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CASE STUDY

INTERNAL RESORPTION-AN INSIDIOUS AND A CHALLENGING THRUSS TO ENDODONTIST-A CASE REPORT

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INTRODUCTION

According to American Association of Endodontics, resorption is defined as a condition associated with either a physiologic or a pathologic process resulting in loss of dentin, cementum or bone. Physiologic resorption is seen in primary teeth that results in their exfoliation and allows eruption of their permanent successors. Pathologic resorption can occur following traumatic injuries, orthodontic tooth movement, or chronic infections of the pulp or periodontal structures. Pathologic resorption if untreated will result in the premature loss of the affected teeth. Physiologic resorption is seen in primary teeth that results in their exfoliation and allows eruption of their permanent successors. Pathologic resorption can occur following traumatic injuries, orthodontic tooth movement, or chronic infections of the pulp or periodontal structures. Pathologic resorption if untreated will result in the premature loss of the affected teeth (Priya Thomas *et al.*, 2014). External resorption begins from the external or cervical surface of the tooth and proceeds inwards and is associated

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ABSTRACT

Resorption is a pathologic process that often eludes the clinician with its varied etiologic factors and diverse clinical presentations. Internal resorption may progress slowly or rapidly. If progression is rapid, it may result in a perforation of the crown or root within a few weeks. This is a case report of a 32 year female patient presenting with internal resorption due to trauma. The case was treated by complete deridement of the canal and then triple antibiotic paste was used as an intracanal medicament. MTA angelus was used as obturating material and 6th month follow up revealed apexification with and progressive healing.

with factors like periapical pathosis, pressure from orthodontic treatment, and rapidly growing tumors. Internal resorption (IR) is a rare, insidious, resorptive pathological process, beginning in the pulpal space and extending into the surrounding dentin. Its diagnosis and management have been a challenge to dental practitioners (Marina Fernandes, 2013).

Case Report

A 32 year-old female patient reported to the Department of Conservative Dentistry & Endodontics with a chief complaint of broken tooth and discoloration in the front region. The history revealed trauma to the teeth about 7 years back. On vitality testing, the tooth was found to be non vital. On periapical radiograph, the pulp canal space of tooth appeared enlarged. A large radiolucency was evident in the middle third with an open apex. A diagnosis of internal replacement resorption along with external inflammatory resorption was made (Fig 1, 2). Following access cavity preparation and establishing working length, an open apex was determined allowing even the 80 K file through the apex. Cleaning and shaping of the canal was then performed using hand K- files, taking care to apply less pressure towards the canal wall to avoid thinning of the wall.

This was followed with copious irrigation of 5.25% NaOCl and by placement of Triple Antibiotic Paste as an intracanal medicament into the canal space for 21 days. Post 21 days, obturation was performed using Mta angelus in the resorption defect. Post endo restoration was done using sandwich technique. The patient was then recalled for follow up visits. At six-month follow up, the tooth was found to be clinically asymptomatic, with radiographic signs of healing which revealed the formation of apex inducing apexification (Fig. 3,4,5,6,7,8)



Fig.1. Preoperative photograph



Fig. 2. Preoperative radiograph



Fig.3. Open apex allowing 80.N K-file

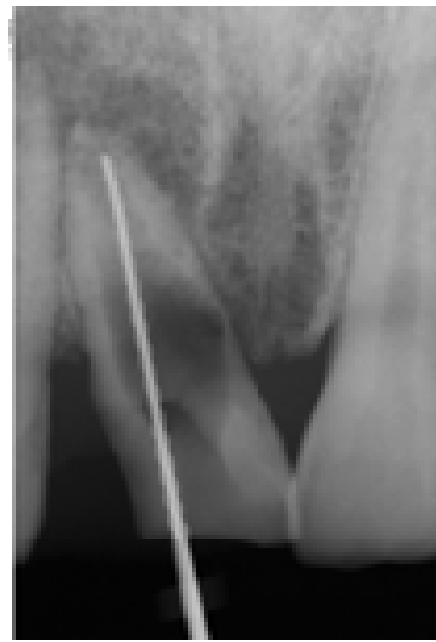


Fig. 4. Working length determination

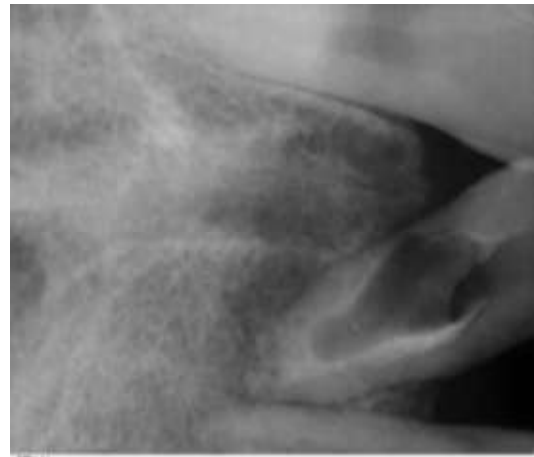


Fig 5. Mta used as apical barrier



Fig. 6. Obturation done using Mta Angelus



Fig. 7. Post endo done using sandwich technique (light cure gic and composite)



Fig. 8. 6 months follow up showing apex formation (apexification)

DISCUSSION

Majority of the cases of internal resorption are idiopathic. It requires high quality periapical radiographs, CBCT scans for its accurate diagnosis. Early diagnosis and appropriate treatment at the correct time can prevent tooth loss. Sufficient dentin thickness leads to good prognosis. A well experienced practitioner should be able to distinguish between internal resorption and other types of resorption for better prognosis of the treatment. In this case, triple antibiotic paste was used as an intracanal medicament because of its well established disinfecting property. Triple antibiotic paste (TAP) contains metronidazole, ciprofloxacin, and minocycline.

It has been reported to be a successful regimen in controlling the root canal pathogen and in managing non-vital young permanent tooth. Raison Bose compared TAP, calcium hydroxide, and formocresol as intracanal medicaments in non-vital young permanent tooth. The triple antibiotic group showed the highest percentage increase in the dentin wall thickness compared with the other two groups. TAP can help promote functional development of the pulp–dentin complex. TAP contains both bactericidal (metronidazole, ciprofloxacin) and bacteriostatic (minocycline) agents to allow for successful revascularization (Rangasamy, 2012).

MTA was used to form a apical barrier in the form of a plug between open apex and the pulp chamber followed by obturation. Mta angelus was chosen due its good biocompatibility, sealing ability, lower overfilling tendency, short setting time i.e 10- 15 minutes and non-cytotoxicity. MTA strengthens the root when used intracanalobturating material. So, endodontic treatment along with MTA could be the first option in these cases rather than invasive surgical procedures like apicoectomy or extraction. MTA being a bioactive material, it forms hydroxyapatite crystals and thus strengthens the weak thin root dentin. After obturation ,light cured glass ionomer cement followed by composite resin i.e sandwich technique was used to prevent coronal micro leakage.

Conclusion

Cases of internal resorption can be managed conservatively with conventional endodontic treatment and bioactive materials, rather than to opt for invasive surgical procedures like apicoectomy or tooth extraction that are debilitating to patients.

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