Case study

Buccal fat pad removal for thinner cheeks: a case report

ABSTRACT

Aims: In the past few years there has been a growing number of procedures for the removal of buccal fat pad, also named cheek reduction surgery. Bichat's buccal fat pad can be used as part of the therapeutic procedure in cases of: oroantral communication, peri-orbital defects, congenital cleft palate, and plastic surgery of facial recontouring. The purpose of this case report was to demonstrate the removal procedure of buccal fat pad removal with aesthetic purpose.
Study design: Case report
Place and Duration of Study: case carried out in 2021 in a private dental office in the city of Santos-SP- Brazil
Presentation of case: After completing the anamnesis and oral clinical assessment, the patient underwent laboratory tests for preoperative evaluation and magnetic resonance imaging of the malar region. Buccal fat pad removal is a minor procedure, and the surgical technique is considered simple and safe if performed by trained and experienced professionals. The postoperative can be compared to an extraction of third molar, and the use of analgesics, anti-inflammatory controls properly any painful symptoms.
Results: The procedure can be performed by a dentist if the practitioner has a good local anatomical knowledge, follows the indication for each case, and take all pre and postoperative care that is necessary to avoid complications.
Conlusions: When we have the correct indication, preoperative exams that indicate that everything is correct in relation to the presence of fat balls and their relationship with adjacent structures and the execution of the technique with postoperative control, there is no way that professionals and patients cannot be happy with the buccal fat pad removal results

Keywords: Adipose Tissue; Buccal Mucosa; Magnetic Resonance Imaging

1. INTRODUCTION

The adipose tissue of the cheeks has a lobed mass formed by a central body and four extensions: buccal, pterygoid, pterygomaxillary and temporal. The body is centrally positioned and is located above the parotid duct, behind the zygomatic arch and is divided into three lobes: anterior, intermediate and posterior in accordance with the structure of the bones, ligaments and blood vessels. The anterior lobe is located below the zygomatic, and extends to the front of the buccinator muscle, jaw and deep space square upper lip muscle. The parotid gland passes through the back, and the anterior facial vein passes through the anterior inferior margin. The anterior lobe also involves the orbital vessels. [1] The ramification of the facial nerve are located on the outer surface of the fat pad capsule. [2] The intermediate lobe is located in and around the posterior lobe and side jaw. The function of Bichat's buccal fat pad is to protect the sensitive anatomical structures around as vessels and nerve trauma and participates in functions of chewing and sucking especially in children. [3,4]

Egyedi first described the use of a flap containing Bichat's fat pad as treatment to cover intraoral defects in 1977.[5] During the last three decades, it has been used as a standard procedure in closing oroantral communications and is a well established tool in oral and maxillo-facial surgery. [6-8] The cheek reduction surgery or simply the surgery to narrow down the cheek is a surgical procedure that removes all or part of buccal fat pad. [9,10] A patient candidate for this type of surgery typically has an excessive facial circumference; in some cases lacerate the tissue of the buccal mucosa due to constant bites at the this location. [11,12]

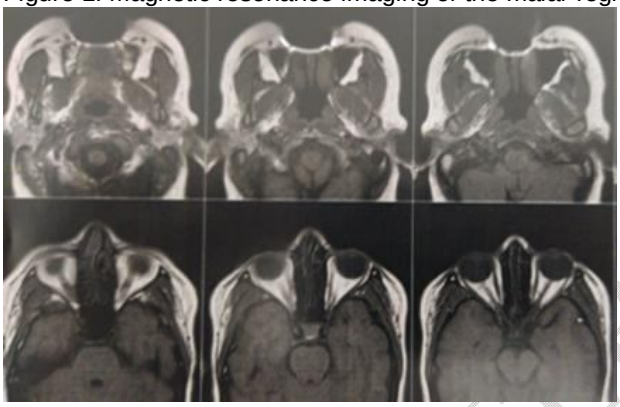
In the past few years, it has increased the number of procedures for removing the Bichat's buccal fat pad with aesthetic purpose, and both the plastic surgeon and the dental surgeon can

perform it. Unfortunately, studies that provide guidelines by emphasizing volumetric and technical details are limited. Buccal fat pad removal is an effective technique for refining the facial silhouette that should be reserved for patients with increased buccal fat pad volume. The purpose of this case report was to demonstrate the removal procedure of buccal fat pad, with aesthetic purpose.

2. PRESENTATION OF CASE

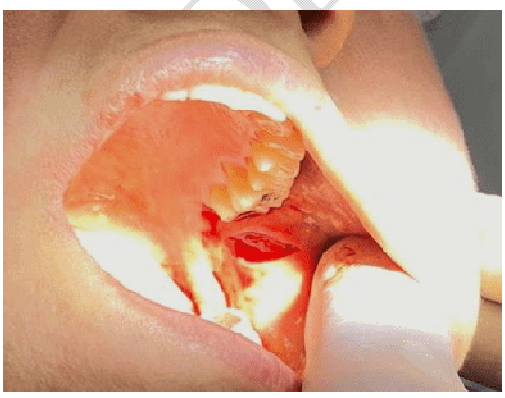
Female patient, 38 years old, was referred to the dental care in surgery specialty, indicating the technique of cheek reduction surgery. Patient was not aesthetically satisfied because of a rounded face and constant bites at the oral mucosa. After completing the anamnesis and oral clinical assessment, the patient underwent laboratory tests for preoperative evaluation (complete blood count, fasting blood glucose and coagulation) and magnetic resonance imaging of the malar region on the right and left sides (Figure 1). After planning, we opted for treatment with removal of buccal fat pad bilaterally.

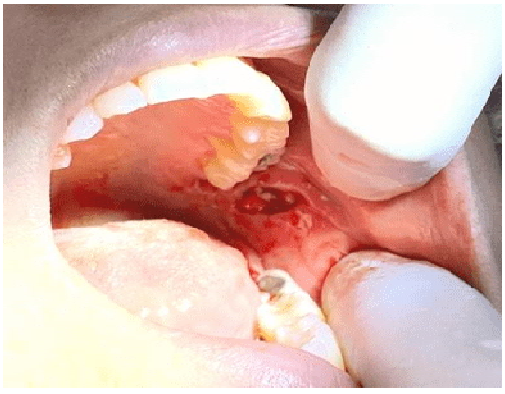
Figure 1: Magnetic resonance imaging of the malar region on the right and left sides.



To access buccal fat pad a small incision was done (Figure 2), no more than 5 mm long, into the soft tissue located in the lower portion of the zygomatic process taking care to properly see the orifice of the parotid gland. After this incision, dissection of the fat pad was achieved with a thin or hemostatic scissors, which is located under the zygomatic arch.

Figure 2: 1.5 cm horizontal incision in the buccal mucosa - 1 cm posterior to the duct, in front of the 2nd molar and identification of the buccal fat pad.

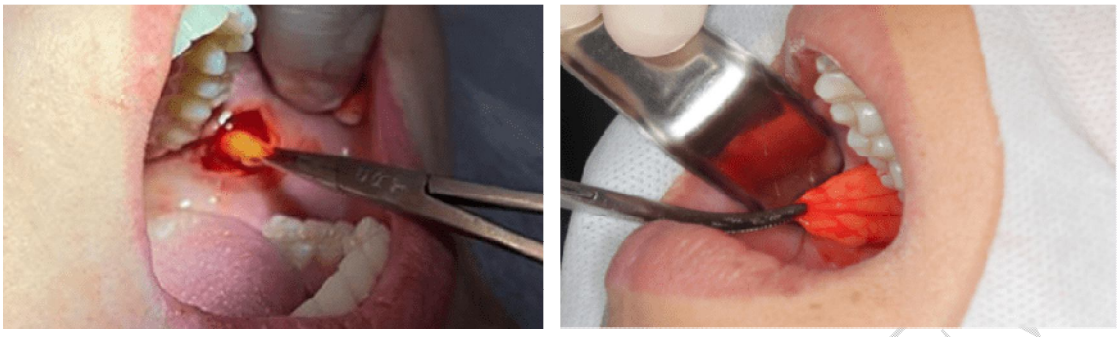




It is very important to preserve the fascial lining of the fat pad, it will allow the removal of the hole fat pat at once. With a long hemostat tweezer inserted into the fat area, a portion of the fat pad is

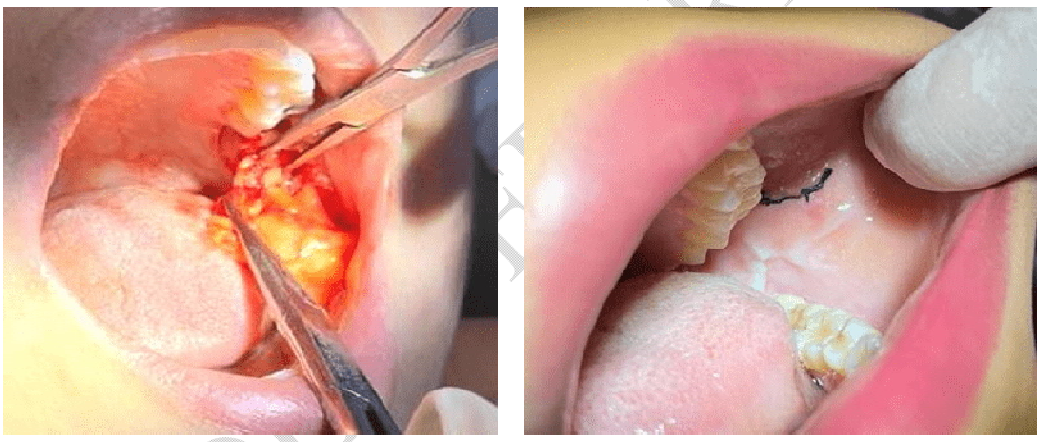
pinched drawn out (Figure 3). Gradually, the entire fat pad is pulled out with the help of another hemostat tweezer until the pedicle can be visualized.

Figure 3 : Buccal fat pad traction in a light and delicate way.



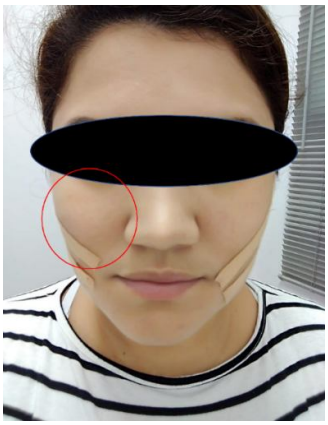
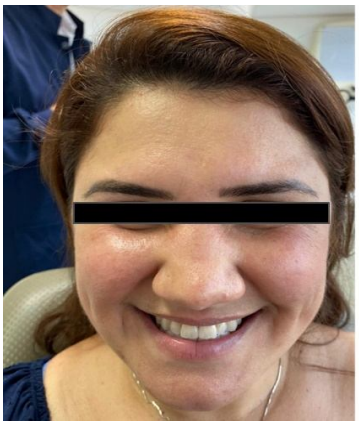
At this point, the pedicle can be cut and the fat pad can be loosed. A small suction tip can be inserted into the area to clean any part of the fat that may have been left during divulsion. A simple suture is carried closing the incision in the majority of cases (Figure 4).

Figure 4: Tweezers exchange movement should be initiated to remove the buccal portion of the fat ball and simple suture



When there are no changes oberved in the macroscopic fat pad there is no need for sending it for histopathology complementary exams.
The postoperative care includes intensive cryotherapy within 48 hours, analgesics and anti-inflammatories. In the case presented, the patient showed a higher edema on the left (Figure 5).

Figure 5: Local edema 4 days after removal of the buccal fad pad, Before buccal fad pad removal and 4 months after removal.


When the fat pad is not removed in a single piece the antibiotic therapy must be held for 5 to 7 days. The results can be observed 4 to 6 months after surgery (Figure 5).

3. RESULTS AND DISCUSSION

The purpose of cheek reduction surgery is purely aesthetic: reduce the volume of the face of the bottom of promoting thinning chin. However, this surgery is controversial for some professionals, because this face region usually lose fat with increasing age and the removal of those fat pockets can result in a more aged appearance, especially if the removal is total. It is important to note that through the years, the face begins to suffer a loss of fat. [11] Therefore, people who undergo this surgery may need fills later to regain a more youthful appearance. It is a purely aesthetic surgery and can be carried out by people who want to fine-tune the face. [12] However, only present good results for people who normally stay with the larger circumferentially face when they are overweight. [3,7-9]

It is important a clinical evaluation by the professional who will perform the surgery so that he can diagnose whether there is indication and what are the expectations of the patient and the treatment. It is important that the patient make pre-surgical tests, including complete blood count, coagulation and blood glucose to see if he is healthy enough to perform the surgery and go through the assessment of a cardiologist. Imaging exams are fundamental and can avoid surprises, as demonstrated in the study by Hwung et al. 2005, in which there is a 26.3% chance of buccal branch injury during buccal fat pad removal. [13]

The anatomical knowledge of this region is essential to avoid iatrogenesis in surgical procedures, which can result in temporary or permanent sequelae. [14] Among the complications of greater complexity in buccal fat pad removal there are: trismus, hemorrhages, facial infections, lesion of the duct of the parotid gland and facial paralysis, however common complications that are related to any surgical procedure can occur, such as edema and hematoma, despite being considered a technically simple procedure. [2]

Among the postoperative complications more often related are hematomas, partial necrosis, infection or injury to the facial nerve exaggerated incisions can leave the tissue without adequate blood supply leading to necrosis. [10] The preservation of the fascia overlying the fat pad promotes improved prognosis and reduces surgical time, the disruption would need suction and curettage of the area. [1] The region where the buccal fat pad are located is close to two of the trigeminal nerve ramifications, the maxillary ramification (which follows the entire upper jaw) and mandibular ramification (which follows the lower jaw). Like many other nerves present in the face, the trigeminal nerve is a sensory nerve that controls sensation spreading across the face, sending them messages to the brain. [11] If the professional is inexperienced and damage this nerve it can cause facial paralysis. The procedure is contraindicated in patients who are treated with local radiotherapy, malar hypoplasia, thin cheeks or Down syndrome.

The buccal fat pad removal has a low incidence of major complications, and this incidence decreases more with a bandage use. Bandages are effective in the decrease of major complications related to procedure. Kinesio® tapes have a bandage effect and must be placed following the guidelines of the technique to be application should be made from muscle insertion to muscle origin for rehabilitation, in cases of muscle overuse and inflammation. [15]

In the case shown in this study, intra oral healing was observed in 15 days, and the end of facial edema after 4 weeks, which was the same reported in the literature.[16]

4. CONCLUSION

The procedure can be performed by a dentist as long as the practitioner has a good local anatomical knowledge, follows the indication for each case, and take all pre and postoperative care that is necessary to avoid complications. When we have the correct indication, preoperative exams that indicate that everything is correct in relation to the presence of fat balls and their relationship with adjacent structures and the execution of the technique with postoperative control, there is no way that professionals and patients cannot be happy with the buccal fat pad removal results.

Ethical approval

The patient was informed of all the risks and benefits of the procedure, had access to the consent form and agreed with the publication of the photos for scientific purposes. The procedure was approved by the Research Ethics Committee of the Metropolitan University of Santos under number 69652817.6.0000.5509

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