ORO-ANTRAL COMMUNICATION CLOSURE THROUGH BICHAT BALL TECHNIQUE: A LITERATURE REVIEW

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ABSTRACT

The paranasal sinuses are formed by four sinuses: frontal, maxillary, ethmoid and sphenoidal; the maxillary sinuses being the largest of the paranasal sinuses. They are located in the interior of the maxillary bone, closely related to the alveoli of the posterior teeth, which invariably enables, during extraction, a surgical occurrence called "Oro-Antral Communication". These occurrences are very common and are usually the result of traumatic exodontia of upper teeth whose roots have an intimate relationship with the maxillary sinus. The diagnosis is made through clinical and radiographic methods, with the Valsalva Maneuver being the main physical examination and the panoramic radiography the main complementary exam. The treatment should be performed as early as possible, thus avoiding possible complications. The aim of the present work is to perform a literature review in the existing databases on the latest information on the closure of oral communication by Bichat Ball technique, highlighting its advantages and disadvantages, indications and contraindications. It was concluded that the Bichat Ball technique is a simple grafting method, which provides a comfortable postoperative period, and generally does not interfere in the furrow depth; thus becoming a viable alternative in the resolution of oro-antral communications.

KEYWORDS: Maxillary sinus, buccal communication; fat body.

1. INTRODUCTION

The paranasal sinuses are formed by four sinuses: frontal, maxillary, ethmoidal and sphenoid; the maxillary sinuses are the largest, being a cavity filled with air. Since the maxillary sinuses are bilateral cavities located within the maxillary bone, they are closely related to the alveoli of the posterior teeth, sharing vascularization and innervation. Its walls are formed by the union of several bony structures, such as the floor of the orbit, wing of the nose, and the maxillary bone itself. These structures are lined by a columnar, ciliated, pseudostratified epithelium where the eyelashes are in constant motion, leading the mucus or any other foreign material contained in the maxillary sinus (dust, microorganisms, foods, etc.) towards the sinus ostium, from where it is drained through the nasal region. The main functions of the sinuses are: moisten and heat the inspired air; reduce the weight of the craniofacial complex; provide resonance to the voice, modulating it; and be an assistant for the cooling of the intra and extra cranial veins. Radiographically the intact sinus should present a radiolucent aspect, but the limit of this cavity is presented as a radiopaque line[1,5].

The discontinuity of the radiopaque line that delimits the affected maxillary sinus floor in comparison to the adjacent side and the presence of possible foreign bodies that were pushed into the maxillary sinus indicate an oro-antral communication[1-4,6,8-9,14-15,17].

A complication frequently related to the maxillary sinus is the oro-antral communication, which consists of a common pathological occurrence characterized by the access or communication of the maxillary sinus with the buccal cavity, which may occur both intraoperatively and postoperatively[2-3,5-11].

Oro-antral communication is one of the most common accidents after posterior maxillary tooth extraction due to its proximity to the maxillary sinus. It can also occur by facial trauma, removal of cysts and/ or tumors, infectious conditions, periapical lesions, osteomyelitis, radiotherapy, among others[1-2,4-16].

The patient should be informed whenever, after evaluation, he / she is observed to be in a situation considered to be at risk, with potential for oro-antral communication; the best approach is always prevention, the best and the prevention, with a detailed planning of the surgical procedure, evaluating the patient's previous history until the postoperative care[11,14]. It should be emphasized that in order to avoid a possible complication, the treatment of oro-antral communion should be performed as soon as possible[5,14].

In order to obtain an accurate diagnosis, it is necessary to perform a good anamnesis and a careful clinical examination, which should have the following steps: Valsalva maneuver, alveolar palpation, visual inspection, percussion, probing, irrigation, light source, translumination of the maxillary sinus, catheterization and/ or endoscopic methods.[1,3-6,8-15,17,19].

The Valsalva Maneuver consists of the compression of the nostrils with the fingers asking the patient to breathe the air through the nose, keeping the mouth open, in which we can repair the exit via alveolar air,

blood or pus by the communication depending on the state of the maxillary sinuses[1,4-6,8-9,14-15,19].

Note that it is important to realize extra oral exams as panoramic radiography, periapical, incidence Waters occlusal posterior-anterior, fronto-nasal-plate face profile and in some cases is given CT[1,3-6,8-9,15,17].

The aim of the present article is to present a literature review about the oro-antral communication and to emphasize the Bichat adipose ball technique, used for its closure, highlighting its advantages and disadvantages.

2. MATERIAL AND METHODS

A bibliographic search was carried out in the search databases Virtual Health Library (VHL), Latin American Literature in Health Sciences (Lilacs) and Scientific Eletronic Libray Online (Scielo), referring to articles from the years 2003 to 2017, using as descriptors: Maxillary sinus; Adipose body; Buccal communication; “Comunicação buco sinusal”; and Maxillary sinus. The selected articles were organized in an exploratory way whenever they were related to the proposed theme. The 21 scientific articles selected were effectively used.

3. LITERATURE REVIEW

An oro-antral communication smaller than 2mm in diameter usually closes spontaneously. However, it is only necessary to stabilize the clot through compression[2-3,5-8,10,12-18,20]. If the communication is greater than 3 mm or when there is inflammation or infection in the maxillary sinus or periodontal region surgery is indicated. Among the techniques, the following can be highlighted: vestibular, palatine, lingual or combined patchwork, Bichat adipose ball technique, buccal flaps, alveolar flap, sliding flaps, mucosal flap, border suture, bone grafts, alveolar mucosal flap of the facial artery, myofascial flap of the associated Bichat ball, combination with myocutaneous flap of the pectoralis major muscle, Rehrmann technique, rotational flap, marginal flaps and pedicular flaps[1-8,10-20].

Patients affected by this disease present as signs: fluid passage to the nose, altered taste, halitosis, unilateral nasal obstruction, nocturnal cough, ringing, swallowing disorders, coryza, continuous pain, air leak when blowing nose, alteration headache, bleeding, hoarseness, earache, catarrhal deafness, foul smell, respiratory discomfort or feeling of shortness of breath, yellowish tongue[1,4,6,8,10-11,13-14,19].

One of the main complications of the communication is acute or chronic maxillary sinusitis, caused by contamination of the sinus by the oral microbiota or by a foreign object in the antrum, which makes it impossible to close such communications if the sinus is infected[1-2,4-6,8-9,12,15]. Development of a fistula that is described as an epithelial communication between the oral cavity and the maxillary sinus may also occur, which prevents the spontaneous closure of the perforation or the development of bacterial infections[2-6,8-10,12]. It is noteworthy that, in cases of late diagnosis, it can lead to epifasia and/ or hemifacial algia[14]. In these cases the complication is first treated, for later accomplishment of the surgical procedure[1-2,4,6,8,12].

The "cheek fat body" is a type of specialized fat, called "sissarcose" that is rounded and encapsulated by a thin blade of connective tissue[8,13-14,20], with the function of filling the masticatory space, improve and dampen muscle mobility and contribute to the morphology of the face, it neutralizes negative pressure during suction in newborns and has a rich venous network[5,13,20].

At first of all, the cheek fat body was just mentioned as an anatomical element. Subsequently, Bichat reported it as being a fatty tissue[1-3,6,10,16,20]. However, it was used as a technique for the closure of bucosinusal communications, and as a pedicled graft associated with a skin graft[1-3,6,8,12,15-18,20]. However, more recently the use of the adipose ball, without cover, was shown for the first time for the treatment of these communications[8,15,21].

The blood supply of the cheek fat body is derived from the deep temporal and buccal branches of the maxillary artery, the transverse facial branch of the superficial temporal artery and small branches of the facial artery[1-2,8,10,14,16,20]. This rich vascularization is credited with the high success rate of the cheek fat body as a pedicled flap, since it guarantees the original arterial blood supply, while revascularization occurs in the recipient bed[1-2,16]. In view of this, the buccal adipose body is recommended for closure of communications and fistulas of varying sizes and locations and in the resolution of surgical cases that have failed previously. Due to this characteristic, it has been widely used in intraoral grafts because of its anatomical location and blood supply that attributes favorable characteristics for the reconstruction of intraosseous defects[21].

The cheek fat body can be used in the correction of various oral defects, including fistula closure and bucoral and buconasal communication, rehabilitation of cleft patients, reconstruction after tumor resection, aesthetic correction of the face, reconstruction after cesarean section resection, treatment of complex fracture of the jaws, implant graft coating and oral submucosal fibrosis treatment[2-3,20].

In cases of closure of sinus mouth communication using the buccal adipose body, it is necessary to obtain a favorable postoperative period to perform an unstressed suture and the indication of light feeding[5].

Anatomically the Bichat ball or buccal adipose is found in the masticatory space, which consists of a main body that is divided into three lobes: anterior, middle and posterior. The structure of the main body of the posterior lobe has four processes: buccal, pterygoid, pterygoid and temporal pterygoid, the body being the area of easier surgical access, as it is located above the parotid duct, lateral to the buccinator muscle and anterior border of the masseter muscle [1,3,5-6,8,10,12,14-16,18].

The literature reports that the volume of Bichat's ball is constant and even in cachectic patients it is present

without alterations, while other authors believe that it varies for each individual and on each side[2-3,20].

The Bichat adipose ball is indicated in the closing of the communications because it presents several advantages, such as: being a simple grafting method, quick, easy access in which allows adjustments after one week, has a minimum incidence of failure, does not interfere in depth of furrow, has a rapid epithelization of fat, has a good prognosis, compared to the slip of the flap generates fewer disturbances and scarring in the vestibule, is a complete technique, where the wide applicability is safe and very effective, less risk of infection , easy mobilization, comfortable postoperative, excellent blood supply, vascularity, low morbidity, high success rate, performed under local anesthesia, absence of aesthetic sequelae, adequate protection for effective bone response, excellent anatomical characteristics, have proximity to the recipient areas, few trans and postoperative complications of and there is no need for additional removal of bone or tooth for the execution of the technique[1-3,5-10,12-16,18,20].

Its disadvantages are: it can only be used once, it has the possibility of postoperative trismus, there is possibility of retraction or dislocation of the graft in the postoperative period, complications such as hematoma and injuries to the facial nerve, limitation for small and medium defects , it is subject to integration failure due to necrosis or infection, it does not give rigid support, discrete phonetic changes may occur, there is the possibility of a depression in the cheek, it may present slight swelling and may require a second surgical procedure to close the cheek[1-3,5-6,8-10,13,15,20].

Formerly for the buco sinusal communications there was no treatment, they were judged as incurable lesions, however with more current studies that depend on the proper diagnosis and proper indication we carry of numerous etiological factors and methods of closing the sinus buco communications[5].

4. CONCLUSION

We conclude with the development of the present literature review that, the sooner the treatment of oro-antral communications occurs, the better the prognosis. If there is any complication, the treatment will be treated first for the surgical procedure to be performed later. Among the numerous surgical techniques that are used for its closure, Bichat's adipose ball technique stands out because it has advantages such as simplicity, extensive applicability, safety, and no interference to furrow depth. Therefore, when performed well, this technique has a high success.

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