

**SUBANTRAL RECOVERY TECHNIQUE**  
**(T.R.O.A.S.)**  
**Technical Note**

*Authors: Prof. Dr. Gabriel F. Arana (#)*  
*Prof. Titular Cátedra de Cirugía V y VI U. Kennedy*  
*Jefe de Servicio Odontología HIGA. Eva Perón*  
*Prof. Dr. Oscar Sarnachiaro (\*)*  
*Prof. Titular Cátedra de Implantología Oral U. Kennedy*

*Address of the author:*

*Prov .Bs. As. Argentina (CP 1636).*  
*e-mail: arana.dds@gmail.com*

**Subantral Recovery Technique. Technical Note.**

**Abstract: The maxillary sinus pneumatization is a frequent inconvenience in rehabilitation with maxillary implants. During the last thirty years, several graft addition techniques have been proposed to solve this problem. A technique without graft has been developed by the authors and his results of this technique are analyzed.**

**Key Works: Sinus Lift, Pneumatization, Implants.**

The pneumatization of the maxillary sinus after teeth loss is used to be one of the most common complications for the placement of root form implants in the posterior upper jaw. Although bone grafts, bone substitutes and other materials have been proposed for obtaining sinus augmentation<sup>3</sup>. It can simply be obtained by the creation of an empty space surrounded by bone walls in which the formation of the blood coagulum will result in the formation of bone, by means of a more natural way, on condition that the contours of the bone cavity can be kept intact.

#### Surgical technique

The approach to the sinus is done in the conventional way, as described by Dr. Tatum in the year 1975<sup>4</sup>. After the incision and reflection of the soft tissues the anterior wall of the Maxillary sinus is visualized. An osteotomy is then performed with rotating instrumentation making sure not to harm the membrane covering the inner surface of the sinus, delimitating a bony window for access. After careful elevation of the sinus membrane the bony window is pushed and rotated upwards into the sinus and is kept in place by means of a screw fixed to the alveolar ridge which acts as a pillar avoiding the collapse of the window by the intra-sinusal pressure, and generating the space under it for the formation of the blood coagulum allowing its organization and posterior osteo-differentiation (Fig.1). The space under the bony window should be of 10 to 13 mm to allow the future placement of implants long enough to withstand the mechanical forces of the posterior part of the mouth. The flap is then suture in place guaranteeing a hermetic closure of the wound. In this way, after a period of four to six months there would be the formation of bone in the space created in order to place the implants (Fig.2). An important observation can be made during the placement of the implants consisting in the complete repair of the bony defect created at the level of the access window by the centripetal growth of bone.

#### Discussion

Through out the literature authors demonstrated that healing of bone grafts and bone substitutes required a substitution and replacement process which takes from 6 months when using autogenous bone to eighteen or more months when referring to biomaterials. The technique presented in this article seems to be efficient and was used in several patients who are currently being studied clinically and radiologically, with periapical and panoramic X-rays. In a first approach when placing the implants biopsies were taken with trefines, and the histologic results showed good quality lamellar bone. The implants placed were radiologically evaluated after periods of 18 and 24 months showing the formation of dense bone around them and a high rate of osseointegration (Fig.3). Maxillary sinus augmentation has achieved a high degree of predictability and success. The simplicity and the low cost are the main advantages of this technique.

#### **Detail of photograph**

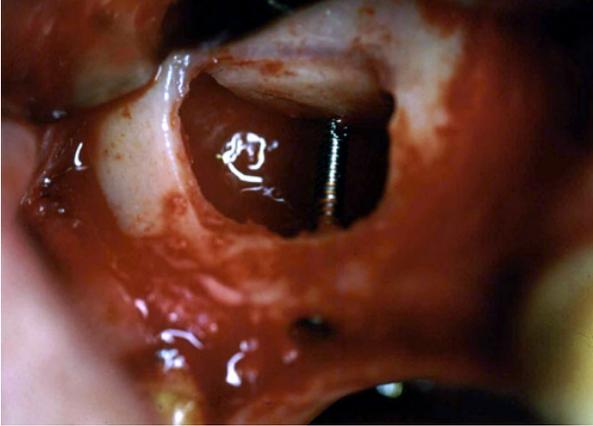


Fig.1. Photograph of the access window in its new position held in place by the screw fixed to the alveolar ridge.

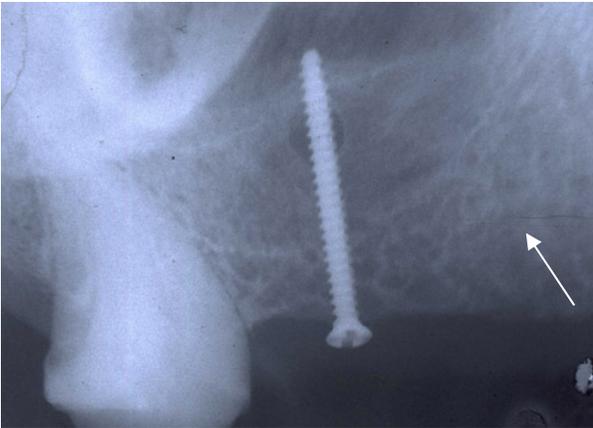


Fig.2. Control radiograph of the post after a healing period of four months. Notice the arrow pointing the previous level of the sinus floor.

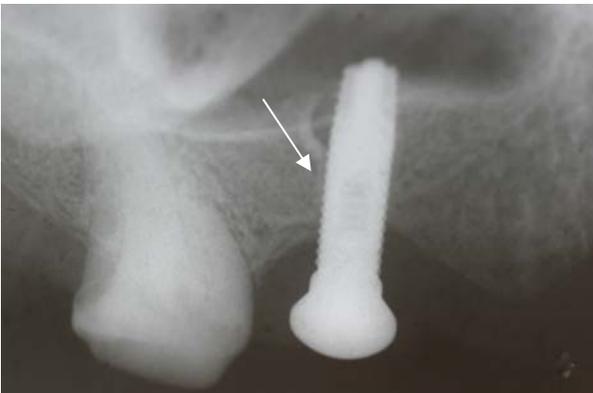


Fig. 3. Control radiograph of the implant after eight months of placement. Compare the old level of the sinus floor with the new one. (see arrows)

## References

1-Merkx MA et al "Assessment of value of anorganic bone additives in sinus floor augmentation: a review of clinical reports" *Int.J Oral Maxillofacial Surg.* 2003:32:1-6

2-Pejrone G., Lorenzetti M., Mozzati M., Valente G. and Schierano GM. "Sinus floor augmentation with autogenous iliac bone block grafts: a histological and histomorphometrical report on the two step surgical technique. *Int J Oral Maxillofacial Surg.* 2002: 31 n 4; 383;388.

3-TARNOW D.P., WALLACE S.S., FROUM S.J., ROHRER M.D., CHO S.C.: "Sinus floor elevation using anorganic bovine bone matrix (OsteoGraf/N) with and without autogenous bone. A clinical, histologic, radiographic, and histomorphometric analysis –part 2 of an ongoing prospective study. *Int. J Periodontics Restorative Dent* 1998: 18:529-543

4-TATUM OH. "Maxillary and sinus implant reconstruction" *Dent Clin North Am* 1986: 30: 207-229