



Foreign Body Ingestion in Dentistry: A Unique Case Report on Decision-Making and Successful Management Strategies

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Abstract

As dental professionals, our utmost priority is to provide exceptional care to our patients, relieve them of pain, enhance their aesthetics, and improve their function. However, sometimes unforeseen complications may arise such as accidental ingestion of a material, appliance, prosthesis, or instrument. These incidents can occur either in the presence of the dentist or when the patient is not under direct supervision. Dentists must possess comprehensive knowledge of the potential consequences and be well-versed in the appropriate protocols to address such mishaps and prevent further complications. This article primarily focuses on effective decision-making in such situations, enabling the dentist to promptly assess and resolve the issue, ultimately ensuring the patient's safety and well-being.

Keywords: Endodontics, File, foreign body, ingestion, decision-making, protocol

Introduction

Dental practice involves the use of a plethora of instruments and materials in the confines of the oral cavity. Access to teeth and their surrounding structures is further compromised by the tongue on one side. The patient's natural reflexes mostly help in warding off untoward instances; hence, foreign body ingestion is rare in adults.¹ However, emergencies of foreign body ingestion or aspiration may be encountered as the oral cavity directly opens into the respiratory tract and the gastrointestinal tract. Furthermore, such an emergency can occur at home when the patient accidentally swallows an appliance, mobile/avulsed tooth, restoration, or prosthesis, either in part or whole.[2,3,4,5,6,7]

Such emergencies should be managed with a proper protocol in place to avoid further complications for the patient. This paper aims to help in decision-making during foreign body ingestion.

Case Report

A 62-year-old female patient with macroglossia reported to our private clinic with severe pain in her lower front tooth. K-file was inserted for taking a working length radiograph during RCT. The patient inadvertently pushed the rubber stop off the file with her tongue as she was accustomed to resting her tongue forward, which led to the file springing backward into the oral cavity.

The patient was immediately checked for signs and asked for symptoms of pain, choking, and breathlessness. Upon receiving a negative response, both the patient and her attender were informed of the mishap. They were reassured and explained about the consequences and possible outcomes. They were then referred for a lateral view of the neck, chest, and abdomen radiograph. (Fig.1 & 2)

The radiographs showed the presence of the file in the stomach (Fig.2a), indicating that it had passed down the esophagus uneventfully and had not interfered with the respiratory tract. Detailed instructions were provided to the patient regarding a diet rich in fiber, and laxatives were prescribed. A radiographic follow-up was directed after 24 hours.

A subsequent radiograph taken 36 hours later revealed that the file had descended into the ileocecal region (Fig.2b). This confirmed that the file was not lodged or obstructed but was rather descending downwards. Once an object or material has passed through the ileocecal junction, the likelihood of it being retained in the body is very low. In a follow-up radiograph after 72 hours, the file was not to be seen, indicating that it had been expelled along with feces. (Fig.2c)

Discussion

Decision-making should be instantaneous and can be simplified (Fig.3). A symptomatic patient has to be immediately addressed with an endoscopy (best done within 4 hours). However, if the patient is asymptomatic and the radiograph shows that the foreign object is in the stomach, a proper follow-up protocol has to be followed. Following factors to be considered: i) Position of the Foreign Body: if a foreign body has already reached the stomach, it has passed through the narrowest part of the digestive tract, the cricothyroid. The other two potential lodging sites are the Duodenum helixes and ileocecal junctions. Chances of a foreign object remaining in the body after passing through the ileocecal junction are unlikely. ii) Time elapsed from the point of ingestion: if a foreign object is ingested in the morning before breakfast and a radiograph reveals its presence in the stomach, there is a higher risk of obstruction as the object would be in a relatively empty stomach after the passage of feces. Conversely, if the incident occurs in the afternoon or evening after a major meal, the chances of

obstruction are lower due to the considerable amount of food in the stomach. iii) Size of the foreign body: large objects are more prone to getting obstructed in the alimentary canal. A foreign body that is more than 5cm in length or 2.5cm in width will have to be removed endoscopically.[8] iii) Shape of the foreign body: Curvature and sharpness of the foreign object influence its chances of lodgment or perforation of the intestine.[8] Patients should be questioned about abdominal discomfort and advised to monitor their stools for signs of blood.

Other Factors helpful in decision-making for Asymptomatic Patients include the waiting Period, which can take up to 14 days for an asymptomatic patient to pass a foreign object in their feces. On average, it takes 2-3 days for the body to naturally eliminate a foreign body through feces.[9] Laxatives that stimulate peristalsis (containing sodium picosulphate) should be avoided if the object is sharp, as the movement of the intestines could cause further damage. Instead, laxatives that increase water absorption and mucous secretion are advised. Natural options, such as bananas and a fiber-rich diet, can also be beneficial. [10]

Risk Vs. Benefits Of Early Retrieval:

Retrieving a foreign body through endoscopy immediately after an accident has the sole advantage of easy accessibility. However, if the foreign object is sharp and/or small, it could get lodged in more complex locations such as the trachea or esophagus. Also, the chances of the object piercing the epithelium during the procedure cannot be ruled out. In 75.6% of asymptomatic cases, the ingested foreign body was expelled naturally through feces. In 19% of the cases, endoscopic intervention was needed, and about 4.8% of such cases required open laparotomy procedures. [11]

The lapse on our part was not using the rubber dam, as the patient was obese, had macroglossia, and was feeling uncomfortable with it. Such precautions of isolation may not always be possible, such as during orthodontic procedures. Also, ingestion of appliances and prostheses in part or as a whole has been reported when the patient is away.

Conclusion

A sound knowledge of the consequences of foreign body ingestion during or after dental procedures

helps the operator make necessary decisions swiftly. The possibility of identification of such ingested objects through ultrasonography can also be explored to avoid repeated exposure of the patients to X-rays, the latter being a non-invasive and inexpensive diagnostic procedure, and the preliminary diagnostic information offered by it can shed light on the clinical condition before proceeding to higher risk radiographic and surgical procedures. [12]

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Figures

Figure 1: a: Lateral View of the neck, b: Lateral View Chest Radiograph, showing no sign of a foreign body.

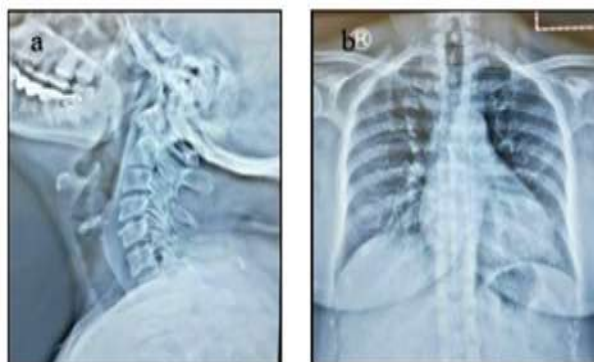


Figure 2: Abdomen Radiograph: a; Showing the foreign body, b: After 36 hours, c: After 72 hours



Figure 3: Flowchart for decision making in case of ingested foreign body in dentistry

