CASE REPORT

Endoperio Lesion - A Case Report

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Abstract

Endodontic-periodontal combined lesion is a clinical dilemma because making a differential diagnosis and deciding a prognosis are difficult. Lesions of the periodontal ligament and adjacent alveolar bone may originate from infections of the periodontium or tissues of the dental pulp. Periradicular bone loss secondary to endodontic pathosis is typically seen in teeth with necrotic pulps. The ultimate goal of periodontal therapy is not only to maintain the natural dentition, but also to restore lost periodontium. Combined periodontal and endodontic diseases involve the periodontal attachment apparatus. The treatment of endodontic-periodontal combined lesions requires both endodontic therapy and periodontal regenerative procedures. With advancements in new techniques and materials different treatment choices are available, providing a superior prognosis. This article includes case report of combined endo-perio lesion which was first treated with conventional endodontic therapy and then followed by periodontal surgery. This combined treatment resulted in a radiographical evidence of alveolar bone gain. This case report demonstrates that proper diagnosis, followed by removal of etiological factors and utilizing the combined treatment modalities will restore health and function to the teeth with severe attachment loss caused by an endo-perio lesion.

Key Words

Endodontic-periodontal lesion, Dental

Introduction

Preservation of the natural dentition is the ultimate goal of dental therapy. In periodontics, the goal is not only to maintain the natural dentition, but also to restore lost periodontium. Lesions of the periodontal ligament and adjacent alveolar bone may originate from infections of the periodontium or tissues of dental pulp. Periradicular bone loss secondary to endodontic pathosis is typically seen in teeth with necrotic pulps. Combined periodontal and endodontic diseases involve the periodontal attachment apparatus. Pulpal necrosis may lead to destruction of the attachment apparatus by extension through the apical foramen or through accessory canals that may be located at different levels on the root surface.

An acceptable treatment results, for combined endodontal and periodontal (endo-perio) lesions may be obtained by endo-perio therapy. Formulating a differential diagnosis among combined lesions has been challenging. Therefore, diagnostic steps should include thorough patient-reported dental history, visual inspection for presence of sinus tract and severe inflammation in association with large restoration and anatomic anomalies such as palatal grooves, radiographical confirmation with tracing the sinus track, results of clinical findings including percussion and palpation, routine periodontal assessment for presence of mobility or deep probing depth, testing for coronal

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cracks and pulp vitality test. [4]

Case Report
A 22-year-old female presented to Department of Periodontology and Implantology, Government Dental College and Hospital Srinagar, with a complaint of pus discharge from mandibular central and lateral incisors. Patients was systemically healthy and medical history was not contributory to this dental problem. On clinical examination, probing depth was 12 mm on mesial aspect of 41 and 8 mm on mesial of 42. Mobility was grade II in both teeth. The buccal gingiva showed slight swelling and clear signs of inflammation. The teeth did not respond to percussion and palpation tests. It neither responded to the electrical pulp test nor thermal tests. Periapical radiograph showed a deep bony defect extending to root apex of 41, 42, in addition to the periapical radiolucency. Initial diagnosis was pulp necrosis and asymptomatic apical periodontitis, and the teeth were thought to have primary endodontic involvement. However, the pattern of periodontal bone loss, with a wide base, coupled with generalized marginal periodontitis, suggested that there was also primary periodontal involvement in this case. [5] Therefore, considering the dental history, clinical tests and radiographs, the diagnosis of this case was an endodontic-periodontal combined lesion, according to Simon classification 1972.

Discussion
Endodontic-periodontal lesion is a clinical manifestation of the pathologic/inflammatory intercommunication between pulpal and periodontal tissues via open structures such as apical foramina, lateral, accessory canals, and dentinal tubules [1]. On the basis of the pathologic origin, Simon et al.,[6] classified endodontic-periodontal lesions into primary endodontic lesions, primary endodontic lesions with secondary periodontic involvement, primary periodontic lesions, primary periodontic lesions with secondary endodontic involvement, or true combined lesions. Bone loss secondary to pulpal pathosis is believed to result from the spread of inflammatory irritants from the pulp to the periodontal ligament. [7] The treatment of endodontic-periodontal combined lesions requires both endodontic therapy and periodontal regenerative procedure, as discussed in this case report. The goal of periapical surgery is to remove all necrotic tissues from the surgical site, to completely seal the entire root canal system, and to facilitate the regeneration of hard and soft tissues including the formation of a new attachment apparatus. [8]
It is interesting to note that there was no radiographic or clinical evidence of preexisting deep decay in either of the teeth, and no cracks were evident. The most common clinical/radiographic features of these endodontic-periodontal lesions reported were the periapical radiolucency and deep pocket depths with a non-vital pulp status. Traditional approaches to treat periodontal and endodontic defects include nonsurgical debridement of root surfaces or root canals, as well as surgical approaches that provide better access to clean the root surfaces and apical lesions and to reshape surrounding bone/root apex. Bone loss caused by pulpal disease is reversible, whereas advanced bone loss caused by periodontal disease is usually irreversible. [9] The necessity of periodontal surgical therapy most likely was because the periodontal bone loss was more advanced and was less likely to resolve after non surgical root canal therapy alone. [1]

Generally, partial apical root resection has been suggested for endodontic surgery caused by the multiple apical canals to the pulp. [10] In this case report, root canal debridement and removal of granulation tissue around the root and apex was done, without subsequent root resection and retrograde filling. However, periradicular curettage was the sole procedure for the following reasons: (a) periradicular curettage is able to remove the granulation tissue without root resection; (b) there is no difference in healing with curettage alone or curettage with root-end resection more dentinal tubules may remain open after root-end resection, allowing more contaminants to leak out through the tubules. The role of bone graft in this case was for space-making and also for inducing bone formation and the attachment gain.

A long junctional epithelium formed over the dehisced root surface has been suggested to be a contributing factor for the poor therapeutic prognosis. However, from clinical and radiographic findings, the result of this combined technique was quite impressive, resulting in a significant reduction of probing depth and bone fill. Selecting a defect that is amenable to regeneration is also critical for achieving success. This is also true for an endodontic defect. Some of the patient factors that might contribute to positive outcome includes the good plaque control, compliance, nonsmoking, anti-infective therapy and systemic health. Other factors that might also negatively affect the healing process include occlusal trauma, improper surgical technique (such as excessive flap tension), early mechanical disruption, and contamination during surgery.

References


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