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The Elevation of the Maxillary Sinus: Our Clinical Experience

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Abstract: In the rehabilitation analysis of the oral cable of a patient partially or totally without teeth today finds great reference uses techniques of implant. These techniques can to times be limited from the not often acceptable anatomical situation and therefore to turn out unacceptable in some cases: "inferior alveolar channel, nasal cavity, maxillary breast". Just the maxillary breast today turns out to be one of the anatomical obstacles more frequent, just for its particular tendency to introduce enough extreme a bony absorption that is often introduced in its distal part. At present the elevation of the maxillary sinus is a good rehabilitee methodical; it consent the set of implants also in situation of little thickness of the bone. In this work we illustrate a clinical case of elevation of the maxillary sinus finished with a good result.

Key words: Maxillary sinus, antrum of highmore

INTRODUCTION

In the rehabilitation analysis of the oral cable of a patient partially or totally without teeth today finds great reference uses techniques of implant[1].

The operator in such occasions is forced for being able to obtain a good anchorage of the systems to rerun to surgical techniques of raising the pavement of the maxillary breast that can be minimal or of remarkable thickness in way to transform the sinus pneumatic cavity in one filled up structure of mature bone. Clearly any it is the type of participation is fundamental to have a deepened acquaintance of the morphology of the maxillary breast taking advantage itself in preoperative phase of supports radiographs (Rx, TAC to us, Ct-Scan, Dental-Scan) in degree to allow one possible the most corrected surgical procedure[2-3].

In the research the authors present a clinical case of the elevation of the maxillary sinus.

Case report: An Italian man, partial edentulous, wanted an oral rehabilitation.

The amoxicillina (1g) was administrated to the patient at least an hour before the oral surgery.

The local anaesthesia with cloridrato mepivacaina 2% with vasoconstrictor was administrated in crest to all lightly palatal thickness and a border to all thickness is unglued.

The ideal position that the system must have in function of the successive prosthesis was localized and the situated one is prepared to implant in depth until arriving to the cortical one of the maxillary breast. With a cutter in rosette in tungsten carbide mounted on contra-angle reducing and under abundant irrigation of sterile salt solution cortical usury bony is overhanging the sidewall of the maxillary breast in correspondence of the apex portion of the implant site.

Surfaced the membrane of Schneider is proceeded to its ungluing with curette from sinus sufficient to elevating the mucous of the maxillary sinus and to insert a blunted instrument to protection of the same one is completed the preparation of the situated one to implant perforating cortical the residual one and finalizing the implant site relative to the final cutters to the diameter of the chosen system.

Subsequently to the positioning of the fixture (Straumann ITI) it's covered the vestibular portion of the decorticated bony portion with bovine bone (Bioss Geistlich Biomaterials), is preceded therefore with detached stitches Fig. 1-8.

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DISCUSSION

The maxillary sinus or antrum of Highmore Fig. 1, occupies the body of the m axillary bone and part of the paranasal sinuses together to the frontal bone, the ethmoid bone and the sphenoid bone. It reproduces the part centres of the same bone; the advanced wall corresponds to the orbit, the posterior one to the infratemporal cavity and to the pterygopalatine, the medial to the nasal cavity, the inferior to the alveolar process[4].

It can have shape irregular for the presence of several extensions (extension in the frontal process of the maxillary one, zygomatic extension, advanced extension palatine, alveolar extension). It must remember that in the advanced maxillary case of edentulous the limits of the breast they can catch up the alveolar margin can extend until the canine and introducing extensions in several the processes of the maxillary one. In such situation the maxillary breast is lower regarding main the nasal cavity.

The calculated medium volume is of 14, 75 cm 3, introducing one light difference between the two sex with a greater volume in the male. To the surgical ends it is important to estimate the dimensions and the antral morphology in careful way and to estimate the eventual bony sheet present that settles more communicating spaces, why that could be source of risk for the laceration of the sinus membrane. The membrane that covers the maxillary breast (membrane of Schneider), of periosteal nature, is composed from more layers: Epithelial covering of cylindrical respiratory type ciliated, tunica own and corium, periosteum, fibrous connectively is absent the sub-mucous[5].

The maxillary sinus receives an arterial supply through coppers collaterals of the maxillary artery and of the arteries greater tippet, sphenopalatine, makes them, buccinator and an infraorbit alveolar. For its venous water-drainage the facial vein is involved, the sphenopalatina and the pterygoid plexus. The innervation happens thanks to the maxillary nerve while its lymphatic water-drainage is put into effect towards the lymph nodes retro-pharyngeal, under gastric, jugular insides and in the station lymphatic of the orbit.

Therefore the maxillary seeds structures not particularly complex carry out instead a fundamental function are like case of indirect resonance of the phonation that like thermal insulators of the advanced, regulator of the quality-amount and inspirited air pressure, protecting nerves of the cranial base and lighten of guarantor the cranial skeletons and also of the filtration with ability to heaters and humidifiers. In the systems therefore it is fundamental to guarantee the primary stability of the same system, this but often it comes reduced from the insufficient availability of crestal bony anchorage in the zone of the maxillary breasts, for being able to obtain a valid stability is in fact necessary a height of the bone at least 4-5 mm around the fixture[6-8].

The bony atrophies that regard the under sinusal zone edentulous can be distinguished, according to the gravity of bony loss, in surgical participations more or less invaded, in our job we will bring back our experience with regard to a situation of less serious atrophy that involves a rise to parcel out or minimums rise of the maxillary breast. The first rise of the maxillary breast came carried out for before the time from Tatum in 1975, in order to resolve the atrophy problems that were come to determine in the patient edentulous in the posterior zones of the maxillary breast through which the ungluing of the sinusal membrane was carried out, the obtained space came filled up with graft materials and with the time they came replaced from woven bony in a position to then becoming valid structure for the insertion of the fixture[3].

Today, but this technique has endured in the time several evolutions, rendering it less traumatic sure less invasive, in our experience considers of valid aid the modification that made Summers in 1994 of the Tatum technique of 1986. Such known technique as Small rise of the maxillary breast previews the preparation of the situated one to implant and the fracture of the pavement of the maxillary breast for trans-alveolar direction by means of the use of osteotomes with raising of the bony plan and the overhanging mucous[9-11]. The fixture exposed in the breast will come subsequently covered from bone new regenerated, in how much the periosteum therefore raised will act as from the effect stretch, allowing the formation of coagulate emetic that will be organized as a result of a minimum of new bone present. But a limit of this technique resides in the difficulty, also in expert hands, to control the modality of the fracture of the bony dowel with consequent risk of laceration of the membrane of Schneider being considered that the procedure happens nearly blindly. It must make present that in agreement with many authors this technique for the use of osteotomes remains more traumatic sure than others, if also less invasive. Therefore in our clinical cases we bring back our experiences and our surgical procedure on one varying of the same technique of Summers.

With this procedure minimums of the order of 1-5 millimetre of bony regeneration can be obtained increments. The period of recovery, for this type of

participation, is attested in approximately 9-12 months, during which the system must remain submerged without indirect cargo.

Moreover the more invasive technique even though avoids possible lacerations of the membrane of the breast and the formation of bone from micro-fracture that the technical modified base of Summers could create. The technique turns out favourable for 2 advanced rises to millimetre and sure the eventual laceration of the mucous turns out surer in controlling.

REFERENCES

1. Boyne, P.J. and R.A. James, 1980 Grafting of the maxillary sinus floor with autogenous marrow and bone. J. Oral Surg., 38: 613-16.
2. Burchardt, H., 1983. The biology of bone graft repair. Clin Orthop Rel Res., 174: 28-42.
3. Tantum, H. Jr., 1986. Maxillary and sinus implant reconstruction. Dent Clin. North Am., 30: 207-229.
4. Moy, P.K. S. Lungren and R.E. Holmes, 1993. Maxillary sinus augmentation: Histhomorphometric analysis of graftying materials for maxillary sinus floor augmentation. J. Oral Maxillof Surg., 51: 857-862.
5. Chiapasco M.E. and P. Ronchi, 1994. Sinus lift and endosseus implants: preliminary surgical and prostethic result. Eur J. Prosthodont Rest Dent., 3: 15-21.
6. Kim, M.R. and H.J. Chung, 1997. Denatl implants placed with bone grafts in the maxillary sinus floor. Acta 13th International Conference of Oral and Maxillof Surg J. Cranio-maxillofacial Surg (Supl) Kioto, pp: 20-24.
7. Timmenga, N.M., G.M. Raghoebar and G. Boering, 1997. Van Weissembruch R. Maxillary sinus function after sinus lift for the insertion of dental implants. J Oral Maxillofac Surg., 55: 936-939.
8. Valentini, P. and D. Abensur Densari, 1998. Histological aevaluation of bioss in a two-stage sinus floor elevation and implantation procedure: A human case report. Clin. Oral. Impl. Res., 9: 59-64.
9. Bavero, G.A., E. Stellini and E. Ersson, 1999. Il rialzo del seno mascellare in implantologia. Il Dentista Moderno, Anno XVII. 5: 23-34.
10. Chiapasco, M. and E. Romeo, 2003. La riabilitazione implantoprotesica nei casi complessi. UTET, pp: 254-298.
11. Del Fabbro M.T. Testori and L.R Francetti Weinstein, 2004. Systematic review of survival rates for implants placed in grafted maxillary sinus. Intl. J. Period and Rest Dent., 1: 24-28.