

Retrieval of foreign body from the root canal of permanent mandibular central incisor – A Rare Case Report

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Abstract

Trauma in young children is the common etiologic factor for the fractured teeth leading to the exposure of root canals. There is increased possibility of lodgement of various foreign bodies in the exposed root canals which becomes potential reservoir of infection. Retrieval of foreign body from the root canal is dependent on various factors like technical assistance, anatomical factors and

skills of the operator. This case report depicts a rare case of non surgical retrieval of a foreign body accidentally lodged in the exposed root canals of a 12 year old male patient who reported to the department of pedodontics and Preventive Dentistry Swami Devi Dyal Hospital and Dental College, Barwala, Punchkula, Haryana.

Keywords: Foreign body, Retrieval, Exposed root canals

Introduction

Children often tend to have a habit of inserting foreign objects in the oral cavity unknowingly for the relief of dental pain. Foreign bodies inside the exposed root canals are detected accidentally on clinical or radiographic examination of fractured teeth which may be associated with infection, pain, swelling and recurrent abscesses as a consequence to the pulpal exposure.

Case Report

A 12 year male patient reported to the outpatient department of Swami Devi Dyal hospital and dental college Barwala with chief complaint of pain and swelling in the lower front tooth region since 10 days and pus discharge since last 2 days. Patient gave a history of trauma of fall 8 months back. On clinical examination, discoloration was observed in 31 with open chamber and Ellis class III fracture in 41. Both the teeth were tender on percussion. Thermal vitality testing was done which showed non responsive pulp in both 31 and 41 suggesting non vital pulp. Further the radiographic evaluation was done to assess the continuity of lamina dura and periapical area. Intraoral periapical radiograph revealed a radio opaque foreign object in root canal of 31. On further taking history, child admitted using various foreign object to remove the food lodged in the root canal space of mandibular left central incisor. A large periapical lesion measuring 4mm was seen in relation to the roots of both right and left mandibular central incisors. The case was diagnosed with acute exacerbation of chronic periapical abscess. Non surgical treatment was planned to retrieve the foreign body followed by the conventional root canal treatment. The access cavity was prepared in both right and left central incisor. Working length was determined by bypassing the foreign object in mandibular left central incisor. Irrigation was done with combination of saline and sodium hypochlorite in both teeth. Retrieval

of foreign object was attempted using two ISO no: 20 H file along the root canal wall and then pulling it out coronally. Once the tip of the object was visible at coronal surface of teeth, it was grasped with the tweezers. The retrieved object was a copper wire of 4mm length. Removal of the foreign body was further confirmed radiographically. Intracanal medicament was placed in the root canals of both the right and left mandibular central incisors. Finally obturation was done with sectional gutta percha followed by fiber post placement and final rehabilitation was done with acrylic crown in both central incisors. The patient was reviewed after three months, teeth were asymptomatic and patient was satisfied with the treatment.

Discussion

Young children always have the tendency to explore the oral cavity and teeth with foreign object. Foreign objects in root canals can act as focus of infection.^{1,4} A number of foreign objects were reported to be lodged in the pulp chamber or root canals of the tooth, which ranged from stapler pin, pencil leads, darning needles, metal screws, beads, plastic chop stick, hat pins, dress maker pins, conical metallic object.^{2,5}

However, the removal of foreign objects into root canal need high skills and advanced techniques⁶, although in this case two H files ISO no 20 were used and EDTA for lubricating the canal were used to retrieve the foreign objects without damaging the internal tooth structure. The patient used copper wire to remove the impacted food and debris but he was not aware and fractured into the canal.

Intracanal medicament was used after removing the foreign object and cleaning the root canal. The use of a root canal dressing has been recommended in teeth with necrotic pulp with periapical lesions for retrieval of foreign objects lying in the pulp chamber or canal using

ultrasonic instrument, the Masserann kit, modified Castroviejo needle holders, the Steglitz forceps have been used.³

In this case copper wire was located within the root canal and confirmed by diagnostic radiograph. Access to the foreign body was improved by flaring the canal coronally. Every attempt has to be made to bypass and retrieve the copper wire by pulling it out coronally.

In the present case reports, copper wire has been retrieved from the root canal system. The metallic foreign body lodged inside the root canal may have corroded in the presence of tissue fluids. The corrosion byproducts can cause argyrosis and Periradicular inflammation which have the potential to induce inflammatory root resorption.

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Conclusion

Foreign objects lodged within the root canal system should be removed for successful outcome of the treatment. A thorough root canal irrigation protocol should be followed to completely remove the corrosion byproducts and remove the remnants of the foreign body. A non surgical attempt to retrieve the lodged foreign bodies is always given first preference over surgical management.

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Legends Figures

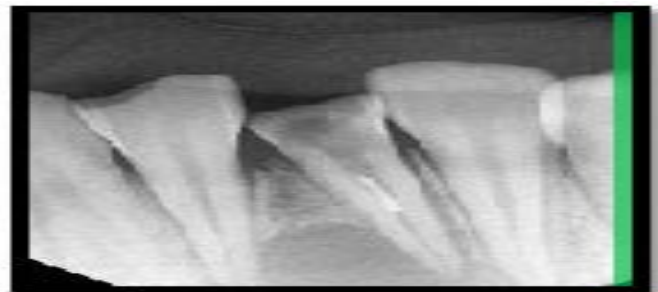


Figure 1: Intraoral periapical radiograph showing foreign body

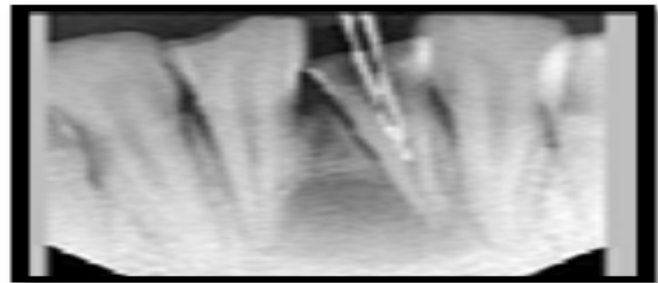


Figure 2: Retrieval of foreign body attempted using two H files ISO 20



Figure 3: Copper wire retrieved

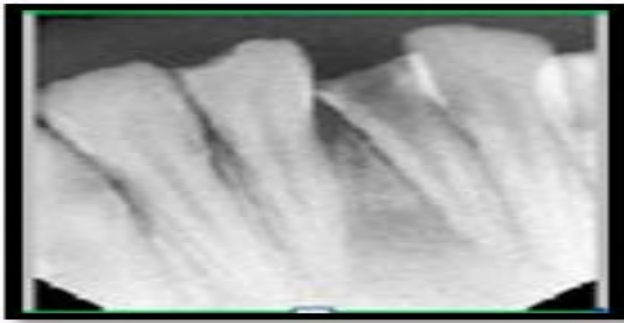


Figure 4: Absence of foreign body confirmed by radiograph

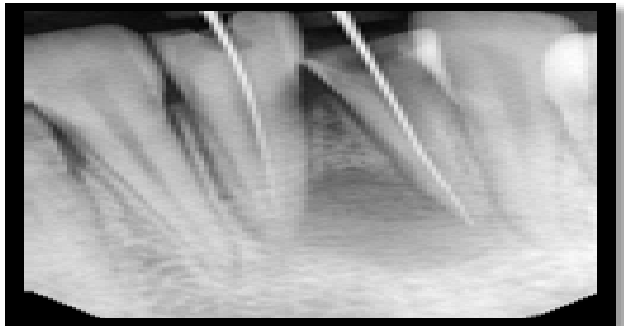


Figure 5: Working length determined

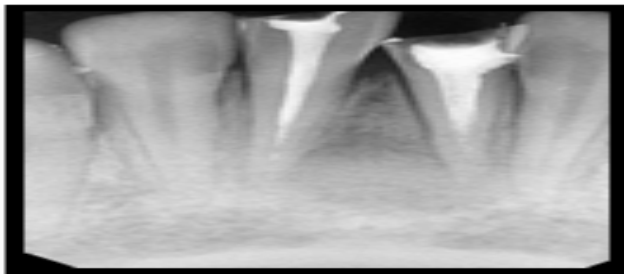


Figure 6: Radiographic showing placement of intracanal medicament metapex

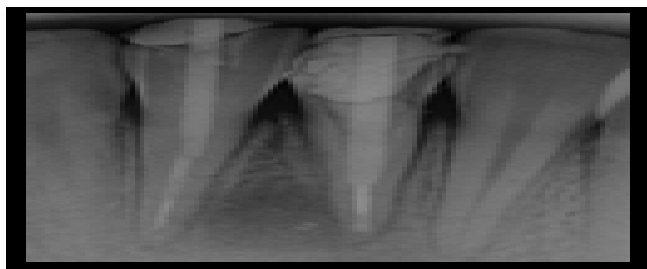


Figure 7: Radiograph showing sectional obturation with gutta percha and followed by fiber post placement

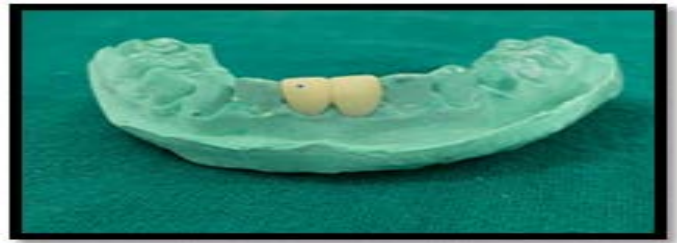


Figure 8: Image showing crown prepared from lab



Figure 9: Post operative view after placement of crown