

MANAGEMENT OF FIRMLY ENTRENCHED UNUSUAL FOREIGN BODY IN THE ROOT CANAL – A CASE REPORT

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INTRODUCTION

Embedment of foreign objects in the oral cavity is a common occurrence among children¹. These foreign objects, usually documented as inserted into the wide root canals of teeth where canals exposed to the oral cavity and in open carious lesions.² Foreign bodies discovered from the root canal varied from radiolucent objects like tooth picks to radiopaque materials like staple pins.³

CASE REPORT

HISTORY AND EXAMINATION

A 20 year old male reported to the department with the chief complaint of pain in the upper left front tooth region. History revealed metallic foreign objects [staple pin and safety pin] being placed inside the open decayed upper left front tooth by the patient himself at the age of 10 years. On clinical examination a large carious lesion in 21 with gingival swelling in relation to its labial aspect was observed, which was soft in consistency and painful on palpation. 21 and 22 was sensitive to percussion and failed to respond to electric pulp sensitivity testing.

Radiographic examination showed radiopaque foreign objects in the root canal of 21 that was projecting into the periapical tissue and also revealed a periapical lesion in relation to 21, 22 (fig 1).

Based on clinical and radiographic findings, the diagnosis was pulpal necrosis with periapical pathology in 21, 22.

Treatment plan → retrieval of foreign object via the access cavity → RCT of 22 → periapical surgery for retrieving the object that extended beyond root apex of 21 → reinforcement of root canal of 21 → metal ceramic crown in 21.

Clinical procedure - Under rubber dam isolation, caries was removed and access cavity was prepared in 21, copious irrigation was done to flush the debris. Foreign body was visualised in the access cavity. With the mosquito artery forceps, foreign object that was obvious in pulp chamber was loosened and removed carefully. Retrieved object was identified as safety pin. By further tactile exploration with H-file, resistance was still felt in the canal. IOPA showed another radiopaque object in root canal of 21 extending beyond root apex (fig 2 to 4). On the same visit access opening was done in 22, biomechanical preparation was done, since there was discharge from 22 calcium hydroxide dressing was given.

Following intracanal medicament for a week, RCT was completed in 22. A written informed consent was obtained from the patient. Under local anaesthesia, full thickness mucoperiosteal flap was elevated. Lesion site was identified, foreign body was visualised at the apex and was loosened. Retrieval of the object via root apex was attempted using mosquito artery forceps. Since the object was firmly embedded in root canal, complete retrieval was not achieved, probably because corroded foreign object got crumpled. By further striving the foreign body was extricated and pushed through the root apex using H- file #40. There were two objects adhering to each other. Retrieved objects were identified as staple pins (fig 5-fig 6).

X ray confirmed complete retrieval of foreign objects (fig 6). Granulation tissue in the periapical region of 21 and 22 was curetted, irrigated and suctioned. Apical 3 mm of the roots of 21, 22 were resected and the retrograde filling done with Biodentin (Septodont, St. Maur-des-Fossés, France). Hemostasis was achieved. As the extension of the defect was large, bone graft (sybograft) with PRF was placed. The mucoperiosteal flap was sutured in place and radiograph was taken for the confirmation of accuracy of retrograde filling (fig 7). Following surgical procedure, as the remaining radicular dentin thickness was crucial in 21, entire canal was obturated and reinforced with Biodentin.

Composite restoration was done in 21, followed by metal ceramic crown in 21 (fig 8-fig 9). The patient was reviewed after 3, 6 and 9 months (fig 10).

CASE ILLUSTRATION



Figure 1- pre op x-ray and clinical photograph



Fig 2- foreign object visualised in 21 fig 3- retrieved foreign object (pin) fig 4 - radiopaque object beyond apex in 21

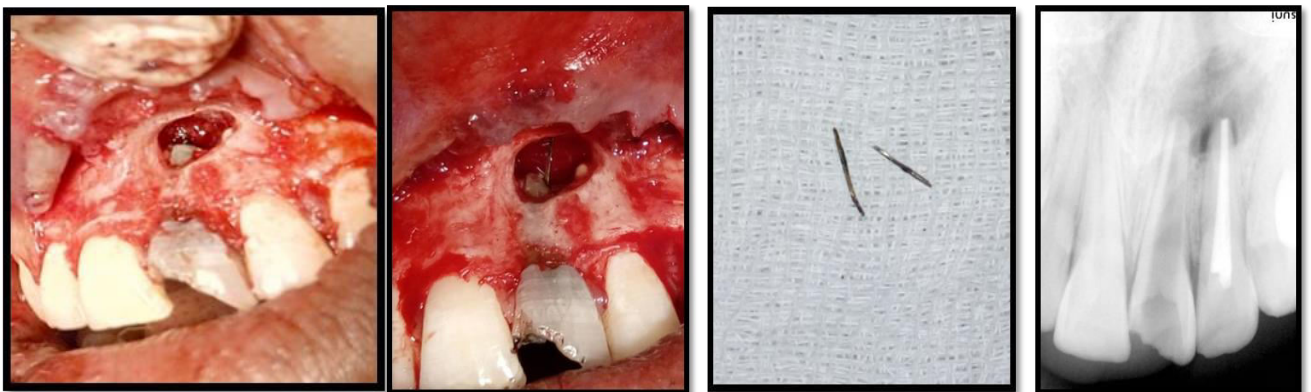


Fig 5 – surgical procedure and IOPA fig 6- retrieval of foreign objects (staple pins) through apex in 21



Fig 7 –retrograde filling with biodentin was done and syngraft plus PRF was placed



Fig 8- composite restoration in 21



Fig 9 – post endodontic restoration (metal ceramic crown)



Fig 10 – 9 months follow up

DISCUSSION

Foreign objects can be easily retrieved if located within the chamber, but once pushed apically, retrieval is difficult.⁴ Shrivastav suggested periapical surgery or intentional reimplantation to remove such objects. Various techniques employed to retrieve foreign objects are barbed broaches, H-files, Stieglitz forceps, Masseran kit, ultrasonic devices, periradicular surgery, intentional reimplantation and extraction when prognosis is poor.⁵

Variety of materials can be used for reinforcing root canal like fiber reinforced composite and calcium silicate cements – MTA and Biodentin. Biodentin, a dentin substitute was used in this case because of its tissue biocompatibility, bioactivity, promoting root repair and bone healing.⁶

CONCLUSION

Foreign bodies in root canal should be carefully assessed to determine the nature, position, size, and difficulty that may be encountered during retrieval. Patience, care and appropriate techniques are helpful in removal and success.

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