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Foreign body mimicking a palatal lesion in an infant: a case report

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Abstract

Foreign bodies in the oral cavity of infants are uncommon and often present with no specific symptoms, leading to frequent misdiagnosis. The anterior hard palate is an unusual site for foreign body impaction, but it can retain small objects due to its anatomical features. In this case, a nine-month-old boy was referred to as a suspicious palatal lesion, which was ultimately identified as a soft silicone foreign body. Early recognition and safe removal prevented further complications. This case highlights the importance of including foreign bodies in the differential diagnosis of palatal lesions, and the need for awareness across different disciplines and parental education.

Keywords: Foreign body, oral cavity, palate, infant, inhalation

Introduction

Although rare, cases of foreign bodies (FB) located in the palate in children under the age of one are increasingly cited in the literature and support a younger age threshold for FB ingestion, between 5 months to 5 years [1, 2]. At this age, oral cavity FB are relatively infrequent with only 4.7% of all head and neck FB located in the oral cavity [3]. Khalaf et al reported 32 cases of hard palate FB impaction between 1967 and 2019 [4]. The mean age at presentation was 14.9 months (range: 3–48 months) with 56.5% females and 43.5% males [4].

Some contributing factors get involved in this situation. These include the developmental period when children tend to put everything in their mouths, are curious and push themselves to make discoveries. In addition, the anatomical characteristics of the palate, by virtue of its morphology and the consistency of its mucosa, make it an ideal area for retaining FB [5, 6].

The main danger posed by the presence of FB in the palate is the risk of tracheal aspiration and respiratory obstruction. This is the fourth leading cause of accidental death in children under three years of age and the third leading cause in children under one year of age. Therefore, it is important to recognize them quickly [2, 3, 6–8].

This case report highlights the possibility of a FB becoming trapped in the palate of a nine-month-old infant, and the difficulty of making a correct diagnosis at the first consultation.

Case report

A nine-month-old boy was referred to the maxillofacial emergency department by the hospital's emergency department for a suspicious lesion on the palate that had been noticed by his parents 24 hours earlier. The parents first consulted a paediatrician, then sought the opinion of a dentist, who advised them to go to A&E immediately. Consequently, the child went from paediatrician to dentist to emergency doctor to maxillofacial surgeon.

The patient appeared asymptomatic and uncomplaining. He was up to date with his vaccinations, had no notable health history, and the pregnancy was

unremarkable. The child was difficult to examine. However, a 1 cm yellowish nummular swelling with clear, slightly raised margins was found in the center of the anterior hard palate (Figure 1). Despite the child's sobbing during the clinical examination, the swelling was soft and painless on palpation. The rest of the clinical examination revealed no particularities.

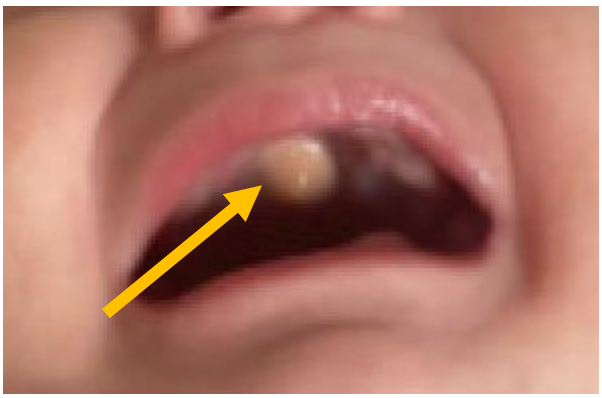

Fig. 1. A conic soft silicon foreign body of 1cm diameter and 1cm of height located in the hard palate of a 9-month-old boy trapped by a suction cup effect (arrow).

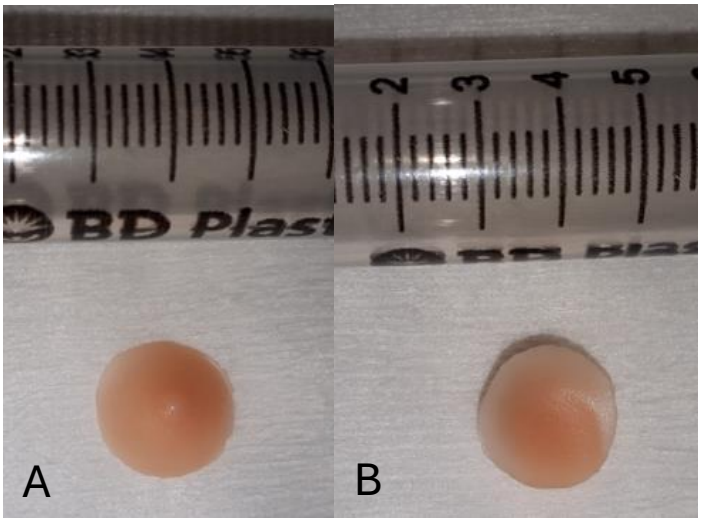

Fig. 2. A. Convex view from above of the foreign body removed. B. Concave view from above of the foreign body removed.

One of the department's supervisors spontaneously raised the possibility of a FB trapped by a suction cup effect. The parents were asked directly during the same consultation if they would like the FB to be removed. With their agreement, the FB was removed using Kocher forceps. This revealed a conical, soft, silicone foreign body measuring 1 cm in diameter and 1 cm in height (Figure 2). Once the FB had been removed, no damage to the palatal mucosa was found. The concave side of the object was adherent to the palatal mucosa, creating a suction effect.

The FB may have appeared at home or at the day nursery, but it has not been identified with certainty. It may be a piece from a round silicone mobile phone holder with a suction cup, non-slip fastening and support pad.

The young patient was able to return home with his parents immediately, with no special instructions other than reminding the parents of the possible dangers to children at home and elsewhere and insisting that they supervise the child.

Discussion

Impacted FB in the oral cavity of children are a rare but important clinical entity that is frequently misdiagnosed and under-recognized. This is particularly true when the FB is located in the hard palate, where it can resemble a variety of oral pathologies. As highlighted in the systematic review by Khalaf et al., of the 32 reported cases of palatal FB, only eight were correctly identified at the initial consultation. The remainder were misdiagnosed as palatal tumors (nine cases), infectious lesions (five cases), cysts (three cases), congenital anomalies (four cases), or investigated for unexplained feeding difficulties (three cases) [4].

The clinical diagnosis is further complicated by the limited cooperation that is often encountered when examining infants. In many cases, the child is unable to verbalize discomfort, and visual inspection may be difficult or incomplete due to crying or limited mouth opening. As a result, clinicians may resort to additional examinations, including imaging (such as CBCT, CT scan or MRI) or even biopsy under general anesthesia. These procedures may expose the child to unnecessary risks [6, 9].

Despite the diagnostic challenges involved, it is crucial for clinicians to remain vigilant for FB, particularly when encountering well-defined, non-painful palatal lesions in otherwise asymptomatic children. In our case, it was the input of a senior clinician that raised the possibility of a suction-adhered FB, which was ultimately confirmed during the same consultation. This highlights the importance of

multidisciplinary collaboration and experience in reducing diagnostic delays and preventing complications.

Foreign body aspiration (FBA) is particularly dangerous in infants and toddlers and remains a major cause of emergency consultations. Ekim et al., noted that up to 20% of cases of FBA may initially present without symptoms, while others present with coughing, choking or breathing difficulties [7]. The risk of a palatal FB becoming dislodged and aspirated, especially if it is manipulated without adequate precautions, adds another layer of urgency to accurate diagnosis and safe removal [7].

Also, between 80% and 90% of FBs in the mouth can be ingested and pass freely through the digestive system (in these cases, surveillance is the only necessary action). However, 10–20% require endoscopic removal and around 1% require surgical intervention [1].

If an FB is found in the palate, it should be carefully extracted to minimize the risk of it being dislodged into the oropharynx or respiratory tract. The recommended approach is to position the child laterally with their head tilted downwards, ideally with a parent's support, and remove the object from posterior to anterior using appropriate forceps [6].

Our case benefited from a prompt diagnosis and removal, thus avoiding the need for more invasive interventions. However, many other cases in the literature report delays ranging from one day to over 500 days. On average, patients require 2.3 consultations before receiving the correct diagnosis, with some requiring multiple physician evaluations. General anesthesia was necessary in 68% of these cases for diagnostic and therapeutic purposes [4].

Another important factor to consider is the psychosocial context of FB ingestion. In rare but alarming cases, it may indicate negligence or intentional harm, particularly in neonates and vulnerable children. Almagribi et al., reported a case of button battery ingestion in a neonate, raising concerns about abuse and neglect [1]. Clinicians should therefore remain alert to these possibilities and consider safeguarding measures when necessary [1].

From a preventive point of view, literature consistently emphasizes the need to educate parents and caregivers. The most ingested FBs include coins, batteries, toy parts, buttons, pistachio shells, teeth and dental material. Batteries (especially button cells) can cause rapid and severe tissue damage and may be fatal [1]. Some studies have revealed that many parents attempt first-aid measures at home, sometimes

using dangerous methods such as probing the mouth with fingers, inducing vomiting or pushing the object further into the airway [1, 7, 9–11].

The prolonged retention of an oral FB strengthens the FB's position through inflammation-induced hyperplasia of the gingiva at the margins of the FB. This can lead to additional complications, including mucosal trauma, infection or fungal colonization, which may delay diagnosis and complicate treatment [6, 9].

Although rare, FB lodged in the hard palate of infants should always be considered when diagnosing unexplained oral lesions particularly in non-verbal children. Early identification and removal can prevent unnecessary interventions and serious complications, including aspiration. It is also important to emphasize the role of prevention through caregiver education, as well as raising awareness among care providers regarding this easily missed but potentially serious condition.

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Authors contribution:

Author	Contributor role
Jost Antoine	Conceptualization, Investigation, Data curation, Visualization, Writing original draft preparation,writing review and editing
Magremanne Michèle	Writing review and editing, Supervision

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