

Babool Thorn in the Root Canal of a Tooth with an Immature Apex: A Case Report and Its Management.

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ABSTRACT

Many children with a habit of placing various objects in the oral cavity eventually end up with foreign body lodgement into the pulp chamber or root canal leading to pain and infection. This case reports babool thorn (*Acacia nilotica*) as foreign body in the root canals and the successful removal of thorns by nonsurgical technique and its management is presented. A 13 year old boy reported with chief complain of pain and swelling in an upper front tooth region since 1 month. A detail history elicited from the patient that he had suffered dental trauma 4½ years back. Both 11, 21 teeth were discoloured and non vital (Ellis Class IV #). During the biomechanical preparation, Babool thorns were accidentally found from 21, in total 12 babool thorns were recovered and both the teeth were further managed by successful apexification procedure with Biodentine (Septodont) followed by RCT and full crown restoration

Keywords: Foreign body, Immature apex, Babool thorn, Biodentine.

INTRODUCTION

Root canal treatment pose problems in children and sometime clinicians may face intricate situations requiring both skill and patience. Children have a tendency of placing and chewing foreign objects in the oral cavity. Due to the pulpal irritation, these objects are inserted into the tooth to probe and relieve pain and pressure symptoms. Sometimes, these objects are lodged in the teeth. This is the situation in a tooth with an open large carious lesion or open pulp chamber caused by trauma in a tooth left open for drainage during root canal treatment. But presence of foreign objects in the teeth are rare. The foreign objects in teeth may acts as a potential source of infection and pain.^[1]

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In most of cases children doesn't reveal to parents out of fear. The finding of such foreign bodies in the teeth is a special situation, which is diagnosed by chance and may be associated with infection, pain, swelling and recurrent abscess as a sequelae to pulpal exposure. Clinical and radiographic examinations are a must to ascertain the presence,

size, location and type of foreign object. This self-inflicting tendency is traumatizing with serious consequences at both individual and social levels.^[2] The following case described a foreign object found in the root canal of an immature permanent tooth 21 with their management is presented here.

CASE REPORT

A 13-year-old male reported to the Department of Pedodontics and Preventive Dentistry, Hitkarini Dental College and Hospital, Jabalpur with chief complaint of pain and swelling in an upper front tooth region since 1 week [Figure-1]. A detail history elicited from the patient was that he had suffered dental trauma 4½ years back. Patient presented with paroxysmal episodes of pain, swelling and pus discharge since 2 years for which he had visited local physician who prescribed him medication. Intra-oral examination revealed Elli's class-IV fracture with an exposed pulp chamber of tooth 21 [Figure-2]. Both 11, 21 teeth were discoloured and non vital.

The tooth exhibited the following clinical features:

- Grade I mobility
- Tenderness in the buccal sulcus
- Pain on percussion
- Draining sinus on attached gingiva



Figure 1: Pre-operative clinical view showing Class IV fracture in 11 and 21.



Figure 2: Preoperative IOPA showing periapical lesion with an open apex in 11 and 21.

Intra oral periapical radiograph revealed an immature open apex and periapical radiolucency, which was less with 11 and marked with 21. Hence, electric pulp testing (Digitest, Parkell, Farmingdale, USA) was done and 11 and 21 both gave negative response thus indicative of irreversible pulpal damage. Considering the clinical and Radiographical finding, the formulated treatment plan was one visit apexification followed by complete root canal treatment of tooth 11 and 21.

The patient received local anaesthesia of 2% lignocaine and 1:2,00,000 adrenaline (Ligno-Ad, Vishal Dentocare Pvt. Ltd, Ahmadabad, India). A rubber dam was placed, and a conventional access cavity was prepared with help of endo access bur (Dentsply Maillefer, Ballaigues, Switzerland). After gaining access to root canal system, the tooth 21 showed frank purulent pus discharge from the root canal. The canals of 21 and 11 was copiously irrigated with saline solution. During the biomechanical preparation, Babool thorns were accidentally found from 21, and in total 12 babool (*Acacia nilotica*) thorns were removed using 50 size H-file (Mani, Inc., Nakaakutso, Japan) [Figure-3]. On further questioning patient admitted that he used to put these thorns whenever he used

to feel itching sensation in his tooth, which he reported that it used to subside after doing so. Thorough irrigation was done with 11 and 21 using 5.25% NaOCl (Vensons, India), normal saline and 2% chlorhexidine (Dentochlor, Ammdent, Punjab, India) irrigating solution. An intra-canal medicament of triple antibiotic paste (Ciprofloxacin, Metronidazole and Minocycline in the ratio of 1:1:1) was used with a vehicle of propylene glycol in 11 and Metapex as an intra canal medicament used in 21 [Figure-4].

The patient was recalled after one month for check up. The patient was completely asymptomatic clinically and radiographic evaluation revealed healing of the periapical radiolucency. The intra canal medication was changed and the patient was recalled again after 2 months. The patient showed marked improvement both clinically and radiographically hence BMP was done till 80 size K- file (Mani, Inc., Nakaakutso, Japan). After thorough irrigation was done, canals were dried and single visit apexification using Biodentine™ (Septodont Ltd, Saint-Maur-des-Fausses, France) was done with 11 & 21 [Figure 5]. The canals were then obturated with the conventional gutta percha using the lateral condensation technique [Figure 6]. The teeth were restored with composite restorative material. The patient was kept on recalled visits till one year, which showed good periapical healing radiographically [Figure 7] and clinically. The patient was completely asymptomatic and full crown restoration was done on respective tooth.



Figure 3: Babool thorns retrieved from the root canal of 21.



Figure 4: Placement of intra canal medicament as 3 Mix in 11 and Metapex in 21.



Figure 5: Biodentine™ apical plug formation in 11 and 21.



Figure 6: Root canal filled with gutta-percha cones following successful apexification.



Figure 7: 1 year follow-up radiograph of teeth and lesion.

DISCUSSION

Introduction of foreign objects into the oral cavity or cavitated and traumatized teeth may be the result of child's effort to relieve the discomfort sometimes, unawareness among parents and

caregivers can lead to serious consequences. These foreign object may be discovered during routine examination by dentist.

A detailed search of literature has shown case of various foreign objects being embedded in the open pulp chamber or root canal [Table 1]. These foreign bodies in root canals act as obstructions for smooth passage of endodontic instruments. A radiograph can be of diagnostic significance especially if the foreign body is radiopaque. McAuliffe summarized various radiographic methods to be followed to localize a radio-opaque foreign object as Parallax views, Vertex occlusal views, Triangulation techniques, Stereo Radiography and Tomography. Specialized radiographic techniques such as radiovisiography, 3D CAT scans can play a pivotal role in localizing the exact position of these foreign object.^[10] However, radiolucent foreign body lodged inside the root canal will not be seen radiographically as in our case report. Hence, it is recommended to take proper history about prevalence of any oral habit and careful instrumentation should be done to prevent apical pushing of the object.^[11] In the present report the babool thorn removed during instrumentation was radiolucent thereby escaping its presence in the radiograph. It was when proper deeper questioning was carried out that patient admitted to placing of thorns in episodes of pain to relieve the symptoms. However, the present case reports lodgement of babool thorns in root canal of tooth 21, which has not been cited in literature so far. *Acacia nilotica* (Babool) belonging to leguminosae family is considered to be native of middle east and Indian subcontinent. The tree has thorn on its branches and hence the Greek name Acacia. Babool is one of the major herb ingredient used in UNANI system of herb medicine. For hundreds of years, babool bark (tannins & gallic acid) been used for dental problems. Babool (*Acacia nilotica*) has also long been used for the treatment of skin, sexual, stomach and tooth problems. It has been proved as effective medicine in treatment of malaria, sore throat and tooth ache(bark). Studies have stated that Babool has shown to posses antibacterial activity against *Streptococcus mutans* and *Enterococcus faecalis*.^[12,13] Hence, from the following references we presume that babool may with its antimicrobial effect, provided relief to the patient.

CONCLUSION

This article has outlined the management of a case of an unusual foreign body in the canal of an immature apex of maxillary central incisor. There are a different need for treatment algorithm to be followed for the management of such clinical situation.

Table 1: Various foreign objects implanted into the root canal by patients

Authors	Year	Foreign object	Age and Sex	Tooth associated	Treatment
Suleman et al ^[3]	2011	Metal Wire & Babool thorn	14 years; Male	#12	Remove by using K and H file
Holla et al ^[4]	2010	Staple pin and aluminium foil sewing needle	10 years, Male	#53	Extraction
Aduri et al ^[5]	2009	Stapler	11 years, Male	#11	Extraction
Prabhakar et al ^[11]	2008	Piece of ornament	12 years, Male	#11	Remove using file and tweezers
McAuliffe et al ^[6]	2005	Staple pin	11 years, Male	#21	Removed with barbed broach
Nadkarni et al ^[7]	2002	Sewing needle	12 years; Male	#16, palatal canal	File and tweezers used for removal
Toida et al ^[8]	1992	Plastic chopstick	12 years; male	Supernumerary tooth	Extraction
Subbareddy et al ^[9]	1990	Beads	12 years; female	#11 and #21, within the root canal	Removed using K-files

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