

## Accidental Ingestion of a Dental Bur Seen in a Paediatric Patient - A Case Report

Rohan Bhatt<sup>1\*</sup> Applu Atrey<sup>2</sup> Ashish Kaur<sup>3</sup> Lipee Dave<sup>4</sup>

<sup>1</sup>Senior Lecturer, Department of Pedodontics, Karnavati School of Dentistry, Gandhinagar, Gujarat, India.

<sup>2</sup>Post Graduate Student, Department of Conservative Dentistry & Endodontics, Ahmedabad Dental College, Gujarat, India.

<sup>3</sup>Reader, Department of Periodontics, AMC Dental College, Ahmedabad, Gujarat, India.

<sup>4</sup>Lecturer, Department of Pedodontics, Karnavati School of Dentistry, Gandhinagar, Gujarat, India.

### ABSTRACT

**Background:** This article presents a case of accidental ingestion of dental bur by a patient during routine dental treatment. This article also points out the possible barrier techniques to prevent swallowing and ingestion of dental foreign objects by patient. An outline of the complications of swallowing/ingestion of foreign objects as well as the required diagnostic measures to be taken following the accidental swallowing and the different treatment options has been laid in brief.

**Keywords:** Dentistry, Radiology, Accidents.

### INTRODUCTION

Any objects that are routinely placed into or removed from oral cavity during dental or surgical procedures can be aspirated or swallowed. These items include teeth restorations, materials, rubber dam clamps, gauze pack, implant parts, dental burs, pins, files etc.<sup>1</sup>. The chances of swallowing or aspirating an object is increased by the common practice of placing the patient in supine position, and specially it is a common problem in young children because they are reluctant and unstable in their position during dental procedure<sup>2</sup>. Compared to any other reason of ingestion of foreign body, the second most common reason is from a dental procedure and it is reported to be 3.6 to 27.7%<sup>3,4</sup>.



After swallowing foreign bodies by any patient, they are usually asymptomatic but symptoms can arise later. It may cause septic abscess, intestinal perforations, partial

or complete airway obstruction, pneumonia, pneumothorax and hemorrhage<sup>5</sup>. Most of the foreign bodies that enter the gastrointestinal tract pass out without any complication, only 1% require surgical removal and 10-20% require nonsurgical intervention<sup>6</sup>.

### CASE REPORT

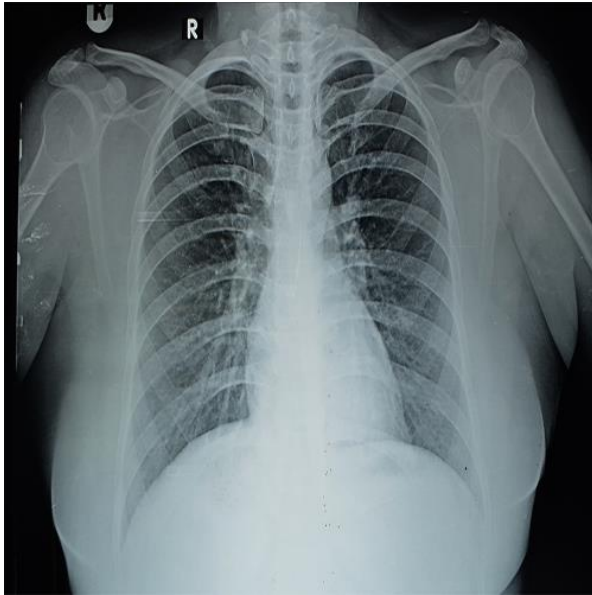
A 14 year old male patient reported with the chief complaint of pain in upper right back tooth region. On clinical examination upper right maxillary first permanent molar was found carious. So intra-oral radiographic examination was advised which showed carious involvement extending to pulp in relation to 16, hence routine root canal treatment was planned. The patient was apprehensive and showed excessive gag reflex hence rubber dam was not placed by the dentist so as to complete the procedure quickly and easily. Access opening procedure was performed. While the procedure was being performed the bur

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\*Correspondence: Dr. Rohan Bhatt

Department of Pedodontics, Karnavati School of Dentistry, Gandhinagar, Gujarat, India.

E-mail: drrohanbhatt@gmail.com



**Fig 1:** Immediate radiograph of chest.



**Fig 2:** Immediate radiograph of abdomen.



**Fig 3:** Abdominal radiograph after 3 days.

accidentally got displaced from the airtor onto the floor of the mouth. The patient complained of irritation in throat indicating that the bur had been swallowed. Immediate line of treatment was followed and the patient was asked to cough forcefully but that did not help in retrieving the bur. The patient though apprehensive showed no signs of respiratory distress. The patient and his parents were informed about the accident.

### INVESTIGATIONS

To ascertain the location of bur, chest and abdominal radiographs of the patient were taken. The chest radiograph showed no evidence of radio-opaque foreign object. The abdominal radiograph showed the radio-opaque foreign body in upper abdomen on left side at level of L2-3.

### TREATMENT

The radiograph of the patient confirmed the presence of a radio opaque foreign object in the gastro-intestinal tract and since the patient was asymptomatic no invasive procedure was planned by the gastroenterologist. The patient was advised to take a normal diet and examine stools for discharge of object.

### Outcome and Follow Up

The patient was recalled after 3 days and again abdominal radiograph was taken. The radiograph showed no evidence of radio-opaque foreign object in abdomen indicating that the ingested bur was excreted in stools.

### DISCUSSION

This case illustrates the ingestion of a dental foreign body during routine dental procedure. Any patient may swallow or aspirate foreign objects, but the risk is higher in pediatric patients, elderly patients and those under the effect of narcotics, sedation or nitrous oxide because of diminished protective reflexes<sup>6</sup>. The most common immediate symptoms of foreign body aspiration are coughing, wheezing, choking and acute dyspnea<sup>7</sup>.

Usually 80-90% of swallowed small foreign objects have been found to pass through the body without any undesirable incident over days to

weeks and incase complications occur, these may

obstruction and perforations<sup>2</sup>. By judicious use of airway protection techniques, dental practitioners can avoid the problems encountered by the patient and the doctor<sup>1</sup>. The use of rubber dam with proper precautions is an effective method of preventing aspiration. In cases of working under General Anesthesia or Deep Nitrous Oxide sedation use of gauze throat barrier is mandatory.

Endodontic files, which are used for root canal cleaning procedure, have been reported to pass out through the gastrointestinal system within 3 days but approximately 10% require endoscopic removal and only 1% will require surgical intervention<sup>8</sup>.

Since in this case a bur was ingested, care had to be taken for the risk of perforation due to the sharpness of the object ingested. The first step in managing such cases is accurate determination of the location of object ingested. This is done by use of radiographs, ultrasound or magnetic resonance imaging. Hence it is crucial to determine whether the object has entered the gastrointestinal or respiratory tract<sup>9,10</sup>.

### LEARNING POINTS

For the all dental procedures:

- Use of rubber dam for all invasive endodontic or operative procedure in the oral cavity.
- Mandatory use of gauze throat pack during dental procedure operating under General Anesthesia.
- Use of high vacuum evacuation on routine basis.
- Use floss to tie dental instruments like endodontic files etc.
- Use a more upright position if possible for all operative dental procedures.

### CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

include hemorrhage, infection, intestinal

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