Foreign Bodies in Primary Molars: A Report of 2 Cases

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ABSTRACT

Foreign bodies can be found in the pulps of primary teeth during routine oral examinations. These foreign bodies can result in painful complications. A detailed case history and clinical and radiographic examinations are necessary to come to a conclusion about the nature, size, and location of the foreign body, and to determine the difficulty involved in its removal. The purpose of this paper was to discuss 2 clinical cases and the management of foreign bodies found lodged in primary molars.
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Frequently, foreign bodies are found in the oral[1] and nasal cavities of children.[2] Oral foreign bodies may be the cause of a person seeking dental care to relieve the discomfort and may be discovered by the dentist's during routine examinations.[2,3] Such a self-injurious act made by the child might result in undue complications, such as exposure of the vital pulp or breakage of the foreign body—leading to dental pain and infection. Also, there may be serious and alarming consequences, such as aspiration or inhalation of the foreign body.

Management of such foreign bodies requires a thorough clinical and radiographic examination to ascertain its exact location, the extent of damage, and the possible atraumatic methods to remove the lodged foreign body.

The purpose of this paper was to describe 2 patients in whom foreign bodies were found to be lodged in the primary molars and their management thereafter.

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CASE REPORT NO. 1

A 6½-year-old boy reported to the Department of Pediatric Dentistry, Faculty of Dentistry, Garyounis University, Benghazi, Libya, with a chief complaint of recurrent pain and swelling in the left posterior region of the mandible associated with a salty discharge experienced over the previous two months. Medical history was noncontributory.

An intraoral soft tissue examination revealed a draining sinus in the buccal gingiva of the primary mandibular left first molar, as shown in Figure 1. A hard tissue examination revealed a nonvital primary mandibular left first molar with deep disto-occlusal caries, grade II mobility, and tenderness on percussion. In addition, moderate occlusal caries was noted on the primary maxillary left and right first molars. The remaining teeth were sound and otherwise healthy.

When the deep disto-occlusal caries was gently explored to dislodge food debris, a metallic pin was found tightly lodged in the pulp chamber. Upon further inquiry, the child replied that he used an office pin to dig out food lodged in his carious primary mandibular left first molar to relieve tooth discomfort. Pain increased in severity when the pin broke inside the tooth.

An intraoral periapical radiograph was taken to confirm the exact position of the metallic pin and ascertain whether the tooth could be saved. Radiographic findings revealed a radio-opaque pin-like foreign body lodged

in the pulp chamber with mesial root resorption and a large inter-radicular radiolucency (Figure 2). After thorough evaluation of clinical and radiographic findings, it was considered prudent to plan for extraction of the primary mandibular left first molar. Informed consent was obtained from the patient's parent, and the treatment was rendered.

A 4.5-mm broken office pin, shown in Figures 3 and 4, was retrieved from the extracted tooth. Indirect pulp capping was performed in relation to the primary maxillary right and left first molars. An appointment was arranged for a band and loop space maintainer for the missing primary mandibular left first molar.

CASE REPORT NO. 2

A 6-year-old girl reported to the Department of Pediatric Dentistry, Faculty of Dentistry, Garyounis University, Benghazi, Libya, with a chief complaint of recurrent pain over the previous 6 months in the right mandibular region. History revealed that the child attempted to remove food lodged in a mandibular right posterior tooth with a pencil, the tip of which fractured inside the tooth. Her medical history was noncontributory. Clinical examination revealed deep occlusal caries in the primary mandibular right second molar, shown in Figure 5, with grade II mobility. It was associated with tenderness on palpation of the buccal vestibule.

Upon exploration of the carious lesion in her primary mandibular right second molar, a foreign body was found to be lodged in the pulp chamber. Other findings included deep occlusal caries with provoked pain in relation to the primary mandibular right and left first molars. There was space loss between the permanent mandibular right lateral incisor and the primary mandibular right first molar due to premature loss of the primary mandibular right canine and associated deviation in the mandibular arch's midline on the right side. The remaining teeth were otherwise healthy.

Intraoral periapical radiographs were taken of the: primary mandibular right second molar region to determine the exact location of the foreign body; and primary mandibular left first molar region to determine the approximation of caries to the pulp and evaluate for any inter-radicular changes.

A radio-opaque foreign body was found to be lying in the pulp chamber of the primary mandibular right second molar, shown in Figure 6, with evidence of internal resorption of the distal root and inter-radicular radiolucency. After explaining the clinical and radiographic findings to the parent, an informed consent was obtained and the extraction was performed. An 8-mm-long pencil lead tip was retrieved from the pulp chamber, shown in Figure 7. A pulpotomy was performed on the primary mandibular right and left first molars, followed by restoration with stainless steel crowns. An appointment was arranged for space management for the missing primary mandibular right second molar.

Figure 1. Deep disto-occlusal caries with a broken pin in relation to a primary mandibular left first molar.

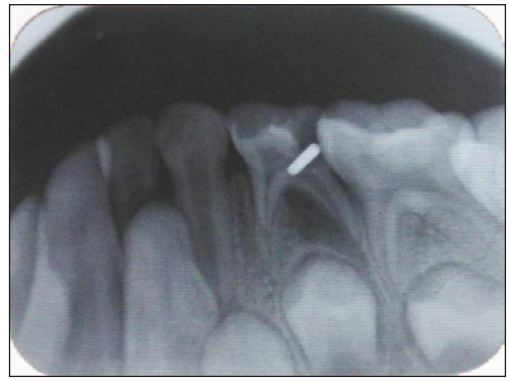

Figure 2. Intraoral periapical radiograph of a primary mandibular left first molar with a radiopaque pin-like foreign body lodged in the pulp chamber.

Figure 3. An extracted primary mandibular left first molar with a broken office pin.

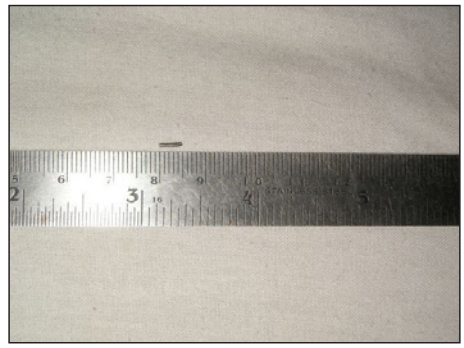

Figure 4. A broken office pin retrieved from a primary mandibular left first molar.

DISCUSSION

Many foreign bodies have been reported to break and separate inside the pulp chamber. Such self-injurious behaviours may occur as a potential outcome of untreated carious teeth in young children.

Different foreign bodies have been reported, ranging from darning needles[4] and metal screws[5] to beads[6] and stapler pins.[7] Lamster and Barenie[8] reported a conical metallic object in the primary left first molar's distal root. Gelfman[9] and colleagues reported observing 2 straws in the root canal of a primary central incisor in a 3-year-old child, and the teeth were later extracted. Grossman[10] reported the removal of indelible ink tips, brads, a tooth pick, adsorbent points, and even a tomato seed from the root canals of anterior teeth that were left open for drainage.

Figure 5. Deep occlusal caries with a broken pencil tip in relation to a primary mandibular right second molar.

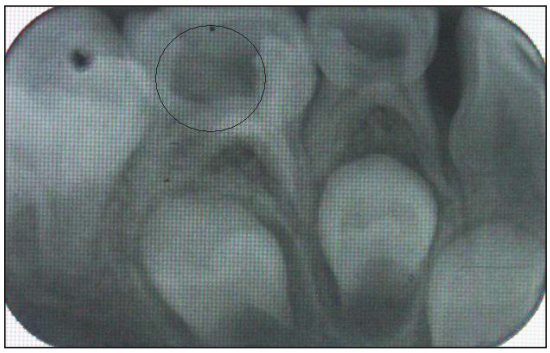

Figure 6. Intraoral periapical radiograph of a primary mandibular right second molar with a radiopaque foreign body lodged in the pulp chamber.

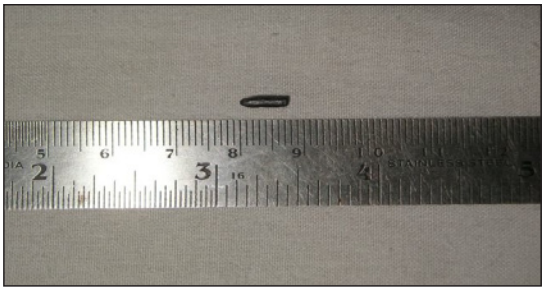

Figure 7. A broken pencil tip that was retrieved following extraction of the primary mandibular right second molar.

Harris[11] reported that patients had inserted various objects in the root canals of their permanent maxillary anterior teeth to remove food plugs. These included pins, wooden toothpicks, plastic objects, toothbrush bristles, and crayons. Zillich and Pickens[12] and Turner[13] cited cases involving hat pins and dressmaker pins in the root canals of maxillary and mandibular incisors that were used to remove the food plugs. Toida[14] has reported a plastic chopstick embedded in an unerupted supernumerary tooth in the premaxillary region of a 12-year-old Japanese boy.

A radiograph forms a valuable diagnostic tool in determining the exact location and relative radio-opacity of the foreign bodies. McAuliffe[7] summarized various radiographic methods to localize a radiopaque foreign objects, such as parallax views, vertex occlusal views, triangulation techniques, stereo radiography, and tomography. Specialized radiographic techniques, such as radiovisiography and 3-D CAT scans, can play a pivotal role in the localization of these foreign bodies inside the root canal.

In the 2 patients presented here, 2 foreign bodies were found lodged in the pulp chambers of primary molars. It was thought wise in the present cases to extract the infected primary molars, as they had compromised periodontal support. If the teeth were indicated for endodontic treatment, removal of foreign bodies lying in the pulp chamber or canal could be accomplished using ultrasonic instruments,[15] a Masserann kit,[16] or modified Castroveijo needle holders.[17] Nehme[18] had recommended the use of an operating microscope along with ultrasonic filing to eliminate intracanal metallic obstructions.

Complications can ensue if these lodged foci of infection are not soon eliminated. Costa reported chronic maxillary sinusitis of a dental origin that occurred due to the pushing of foreign bodies into the maxillary sinus through the root canals.[19] Goldstein cited development of actinomycosis due to the lodgement of a piece of jewelry chain in a maxillary central incisor.[20]

Health professionals should play a vital role in the early referral of young children with dental caries to the dentist. Educational campaigns should be conducted to emphasize the danger following the use of foreign bodies in the oral cavity. Anticipatory guidance to parents should also include potential complications caused due to self-injurious behaviour with foreign bodies in young children.

The present case reports effectively illustrate the sequelae of untreated caries in children. Awareness about the sequelae of untreated dental caries is a prerequisite to both the patient and the dentist, which facilitates early diagnosis and prompt management of similar cases.

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