

Removal of Broken Safety Pin from Root Canal: A Case Report

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ABSTRACT

Background: Impaction of foreign objects in root canal is an unpleasant situation. It may act as a source of pain and infection. Skillful approach should be followed by the practitioner for the management of this situation. In this case report we present the successful management of impacted safety pin in root canal.

Keywords: Safety pin, foreign body, root canal, ultrasonic tip.

INTRODUCTION

Encounter of foreign object embedded in tooth is relatively very uncommon. Some people have the habit of placing foreign objects in the tooth to remove the embedded food. The detection of foreign bodies such as staple pins, paper clip, nail, and metal screw have been reported. Once these objects get lodged in the canals it may become source of pain and infection. Removal of foreign objects from root canal is an arduous situation in endodontic therapy. This case report describes the case of foreign object impacted in the distobuccal root of mandibular first molar.¹

CASE REPORT

A 17 year old male patient reported to the department with chief complaint of severe pain in right mandibular molar. On clinical examination, carious lesion was detected in relation to 46. On further examination, the presence of broken pin was noted, which was partially visible from the orifice. Patient gave history of insertion of safety pin in the tooth for removal of impacted food plug from the carious

tooth. On radiographic examination, revealed the presence of broken pin in the distobuccal canal of the tooth. Cold test gave exaggerated response which lasted for longer period of time. A diagnosis of symptomatic irreversible pulpitis with apical periodontitis and foreign body lodgement was made in relation to 46. Considering the clinical and radiographic findings, it was decided to remove broken pin, followed by endodontic therapy.

Tooth was anesthetized using inferior alveolar nerve block. Tooth was isolated with rubber dam application. A conventional access cavity was prepared and the pulp chamber was cleared of debris by copious irrigation with saline solution. A staging platform was made using Gates Glidden drills. Loosening of broken pin was done using ultrasonic tips and retrieved with a tweezer. Biomechanical preparation was done using Protaper Gold rotary files. Root canal debridement was done using alternate irrigation with 2.5% sodium hypochlorite, and saline and cleaning and shaping of the canal was

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performed. The root canal was dried using sterile paper points. Calcium hydroxide dressing was given and was recalled after 5 days. After 5 days as patient was completely asymptomatic, calcium hydroxide was removed from the canal using hand k files. Final irrigation as done with chlorhexidine and obturation was done using gutta percha.

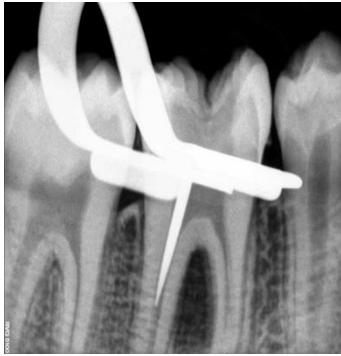


Fig 1: Pin in the root canal.



Fig 2: loosening of pin using ultrasonic tips.



Fig 3: After removal of pin.



Fig 4: Pin that is removed from canal.



Fig 5: Working length determination.

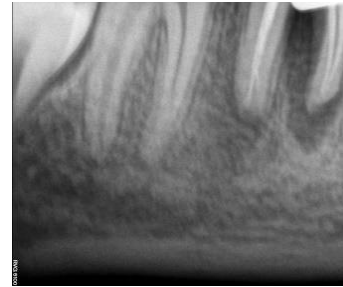


Fig 6: Post obturation.

DISCUSSION

Detection of foreign bodies in root canal are rare incident. This occurs due to open pulp chamber either due to large carious lesion, traumatic injury or pulp chamber left open for pus drainage.² In the present case patient had a large carious lesion and patient had the habit of using metallic objects for removal of food plugs.

According to various case reports in last 5 years, it was revealed that most commonly lodged objects include stapler pins, metal screws, darning needles, beads, pencil leads, toothbrush bristles, and crayons (table 1).^{3,4,5} Zillich and Pickens and Turner have cited cases where hat pins and dressmaker pins that were used to remove the food plugs from the root canals of maxillary and mandibular incisors undergoing endodontic treatment had eventually fractured inside the root canals of these teeth.⁶ Impaction of these foreign bodies causes severe pain, infection, and bleeding. Radiographs helps in the detection of foreign object.⁷

McAuliffe compiled that various radiographic methods to be used for localization of radio-opaque foreign object in the root canal. Parallax view is the most preferred technique. Other diagnostic techniques are vertex occlusal view, triangulation technique, stereoradiography, and

tomography. Parallax technique involves 2 radiographs taken at different horizontal angles with same vertical direction.⁸ Due to parallax the objects appear to travel in the same direction as

tube shifts and the object closer to tube appears to move in opposite direction (the so called Same Lingual Opposite Buccal – SLOB).⁹

Table 1: Case reports for foreign bodies in teeth and their management in last 5 years in Indian population

Authors	Foreign bodies	Age/sex	Tooth involved and location	Treatment rendered
Godhi <i>et al</i> , 2014	Stapler pin	12/M	11	Retrieval and endodontic therapy
Chand, 2013	Stapler pin	14/M	11	Retrieval and endodontic therapy
Shashidhar and Chandrashekhar, 2013	Stapler pin	13/M	21	Retrieval and endodontic therapy
Nagaveni and Umashankara, 2012	Stapler pin	6/M	85	Retrieval and endodontic therapy
	Glass bead	12/F	46	Retrieval and endodontic therapy
	Stapler pin	9/M	54	Retrieval and endodontic therapy
	Wooden stick	13/M	21	Retrieval and endodontic therapy
	Stapler pin	13/M	36	Retrieval and endodontic therapy
Lehl, 2010	Paper clip	6/M	55	Extraction
Holla <i>et al</i> , 2010	Aluminum foil	10/F	53	Extraction
	Stapler pin	5/M	51	Extraction
Kalyan and Sajjan, 2010	Stapler pin	55/F	11	Retrieval and endodontic therapy

Specialized radiographic techniques such as radiovisiography, 3D CAT scans can play a role in localization of these foreign objects inside the root canal.⁸

For retrieval of foreign objects impacted in root canal use of ultrasonic instruments, the Masserann kit, modified Castroviejo needle holders, the Steglitz forceps have been suggested.^{10,11,12} Various factors plays important role in determining technique to be used for the retrieval of foreign objects from root canals. In this case as broken pin was lodged in the coronal third of canal and it was partially visible from orifice, ultrasonic and tweezer was used for retrieval. McCulloch stated that access to the foreign object is improved by removal of small amount of tooth structure.¹³ Walvekar et al suggested that if the foreign object is snugly bound in the canal, the object may have to be loosened first and then be removed with

minimal damage to internal tooth structure.¹⁴ Impacted foreign body in root canal can act as foci of infection. If they are not removed at right time, can cause complications.⁷

CONCLUSION

Once a foreign object is encountered in root canal, it should be judiciously managed, which otherwise causes further complications. As prevention is always better than cure, patients should be duly educated to avoid using such objects and to avert such mishaps from occurring.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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