CASE REPORT

DIAGNOSIS & MANAGEMENT OF ENDO-PERIO LESION: A CASE REPORT

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ABSTRACT

Diagnosis of combined pulpal & periodontal infections can be challenging in our day to day practice. Prognosis of such teeth can improve with correct diagnosis and timely treatment. The treatment of these endo-perio lesions differ individually, but should be judged based on progression of the lesion. This case report aims to discuss one such clinical case of endo-perio lesion along with its 18 months follow-up.

INTRODUCTION

The relationship between the pulp and the surrounding periodontal tissue was first described by Simring and Goldberg in 1964. The interrelationship of these structures influences each other in terms of function, health and disease. Typically these structures get infected alone however, if they do get diseased together, it's commonly known as Endo-Perio lesion. Thus, pulp and periodontium get involved together, making the diagnosis and treatment challenging[1,2]. Such widespread infection compromises the longevity of tooth and is held responsible for about 50% of tooth extractions.

Treatment of endo-perio lesions need endodontic therapy followed by periodontal procedures. The aim of the present case report is to describe the management of primary periodontal disease with secondary endodontic involvement. Treatment here involves root canal treatment followed by flap surgery using guided tissue regeneration(GTR) membrane with bone graft.

CASE REPORT

A 37 year old female patient came with a chief complaint of pain since the last 4-5 months, mainly in her lower right back tooth. She gave a history of localized, dull intermittent pain which increased in intensity while chewing food. No relevant medical or family history was noted. Clinically, Grade II mobility irt 46 and probing depth of 8 - 10 mm was recorded on the distal aspect of tooth [Fig 4]. Despite the tooth being non-carious, it did not respond to vitality testing indicating diagnosis of pulp necrosis. IOPAR revealed bone loss extending upto the apex on the distal aspect of tooth 46 (Fig 1). Hence, we diagnosed the case to have a primary periodontal component with a secondary endodontic involvement. Initial appointment was given for full-mouth scaling and root planing, following which root canal treatment in relation to 46 was initiated.

Endodontic therapy

Endodontic treatment was taken up first. 2% local anesthesia with 1:80,000 adrenaline was administered and access opening was done using rubber dam isolation. Biomechanical preparation was done using Pro-Taper files followed by Calcium hydroxide dressing for 1 week. Tooth was obturated with GP points (Fig 2-3).

Patient was kept on regular follow ups to assess progress in healing.

Periodontal Therapy

Following 3 months of root canal, periodontal flap surgery was done for tooth 46. After administration of LA, mucoperiosteal flap was raised at the buccal aspect following intrasulcular and vertical releasing incision (Fig 5). Vertical releasing incision was placed at the mid buccal aspect of the tooth extending into the alveolar mucosa. After reflection, granulation tissue was removed and thorough root planning was done (Fig 6). Bone graft (Hydroxyapatite crystals) was placed in the bone defect (Fig 7) and root dehiscence was covered by GTR membrane (Fig 8). Flap was sutured with 3-0 silk sutures (Fig 9) and Coe-Pack was placed.

Post-operative instructions

The patient was given oral hygiene instructions and prescribed 0.12% chlorhexidine mouthwash for rinsing twice daily for 2-3 weeks. The sutures were removed 2 weeks after surgery.

Follow up visits

The patient was put on regular follow up at 6, 12 and 18 months (Fig 10-11). During follow up appointment, the probing depth was reduced to 3 mm and post-op radiograph showed bone fill in the defect.

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DISCUSSION

Inflammatory intercommunication between the pulp and surrounding tissues leads to endo-perio lesions. This clearly demonstrates that the tooth must be treated along with the periodontium as a biological unit. Understanding the relationship between pulp and periodontia provides a viable solution to such problems and delays extraction / complicated procedures to save the tooth. However, it must be noted that these lesions are difficult to diagnose and treat as they present signs and symptoms of both endodontic as well as periodontic pathology[2].

Taking our present case into consideration, there was no carious lesion irt 46. However, the tooth was associated with deep periodontal pockets with Grade II mobility and was non-vital. Radiographic examination showed advanced periodontal bone loss in relation to (distal aspect) 46.

In such combination pathologies, Simon's classification is mostly used. According to it, this suggests a primary periodontal disease with secondary endodontic involvement. There are three main routes that have been correlated in the development of such periodontal–endodontic lesions: apical foramen, lateral and accessory canals, and dentinal tubules [3]. In the present case, we inferred that the ingress of pulpal infection was via periodontal pocket through lateral canal. The absence of any caries in the tooth led to this conclusion. Root canal treatment followed by periodontal surgery is the mainstay of treatment to be followed here.

Endodontic treatment is completed first[4,5] since pulpal infection is said to be causative of marginal epithelial downgrowth along the root surfaces of the teeth[6]. Unhealed apical lesions would then further require periodontal surgery.

During root canal treatment, it's also imperative to consider the role of accessory canals. It's proven that 30-60% of molars contain accessory canals in their furcation area. It's mainly the mandibular molars which contain these canals and incase of incomplete or improper root canal treatment, these areas act as reservoirs of canal re-infection. Similarly, inaccessible areas around the molars or permeable dentin/cementum also complicate treatment prognosis.

After successful endodontic treatment, the prognosis of tooth depends on periodontal extent of destruction. If periodontal therapy prognosis is poor, it's advisable to extract the tooth. Periodontal treatment is taken up 3-4 months post root canal treatment (RCT). Previous studies suggest that this much period of time is sufficient for the endodontic therapy to not adversely affect the periodontal wound. healing.

In the present case report, follow-up after the root canal revealed persisting bone loss with periodontal pocket, which necessitated periodontal therapy to be performed. The flap surgery was accompanied by bone graft and GTR membrane. The membrane here acts as a barrier between the faster growing epithelial cells and the defect region. Thus, by exclusion of gingival epithelium and connective tissue, periodontal regeneration is achieved increasing the prognostic value of the tooth.

CONCLUSION

This case report aims to establish the fact that accurate diagnosis in such complicated cases, followed by a multidisciplinary approach in treatment planning restores proper health and function to the affected tooth in harmony with its supporting tooth structures.

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