Traumatic Herniation of Buccal Fat Pad in 1 Year Old Child: Case Report and Review of Literature

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Abstract Traumatic herniation of buccal fat pad (BFP) is very rare, usually seen in infants and young children ranging from 5 months to 12 years of age. Etiology will be blunt injury to buccal mucosa from foreign objects or trauma due to teeth and fall. The suckling activity in infants may also encourage the herniation following trauma. A minor injury or perforation to the buccal mucosa can cause herniation of BFP. The size of herniated mass is very large when compared to the size of the perforation. The history of trauma, absence of prolapse before the injury, its occurrence in infants and young children, specific anatomic sites and location of perforation in mucosa, histopathological appearance of adipose tissue are the characteristic features important for diagnosing the condition. The treatment options for the herniated BFP are usually excision. Alternative to excision is repositioning of the herniated fat in its anatomical location if noticed early.

Keywords Children · Trauma · Buccal pad of fat · Herniation

Introduction

The buccal fat represents a specialized type of tissue that is distinct from subcutaneous fat. The buccal fat pad (BFP) is responsible for the fullness of the cheeks and is relatively large and prominent in neonates, infants and young children which aids in cushioning and sucking functions. A minor tear of buccal mucosa and buccinator muscle can result in herniation of large volume of fat into oral cavity that is termed as “pseudolipoma.” The BFP is an anatomically rounded and biconvex structure that is of great importance in the facial contour. It is an adipose tissue surrounded by a thin capsule and located inside masticatory spaces in the oromaxillofacial region. The BFP has a central body with four extensions: pterygopalatine, temporal, pterygoid, and buccal. The blood supply of the BFP is from three sources: the maxillary, superficial temporal and facial artery [2]. It plays an important role in masticatory function especially in the infant during suckling. Its size diminishes as the infant grows with the accompanying growth of the surrounding facial structures. The BFP also enhances inter-muscular motion [3, 5].

Case Report

A 1 year old male patient was brought to maxillofacial unit with complaint of intra oral swelling since 10 days following blunt injury to the cheek while playing. There was history of bleeding or any other injuries. Child was conscious and well oriented. On examination, there were no extra oral injuries. Intraoral examination revealed a well defined pedunculated mass of size 2 × 2 cm seen on right buccal mucosa. The swelling was yellowish red in color and there were no signs of inflammation. Swelling was soft

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Fig. 1 Intraoperatively herniated buccal pad of fat before excision

Fig. 3 Sutured raw area

Fig. 2 Excised mass

in consistency non tender on palpation. Based up on the history given by mother the swelling suddenly appeared following intra oral blunt trauma. We suspected traumatic herniation of buccal pad of fat and planned for surgical excision under general anesthesia. The mass was excised intraorally and primary closure done using 5–0 vicryl suture material. Histopathological examination revealed adipose tissue separated by connective tissue stroma and few inflammatory cells. Hence based up on the history, anatomical site and histopathological features it was diagnosed as traumatic herniation of buccal pad of fat (Figs. 1, 2).

Discussion

Maxillofacial trauma in children is the area where there should be careful evaluation and treatment planning is

Fig. 4 H and E section shows lobules of adipocytes and fibrous connective tissue infiltrated with chronic inflammatory cells

required. Pediatric patients are difficult to examine and history given by parents may not provide adequate information. As per the literature the traumatic herniation of BFP is very rare. Reports of traumatic herniation of buccal fat into maxillary sinus following fractured lateral wall of sinus are also reported. Most commonly seen in infants and young children ranging from 5 months to 12 years of age, following blunt injury of buccal mucosa from foreign objects. Fleming in his study mentioned that traumatic pseudolipoma is most common in children, the suckling activity in infants may also encourage the herniation following trauma. The buccal mucosa can also be traumatized by teeth and fall. Cases of pseudolipoma without history of trauma were also reported in literature [6]. The major portion of BFP formed by central and buccal extension lies deep to the thin buccal mucous membrane and is closely related to buccinator muscle [4]. A minor injury or perforation to the buccal mucosa can cause herniation of BFP. The size of herniated mass is very large when compared to the size of the perforation (Figs. 3, 4).

Tumors such as lipoma, traumatic fibroma, salivary neoplasm, hemangioma form the differential diagnosis [6]. However, the history of trauma, absence of prolapse before the injury, its occurrence in infants and young children, specific anatomic sites and location of perforation in mucosa, histopathological appearance of adipose tissue are the characteristic features important for diagnosing the condition. The treatment options for the herniated BFP are usually excision. Alternative to excision is repositioning of the herniated fat in its anatomical location if noticed early to prevent further extrusion [4]. Treatment option depends on nature of presenting situation. Repositioning of the herniated mass can be done if it is diagnosed early. Repositioning immediately after the trauma can give better results and can prevent aesthetic deformities like “chipmunk cheeks” [1]. Excision is indicated in cases of long duration with signs of inflammation, necrosis are present. Buccal pad of fat is anatomically located in masticatory space related to parotid duct, facial nerve. Hence care should be taken during surgical procedure to prevent injury to vital structures.

Conclusion

Traumatic herniation of buccal pad of fat is rare entity and commonly seen in infants and young children. Etiology is perforation of buccinator muscle mainly at the junction of buccinator and masseter where the buccal pad of fat present

is covered by thin mucous membrane. Treatment options are either excision or replacement of herniated mass and closure of the wound, based on the time from initial injury. Care should be taken to prevent injury to stensen’s duct. Repositioning is strictly indicated if it is immediately identified and there are no sign of inflammation so that we can avoid aesthetic deformities.

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Conflict of interest None.

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