotics, and mouth rinses, with antibiotics reserved for specific patients. In this case, periodontal abscess was linked to sub gingival calculus and a periodontal pocket which was drained following mechanical debridement.² A periodontal abscess should be carefully diagnosed after a thorough evaluation and interpretation of the patient's chief complaint, medical-dental history, and clinical and radiographic exams.

IV. CONCLUSION:

Periodontal abscess is the third most common type of dental emergency. Several factors contribute to the establishment of a periodontal abscess, including occlusion of the opening of a deep periodontal pocket, systemic antibiotic medication without periodontal treatment, and

poorly controlled diabetes. When it comes to diagnosing a periodontal abscess, the patient's major complaint, as well as clinical and radiological findings, are critical. For the management of periodontal abscess, early diagnosis and appropriate intervention are very important because this condition can lead to the loss of the tooth involved.

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FIGURES:

Figure 1:



FIG.: Pre-op picture showing smokeless tobacco stains

Figure 2:



Periodontal Abscess wrt 44 and 45

Figure 3:



FIG.: radiograph depicting bone loss in the interproximal areas wrt 44-45

Figure 4:



Post Phase 1 therapy and subgingival povidone-iodine irrigation

Figure 5:



Immediate post-op picture after abscess drainage

Figure 6:



Periodontal dressing placed

Figure 7:



Picture showing complete resolution of the lesion
after one month