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Retrieval of an Unusual Foreign Object from the Root Canal: A Case Report.

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Abstract

The success of root canal therapy depends on thorough debridement, microbial control, and complete sealing of the canal system. Prolonged exposure of canals, often left open for drainage, may predispose them to the lodgment of foreign objects, serving as a nidus for reinfection. This report describes a 28-year-old male who presented with pain and pus discharge from the right maxillary lateral incisor. Six months earlier, he had undergone incomplete root canal treatment, leaving the canal open. Clinical examination revealed discoloration and an open pulp chamber, while radiographs showed a radio-opaque object within the canal. The object was retrieved using endodontic files and tweezers, and identified as a corroded sewing needle. The canal was cleaned, shaped, and obturated, and the tooth remained functional and asymptomatic at a one-year follow-up. This case underscores that foreign body lodgment in open canals is a preventable complication. Avoiding prolonged canal exposure, ensuring patient compliance, and employing careful retrieval techniques are essential for successful outcome.

Keywords: Root canal, foreign body, sewing needle

Introduction

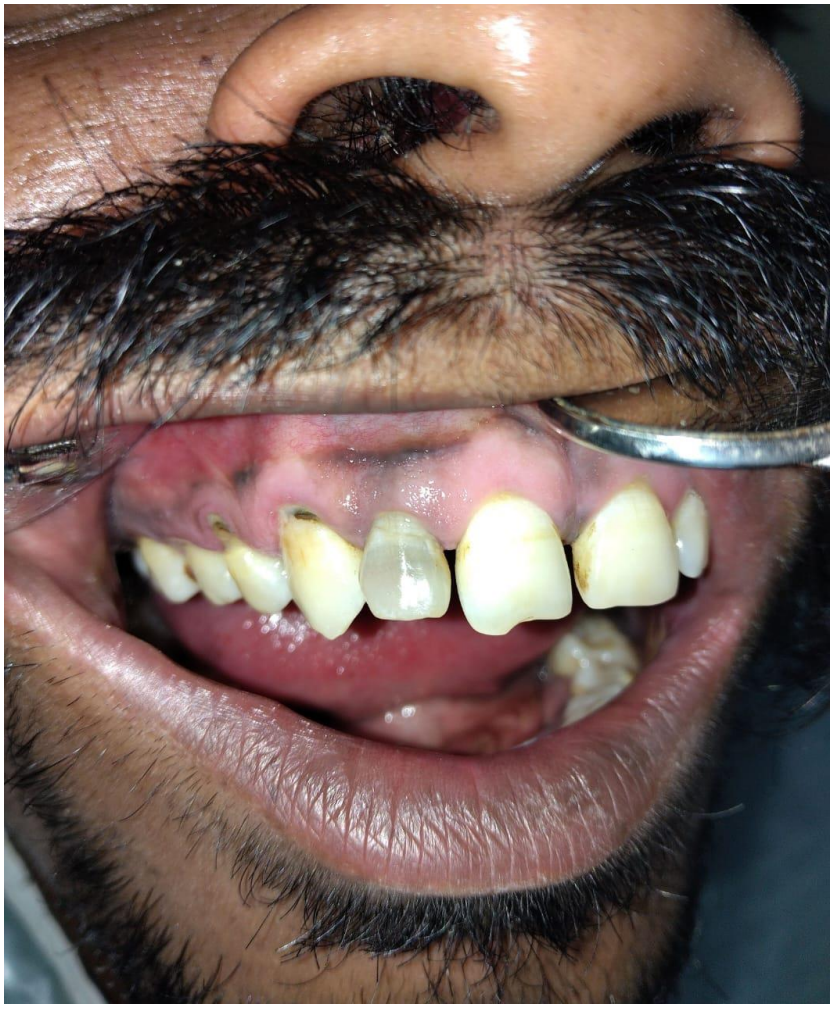
The primary goals of root canal therapy are to thoroughly clean the root canal system, remove debris and microbes, and seal it with an appropriate filling material. The procedure involves cleaning, shaping, and sealing the canal, followed by the application of a therapeutic inter-appointment dressing. Foreign items may become embedded in the pulp chambers of teeth with incomplete endodontic treatment, where the canals have been left open for drainage, or in cases of severely carious teeth with exposed canals or teeth with a dislodged dressing. Such cases have been reported to eventually cause re-infection and/or pain. Instances of patients of all ages placing foreign objects into exposed pulp chambers have been documented in the literature. Various foreign objects lodged in root canals have been reported including stapler pins, nails, pencil leads, needles etc. For such cases detailed clinical and radiographic examination is necessary to confirm the presence, size, location and the type of the foreign object [1-5]. This case report describes the retrieval of a sewing

needle from the root canal of a right maxillary lateral incisor tooth in a 28-year-old man.

Case report

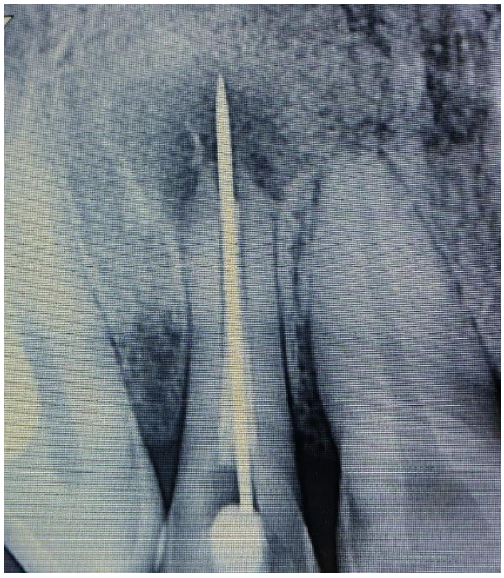
A 28-year-old man reported to the dental clinic with the chief complaint of pain and pus discharge from the upper right lateral incisor since 15 days (Fig 1).

Fig 1) Pus discharge from the upper right lateral incisor (12)



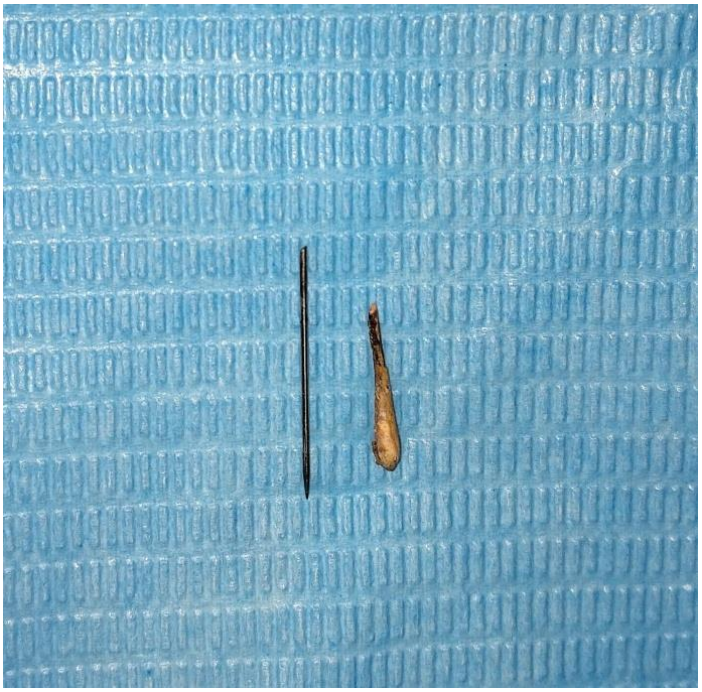
The patient had pain in the same tooth 6 months back for which he had visited a local dentist and underwent RCT; however, the tooth developed infection, and a Re RCT was initiated in which the tooth was left open to allow drainage. The patient did not report back to him for completion of treatment as his pain had subsided. When the patient reported to us, the canal had been open since the past 6 months. On clinical examination, there was discoloration of the tooth and an open pulp chamber in relation to right maxillary lateral incisor. The canal was filled with food debris, gutta-percha and on exploration of the canal a black metal object was also visible. Intraoral peri-apical radiograph of the tooth revealed a radio-opaque object lodged within the root canal (Fig 2).

FIG 2) IOPA of the tooth revealed a radio-opaque object lodged within the root canal along with partially filled gutta percha



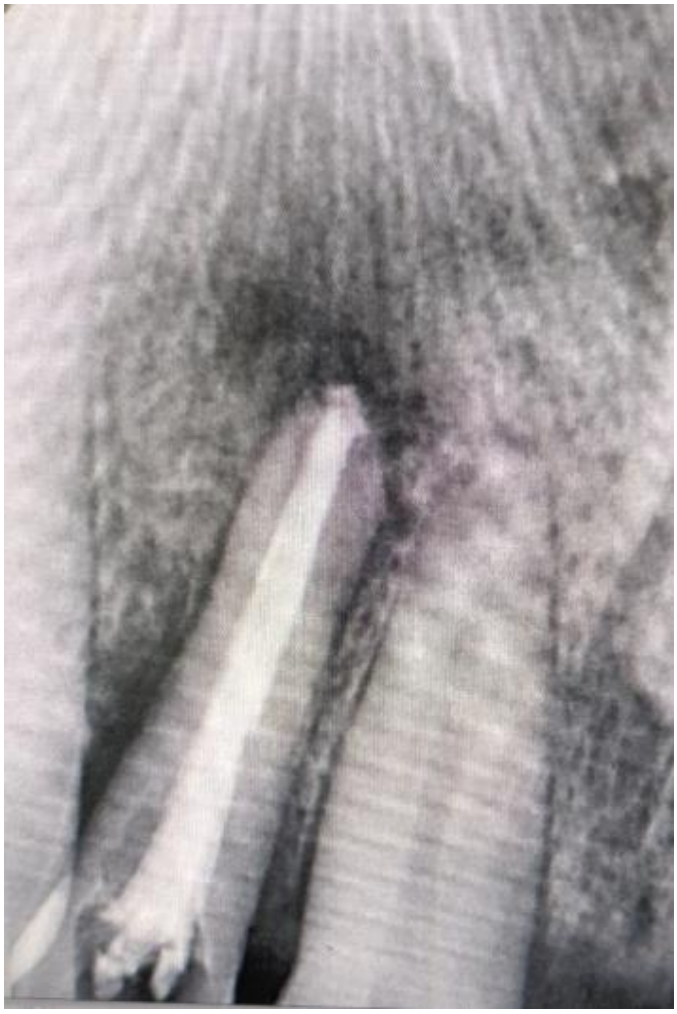
The patient's history indicated that he used to clean the food stuck in the open canal with a needle which accidentally got stuck in the canal one day, and could not be retrieved. The conventional access cavity was refined to facilitate access for instrumentation. A no. 20 K-file was used to bypass the metallic object with copious irrigation. The irrigant passed out of the canal with a blackish colour, revealing that the metallic object was undergoing corrosion. Retrieval was done by engaging the object between a no. 25 H-file and the canal wall, then pulling it out coronally, which was then grasped with tweezers and retrieved. The metallic object was discovered to be a sewing needle (Fig 3).

Fig 3: Hand sewing needle and infected Gutta-percha retrieved from the root canal



Root canal treatment was completed and obturation was done (Fig 4).

Fig 4: Post op radiograph



The tooth has been asymptomatic after obturation since one year.

Discussion

There have been reports of a variety of foreign objects being stuck in the pulp chambers and root canals of both permanent and deciduous teeth. Pencil leads, tomato seeds, pins, wooden toothpicks, plastic items, toothbrush bristles, crayons, needles, metal screws, fingernails, and pins are examples of alien objects [1–5]. It has been noted that when there is pus discharge through the canal, dental professionals occasionally leave the pulp chamber open when doing emergency root canal therapy. Such a technique may put the patient at risk of foreign body lodgment in the open canal. In this situation, Weine advises that the patient should stay in the dentist's office with a tooth that is draining for at least an hour to allow drainage. The visit should conclude with the access cavity sealed to stop debris or new bacteria from entering the canal [6]. The course of treatment should be determined on an individual basis. The nature, location, size, and potential level of difficulty of removal should all be thoroughly assessed if foreign materials are suspected of being in root canals. In the literature, various tools and methods for removing foreign objects from the pulp chamber have been reported. The Masserann kit, modified Castroviejo needle holders, or Stieglitz forceps have all been utilized in the past to retrieve foreign objects that are lying in the pulp chamber or canal. In order to increase access to the foreign item and prevent it from inadvertently pressing deeper into the canal, McCullock, Fors, and Berg have suggested removing a significant portion of internal tooth material before removing the foreign objects from the pulp chamber or root canal. According to Walvekar et al., in order to prevent perforation, a foreign item that

is securely bound in the pulp chamber or canal may need to be loosened first and then removed with the least amount of harm to the internal tooth structure. In our instance, we used the method Glick outlined for removing foreign objects from root canals, which involved inserting H files within the channel and engaging the object to draw it out. The foreign body should be removed from the pulp chamber with caution so as not to drive it farther into the root canal or cause the pulpal floor to perforate, which would compact the foreign matter in the interradicular soft tissue. There is also the risk of tooth/root fracture while retrieving the foreign object. In case of accidental leak of the foreign object into the periapical region that cannot be retrieved through the canal an apicoectomy may be needed [7–10].

Conclusion

Foreign object lodgment in root canals is a preventable yet potentially serious complication of incomplete or improperly managed endodontic therapy. Prolonged canal exposure should be avoided, as it not only increases the risk of microbial contamination but also invites accidental insertion of foreign materials. Thorough clinical and radiographic evaluation is crucial for detecting such objects. Careful selection of retrieval techniques aimed at minimizing damage to internal tooth structure ensures an optimal outcome. This case highlights the need for vigilance, preventive measures, and skillful management to ensure long-term success in endodontic care.

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