

Surgical Management of Oroantral Fistula by Von Rehrmann Flap: A Case Report

Ashvini Kishor Vadane*, Janardan B Garde and Hassaan Kazi

*Department of Oral and Maxillofacial Surgery, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune, Maharashtra, India.

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ABSTRACT

Killey and Kay, in 1975, defined oroantral fistula (OAF) as an unnatural communication between the oral cavity and the maxillary sinus resulting most commonly from extraction of teeth. Successful surgical management of oroantral fistula depends on the type of surgical technique implied as well as size and location of the fistula. There are various types of surgical options for the closure of oroantral fistula. Here, we are reporting a case of oroantral fistula in 47 years old male patient, which was successfully managed by buccal advancement flap [Von Rehrmann flap] in M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune.

Keywords: Oroantral communication, Oro-antral fistula, Maxillary sinus, Buccal advancement flap, Von Rehrmann flap

CASE REPORT

A 47 years old male patient visited the department of Oral and Maxillofacial Surgery of our college with the chief complaints of fluid discharge from the upper right back teeth region of jaw since 12 days which was intermittently present. The patient had undergone extraction with upper right first molar, 2 months back as it had poor prognosis.

The radiographic examination which was performed prior to extraction, showed the radiolucency in the right maxillary sinus region and also showed breach in the continuity of floor of the maxillary sinus as shown in **Figure 1**. The patient's chief complaint was related to the same extraction socket. We examined it clinically. We performed mouth mirror test and cotton wisp test which was found positive. Hence, we advised him radiographic examination.



Figure 1. Orthopantomogram showing grossly carious upper right first molar.

Radiographic examination revealed the presence of breach in the continuity of right side floor of maxillary sinus. This indicated the presence of oroantral fistula in the upper right back teeth region of jaw (**Figure 2**).

Corresponding author: Ashvini Kishor Vadane, Department of Oral and Maxillofacial Surgery, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune, Maharashtra, India, Tel: 7387935523; E-mail: drashvinivadane@gmail.com

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Figure 2. Radiographic examination revealing well defined radiolucency in the right maxillary sinus and breach in the continuity of floor of maxillary sinus.

Surgical management of oroantral fistula was planned. All preoperative investigations and measures were done and patient was operated under general anesthesia. The oroantral fistula was located and was exposed. The opening of fistula was located and surgical excision was performed. Surgical curettage and debridement was done and all unhealthy tissue was excised. **Figure 3** describes the oroantral fistula after surgical curettage.



Figure 3. Surgical exposure of OAF Picture taken after complete curettage.

Buccal advancement flap which is also known as Von Rehrmann flap was planned for closure of fistula. An incision was made all around the fistula opening; about 3-4 mm away from it and mucoperiosteum was reflected. From the buccal side of fistula, two divergent incisions were marked, extending towards mucogingival junction. A full thickness mucoperiosteal flap was raised and advanced over the defect. Water-tight closure was performed as shown in **Figure 4**.



Figure 4. Closure of oro-antral fistula by buccal advancement flap.

The acrylic stent/plate was placed for one week at the operated site as shown in **Figure 5**. The acrylic stent was designed pre-operatively by taking impression. And this stent was placed to support and protect the operated site, postoperatively. The placement of acrylic stent helps in the stability and proves beneficial for wound support. It also prevents hematoma formation.



Figure 5. Placement of acrylic stent post-operatively.

The soft tissue specimen was excised from the operated site, i.e., from right maxillary sinus area. This specimen was sent for histopathologic examination. It revealed the presence of dense chronic inflammatory infiltrate interspersed with blood vessel suggestive of the presence of inflammatory tissue.

Regular follow-up of the patient was maintained. The **Figure 6** shows the postoperative follow-up picture after 21 days which indicates the fistula is completely healed.



Figure 6. Postoperative follow-up picture after 21 days (mirror view).

DISCUSSION

The pathological connection between the oral cavity and maxillary sinus which takes place because of soft or hard tissue loss which normally separates these compartments is known as oroantral communication (OAC). Oroantral fistula (OAF) is defined as a persistent epithelialized open communication [2]. Killey and Kay, in 1975, defined oroantral fistula (OAF) as an unnatural communication between the oral cavity and the maxillary sinus resulting most commonly from extraction of teeth. Oroantral communication or fistula takes place commonly because of extraction of maxillary molar teeth. It can also occur due to pathological lesions, trauma, neoplasm, iatrogenic injuries and Paget's disease [4]. Fistulas which are smaller than 5mm in diameter can close spontaneously, whereas larger one requires surgical closure. The success rate percentage is about 90% to 95%, if the primary closure of oroantral fistulas is done in 2 days; whereas it falls to about 67% when closure is done secondary [4].

Various surgical procedures like local or distant flaps and grafting can be used for closure of fistulas. Minor or moderate sized defects can be closed by local flaps. Buccal advancement flap (Von Rehrmann flap), buccal sliding trapezoidal flap (Moczair's flap) and Ashley's flap (Palatal rotational flap) are various types of local flaps which can be used for surgical closure of oroantral fistula (OAF) [1,8,9,13]. Use of buccal fat pad can be done for the closure of OAF which acts as pedicellate graft for the reconstruction of intra-oral defects [2].

In the present case report, oroantral fistula was surgically managed by Von Rehrmann flap. This case was successfully managed in the department of oral & maxillofacial surgery of M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune.

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