



ELSEVIER

Available online at www.sciencedirect.com

British Journal of Oral and Maxillofacial Surgery xxx (2011) xxx.e1–xxx.e2

BRITISH
Journal of
Oral and
Maxillofacial
Surgerywww.bjoms.com**Technical note****Closure of oroantral fistula using auricular cartilage: a new method to repair an oroantral fistula**Sabri C. Isler¹, Sabit Demircan², Erol Cansiz**Istanbul University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Capa/Istanbul, Turkey*

Accepted 30 March 2011

Keywords: Auricular; Cartilage; Graft; Maxillary sinus; Perforation; Oroantral; Repair; Fistula; Palatinal; Flap

Many of surgical techniques have been described for the closure of oroantral fistulae and most of them rely on mobilizing the soft tissue and advancing the resultant flap into the defect. For this reason, conventional techniques such as; simple vestibular mucosal flaps, rotational pedicled palatinal or buccal flaps or palatinal island flaps are used. In addition to these conventional techniques, some others are developed in time such as; otogenous bone grafting techniques, metal plaque techniques, using fibrin adhesives, etc.

Also, nasal septal cartilage is used for the closure of oroantral fistulas and using an auricular cartilage graft can be an alternative. Auricular cartilage is biocompatible, resistant to infection, nonresorbable, easily manipulated, structurally sound, noncarcinogenic, easy to obtain and cost-effective. Auricular cartilage do not require vascularisation for the integration of the graft to the recipient site and this characteristic decreases the failure incidence of the graft. Also, after the harvesting of an auricular cartilage, scar or defect formation do not occur on the donor site. In addition, an auricular cartilage graft treat like a separator barrier between the sinus membrane and the oral mucosa which allows successful healing. Because of these properties, auricular cartilage is a valuable alternative for the nasal cartilage. Using a cartilage in between the sinus membrane and the oral mucosa maintains ideal healing but the graft must also be supported by soft tissue primary closure. In this case, auricular cartilage graft is used and sup-

ported by palatinal island flap for the closure of an oroantral fistula.

Under local anesthesia, initially, soft tissue wall of the fistula was excised and granulation tissue was curetted totally (Fig. 1). Buccal flap was raised for the attachment of palatinal rotational flap. The palatinal island flap incision was made on the palatinal side of the fistula and than the flap was raised, preserving the descending palatinal artery. The palatinal island flap was rotated to the buccal side to check the tension free connection of the buccal and palatinal flaps.

After the preparation of the recipient site, semi-circular anterior auricular split-thickness incision was made and the skin overlying the auricular cartilage was elevated gently under local anesthesia (Fig. 2). Circular incision was made on the auricular cartilage and the graft was extracted. Later, auricular skin flap was sutured with 6/0 polypropylene for maximum esthetic outcome.

Harvested auricular graft was then adapted on the perforation site and sutured to the bone with 3/0 polyglactin 910 for stabilization (Fig. 3). Palatinal island flap was rotated and passed through the full-thickness tissue tunnel, which had been prepared previously on the palatal side of the fistula. The rotational flap and the buccal flap were sutured with 3/0 polyglactin 910 to each other as well to the incision sites. The post-operative healing was uneventful. On the two month's control visit ideal healing was observed (Fig. 4).

Although, the most commonly used methods for the closure of oroantral fistulas are simple vestibular mucosal flap and rotational pedicled palatinal flap techniques, both of them do not provide complete separation between the sinus membrane and the oral mucosa. As a result of that, a conjunction occurs between the sinus membrane and the oral mucosa dur-

* Corresponding author. Tel.: +90 55337439190.

E-mail addresses: dtcemil@yahoo.com (S.C. Isler), sabitdemircan@gmail.com (S. Demircan), erolca@yahoo.com (E. Cansiz).¹ Tel.: +90 5424122902.² Tel.: +90 5557197848.

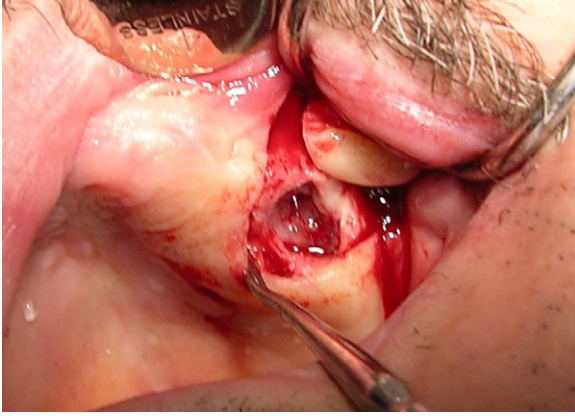


Fig. 1. Presentation of the oroantral fistula.

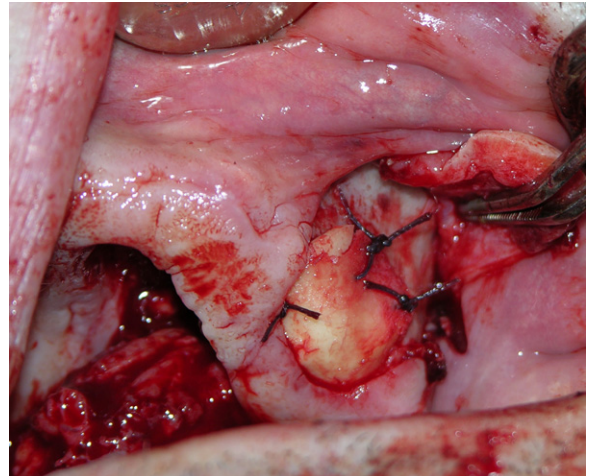


Fig. 3. Stabilization of the graft with the 3/0 polyglactin 910 sutures.

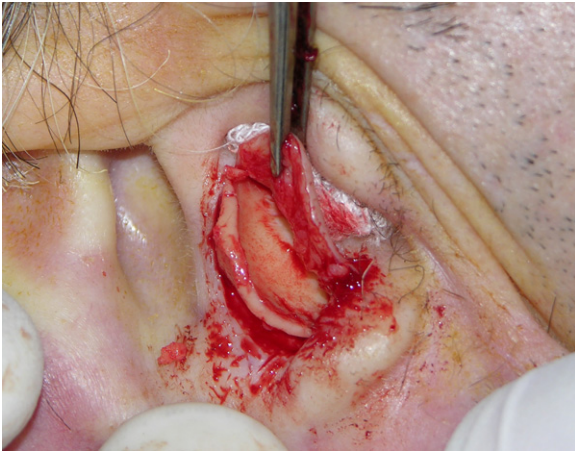


Fig. 2. Harvesting of the autogenous auricular cartilage graft.



Fig. 4. Postoperative appearance after two months.

ing healing and this conjunction complicates further sinus lifting operations. To eliminate this problem, synthetic barriers or block bone grafts are used mostly but, thanks to specific features of that, using auricular cartilage graft can be an alternative.

Conflict of interest

There is no conflict of interest on this subject.