

## Foreign Bodies Adhered to the Structures of the Oral Cavity of Babies: Report of Two Cases

*Corpos Estranhos Aderidos às Estruturas da Cavidade Oral de Bebês: Relato de Dois Casos*  
*Cuerpos Extraños Adheridos a las Estructuras de la Cavidad Oral de Bebés: Reporte de dos Casos*

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### Abstract

Foreign bodies (FB) are characterized as unwanted objects that do not belong to the organism and can be lodged or adhered to the human body. This study aimed to report two clinical cases of FB adhered to different structures of the oral cavity in babies. Case 1: A 9-month-old male patient presented to the Faculty of Dentistry of UNESP, due to the presence of a painless lesion on the hard palate for approximately 15 days. Clinically, a yellowish, smooth, shiny, well-defined lesion with a hardened consistency and an erythematous halo at the edges was identified in the median region of the hard palate. Case 2: A 12-month-old female patient attended at the Baby Clinic of the State University of Londrina, due to the presence of a whitish cyst on the gum for approximately 7 days. Clinically, a whitish, smooth, shiny, well-defined lesion with a hardened consistency was identified in the posterior region of the gingival rim on the left side. In both cases, the approach taken was the removal of the FB. After the procedure, it was determined that the FB were, respectively, a silicone door impact protector and a plastic fragment from a toy. On clinical follow-up, the mucosa of the hard palate and gingival rim was observed to be normal. It is concluded that the presence of FB adhered to different locations of the oral cavity in babies represents situations that pose risks of aspiration or swallowing and physical examination allows for an immediate and accurate diagnosis.

**Descriptors:** Cavity, Oral; Infant; Pediatric Dentistry.

### Resumo

Corpos estranhos (CE) são caracterizados como objetos indesejáveis que não pertencem ao organismo e podem se alojar ou aderir ao corpo humano. Este estudo teve como objetivo relatar dois casos clínicos de CE aderidos a diferentes estruturas da cavidade oral em bebês. Caso 1: Paciente do sexo masculino, 9 meses de idade, compareceu à Faculdade de Odontologia da UNESP, devido à presença de lesão indolor em palato duro há aproximadamente 15 dias. Clinicamente, identificou-se lesão amarelada, lisa, brilhante, bem delimitada, de consistência endurecida e com halo eritematoso nas bordas, na região mediana do palato duro. Caso 2: Paciente do sexo feminino, 12 meses de idade, atendida na Bebê Clínica da Universidade Estadual de Londrina, devido à presença de cisto esbranquiçado em gengiva há aproximadamente 7 dias. Clinicamente, foi identificada uma lesão esbranquiçada, lisa, brilhante, bem delimitada e de consistência endurecida na região posterior do rolo gengival do lado esquerdo. Em ambos os casos, a abordagem adotada foi a remoção do CE. Após o procedimento, foi determinado que os CE eram, respectivamente, um protetor de porta de silicone e um fragmento plástico de brinquedo. No acompanhamento clínico, observou-se que a mucosa do palato duro e da borda gengival estavam normais. Conclui-se que a presença do CE aderidos em diferentes locais da cavidade oral em bebês representa situações que oferecem risco de aspiração ou deglutição, e o exame físico permite um diagnóstico imediato e preciso.

**Descritores:** Cavidade Bucal; Lactente; Odontopediatria

### Resumen

Cuerpos extraños (CE) se caracterizan como objetos indeseables que no pertenecen al organismo y pueden alojarse o adherirse al cuerpo humano. Este estudio tuvo como objetivo reportar dos casos clínicos de CE adheridos a diferentes estructuras de la cavidad oral en bebés. Caso 1: Paciente de sexo masculino, de 9 meses de edad, acudió a la Facultad de Odontología de la UNESP debido a la presencia de una lesión indolora en el paladar duro desde hacía aproximadamente 15 días. Clinicamente, se identificó una lesión amarillenta, lisa, brillante, bien delimitada, de consistencia endurecida y con un halo eritematoso en los bordes, en la región media del paladar duro. Caso 2: Paciente de sexo femenino, de 12 meses de edad, atendida en la Clínica del Bebé de la Universidad Estatal de Londrina, debido a la presencia de un quiste blanquecino en la encía desde hacía aproximadamente 7 días. Clinicamente, se identificó una lesión blanquecina, lisa, brillante, bien delimitada y de consistencia endurecida en la región posterior del rodete gingival del lado izquierdo. En ambos casos, se adoptó como enfoque la remoción del CE. Tras el procedimiento, se determinó que los CE eran, respectivamente, un protector de puerta de silicona y un fragmento plástico de juguete. En el seguimiento clínico, se observó que la mucosa del paladar duro y del borde gingival estaban normales. Se concluye que la presencia de CE adheridos en diferentes lugares de la cavidad oral en bebés representa situaciones que ofrecen riesgo de aspiración o deglución, y el examen físico permite un diagnóstico inmediato y preciso.

**Descriptores:** Boca; Lactante; Odontología Pediátrica.

INTRODUCTION

Foreign bodies (FB) can be characterized as the unwanted presence of one or more external objects that do not belong to the organism and are attached to the human body or located in some internal region<sup>1,2</sup>, such as oral cavity, throat, ear or nose<sup>3,4</sup>.

The presence of FB attached to the structures of the oral cavity represents situations commonly found in babies and younger children, with ages ranging from 6 months to 3 years old<sup>5,6</sup>. During early childhood, children are expected to show extreme curiosity and a need to explore objects, constantly taking them to their oral cavity<sup>6,7</sup>. In addition to this behavioral tendency, factors related to the suction force during breastfeeding, use of bottles and pacifiers, anatomy of structures and movement of the tongue can act as facilitating mechanisms for the fixation of FB in different structures of the oral cavity, especially in the hard palate<sup>8,9</sup>.

In order to mitigate the imminent risks of ingestion or aspiration of FB, it is essential that the diagnosis be rapid and assertive. In many situations, the identification is made accidentally by one of the legal guardians or by professionals after long periods of time in which the FB remains in the oral cavity<sup>8,10</sup>. Furthermore, it is aggravated by the fact that many professionals incorrectly diagnose the presence of FB as inflammatory lesions, infections and neoplasms<sup>7,11</sup>, inevitably leading to an increase in the time the FB remains in the oral cavity and, consequently, greater chances of potential complications and emotional distress in the family unit<sup>2,7,12</sup>.

Based on the relevance of the content presented and the scarce literature about FB, this article aimed to report two clinical cases of FB adhered to different structures of the oral cavity of babies, as well as the diagnosis and treatment.

CASE REPORTS

This study was written in accordance with the PRICE 2020 guidelines.<sup>13</sup> Legal guardians were consulted and agreed to participate in the clinical cases reported below, signing a free and informed consent form. Table 1 briefly shows the sociodemographic and clinical characteristics of clinical cases.

○ Clinical case 1

A 9-month-old male baby attended the Baby Clinic of the Araçatuba School of Dentistry - FOA/Unesp, accompanied by his legal guardians. The main complaint reported was the presence of a painless lesion on the hard palate identified approximately 15 days ago. During the anamnesis, the parents presented stress and marked emotional distress. According to the mother, the baby uses a bottle and a pacifier. Furthermore, they reported

that the baby had already been evaluated by another professional, who initially diagnosed the change as a burn on the palate due to the ingestion of extremely hot food or drink, although the etiology and episode were not confirmed by the parents. The treatment proposed by the professional included: cleaning the area adjacent to the alteration with 0.12% chlorhexidine and topical application of Ad. muc kids® mouth gel in the area. However, after 7 days, no signs were observed indicated regression of the alteration.

Table 1. Age, sex, habits, location, diagnosis and treatment of the clinical cases

Sociodemographic and clinical characteristics of the cases presented						
Clinical cases	Age	Gender	Habits	Location	Diagnosis	Treatment
Clinical case 1	9 months	Male	Pacifier and feeding bottle	Hard palate	Foreign body Silicone anti-impact door Rotector	Removal Outpatient setting
Clinical case 2	12 months	Female	Pacifier feeding bottle and digital sucking	Gingival rim	Foreign body Plastic toy fragment antiestresse	Removal Outpatient setting

Source: Research Data

On intraoral physical examination, a yellowish, smooth, shiny, circumscribed change can be identified, with a hardened consistency and an erythematous halo on the edges, measuring approximately 1.5 cm, located in the median region of the hard palate (Figure 1).



Figure 1: Presence of a foreign body attached to the hard palate.

The diagnostic hypothesis was a FB attached to the hard palate. As a therapeutic approach, we opted for removal of the FB in an outpatient setting. For legal reasons, guidelines on the procedure were initially shared and parental consent was obtained to perform active physical restraint to prevent sudden movements of the baby. With the aid of a hollemback®, mouth opener and sterile gauze (to protect the airway), the FB was removed. After removal, it was found that the FB was a silicone anti-impact door protector (Figure 2).

The immediate postoperative evaluation showed increased tissue volume in the region where the FB was impacted, the presence of

erythematous spots and slight bleeding (Figures 3 and 4). At the end, the mother received guidance on oral hygiene and a liquid and soft diet to avoid local irritation.



**Figure 2:** Silicone anti-impact door protector removed from hard palate.



**Figure 3:** Immediate clinical condition after removal of the foreign body.



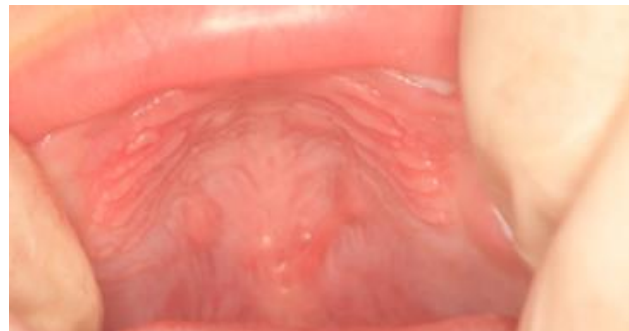
**Figure 4:** Immediate clinical condition after removal of the foreign body.

On clinical follow-up for 7 and 30 days, a normal appearance was observed in the hard palate region, without changes or relapses (Figure 5). At this time, the patient continues to receive educational-preventive dental monitoring at the institution.

#### ○ Clinical case 2

A 12-month-old female baby attended the Baby Clinic at the State University of Londrina (UEL), accompanied by her mother. The main complaint was the presence of a whitish cyst on the gum for approximately 7 days. During the anamnesis, the mother showed stress and anxiety about this situation. According to the mother, the

baby uses a pacifier, bottle and thumb sucking. In addition, she reported that the baby had already been evaluated by another professional, who suspected a possible malignant lesion due to the rapid progression and referred the baby to the institution.



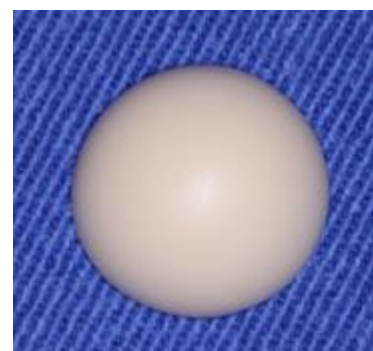
**Figure 5:** Clinical condition 30 days after removal of the foreign body.

On intraoral physical examination, a whitish, smooth, shiny, circumscribed change with a hardened consistency was identified, located in the posterior region of the gingival ring on the left side, measuring approximately 3 cm, compatible with a FB (Figure 6).



**Figure 6:** Presence of a foreign body attached to the posterior region of the gingival rim.

The diagnostic hypothesis was a FB attached to the posterior region of the gingival rim. As a therapeutic approach, we opted for removal of the FB in an outpatient setting. The pre-, trans- and post-operative steps were performed as described in clinical case 1. After removal, it was found that the FB was a fragment of plastic detached from an anti-stress toy known as "Pop It" (Figure 7).



**Figure 7:** Fragment of plastic detached from an anti-stress toy removed from the gingival rim.

The immediate postoperative assessment



showed increased tissue volume in the region where the FB was impacted, with the presence of slight bleeding after removal (Figure 8). At the end, the mother received guidance on toys that were most suitable for the age group, oral hygiene and a liquid and soft diet to avoid local irritation.



**Figure 8.** Immediate clinical condition after removal of the foreign body.

In clinical preservation for 4 months, the eruption of tooth 64 and tooth 63 can be observed, both with normal characteristics and within the estimated eruption chronology. Additionally, during this period, no relapses were identified (Figure 9). The patient continues to receive educational-preventive dental follow-up at the institution.



**Figure 9.** Clinical condition 120 days after removal of the foreign body.

## DISCUSSION

The dental approach to cases of FB adhered to the structures of the oral cavity of babies represents situations commonly found in pediatric dentistry and a challenge imposed on the professional. This article highlights the importance of a rapid and accurate diagnosis, as well as effective treatment, based on a detailed and thorough intraoral physical examination. Removal of objects was essential to avoid serious complications related to aspiration or swallowing, in addition to allowing the reestablishment of normal oral cavity conditions and alleviating the anxiety and stress of legal guardians.

Babies, especially in the oral phase, tend to frequently put various objects in their mouths, which increases the risk of FB sticking to this region. In addition to this behavior, habits such as digital sucking, use of pacifiers, bottles and the vacuum effect caused by dome-shaped objects are closely associated with the greater potential for FB fixation<sup>7,9,10</sup>. Furthermore, the arched/concave anatomy and the position of the tongue in constant contact with the hard palate may justify the fixation of FB in this region, although they are rarely described<sup>7,14</sup>. In both reported cases, it is believed that the age of the babies, presence of oral habits, characteristics and possibility of forming a vacuum of the objects have favored the emergence and fixation of FB in the structures of the oral cavity.

Regarding the objects frequently found attached to this region, the literature illustrates cases of coins<sup>15</sup>, plastic screw caps<sup>7</sup>, button cells<sup>16</sup>, plastic stickers<sup>2</sup>, toys<sup>11,14</sup>, among others. It is worth highlighting that in addition to the vacuum effect, the characteristics of the objects, such as their colorful, shiny, circular and small size, can increase babies' interest in exploring them in the oral cavity and, consequently, the risk of adhesion<sup>2,6,7</sup>. In the present study, an anti-impact silicone door protector and a plastic fragment from an anti-stress toy were identified, both small, shiny, circular objects, which may have aroused the interest and attraction of babies to manipulate them orally. Additionally, in clinical case 1, the object was located in an easily accessible place and in clinical case 2, the object was a toy that the baby played with constantly, according to the mother.

A relevant point of this article is that, initially, other professionals wrongly diagnosed FB as an inflammatory lesion resulting from burns and neoplastic lesions. It is clear that in FB situations several factors can contribute to an incorrect diagnosis. First, the reported history of the alteration in these patients is often vague and imprecise<sup>10,11</sup>. Second, babies of this age tend to exhibit uncooperative behavior during care<sup>9,16</sup>. Finally, depending on the length of time the FB remains and the diverse clinical characteristics of the objects, they may be confused and incorrectly diagnosed as ulcerative, neoplastic, inflammatory lesions, fungal infections or salivary gland tumors<sup>7,11</sup>. However, these limitations and difficulties should not be an impediment to a careful and detailed evaluation of the history and current clinical condition. It is essential that the intraoral physical examination be performed based on semitechnical inspection and palpation maneuvers, associated with good clinical lighting conditions. In addition, it is essential that pediatric dentists and physicians include foreign bodies, although rare, in the differential diagnosis of lesions in the oral cavity and that they can promptly

diagnose and remove the offending agent before the emergence of potential complications such as aspiration of the object, perforation or necrosis of the structures<sup>8,14</sup>.

Regarding the conduct and environment for treatment, most studies indicate that FB removal should be performed at a hospital level, under general anesthesia, to ensure greater airway safety and reduce the risk of secondary aspiration<sup>7,8,14</sup>. Nonetheless, it is important to highlight that babies have lower body weight, immature respiratory and cardiovascular systems and a greater possibility of adverse reactions to anesthetics. In view of this, it is plausible to consider that this environment should be intended for specific situations, in which the clinical evaluation indicates previous unsuccessful removal attempts in the office or the presence of FB firmly adhered and embedded in the tissues<sup>17,18</sup>. In both reported cases, a thorough clinical examination combined with the specific characteristics of the FB allowed for safe and extremely rapid removal on an outpatient basis, without the need for general anesthesia. In this context, the outpatient approach offered a more conservative and safer alternative for the patient, reduced costs for the health system, optimized clinical time and minimized emotional distress for family members.

## CONCLUSION

Based on the reported cases, it is possible to conclude that FB should be considered in the differential diagnosis of lesions in the oral cavity in babies to avoid incorrect diagnoses and unnecessary treatments. To achieve this, it is essential that the pediatric dentist performs a careful and detailed physical examination and is qualified to make an assertive diagnosis.

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### **CONFLICT OF INTERESTS**

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The authors declare no conflict of interest.

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