

## An Unexpected Encounter with Foreign Body in the Primary Teeth and Its Management

### Abstract

Clinicians may come across strange situations when they accidentally notice foreign bodies in the root canals of the teeth. This foreign body entrapment is more common in children because of the habit of placing various objects into the tooth, particularly in the cases of open carious lesions. Sometimes, these foreign objects may act as an impending source for pain and infection. Even though accidental insertion is the main etiological factor, there are other possibilities such as self-injurious habits and dental neglect which should be ruled out by thorough history. The present article describes two cases of typical etiology for foreign body lodgment and its management in the primary teeth.

**Keywords:** Foreign body, metal wire, primary teeth, stapler pin

### Introduction

Unusual behavior of children sometimes leads to the placement of various foreign objects in the tooth, especially in cases of open carious lesions. These foreign objects project a source of infection, pain, and swelling which may cause tissue irritation and other complications.<sup>[1]</sup> Detailed case history and clinical and radiographic examinations are necessary to detect the exact etiology, size, position, and type of foreign object. Although various case reports have been observed in the literature regarding foreign objects in the permanent teeth and its management, here we present two of such case reports of foreign objects in the primary teeth with distinctive etiology and its management.

### Case Reports

#### Case 1

An 8-year-old male child visited the department of pedodontics and preventive dentistry with a chief complaint of pain in the upper front tooth region for 2 days. The pain was intermittent, severe, and throbbing with a history of pus discharge. Medical history of the patient was noncontributory. Detailed history revealed that he had decayed teeth and pain in that region and have been informing parents

about the pain in the same region for about 6 months. Due to their financial restraints and unaffordability, they ignored the problem. The patient thus developed the habit of inserting various objects in the affected tooth to relieve pain. Intraoral examination revealed the presence of decayed primary maxillary right canine (53, Federation Dentaire Internationale) with grayish-black discoloration and open pulp chamber. Black-colored unknown foreign object was found in the labial vestibule in relation to the same tooth [Figure 1a]. When an attempt was made to remove the foreign body, it was found to be associated with the tooth and the tooth was tender on percussion. Intraoral periapical radiograph revealed the presence of multiple linear radiopaque lines extending from coronal aspect of the tooth to the entire length of root canal and extended to its underlying permanent successor (13, Federation Dentaire Internationale) [Figure 1b]. Based on clinical and radiographic evaluation, it was diagnosed as a case of chronic dentoalveolar abscess with unknown foreign body in the primary tooth.

In the present case, extraction of the affected tooth was planned as underlying permanent canine was ready for eruption. Before the procedure, the treatment plan was explained to his parents and consent was obtained. Extraction of 53 was carried under local anesthesia (lignox 2%

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lignocaine with epinephrine 1:80 000) along with administration of a tetanus vaccine booster intramuscularly. Extracted tooth showed one metal wire measuring 7 mm approximately and 3–4 nonmetallic objects measuring approximately 5 mm. A portion of metallic wire had undergone corrosion and was covered with debris [Figure 1c]. Further radiograph was taken to verify the presence of any radiopaque material [Figure 1d]. Systemic antibiotics and analgesics (amoxicillin 250 mg, 8 hourly for 5 days and meftal P 125 mg, 8 hourly for 5 days) were administered following the tooth extraction.

**Case 2**

A 7-year-old female child reported to the department of pedodontics and preventive dentistry with a chief complaint of pain in the upper left front tooth region for the past 3 days. The pain was intermittent, moderate, and pricking type without any history of pus discharge. Detailed history revealed that she had pain and swelling in the same region and underwent symptomatic treatment 5 months back. Once the pain subsided, she did not turn up. During this time interval, she had developed a habit of placing various foreign objects in the affected tooth because of open pulp chamber and again complained about pain for the last 3 days. On intraoral examination, there was gross destruction of crown structure of the deciduous maxillary left lateral incisor (62, Federation Dentaire Internationale) with open pulp chamber [Figure 2a]. Intraoral periapical radiograph revealed that a radiopaque object in the root canal of 62 which was extending 4–5 mm below the apex of tooth with two-third resorbed root [Figure 2b]. Based

on the clinical and radiographic findings, it was diagnosed as unusual foreign body in the root canal of primary tooth with open pulp chamber.

Considering the prognosis of affected teeth, extraction was performed under local anesthesia (lignox 2% a lignocaine with epinephrine 1:80,000) along with administration of a tetanus vaccine booster intramuscularly. Extracted tooth showed one staple pin which was measured about 5.5 mm approximately and it was covered with debris [Figure 2c]. Additional radiograph was taken to verify the absence of radiopaque material [Figure 2d]. Systemic antibiotics and analgesics (amoxicillin 250 mg, 8 hourly for 5 days and meftal P 125 mg, 8 hourly for 5 days) were administered following the tooth extraction.

**Discussion**

Children have a propensity to have the habit of inserting a variety of foreign objects in the oral cavity, especially in open carious lesions to relieve pain. Different foreign bodies were reported such as pencil lead,<sup>[2]</sup> darning needles,<sup>[3]</sup> metal screws,<sup>[4]</sup> beads,<sup>[5]</sup> staple pins,<sup>[6]</sup> and toothpick.<sup>[7]</sup> These objects if not retrieved from the tooth that may serve as foci of infection and cause severe hard- and soft-tissue injuries. Complications associated with these foreign bodies include aspiration of foreign bodies which may lead to asphyxia, acute dyspnea, cardiac arrest, and laryngeal edema.<sup>[8]</sup> Other complications include injury to the permanent successor and development of masochistic habits.



Figure 1: (a) Intraoral picture showing grayish-black-colored crown with black-colored object in labial vestibule in relation to 53. (b) Intraoral periapical radiograph showing multiple radiopaque lines in relation to 53. (c) Metal wire and nonmetallic objects retrieved from extracted tooth. (d) Postoperative radiograph shows absence of foreign body



Figure 2: (a) Intraoral picture showing open pulp chamber in relation to 62. (b) Intraoral periapical radiograph showing radiopaque object in relation to 62. (c) staple pin retrieved from extracted tooth. (d) Postoperative radiograph showing the absence of foreign body

Various radiographic methods can be used to localize foreign objects such as parallax views, triangulation techniques, radiovisiography, and computerized axial tomography scan.<sup>[6]</sup> In the cases reported here, the foreign objects were traced using routine intraoral periapical radiograph.

Most common causes for entrapment of foreign objects in the tooth are wide open canals that have been exposed due to caries or trauma or some chronic carious lesions in active state, which are kept open for drainage of pus. However, interestingly, in the first case, dental neglect of parents could be one of the etiological factors for delaying the treatment; thus, the patient developed a habit of inserting foreign objects into the teeth to relieve pain. Dental neglect is an uncommon condition which is often overlooked by most of the dentists. The reason for dental neglect in this case was found to be their low socioeconomic status; in such cases, awareness should be created about the existence of primary health care centers where the treatment is much affordable.

In the second case, because of swelling in the region 62, the access opening procedure was attempted and open dressing was given. Once the pain and swelling had subsided, she failed to report. When the lesion became active again, the patient developed the habit of inserting foreign objects into the tooth.

A diversity of devices were used to retrieve the foreign bodies in the pulp canal such as ultrasonic instruments, mosquito hemostat, modified Castroviejo's needle holder, and Stieglitz forceps.<sup>[9]</sup> In the cases mentioned above, the underlying permanent successors are ready for eruption, there might be a risk of potential damage to these underlying permanent tooth, and hence, extraction was considered.

Extracted teeth in the first case showed one metallic wire and 3–4 nonmetallic components include toothpicks and lead powder. In the second case, the extracted tooth showed sharp object which resembled a staple pin covered with debris.

However, the incidence of foreign objects in the root canals of permanent teeth has been reported; the occurrence of foreign bodies in primary teeth is unusual condition.<sup>[10]</sup> Although the condition is bizarre, there may be serious and frightening consequences, such as aspiration or inhalation of the foreign bodies. Foreign bodies which were embedded beyond the furcation can cause trauma to the permanent tooth bud. This may devastate the permanent tooth bud completely or may form a complex odontoma. A force of lesser magnitude may result in a geminated

and/or a hypoplastic successor tooth.<sup>[11]</sup> Early diagnosis and management of foreign bodies in the primary tooth should be performed to avoid all these types of complications.

Treatment of foreign body blocked in a tooth depends on the assessment of clinical and radiographic findings, patient's age, and level of cooperation. Educational campaigns should be conducted to highlight the risks associated with insertion of foreign bodies in the oral cavity.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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#### Conflicts of interest

There are no conflicts of interest.

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