The Periodontal Abscess - A Case Report

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Determining the causative factors of dental abscesses continues to tax the diagnostic skills of clinicians. A case is discussed of an unusually presenting chronic periodontal abscess involving the bifurcation of the upper left first premolar.

Key Words: periodontal, abscess, diagnosis.

Introduction

The periodontal abscess has been recognized as a distinct clinical entity since the nineteenth century and is defined as a localized purulent inflammation of the periodontal tissues (Carranza, 1979). It can present either as an acute or chronic abscess but is usually an acute exacerbation of chronic periodontal disease. It is frequently referred to as a lateral periodontal abscess, however, when the marginal soft tissue are affected in isolation, it is called a gingival abscess (McFall, 1964). Gingival and periodontal abscesses are identical histologically and differ only in location (O’Brien, 1970).

The organisms generally associated with the periodontal abscess are similar to those found in subgingival plaque (Newman and Sims, 1979). The abscess may occur as a direct response to an increase in virulence of the commensal organisms and the release of their associated toxins. Alternatively, it may occur secondary to reduced host resistance (Peterson et al., 1987).

The acute abscess usually presents with throbbing pain and redness, swelling and tenderness of the overlying mucosa. It may heal following pus discharge or it may become chronic. The chronic lesion may be asymptomatic and usually presents as a discharging sinus (Soames and Southam, 1988). The most common cause of the periodontal abscess is occlusion of the orifice of the periodontal pocket. This may be due to trauma to the pocket, or impaction of food, calculus or a foreign body into the opening of the pocket (Miyasato, 1975; Dello Russo, 1985). Such blockage prevents drainage of exudate which results from the inflammatory reaction and is frequently seen in pockets having narrow, tortuous paths associated with furcations and deep infra-bony defects. Periodontal abscesses have been reported in patients who have undergone periodontal prophylaxis (Palmer, 1984) and a high incidence of abscesses have been reported after systemic antibiotic therapy (Topali et al.,
Occlusal trauma has been cited as a causative factor (Gottsegen and Darakjian, 1979) and occasionally an infected lateral periodontal cyst may present as an abscess (Cross, 1954).

A case history is described of an unusually presenting chronic periodontal abscess involving the bifurcation of the upper left first premolar.

Case Report

A sixty-year-old Caucasian woman presented with an asymptomatic discharging sinus in the buccal sulcus between the root apices of the upper left lateral incisor and canine. Her relevant medical history included an allergy to penicillin.

The patient was first referred to Bristol Dental Hospital in 1965, aged 35, with active and advanced periodontal disease. At this time, it was predicted that the long term prognosis of the remaining teeth was guarded. Initial phase therapy, comprising oral hygiene instruction, scaling and polishing was commenced. The patient responded well and subsequently she has been under six-monthly maintenance care. Over the years, she has lost the upper molars and upper second premolars due to advancing disease and has also had a small cyst removed surgically from the upper lip.

During one of her maintenance appointments the patient presented with a discharging sinus between 22 and 23 on the labial aspect, slightly above the attached gingivae. All the teeth were asymptomatic and overall clinical dental examination revealed a generally well maintained mouth. The teeth in the upper left quadrant responded positively to pulp testing. The periodontal status was stable although there was a persistent pocket relating to the distal of 24 which exhibited grade II mobility.

Radiographs taken of 22, 23, and 24 revealed a radiolucency associated with 23 and 24 (Figure 1). A further radiograph taken with a gutta percha point inserted into the sinus revealed a pear shaped radiolucency between the root apices of 22 and 23. No communication of the sinus was noted with the radiolucency around 24 (Figure 2). In view

Figure 1 - Radiograph showing radiolucency associated with 23 and 24.
of the above finding, a differential diagnosis of a periodontal abscess associated with 24 or an infected globulomaxillary cyst was made.

Investigation of this area was carried out under a general anesthetic due to a previous history of problems with local anesthesia. It was noted at operation that the sinus tract, lined with granulation tissue, was originating from the furcation of 24. The prognosis of 24 was considered hopeless and the tooth was extracted. The apex of 23 was lying in the sinus tract and this tooth was thus apicected and a retrograde root filling was placed.

One week following surgery, the area was healing satisfactorily with no evidence of recurrent infection. At the three-monthly review, the area had healed well and no problems were identified (Figure 3).

Discussion

A case of a chronic periodontal abscess tracking to a site distant from the origin has been reported. The case demonstrated that the diagnosis of a discharging sinus can be challenging for a clinician. In view of the past periodontal history, the most likely cause of the discharging sinus was thought to be a periodontal abscess. However, an infected globulomaxillary cyst was included in the differential diagnosis due to the characteristic pear-shaped radiolucency between the roots of 22 and 23. Although rare, it has been documented that globulomaxillary cysts may exist where both the lateral and canine teeth
have vital pulps (Seward et al., 1987). The previous history of a cyst in the upper lip added to the debate.

It has been cited that where a periodontal abscess is associated with the bifurcation or trifurcation of premolars or molars, a sinus may track to a site distant from the area of infection (Trott, 1959). In such cases, the sinus track follows a long, narrow, tortuous path as seen in the case discussed. Additionally, the furcation of 24 is such that the palatal groove on the buccal root may provide a sheltered situation for abscess formation, hence enabling it to discharge at a site distant from the pocket.

The prognosis of such a tooth depends on the nature of the abscess and the extent of bone loss. Chronic periodontal abscesses, which are usually long standing, suffer slow progressive loss of bone. They are more difficult to treat especially when the furcation is involved. In the case described, the bone loss associated with 24 was quite extensive and hence the tooth was extracted.

It could be argued that 23 did not need apicectomising due to the vital response. Unexpectedly, the apex of this tooth lay in the sinus tract and a decision was made to apicect in view of the likelihood of disturbance of the apical vessels whilst removing the sinus tract. It is appreciated that placement of a retrograde filling is facilitated by the prior placement of an orthograde root filling but in this instance the time involved in filling, shaping and filling a root canal was incompatible with the increased anesthetic risk in prolonging the duration of the surgical procedures.

References

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