Simple practice for OAF Treatment

Mudher MB. Alsunbuli¹, Ameen K. Shannoon²

¹Lecturer Doctor Dr., College of Dentistry, Al-Bayan University, Iraq.
²Head of oral surgery dep. Alkhadhemia specialized dental center, Iraq.

Introduction

Oro antral communication (OAC) is an open connection between the oral cavity and maxillary sinus. The maxillary sinus takes up a large part of the body of the maxilla, generally extending into the alveolar process bordering the apices of the posterior teeth (Jor of maxillofacsurg, closure of oroantral communications areview of literature.68:1384-1391.2010)¹.

The most common cause of OAC is the presence of an advertent opening of the maxillary sinus during extraction of the upper posterior teeth. Apices of these teeth might intrude into the antrum due to anatomical variation and are only separated from the lining membrane by the socket wall which might be easily distracted by periapical infection. Apex of such teeth will be in direct communication with the sinus mucosa. So that an extraction might end up with the creation of OAC.

Other less common causes of OAC might include massive trauma to the face, removal of upper impacted teeth, failure of healing a cald-well Luc operation, alveolectomy and during palatal abscess resulting from osteomyilis, removal of cyst or tumors in the maxilla, ulcer in the palate like tuberculosis leishmania and infected upper implant. (Iraqi dental journal volume 13 in 1987 oroantral fistula Abdulla Al-sibahi, AmeenK. Shanoon)².

OAC is a rather frequent complication of oral surgery in the maxilla. If the antrum is healthy the small communication close spontaneously as a blood clot fills the defect and remains undisturbed. Most of the OAC can be treated adequately at time of occurrence. Primary healing might fail and some OAC become chronic and fistula will form. Oro antral fistula (OAF) usually requires surgical closure. Many complicated procedures have been used for repair of such OAF as mucoperiosteal flaps from either the bucal or the palatal flap, dorsal pedicle tongue flap, bone graft and palatal pedicle flap. Metallic implants made of gold foil, tantalium foil or tantalium plate have also been used to encourage epithelization of OAF. (The Arab journal of medicine vol.4 no.8 september 1985, Oro-antral fistulas. JabrThabet ,S.y.Shalhoub)³. Soft polymethylmethacrylat, hydroxylapatile and root analogue, collagen and gelatin film and guided tissue regeneration were used to repair OAF. (Al sibahi A, shanoon A: The use of soft polymethylmethacrylate in the closure of oro-antral fistula. J oral maxillofacsurg 40:165,1982)⁴.

Also using hydroxylapatile and root analogue, collagen and gelatin film and guided tissue
regeneration,(Jor of maxillofacsurg ,closure of oroantral communications areview of letrature.68:1384-1391.2010)(1).


The rare occurrence of complications in the treatment of odontogenic maxillary sinusitis might be related to the relatively limited extent of endo-nasal surgery, compared with the treatment of rhino-sinusitis and nasal polyps(18).

Material and Method

8cases of chronic OAF have been successfully treated by this procedure 3of them was female 5 was mal .the rang of ages from 31years to 70years .All of them refered to surgical department in alkadimia specialized dental center in Baghdad all the cuses post extraction .Two of them subjected to previous failear operation of buccallflap.Follow up of these cases for 6 months showed maintanence of the closure.

The material used GORE-TEX Regenerative membrane titanium reinforced . It is intended to provide a mechanism for the in growth of new hard and soft tissue into bony defect on alveolar ridge.

The material is designed to be passive barrier which excludes epithelial and gingival connective tissue from the defect site so that only the desirable cells repopulate the space ,allowing regeneration to occur.

The material is designed to be stiff enough to create and maintain a protected defect space into which new bone can form.

Figure 1. The membrane is composed of expanded.

And under local anaesthesia an incison is made along the crest of the alveolar ridge, around the necks of the adjacent teeth on both palatal and buccal sides. In edentulous patients, the incision is made along the crest of the alveolar ridge, and around the fistula, extending at least one cm on both sides of the fistula. The mucoperiosteum is then undermined buccally and palatally, and the bony opening is exposed. All granulation tissue and necrotic bone in the area is removed (Figure 3).

Figure 2. In edentulous patients, the incision.

Figure 3. All granulation tissue and necrotic bone in the area is removed.
The sterile membrane titanium reinforced cut to a size sufficient to extend beyond the margins of the bony defect at least 2 mm in all directions and adapted to take shape of the alveolar ridge (Figure 4).

![Figure 4. Shape of the alveolar ridge.](image)

Then it is placed over the defect and the flaps are replaced over the membrane and held without tension by interrupted sutures. No attempt is made to approximate the flaps to cover the membrane completely (Figure 5). Use sterile iodoform gauze strip and protected periopack to cover the area or using acrylic splint.

![Figure 5. Use sterile iodoform gauze strip and protected periopack to cover the area or using acrylic splint.](image)
Post operative care consists of antibiotic therapy, mild analgesics, and nasal drops. The sutures are removed after 7 – 10 days. More of the membrane becomes visible in the third and fourth weeks (Figure 6).

![Figure 6. More of the membrane becomes visible in the third and fourth weeks.](image)

When the periphery of the membrane becomes exposed, it is removed easily without anaesthesia. After removal, a dense dark red bridge of healthy connective tissue is seen covering the original bony opening and closing the ONC (Figure 7).

![Figure 7. After removal, a dense dark red bridge of healthy connective tissue is seen covering the original bony opening and closing the ONC.](image)
After one week, this tissue become pink, resembling the color of the adjacent normal tissue, as the surrounding epithelium to cover the connective tissue (Figure 8).

Figure 8. The surrounding epithelium to cover the connective tissue.

Follow up of these cases for 6 months showed maintenance of the closure (Figure 9).

Figure 9. After contral infection of the maxillary sinus.
Discussion

OAC is a common complication after upper molars extraction or in the cases of presence of periapical lesion, cyst, or tumors (14). About 50% of untreated OACs induce inflammatory changes in maxillary sinus mucosa in first 48 hours, while 90% of them progress into maxillary sinusitis two weeks after OAC formation (15). Small OAC less than 2 mm in diameter tends to heal spontaneously (16), if the sinus is free of inflammation, while larger ones require surgical intervention. OAC closure is mandatory in first 24 hours, contrary to that an OAF may develop as a consequence (17).

Buccal flaps are the most frequently used procedures, but flap over tension (16,17) post operative haematoma (4,5,9) and reduction of buccal sulcus depth (18,19) can compromise successful closure or complicate final prosthetic treatment.

Palatal flap produce adenuded area that heals by secondary intention, and may be accompanied by pain, and in addition healing of palatal defects is prolonged with possible scaring (3,10,17).

Closure of OAF with buccal fat pad has advantages in relation to buccal flaps, and does not interfere with the buccal sulcus depth. Risk of invagination of fat tissue, unpredictable secondary healing infection, and necrosis, fibrosis, shrinkage, retraction and distortion can occur (3).

Our technique is relatively simple and minimally invasive procedure that could be helpful for closure of OAC.

The membrane provides support for the blood clot in the defect so that it will organize, and will be replaced by bone and epithelialize on its oral surface (13,16) it could be used in the cases with reduced depth of the buccal sulcus due to previous attempts to close 0AF (16).

Conclusion

All the cases have been successfully treated by this procedure. The use of the membrane is biocompatible and simple technique and could restore the shape of the alveolar ridge by the regenerative membrane titanium reinforced, it provide a mechanism for the growth of new hard and soft tissue in to bony defect on alveolar ridge.

References