ORIGINAL RESEARCH PAPER

Dental Science

CASE REPORT: ENDO PERIO LESION TREATED WITH DISTAL WEDGE PERIODONTAL THERAPY

KEY WORDS: Distal wedge procedure; Periodontium; Pulp.

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ABSTRACT

Endodontic–periodontal lesions present challenges to the clinician as far as diagnosis and prognosis of the involved teeth are concerned. Primary periodontal disease with secondary endodontic involvement require both endodontic and periodontal therapies. Prognosis of such cases depends on the severity of periodontal disease and the response to periodontal treatment. To prevent the further loss of periodontal structures around molars, distal molar surgery has proven to be a simple and promising technique known as distal wedge procedure. Here, we present a case report of endo-perio lesion primarily treated endodontically followed by periodontal therapy via distal wedge procedure.

INTRODUCTION

The endodontium and periodontium are closely related and diseases of one tissue may lead to the involvement of the other.[1] The endo-perio lesions have been characterized by the involvement of pulp and periodontal disease in the same tooth. These lesions often remain free of symptoms for long periods, until it starts acute symptoms of inflammation and increased pain. The differential diagnosis of endodontic and periodontal diseases can sometimes be difficult, but it is of vital importance to make a correct diagnosis so that the appropriate treatment can be provided.[2] Periodontal therapy is directed at disease prevention, slowing or arresting disease progression, regenerating lost periodontium, and maintaining achieved therapeutic objectives.[3]

Management of deep periodontal pockets on the distal aspect of molar as a sequel of disimpaction procedure is a strenuous clinical situation which is even more complicated due to the bulbous tissues over the tuberosity or prominent retromolar pad. This is a common finding due to anatomical and histological characteristics of the tissue in these regions which predispose to the appearance of this type of periodontal lesion. An attempt to manage and prevent the further loss of periodontal structures around molar, distal molar surgery has proven to be a simple and promising procedure known as distal wedge procedure.[4]

Here, we present a case of endo-perio lesion primarily treated endodontically followed by periodontal therapy via distal wedge procedure.

CASE REPORT

A 22-year-old male reported to the department of periodontics Haldia institute of dental sciences and research with the chief complaint of pain in the left lower back jaw region for 20 days. The patient gave history of pain which was dull, continuous, aggravated on taking hot and cold food substances and relieved on taking self-medication. Past medical, dental and family history were insignificant. Vital signs were within satisfactory limits.

On clinical examination, no extraoral swelling was observed. Intraorally, deep carious teeth with pulpal involvement were seen i.r.t. 37. Periodontal pocket depth of 6mm was noted distally in the associated tooth. Intraoral periapical radiograph i.r.t. 37 revealed deep dentinal caries with pulpal involvement and periapical radiolucency with irregular borders involving both the roots of 37. Distal bone loss was also seen. Based on history, clinical and radiological findings, diagnosis of endo-perio lesion was considered.

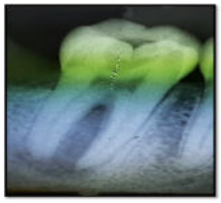
Primarily, endondontic treatment was planned for 37 followed by periodontal therapy. Access opening was done for 37 and working length determined followed by calcium hydroxide dressing. Periapical radiolucency was seen to be reduced radiographically after 3 consecutive calcium hydroxide dressings. Next calcium hydroxide and iodoform dressing was given thrice and evaluated at an interval of 1 month each. Distolingual and distobuccal cusps were fractured in between treatment which was further build up by composite restoration followed by obturation and restoration. No periapical radiolucency was seen radiographically at the end of the endodontic treatment.

Further, periodontal therapy was planned and scaling and root planing done. Distal wedge procedure was performed after a period of 1 week. Hematological parameters were found to be normal. Prior to the surgical procedure, the area was anesthetized with a 23-gauge syringe loaded with 2% lignocaine and 2,00,000 adrenaline solution under aseptic conditions. Two vertical converging buccal and lingual incisions were made through the retromolar pad forming a triangular wedge. The buccal and lingual incisions were extended in a mesial direction along the buccal and lingual surfaces distally to 37 to facilitate flap elevation. The inner surfaces of both the flaps were undermined, loose tags of tissue removed and the root surfaces debrided. The flaps were then approximated by simple interrupted sutures with 3 - 0 silk material.

Post-operative instructions were given. The patient was advised antibiotics (amoxicillin plus clavulanic acid 625 mg BD and metronidazole 400 mg TDS) and analgesics (diclofenac sodium plus paracetamol BD) after surgery for 5 days. The patient was also encouraged to practice intermittent cold fermentation for the next 24 hours. He was instructed not to brush in the treated area and to rinse thrice daily for 1 minute with chlorhexidine digluconate 0.12 % until suture removal. He was also advised to maintain a soft diet for the next 15 days.

The patient had come after a week for suture removal. Postoperative healing was found to be uneventful. He was asked for periodic follow up after 15 days, 1 month and 3 months. Reduction in periodontal pocket depth was observed after a period of 3 months.

Preoperative Clinical picture



Preoperative radiograph

W/L Determination

Radiograph After three subsequent dressing change with calcium hydroxide.

Master cone selection & Obturation

Per-operative

Incision Line

Wedge Tissue Removed

Suture Placed

1 Month followup

3 Month followup with pocket reduction

Pre operative

1 Year Post Operative

DISCUSSION

The relationship between periodontal and pulpal disease was first described by Simring and Goldberg in 1964.[1] If a suppurating primary endodontic disease remains untreated after a period, it may then become secondarily involved with marginal periodontal breakdown. Plaque forms at the gingival margin of the sinus tract and leads to marginal periodontitis. When plaque or calculus is present, the treatment and prognosis of the tooth are different from those of teeth involved with only primary endodontic disease. The tooth now requires both endodontic and periodontal treatments. If the endodontic treatment is adequate, the prognosis depends on the severity of the marginal periodontal damage and the efficacy of periodontal treatment. With endodontic treatment alone, only part of the lesion will heal to the level of the secondary periodontal lesion. In general, healing of the tissues damaged by suppuration from the pulp can be anticipated. The primary endodontic disease with secondary periodontal involvement should first be treated with an endodontic therapy. Prognosis depends on the severity of periodontal involvement, periodontal treatment and patient response. Similarly, in our case, the tooth was treated endodontically as well as periodontally.[5]

The main objective of periodontal surgery is to obtain a healthy and functionally esthetic periodontium.[6] Distal wedge procedure is one such technique indicated on the distal aspect of terminal molars or on other proximal tooth surfaces encircling edentulous spaces for treating periodontitis, enabling an effective oral hygiene practice and an ease in restorative aspects.[7] It was originally given by Robinson in 1966.[8] The procedure can be performed as an independent plan of action or in adjunctive with various periodontal therapies like flap access for crown lengthening and apically positioned flap. Numerous osseous and regenerative surgery can also be accompanied with the same.

Three classic distal wedge incision designs have been defined: square, triangular, and linear.[8] Since the 1960s, a few authors have offered incremental modifications to these approaches.[9,10] In the present case, triangular wedge incision was performed. Positive treatment outcomes are achievable irrespective of the selected distal wedge technique in most cases, and evidence supporting superiority of any method is lacking. Distal wedge procedures can be indicated at any site adjacent to an edentulous space. However, these procedures are very commonly applied on the distal aspect of terminal second molars.[7]

CONCLUSION

The presence of a combined endodontic-periodontal lesion will always result in a compromised situation following treatment. Even with apparently successful treatment, the tooth will still be compromised as there is likely to be loss of periodontal attachment and bone support. It is of utmost importance that the patient maintains good oral hygiene and obtains regular professional care for this region. The tooth anatomy and the etiology of endodontic-periodontal lesions offer a strong base for establishing a correct diagnosis. An interdisciplinary approach with a good collaboration between endodontists, periodontologists and microbiol ogists is recommended.

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