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Herniation of Bichat's Fat Tissue Secondary to Trauma into the Oral Cavity

Case Report

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Abstract

Herniation of Bichat's fat tissue into the oral cavity is a rare clinical entity. It is known as "traumatic pseudolipoma," which develops within a short time after direct trauma to the buccal mucosa, especially in young children, or as "post-traumatic lipoma," which occurs depending on the changes in the storage and differentiation of adipocytes after conditions, such as trauma and hematoma, that trigger cytokine release. In this article, herniation of Bichat's fat tissue secondary to blunt-penetrating trauma in a 3-year-old boy is presented, and important points of diagnosis and treatment procedures are discussed in accordance with the literature.

Key Words: Bichat's fat tissue, buccal fat tissue, herniation, pseudolipoma

Introduction

Buccal fat pads are the formations located between the masseter and buccinator muscles. They support the masticatory muscles, and they are important due to their being in the neighborhood of the parotid duct and the facial nerve. These fat pads, which are also known as Bichat's fat tissue, are more apparent, especially in newborns, infants, and young children (1). They help mastication and suction and provide fullness in the face (2). They may sometimes herniate into the mouth. These herniations usually occur in two forms. The first possibility is "traumatic pseudolipoma," which develops within a short time after direct trauma to the buccal mucosa, especially in young children (3). The other possibility is "post-traumatic lipoma," which can occur depending on the changes in the storage and differentiation of adipocytes after conditions, such as trauma and hematoma, that trigger cytokine release (1). Brooke and MacGregor first suggested the term "traumatic pseudolipoma" by differentiating the fat tissue growing by swelling from the buccal mucosa from other oral cavity lesions in their case (4). Traumatic pseudolipomas are more common, particularly among children between 5 months old and 5 years old. In this case report, the diagnosis and treatment processes of a 3-year-old boy having post-traumatic herniation of buccal fat pad into the oral cavity were presented in accordance with the literature.

Case Report

A 3-year-old boy was consulted in our clinic by the emergency department due to bleeding from his mouth and swallowing difficulty after foreign body-induced intraoral trauma. Thirty minutes before the admission, the patient had fallen, and the tip of the wooden object shown in Figure 1 had pricked his mouth. Because of intraoral bleeding that could not be stanched, the patient applied to the hospital.

In the intraoral examination of the patient, an ovoid-shaped, pink-colored, smooth-surfaced, mobile, non-ulcerated, pedicled, 3x2x2-cm-sized mass with a protrusion from the right buccal mucosa into the oral cavity was detected at the level of first premolar teeth (Figure 2).

The patient's parents were informed about the surgery that would be performed, and informed written consent was obtained from them. Due to the history of oral food intake a short time ago, he was taken into operation under general anesthesia 5 hours later. Considering the fact that the mass was large in size and was infected because of being in the oral cavity for a long time, total excision was performed, beginning from the base of the buccal mucosa, instead of replacing the fat tissue. Then, the mucosa was closed with primer suture technique (Figure 3). During the operation, injury of the opening of the Stensen duct was avoided; appearance of saliva from the Stensen duct by patting after mucosal saturation was observed, and then, the operation was ended. Postoperative complications, such as bleeding, any hematoma in the buccal region, or asymmetric face, did not develop. The patient, with good oral intake, was discharged from the hospital on the 1st postoperative day. In the follow-up examinations performed in the 1st postoperative month, no findings of defects in the oral mucosa, facial asymmetry, or difficulty in swallowing, mastication, and suction were found. The patient was called for a follow-up evaluation in the 3rd postoperative month.

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Discussion

The term "buccal fat pad" was first described by Bichat in 1802 (5). This pad, which is located between the masseter and buccinator muscles, helps the function of the masticatory muscles (1). Particularly in infants, it supports the muscles that perform the function of suction and plays an important role in the formation of cheek contours in adults (6).

The definition of "pseudolipoma," which develops with the herniation of buccal fat tissue into the oral cavity, was first made by Clawson (7). The post-traumatic pseudolipoma phenomenon was described by Brooke and MacGregor for the first time (4). The authors differentiated the growing mass that resulted from the trauma in the buccal mucosa from other oral cavity lesions and called it this term. Furthermore, Adair et al. (8) first reported the role of trauma in the formation of lipomas.

Figure 1. Wooden object that the patient fell over

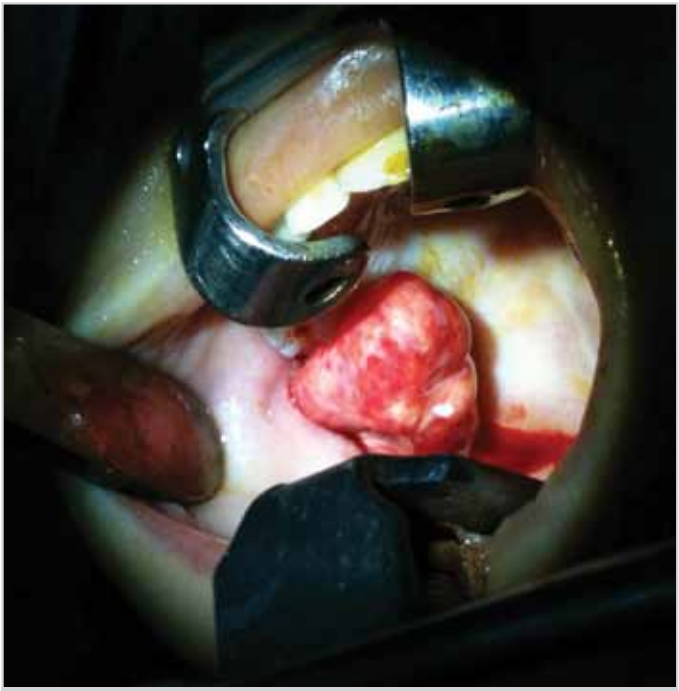

Figure 2. Buccal fat pad herniated into the oral cavity

In the literature, herniation of buccal fat pads into the oral cavity is a rare condition (1). It occurs frequently in the children, especially at the age between 5 months and 5 years, when they like keeping foreign bodies, like pencils and toothbrushes, in their mouths (9), or when they are exposed to direct intraoral trauma (10). In our case, the patient was 3 years old and exposed to direct intraoral trauma.

In the series of 31 cases conducted by Aust et al. (10), they stated that the causes of post-traumatic lipomas included two mechanisms. The first is, as in our case, the prolapsus of fat tissue from a fascia after direct trauma, and the second is the change in proliferation and differentiation of adipocytes with increased cytokine release secondary to blunt soft tissue trauma or hematoma. Recently, it has been detected that impairments in the parameters of coagulation tests also contribute to the formation of post-traumatic lipomas (10). However, in our case, the results of coagulation tests were found to be normal.

There are two surgical approaches for the treatment of herniated buccal fat pads due to trauma (3, 9). If a patient applies in 4 hours and the size of protruded mass is small, it can be replaced easily, and the operation can be ended with primer suturation of the mucosal laceration (9). Since tissue necrosis would occur after the 4th hour and the mass would be infected due to being in the mouth for a long time, total excision of mass can be performed (1). In our case, general anesthesia could be administered 5 hours later. Therefore, the second method, total excision, was performed.

Figure 3. Postoperative image

During the operation, one of the points that should be considered is the Stensen duct (1). Following excision of the mass, the occurrence of saliva from the Stensen duct must be certainly observed before ending the operation. In this case, before ending the surgery, it was ensured that the Stensen duct was undamaged after excision of the mass.

Conclusion

Herniation of buccal fat pads that develop secondary to trauma is an uncommon case in the literature. The surgical approach differs depending on the time of the patient's admission and size of the mass. These pads, which play an important role, especially in mastication, suction, and formation of cheek contours in adulthood, should be replaced in the same site if possible. For cases in which the buccal fat pad can not be replaced, excision of the mass should be performed, and at the same time, it must be definitely assured that the Stensen duct is in good condition.

Informed Consent: Written informed consent was obtained from parents of the patient who participated in this case.

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