TRAUMATIC HERNIATION OF THE BUCCAL FAT PAD: A CASE REPORT

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SUMMARY
The buccal fat pad is an encapsulated mass that lies superficial to the buccinator muscle at the anterior border of the masseter muscle and relatively large in neonates and infants. A small perforation of the buccinator muscle in this region can allow a large portion of the buccal fat pad to herniate into the oral cavity. This article reports the clinical presentation and treatment of one such case arising in a six-year-old boy, following trauma to the buccal mucosa of his left cheek from a toothbrush and its management.

INTRODUCTION
The buccal pad of fat lies deep to the thin buccal mucous membrane, and is closely related to the buccinator muscle, the muscle of the cheek[1]. From its attachment to the external oblique ridge of the mandible, the buccinator muscle runs forward and at the angle of the mouth, the uppermost and lowermost fibres pass straight across into the upper and lower lips respectively[2,3], being in continuity with the fibres from the other side[2]. The central fibres decussate near the angle of the mouth at the modiolus and cross over to either the upper or the lower lips[2,3]. The buccal fat pad is an encapsulated mass of fat that lies superficial to the buccinator muscle, extra-orally, at the anterior border of the masseter muscle and is relatively large in neonates and infants[1]. A small intra-oral perforation of the buccinator muscle in this region can allow a large portion of the buccal fat pad to herniate into the oral cavity[4]. This article reports the clinical presentation and treatment of one such case.

Case Report
A healthy six-year-old boy was brought to the Maxillo-facial Unit of the Korle Bu Teaching Hospital (KBTH) at about midday, following trauma to his left cheek. Earlier in the day, he noticed burning sensation with slight pain in the mouth immediately after tooth brushing. Apparently while brushing his teeth, the toothbrush slipped and lacerated the inside of his left cheek. There was no significant bleeding but the mother noticed a small soft swelling in the mouth, which had dramatically increased in size over the following couple of hours.

On examination, the child appeared normal generally but both him and his mother appeared visibly anxious. Externally, the face appeared symmetrical and the skin of the cheeks appeared norma=l. Gentle palpation over the cheeks, however, revealed mild tenderness over the left cheek. Intra-orally, a large pedunculated yellowish-brown mass (Figure 1) protruded from a vertical cut of about 1cm in height. This cut was above and distal to the orifice of the Stenson's duct of the parotid gland. The mass, which measured about 3.5cm in its widest diameter, was multi-lobulated and showed streaks of tiny blood vessels over its capsule.

Figure 1 Clinical presentation. Herniation of left buccal fat pad 4h following sharp intra-oral trauma

A diagnosis of traumatic buccal fat pad herniation was made. Under local anaesthesia, using the opposite end of the dental examination mirror, the mass was gently pushed back into the cheek through the original cut without making any further extension to the laceration. Direct wound clo-

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sure was carried out and the child made an uneventful recovery (Figure 2).

Figure 2 Same patients as in figure 1. Uneventful wound healing 1 week following closure

DICUSSION

The buccal pad of fat lies superficial to the buccinator muscle (extra-orally) at the anterior border of the masseter muscle[2,4]. From this location, narrow projections of the buccal pad of fat extend deeply between the masseter and temporalis muscles and upward under the deep temporal fascia. Some of the tissue continues more deeply into the infratemporal fossa, separating the lateral pterygoid and temporalis muscles from the maxilla[2,4]. The buccal fat pad anterior to the buccinator muscle is relatively prominent in children and even more so in infants where it is referred to as the suctorial pad because of its alleged function in preventing collapse of the cheeks during sucking [5].

Fleming[4] reported two cases of traumatic intra-oral and extra-oral herniations of the buccal pad of fat, conditions he described as an almost exclusive occurrence in children and which according to him is probably due to the fact that young children frequently investigate foreign object by placing them in their mouths. Such actions can easily lead to traumatic injuries within the oral cavity. In addition, being very active, toddlers and children alike, are prone to falls and thus an injury by a sharp object is likely to result in a puncture wound to the oral mucosa and thus lead to herniation of the buccal fat pad through such a punctured wound; especially as the fat pad is relatively large at this age. In infants, the sucking activity may also encourage the herniation of fat through such a wound into the oral cavity[4]. In the case reported here, however, the condition arose as a result of an injury to the buccal mucosa from a toothbrush while the child was cleaning his teeth.

Traumatic intra-oral herniation of the buccal pad of fat, although a distinct clinical entity, is however quite rare. A review of the literature reveals only eight previously published cases[4,6-11]. Six of these cases involved boys and in five of the eight reports, the right side was affected. The ages of the patients presented ranged from 5 months to 12 years, and the size of the lesions varied up to a maximum of 3 cm. in this report, the maximum diameter of the fat pad was 3.5cm, the herniation was intra-oral, and involved the left side in a 6 year-old boy. This report, when added to previous reports as stated above, brings the ratio of boys to girls affected by this condition, to seven to two. This finding is hardly surprising, giving the fact that this condition is trauma related, and that boys by their nature tend to be more active and adventurous than girls, especially at such young ages. In terms of the location, this condition appears to affect the right side a bit more often than the left. Though the reason for this is not clear, in our opinion it may be related to the fact that most people are right-handed.

Treatment of this condition depends on the nature of the presenting situation. In a previous report[4] a ten month-old boy, with buccal fat pad herniation presented with some risk of respiratory embarrassment, therefore, the lesion was excised under general anaesthesia. The alternative treatment to excision is to replace the herniated buccal pad of fat and suture the puncture wound[7,9]. There may however be the need to extend the original wound in order to enable replacement of the herniated fat pad. Such as extension needs to be carefully made in order to avoid injury to either the parotid duct or its orifice. In the case reported here the herniated fat pad was replaced via the original wound without the need for any extension.

CONCLUSION

Traumatic intra-oral herniation of the buccal pad of fat, although rare, is a distinct clinical entity. It may arise as a result of a traumatic injury within the oral cavity that leads to a perforation of the buccinator muscle, especially at the anterior border of the masseter muscle, where the main portion of the buccal fat pad lies sandwiched between the two muscles.

Treatment of this condition depends on the nature of the presenting situation. However, the options are either excision or replacement of the herniated buccal fat pad and closure of the puncture wound. In doing this, it is essential that care is taken to

prevent damage to either the parotid (Stensen's) duct or its orifice.

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