The Treatment of Acute Periodontal Abscess and Secondary Occlusal Trauma: A Case Report

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Abstract: The periodontal abscess is a purulent matter located in the periodontal supporting tissues. The aim of the current study is to report the clinical case of a patient with chronic periodontitis who sought emergency treatment. The clinical examination identified pain, mobility, gingival swelling, fistula and suppuration in the region of tooth 21. We verified the absence of malaise, fever and lymphadenopathy by assessing the systemic condition. The option was made for the abscess drainage and subgingival scaling treatment modality without antibiotic therapy. The emergency treatment succeeded in resolving the inflammatory process and in reducing the probing depth. However, after 28 days, the tooth presented extrusion and secondary occlusal trauma, thus requiring subsequent occlusal adjustment.

Keywords: Periodontitis, Occlusion, Periodontium, Periodontal abscess, Occlusal adjustment.

1. INTRODUCTION

The periodontal abscess is a purulent matter located in the periodontal supporting tissues. It occurs when the periodontal pocket lumen is closed, thus preventing the inflammatory content from flowing through the pocket. The presence of very winding periodontal pockets hindering the pus flow path is one of the causes for periodontal abscess formation [1].

The periodontal abscess is associated with history of pre-existing periodontal disease, which was inadequately treated. In addition, the lack of maintenance therapy may result in new periodontal disease manifestations [2].

The signs and symptoms of acute periodontal abscess are pain, swelling, suppuration, redness, dental extrusion, sensitivity to percussion, as well as a possible body temperature increase and lymphadenopathy [1].

There are several periodontal abscess treatment methods, and the most used one encompasses abscess draining, followed by subgingival scaling and root planing, which can be associated or not with systemic antibiotic therapy [3].

The occlusal trauma is often found in patients with periodontitis and its prevalence is positively related to the presence of dental insertion loss and to the severity of periodontitis [4].

In 1999, the Academy of Periodontology evaluated the role played by occlusion on periodontal tissues. The occlusal trauma is an injury that leads to tissue changes within the attachment apparatus due to occlusal force. The primary occlusal trauma is an injury resulting in tissue changes due to excessive occlusal forces applied to the tooth or teeth with regular support. The secondary occlusal trauma is an injury resulting in tissue changes due to regular or excessive occlusal forces applied to the tooth or teeth with reduced support [1].

It is known that the persistence of untreated abnormal occlusal contacts can exacerbate periodontitis. Moreover, the occlusal adjustment is able to improve the periodontal parameters, thus suggesting that the occlusion therapy should be adequate after periodontal therapy [5].

The aim of the current study is to report the treatment of acute periodontal disease. The periodontal abscess was treated and it was followed by secondary occlusal trauma therapy.

2. CASE REPORT

A 38-year-old woman attended dental emergency appointment reporting pain associated with acute periodontal abscess in tooth # 21. The patient had history of chronic periodontitis and absence of systemic diseases. The clinical examination of tooth # 21 showed gingival swelling, fistula, suppuration, grade 2 mobility, and localized pain (Figure 1A). The X-ray of tooth # 21 depicted large periodontal radiolucency associated with interproximal bone loss and high probing depth (Figure 1B). According to the pulp vitality test (assessment of
the Pulp’s Blood Supply), tooth # 21 was found to be vital.

Malaise, fever and lymphadenopathy were not identified during the systemic condition assessment. The option was made for abscess drainage and subgingival scaling treatment modality without adjunctive antibiotic therapy.

The emergency treatment was accomplished through periodontal abscess suppuration drainage via periodontal pocket using a 10 mm Newmar probe (Figure 2A). Subsequently, scaling and root planning were done using Hirschfield files 3/7 and 5/11, and Gracey curettes 3/4, as well as McCall curettes 13/14. It was possible to observe the absence of fistula, as well as the reduction of swelling and pain after 14 days (Figure 2B).

Tooth # 21 showed extrusion generating secondary occlusal trauma (Figures 3A and 3B) 28 days after the periodontal abscess was treated. It was possible to

Figure 1: A. Anterior region of the jaw showing gingival swelling, fistula and suppuration in periodontal tooth # 21. B. The X-ray of tooth # 21 revealed high probing depth in the buccal side, represented by millimeter probe.

Figure 2: A. Drainage of suppurative periodontal abscess via periodontal pocket using millimeter probe. B. Clinical aspect 14 days after drainage, scaling and root planning.
identify tooth # 21 migration as well as the presence of premature contact in protrusive movement (Figure 4A).

Occlusal adjustment was performed using articulating paper to mark the premature contacts to be removed (Figure 4B) in order to treat the trauma. We used high-speed diamond drill to remove the premature contacts (Figure 4C). The jaw movements were tested and the occlusal contacts were properly distributed after occlusal therapy, in order to proportionally distribute the masticatory forces (Figure 4D).
3. DISCUSSION

Abscesses affecting the periodontal region are caused by subgingival biofilm microorganisms in exacerbation episodes. They may also occur due to pre-existing periodontitis, after improper periodontal therapy, and due to periodontal disease recurrence as well as to the occurrence of super-infection after systemic antibiotic therapy [1].

The dentist should keep a high level suspicion while evaluating patients with cancer history. A 55-year-old woman presented a rare metastatic carcinoma case, although the lesion resembled a periodontal abscess [6].

In another case, a 19-year-old patient presented swelling on the buccal aspect of the gingiva near tooth 36, which started two days earlier. He had recently undergone initial preparations for planned orthodontic crowding treatment. The X-ray revealed small ill-defined radiopaque area revealing elastic band in the periodontal space. The elastic rubber band was removed through periodontal curettage. It is worth emphasizing that the foreign body-induced reaction should be included in the differential diagnosis of gingival overgrowths [7].

The aim of the periodontal abscess therapy is to eliminate the acute signs and symptoms as soon as possible. Thus, the desired therapy result in patients with acute periodontal abscess consists of the resolution of signs and symptoms. The acute resolution phase may lead to the partial recovery of the lost attachment [8]. The resolutive therapy was the clinical approach used to treat the periodontal abscess in the current study.

The non-surgical (scaling and root planing) periodontal treatment may also iatrogenically damage the periodontium and cause several complications such as tooth mobility/loss, post-operative bleeding and pain, post-operative swelling, post-operative infection, increased sensitivity to temperature and gingival recession [9]. The only periodontal damage found in the current study was tooth mobility and extrusion.

According to another case, an 8-year-old girl showed swelling, which had started 2 days earlier. A periodontal abscess was diagnosed in tooth 21 and it was drained through the gingival pocket in the same session. Gingival swelling, pocket and discoloration disappeared three days later [10].

The main trauma-associated clinical findings are progressive mobility, occlusal discrepancies, fractured tooth and, tooth migration [11]. Although the therapy conducted in the current study provided good infection resolution, it caused the emergence of secondary occlusal trauma. It happened because the dental extrusion generated occlusal discrepancy, which was eliminated through occlusal adjustment.

A multidisciplinary approach comprising complete diagnosis and properly planned comprehensive treatment executed in cooperation with periodontists and prosthodontists plays an important role in achieving the desired therapeutic outcome [5]. The present case reported that the treatment may involve combined periodontics and restorative dentistry in order to keep the tooth chewing function.

4. CONCLUSION

The acute periodontal disease, mainly periodontal abscess, shows therapy options related to the severity of the disease, to mechanic treatment access and to the patient’s systemic condition. The occlusal adjustment should be checked after the appropriate periodontal treatment, since dental migration and occlusal discrepancies occur before therapy. Therefore, an integrated treatment plan is necessary in order to recover tooth function and to provide comfort and esthetics to the patient. Therefore, the periodontal abscess emergency treatment successfully resolved the inflammatory process and reduced probing depth. The secondary occlusal trauma in tooth 21 was subsequently treated through occlusal adjustment. Thus, the tooth was recovered and the dental-jaw complex was re-established after the treatment.

REFERENCES


