

## CASE REPORT

# Traumatic herniation of buccal fat pad into the oral cavity in an infant: A case report

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## Abstract

Buccal fat herniation is a rare traumatic disease that should be included in differential diagnosis of infants' oral cavity mass. History of preceding trauma, careful evaluation of mucosal perforation aiding the diagnosis.

## KEYWORDS

buccal fat pad, case report, herniation, infant, trauma

## 1 | INTRODUCTION

Buccal fat herniation is a rare intraoral traumatic disease with sparse reports in the literature that occurred with a minor injury to the buccinator muscle and buccal mucosa. We present a case report of an 8-month-old infant, diagnosed with traumatic buccal fat pad herniation and successfully treated with surgical repositioning.

The buccal fat (Bichat's fat) is a deeply implanted and encapsulated adipose tissue between the buccinator and superficial facial muscles within the masticatory spaces in the oromaxillofacial region that is distinct from the superficial subcutaneous malar fat.<sup>1</sup> The buccal fat pad provides an aesthetic function with cheek fullness and permits better mobility of facial muscles.<sup>1</sup> In addition, it aids in suckling in neonates, infants, and young children.<sup>2</sup> With its extension, Bichat's fat pad plays an important role in preserving facial contour.<sup>3</sup>

Buccal mucosal or muscular traumatic injuries may result in a massive herniation of Bichat's fat pad contents into the oral cavity, a condition known as "pseudolipoma".<sup>4</sup> More frequently, these injuries result from the falling of a child with an intraoral object, such as pens, toothbrushes, lollipops, eating dishes, or drinking straws, resulting in mucosal injuries and fat herniation.<sup>2</sup> There are sparse reports of traumatic herniation of buccal fat pad to the oral cavity in the literature.<sup>1,3,4</sup> Herein, we discuss a case of an 8-month-old infant who presented with an oral lump following a traumatic injury.

## 2 | CASE REPORT

An infant aged 8-month-old was brought to our emergency department, Alborj hospital, Ibb, Yemen, on November 23, 2022, complaining of protruding mass beside the

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tongue from the left side after exposure to injury by her sister's nail when she attempted to remove chewing gum from his mouth 6 h ago. The mass starts small with little bleeding and becomes progressively enlarged besides the tongue and prominent over 6 h. The patient has had no significant medical or family history.

On examination, there was a fleshy with mild whitish discoloration protruding mass, increased size with the infant crying, and no contact bleeding was observed. Pyogenic granuloma, inflammatory pseudotumor, foreign body granuloma, traumatic neuroma,

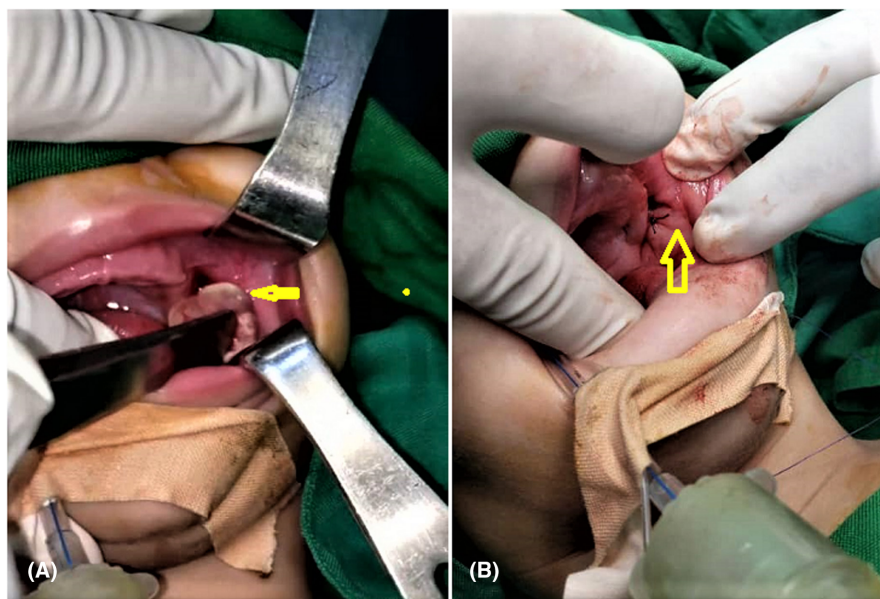


**FIGURE 1** Preoperative photo showing a small mass arising protrude to oral cavity (arrow).

lipoma, hemangioma, and salivary neoplasm are all suspected differential diagnoses. However, according to the mother's history of trauma and clinical appearance (the swelling appeared suddenly after intra-oral blunt trauma), anatomic location, and age of the patient. The provisional diagnosis was intraoral herniated buccal fat (Figure 1). The clinical laboratory data, including complete blood cell count and renal function tests, were normal. The patient was urgently prepared for the operation and examination under general anesthesia. During the operation, investigated mass revealed normal fatty tissue. The mass was about 2 × 3 cm in size and yellowish-red in color, and there were no signs of inflammation. A biopsy was taken, with cleaning, washing, and repositioning of the tissue on its normal position with debridement of necrotic tissue, and suturing of the wound by simple absorbable Vicryl 3/0 suture was performed (Figure 2). The patient recovered well following the surgery. A postoperative computerized tomography scan revealed a normal parotid gland. The histopathology showed adipose tissue with sparse inflammatory cells separated by connective tissue stroma. A course of amoxicillin antibiotics was prescribed for 5 days.

### 3 | DISCUSSION

The buccal fat pad comprises a lobulated structure with buccal extension toward the mandible, pterygoid extension toward the temporal bone filling the pterygomandibular space, pterygopalatine extension filling the infra-temporal fossa, and temporal extension toward the ears, as it lines the masticatory space aiding in mastication. In addition to its anatomical relation to masticatory muscles, it is situated in



**FIGURE 2** Intraoperative photos showing: (A) Small mass protruded to oral cavity that yellowish red in color (arrow). (B) Oral cavity after repositing the mass (arrow).

close proximity to the parotid duct and the facial nerve and located in between the buccinator.<sup>1</sup> It extends anteriorly and medially to the masseter muscle.<sup>5</sup> Furthermore, it is encapsulated by a fibrous septated capsule that may rupture following penetrative traumatic injuries, resulting in fatty tissue herniation intra-orally, termed “traumatic pseudolipoma”.<sup>6</sup>

Maxillofacial trauma in children is rarely seen; however, it requires meticulous evaluation and treatment planning. Such injuries can be challenging to diagnose, given the difficulty in examining pediatric patients and the insufficient history provided by parents occasionally.<sup>1</sup> In addition, the proximity of the buccal fat pad to the parotid gland misdiagnoses it as another etiologies.<sup>1</sup>

The literature has sparse reports of traumatic herniation of buccal fat pad to the oral cavity.<sup>1,3,4</sup> Nevertheless, infants and young children (5 months–12 years) are most frequently affected, mainly due to the prominence of the buccal fat pad at this age, making it vulnerable to blunt injuries from foreign objects, as seen in our case.<sup>1,3,4,7</sup> The incidence of post-traumatic intraoral pseudolipoma is about 1%.<sup>8</sup> A review of the literature revealed that of 95 articles initially screened, only 24 cases were found to have reported the condition correctly. Terms such as “traumatic pseudolipoma” have been used synonymously and erroneously for this condition.<sup>9</sup>

This anatomic feature, as well as sucking activity and the tendency to place foreign objects in the oral cavity, may be risk factors for traumatic herniation of the buccal fat pad in infants, as seen in our case.<sup>10</sup> In most cases, the herniated mass is much larger than the perforation, as seen in our case.<sup>2,10</sup>

Traumatic buccal fat pad herniation usually appears as a pedunculated mass adjacent to the parotid gland and in close proximity to the buccinator muscle. It is usually nontender, soft with smooth borders, and a non-blanchable mass.<sup>1</sup> Several differential diagnoses can mimic buccal fat pad herniated mass, including pyogenic or foreign body granuloma, traumatic neuroma, lipomas, or hemangiomas.<sup>1</sup> However, in this case, according to the mother's history, the swelling appeared suddenly after intraoral blunt trauma. The provisional diagnosis was intraoral herniated buccal fat. As thrombosis and necrosis occur, the color changes from yellow to red to purple or deep blue, making the mass easily palpable and may be confused with a more severe lesion.<sup>9</sup> Factors that may aid in the diagnosis include: a history of preceding trauma with no prior identified mass.<sup>7</sup> Nevertheless, the diagnosis is feasibly made intra-operatively. Excision or replacement of the buccal fat pad is used to treat traumatic pseudolipoma.<sup>11</sup> With either approach, caution must be taken to avoid damaging the parotid duct and its aperture. Tissue restoration with primary wound closure is effective when an early diagnosis is obtained prior to the development of inflammatory

alterations, as in our case.<sup>9</sup> Excision is preferred when there is a delay between diagnosis and treatment due to tissue contamination and necrosis.<sup>1</sup>

When in doubt, aids such as ultrasonography, computed tomography, or magnetic resonance imaging may be used and later confirmed with histopathology especially in case of the post-traumatic fatty tumors since ruling out malignancy is important, as performed in our patient.<sup>9</sup>

## 4 | CONCLUSION

Traumatic herniation of the buccal fat pad should be included in the differential diagnosis of intraoral masses in the pediatric age group. The patients should be evaluated thoroughly for any preceding history of trauma and examined meticulously for mucosal perforation, mass origin, and extension. Excision or repositioning is the preferred treatment approach.

## AUTHOR CONTRIBUTIONS

**Faisal Abulohoom:** Conceptualization; data curation; investigation; resources; writing – review and editing. **Saleh Al-wageeh:** Conceptualization; investigation; project administration; resources; software; writing – original draft; writing – review and editing. **Faisal Ahmed:** Conceptualization; data curation; funding acquisition; methodology; project administration; resources; supervision; visualization. **Hesham Al-Sharani:** Conceptualization; formal analysis; project administration; resources; supervision; visualization. **Zakarya Al-Muaalemi:** Funding acquisition; investigation; project administration; software; supervision. **Nassr Al-Hutbany:** Data curation; formal analysis; project administration; resources; software; writing – review and editing.

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None.

## CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest to declare.

## DATA AVAILABILITY STATEMENT

None.

## CONSENT

Written informed consent was obtained from the patient's family to publish this report in accordance with the journal's patient consent policy.

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