Endo - Perio Lesion – A Case Report

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Abstract

Bacterial infections play an important role in the vast majority of pulpal and periodontal lesions. Such infections usually account for more then 50% of the tooth mortality. Endo-perio lesions primarily occur by way of the intimate anatomic and vascular connection. Accurate diagnostic tests must be carried out to confirm pulp necrosis and careful diagnostic probing should be done to distinguish between endo-perio lesions.

Keywords: *Periodontitis, perio-endo lesion, furcation.*

Introduction

The Periodontium and endodontium develop with a shared root, which results in numerous communication channels, which may lead to the spread of pathological disorders.[1] The extension of disease from a periodontal pocket to the pulp are through patent dentinal tubules, lateral canals, and the apical foramen or foramina.[2] Alongside these anatomically predetermined paths, the formation of non-physiological connections like root perforations or vertical root fractures[3] is also possible. The expression endo-perio lesion was devised to describe the etiopathogenesis in such cases and in lesions (i) Caused by endodontic pathogens that have spread coronally, thus involving the gingival margin and in some cases creating a fistula, or sinus tract, (ii) Originating from a marginal lesion which has subsequently affected more apical periodontal areas, (iii) Resulting from of a combination of the above, in which case the differential diagnosis must attribute each portion of the lesion to its cause.

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Case Report

A 38 years old female patient reported to Department of Periodontics with chief complain of dull pain in relation with lower right posterior region of the jaw since last one month. On intraoral examination with UNC-15 probe, it was observed that there was a pocket depth of 11 mm on buccal aspect of 46 was present with furcation involvement (Fig.01).

Fig.01. Probing depth 11mm

Fig.02. IOPA showing radiolucent area

No signs of mobility and tenderness on percussion were present. An intraoral Periapical radiograph of that region revealed a large radiolucent area at the apical aspect of 46 mimicking grade III furcation involvements (Fig.02). Also the tooth was found to be non vital when pulp vitality test was done. Henceforth, root canal treatment was done with 46 along with scaling and polishing.

The patient was recalled after three month, but no significant reduction in pocket depth was found. Under local anaesthesia sulcular incison was given and the flap was reflected (Fig.03). Granulation tissue was removed and root planing was done. On checking with Nabers probe, lingual cortical plate was found to be intact and it was a typical case of grade II furcation involvement revealing cul-de-sac (Fig.04). After thorough debridement, graft was placed (Perioglas) along with collagen membrane covering the defect (Periocol) (Fig.05). The flap was then sutured with interrupted sutures and periodontal dressing was given (Fig.06). Patient was recalled after 8 days and sutures were removed.

Fig.03. Flap reflection and debridement

Fig.04. Detection of furcation involvement with Nabers probe

Fig.05. Placement of bone graft

Fig.06. Periodontal Dressing collagen membrane

At the end of six months, there were no symptoms of any pain or discomfort. On examination the pocket was reduced from 11mm to 4mm (Fig.07) and radiograph showed bone formation in apical portion of the defect (Fig.08).

Fig.07. At 6 months postoperative

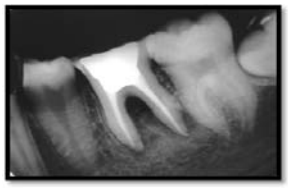

Fig.08. Bone fill in Radiograph

Discussion

It was a typical case of primary endodontic lesion with a secondary involvement of periodontal tissue. On flap reflection, it revealed a typical cul-de-sac feature leading to grade II furcation involvement. In combined periodontal-endodontic lesion, only part of the lesion heals to the level of the secondary periodontal lesion. In general, healing of the tissue damaged by suppuration from the pulp space can be anticipated. Primary endodontic lesions with secondary periodontal involvement may also occur as a result of root perforation during root canal treatment, or where pins or posts have been misplaced during coronal restoration.10 Unlike teeth with periodontal-related lesions, teeth with endodontic-related lesions mainly feature extesive restorations. In contrast to teeth with endodontal lesions, periodontal lesions are often visible in combination with local factors (plaque/calculus). Whereas periodontal-related lesions which generally involve increased exploratory depth, endodontal related lesions as in the case mentioned; during probing, at one particular aspect of the tooth, the probe 'disappears' into a deep, narrow, fistula-like defect.

Symptoms may be acute, with periodontal abscess formation associated with pain, swelling, pus or exudate, pocket formation, and tooth mobility. A more chronic response may sometimes occur without pain, and involves the sudden appearance of a pocket with bleeding on probing or exudation of pus. When the root perforation is situated close to the alveolar crest, it may be possible to raise a flap and repair the defect with an appropriate filling material. In deeper perforations, or in the roof of the fucation, immediate repair of the perforation has a better prognosis than management of an infected one. Use of mineral trioxide aggregate has resulted in cemental healing following immediate repair.[4]

The prognosis and treatment of each endodontic–periodontal disease varies. Primary endodontic disease should only be treated by endodontic therapy and has a good prognosis. Primary periodontal disease should only be treated by periodontal therapy. In this case, the prognosis depends on severity of the periodontal disease and patient response. Primary endodontic disease with secondary periodontal involvement should first be treated with endodontic therapy. Treatment results should be evaluated in 2–3 months and only then should periodontal treatment be considered. This sequence of treatment allows sufficient time for initial tissue healing and better assessment of the periodontal condition.[5, 6] It also reduces the potential risk of introducing bacteria and their byproducts during the initial healing phase. In this regard, it was suggested that the periodontal healing was adversely affected by aggressive removal of the periodontal ligament and underlying cementum during interim endodontic therapy.[7] Terminology currently used in literature adds to the confusion of accurate identification of various lesions resulting in defects that can be probed. Recently a new classification for periodontal diseases and conditions was adopted by the International Workshop for a Classification of Periodontal Diseases and Conditions and a category of 'Periodontitis Associated With Endodontic Lesions' and a subcategory of 'combined periodontic–endodontic lesions' was added to the classification.[8] Combined lesions are defined as 'those cases where there is any coalescence of endodontic and periodontal lesions.[9]

It is estimated that 30–40% of all teeth have lateral or accessory canals and the majority of them are found in the apical third of the root.[10]

DeDeus [11-12] found that 17% of teeth had lateral canals in the apical third of the root, about 9% in the middle third, and less than 2% in the coronal third. However, it seems that the prevalence of periodontal disease associated with lateral canals is relatively low.

Conclusion

The above case represents a typical primary endodontic-secondary periodontal involvement. Such lesions can be positively identified by careful probing and radiograph. Root canal treatment is the first treatment priority followed by periodontal therapy in treating perio-endo lesions.

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