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Ingestion of Dental Crown: An Accidental Catastrophe

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Abstract

In oral healthcare, ingestion or aspiration of foreign objects are significant iatrogenic events. Ingestion of dislodged restorations, dental appliances, crowns, and teeth in dental operatories is frequently reported. Early diagnosis of foreign body ingestion in a dental operatory and awareness of its signs and symptoms are very crucial. These mishaps are by their very nature unexpected, and successful prevention and management are key to minimizing potential adverse consequences. This case report illustrates the accidental ingestion of dental crownand their management.

Keywords: Ingestion of Dental Crown, Accidental Aspiration, Prevention, Management, Adverse Consequence.

Introduction

While relatively rare, dental literature is filled with reports of ingested or aspirated dental burs, implant components, endodontic files, amalgam fragments, crowns, extracted teeth, pins, posts, rubber dam clamps, impression materials, and many more. Whenever possible, it is important to take precautionary measures to prevent such incidents – the use of rubber dams is one of the most effective forms of prevention. The use of gauze screens, floss ligatures, and modified chair positions are other commonly employed methods of reducing patient risk. Ingestion of materials and appliances in dental operatories sometimes may end up with serious complications. [1]It might sometimes become necessary to intervene with a surgical procedure. Tamura and co-workers reported that the frequency of dental-related object ingestion ranges from 3.6% to 27.7% among all foreign bodies. [2]It might require an extensive surgical intervention and occasionally leads to life-threatening situations if not appropriately managed. Therefore, dentists should be aware of the management and prevention of dental object ingestion protocol. Hence, this case report describes a case of accidental

dental crown ingestion in a 40-year-old male patient who was managed bynon-invasive intervention.

Case Report

A 40-year-old male patient reported to the department with a draining periodontal abscess. On examination, the tooth was diagnosed with endo-perio lesion. Root canal treatment had been done 2 years back and a PFM crown was placed on the tooth. Re-root canal treatment along with drainage of the abscess was planned. On the day of the appointment, while removing the crown, the patient experienced coughing episodes while the loose crown was still in the oral cavity. On examination, it was found that the crown was accidentally ingested. A chest X-ray was done (Fig 1) to find the position of the crown and it was found to be stuck in the left alveolus. The patient was admitted to the emergency and an SOS endoscopy was planned (Fig 2-4). The crown was retrieved (Fig 5) using an endoscope under general anesthesia. The patient was followed up for any post-operative discomfort. After 2 weeks, the patient was again planned for a PFM crown.

Figure 1

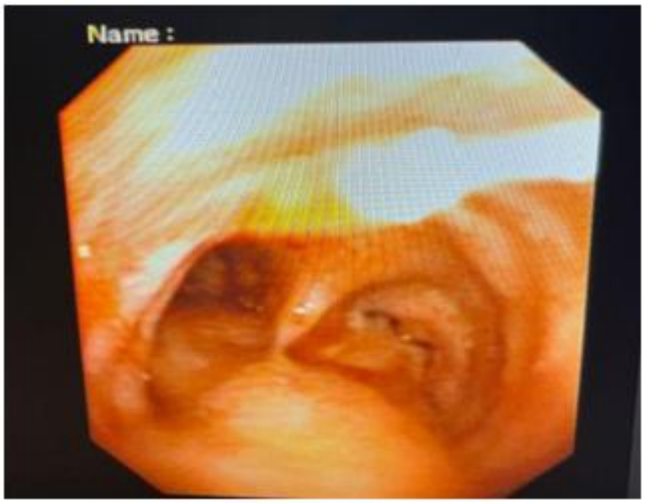

Figure 2

Figure 3

Figure 4

Figure 5

Discussion

Multiple authors have reported the ingestion of various foreign bodies, such as toy parts, coins, safety pins, magnets, and batteries. In a clinical dental setting, a patient's risk of aspirating a foreign body is increased by myriad factors, such as sedation, local anesthesia, supine and reclined positioning, jerky or unexpected movements, and excessive salivation. [3-5]Foreign objects pass through the GIT in the majority of cases and are excreted in days without any signs and symptoms or, in some cases, may cause peritonitis by lodging in the duodenum or colon. A couple of authors suggested that bananas may be very beneficial in such instances. [6-7]The first systematic study of foreign bodies in the airways was attempted by Gross in his publication 'A Practical Treatise on foreign bodies in the Air passages' in 1854. [8] He emphasized the importance of clinical history, especially the first paroxysm, notably coughing, and symptoms of severe suffocation that occur with the aspiration of a foreign object. In a case series by Cosellu G et al [8]he described 3 cases where in two cases, dental burs were accidentally ingested and stuck in the right bronchus and in the 3rd case, a dental crown was aspirated and was stuck in the left bronchus. According to the authors, If the foreign body is situated in the bronchial tree and vigorous coughing fails, and if the instrument cannot be removed manually or by the patient's coughing and/or with the Heimlich manoeuver, then surgery will be required to remove the object. In another retrospective study,the incidence of accidental foreign body aspirations tended to increase with age, with a particularly marked increase in patients aged 80 years or older. [9] In this case, as the patient has sudden coughing episodes, the crown was ingested and was stuck in the left alveolus. Foley's catheter with endoscopy has been suggested to remove such foreign bodies; if it is not removed, open surgery or laparoscopy has also been advocated in some cases. Foreign body ingestion may cause damage to the airways or gastrointestinal mucosa, partial or complete airway obstruction, respiratory distress, post-obstructive pneumonia, hemorrhage, or pneumothorax, intestinal perforations, or septic abscess. [3]

Conclusion

In most cases of accidental ingestion or inhalation, foreign objects typically pass through the gastrointestinal tract (GIT) without causing any symptoms and are excreted within a few days. However, in some cases, they may get stuck in the duodenum or colon, leading to peritonitis. In this particular case, a dental crown was accidentally inhaled and became lodged in the left alveolus. As a result, an endoscopy was urgently performed.

- The key to preventing disastrous consequences during any oral cavity-related surgical or nonsurgical operation is early identification of high-risk factors and the location of swallowed foreign substances.

- Clinical signs and symptoms should be closely watched until the foreign body that was swallowed or aspirated is eliminated.
- In many modern dentistry clinics, using preventive measures like rubber dams, gauze throat screens, or floss ligatures is an essential standard of care for patient safety.
- Dentists should constantly be aware of a plan for managing such iatrogenic instances as well as for prevention in this litigious era.

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