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MANAGEMENT OF ROOT RESORPTION- A REBIRTH CASE REPORTS

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INTRODUCTION

Tooth Resorption is defined as a condition associated with either a physiologic or a pathologic process resulting in the loss of dentin, cementum, or bone¹. Andreasen has classified tooth resorption as Internal (Inflammatory, Replacemental, Transient apical breakdown) and External (Surface, Inflammatory, Replacemental, Cervical, Transient apical breakdown)²

Internal root resorption is the progressive destruction of intraradicular dentin and dentinal tubules along the middle and apical thirds of the canal walls as a result of clastic activities. For internal root resorption to occur, the protective odontoblast layer and the predentin of the canal wall must be damaged, resulting in exposure of the underlying mineralized dentin to odontoclasts³

For external resorption to occur, the protective cementum layer below the epithelial attachment should be damaged, which exposes the root surface to osteoclasts, which then resorb dentin⁴.

Below are two case reports on management of internal resorption and external cervical root resorption using different treatment modalities.



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CASE REPORT- 1

History

A 25 year old male patient reported to the department with the chief complaint of discoloured upper front tooth for the past 4-5 years. History revealed that he had met with trauma 10 years back and remained completely asymptomatic till date.

Clinical examination

Intraoral examination showed brownish discoloration of 21 with no tenderness on percussion or periapical palpation. Neural sensibility tests elicited no response in 21. Clinically labial mucosa and attached gingiva in relation to 21 showed no abnormality. (fig 1a)

Radiographic examination

The radiographic findings revealed a well-defined ballooning radiolucency of root canal wall extending from the cervical aspect of the crown to the junction of coronal and middle third of the root. A very thin root canal extends from the middle third of the root. (fig 1b)

Provisional Diagnosis

Non perforating Internal inflammatory root resorption of 21

Treatment plan

Root canal treatment of 21 → Non surgical management of the resorptive lesion with thermoplasticized gutta percha → Non vital bleaching

Clinical procedure

Under rubber dam isolation, Access opening was initiated in 21 without local anaesthesia . Apical third of the canal was negotiated using a 10k file and EDTA. Working length was measured (fig 2a). Cleaning and shaping was done till no 60k file. Ultrasonic activation of the irrigant (3%sodium hypochlorite) was done to ensure thorough debridement of the resorptive defect. Calcium hydroxide intracanal medicament was placed for 2 weeks.

In the second visit, obturation was done by hybrid technique (fig 2c). First, endoseal MTA sealer (**Endocem MARUCHI Products**) was coated along the walls of the canal using a lentulospiral. Apical third of the canal was obturated first by lateral condensation, following which the gutta percha apical to the resorptive defect was severed and firm vertical pressure was maintained using a heated plugger. Resorptive defect was filled by thermoplasticized gutta percha (fig 3)

Esthetic correction of 21 was achieved with walking bleach technique (Using sodium perborate and distilled water in the ratio of 2:1 changed weekly for 2 weeks). 3mm of RM-GIC was placed as a cervical barrier for bleaching procedure to prevent percolation of bleaching agents. At 1st month review patient remained completely asymptomatic with satisfactory results clinically and radiographically (fig 4)

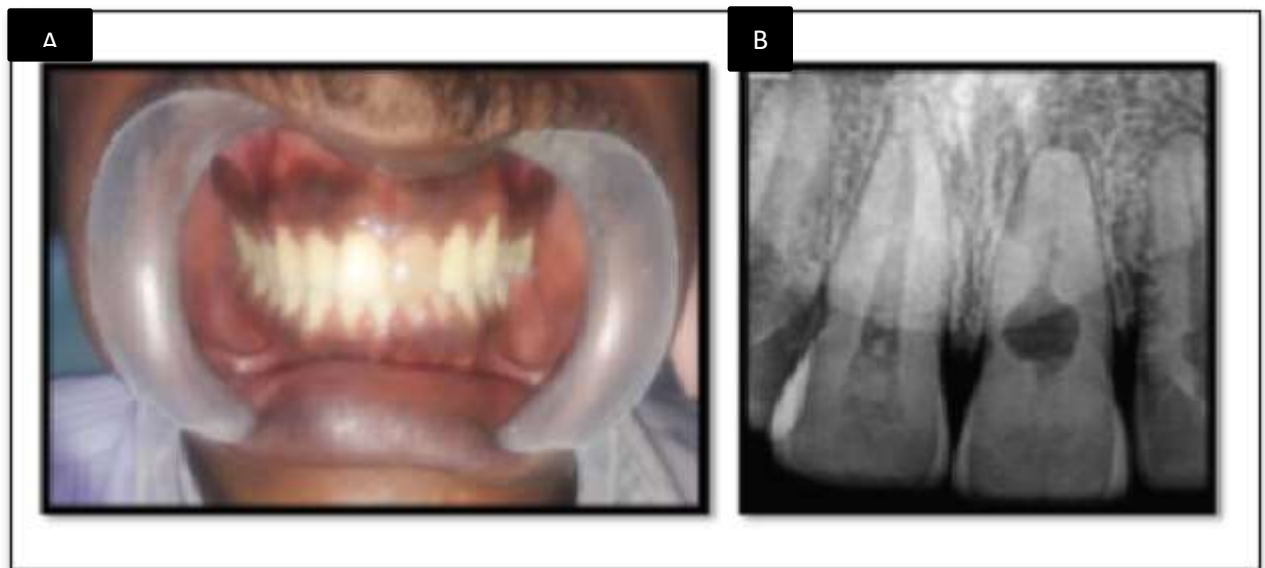


Fig. 1

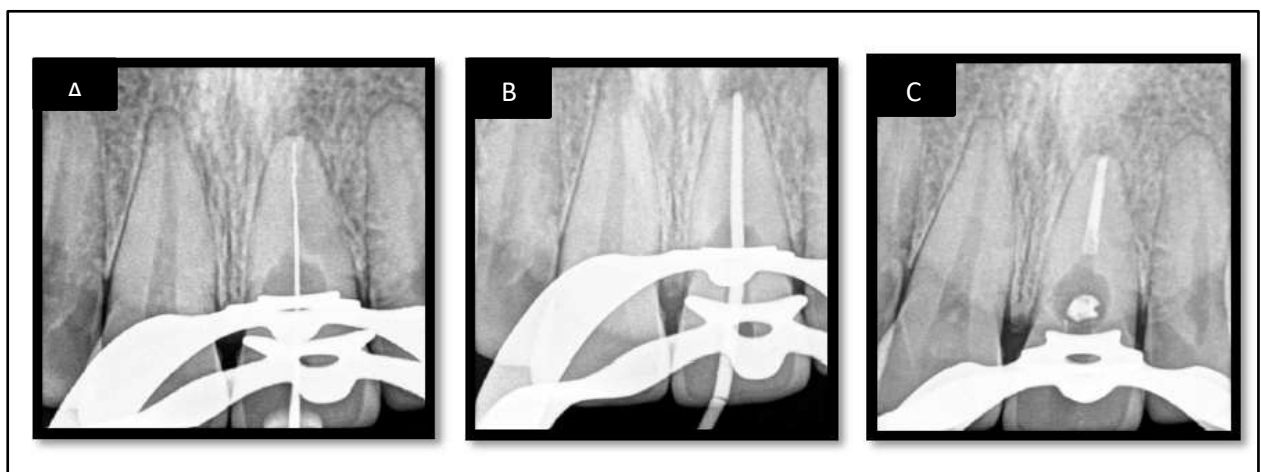


Fig. 2



Fig. 3

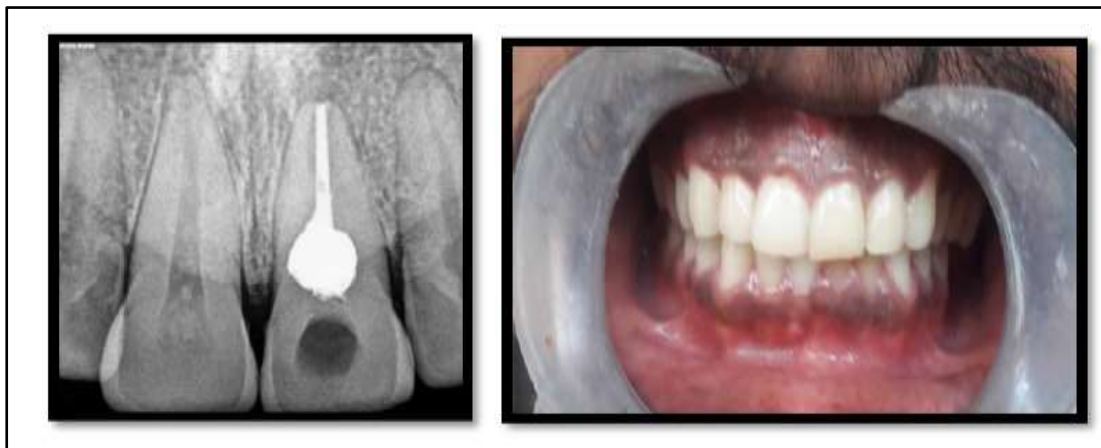


Fig. 4

CASE REPORT- 2

History

A 52 year old male patient reported to the department with the chief complaint of pain and swelling in the lower front tooth region for the past 1 week. Pain is intermittent, dull aching with difficulty in having food. Past dental history revealed that he underwent intermaxillary fixation following dentoalveolar fracture 20 years back. He was completely asymptomatic until a week before.

Clinical examination



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On intraoral examination 1*1 cm ovoid swelling was present in relation to labial mucosa of 33. No caries was visible clinically and the tooth was tender on percussion. On palpation, the swelling was soft and fluctuant. (fig 5a)

On probing circumferentially, a cervical defect was perceived on the lingual root surface of 33.

Radiographic examination

A well-defined spherical radiolucency was present extending from the CEJ to the pulp chamber of 33 with periapical radiolucency. Angular bone loss was also present on the mesial aspect of 33. (fig 5b)

Provisional Diagnosis

Invasive cervical root resorption with acute exacerbation of chronic peripical abcess in 33

Treatment plan

Rct in 33 → Surgical repair of the resorptive defect with biodentin.

Clinical procedure

The root canal treatment was initiated under rubber dam isolation in 33. Access opening was done using endo access bur. Working length was determined (fig 6a). Pus discharge through the canal was present. After complete drainage, cleaning and shaping was done till 70k file. Calcium hydroxide intracanal medicament was placed for 2 weeks. After complete resolution of the symptoms, obturation was done with gutta percha and zoe sealer (fig 6c). After taking informed

consent from patient and routine haematological evaluation, surgery was planned on the same day of obturation. A full thickness mucoperiosteal flap was elevated lingually. A box shaped resorptive lesion was present just below the CEJ (fig 7a). Thorough Curettage of the granulomatous tissue was done (fig 7b) and repaired with biodentin (**septodont**) (fig 7c).

Patient was reviewed at first and 3rd month interval and showed satisfactory healing clinically and radiographically. (fig 8)

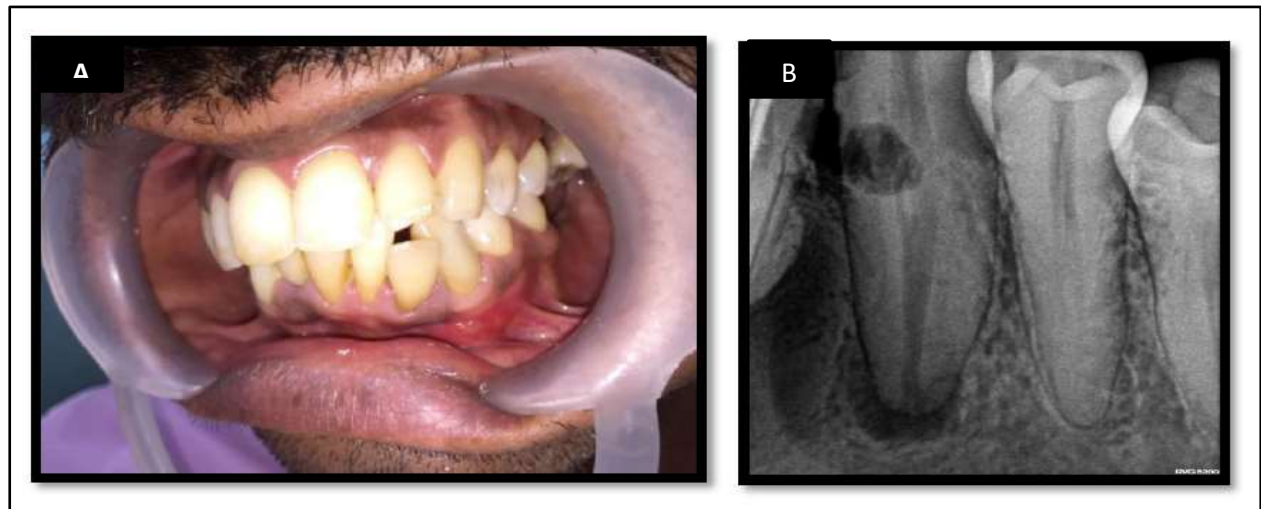


Fig. 5

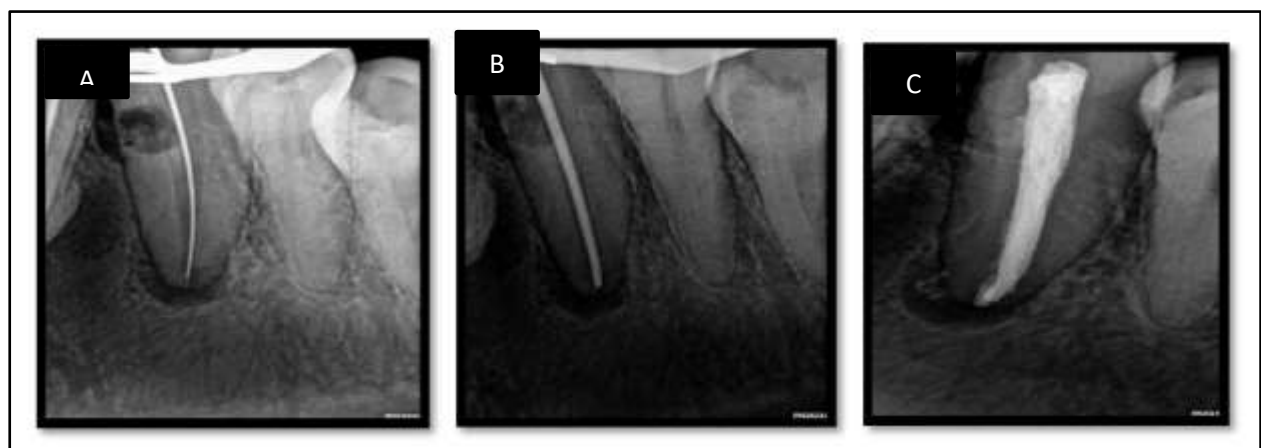


Fig. 6

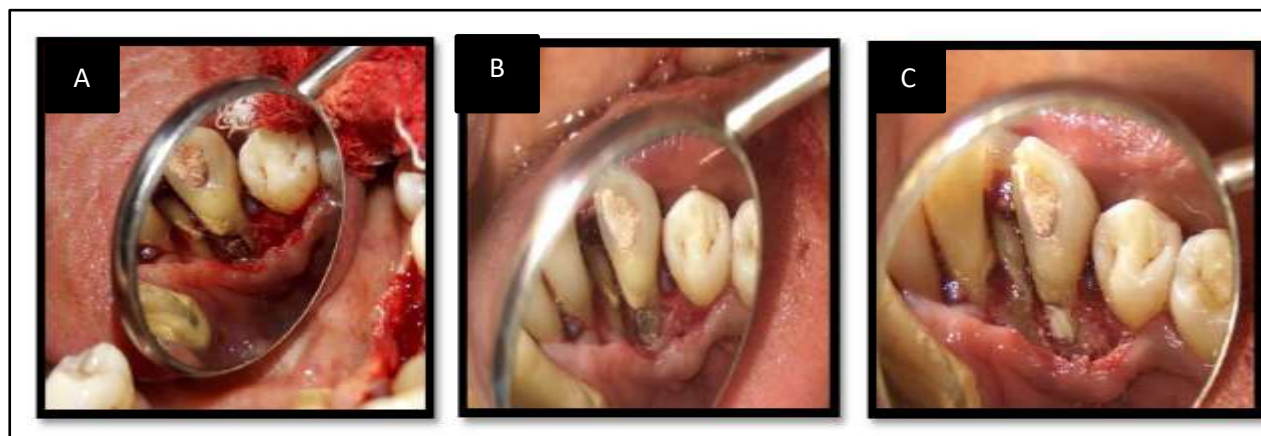


Fig. 7



Fig. 8

DISCUSSION

Diagnosis of resorption can be complex and often misdiagnosed. The first step in successful management would be to distinguish between an internal and external cervical root resorption. In case 1 we opted for non-surgical management as it is predictable to control the process of internal root resorption with conventional root canal therapy. Case 2 was surgically managed as complete curettage of the granulomatous tissue and 3 dimensional obturation of the resorption defect was not feasible non surgically. MTA was used as a sealer in case 1 as it forms an effective seal against dentin and cementum promoting biological repair and regeneration of the periodontium⁵. In case 2 biodentin was used as a repair material due to its bioactivity. It also enhances the alkaline environment which is more conducive for osteoblastic activity⁶.

CONCLUSION

Early detection and a correct differential diagnosis are essential for successful management of the outcome of resorption to prevent overweakening of the remaining root structures and root perforations. In both the cases long term follow up is mandatory to justify the treatment success

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