

The Use of Tilted Implant in Extreme Case of Failed Implants: Surgical Procedure

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Abstract

Maxillary sinus often can have a severe limitations for conventional implants treatment. Resorption of bone and the expansion of maxillary sinus reduce in many cases the amount of bone available both in thickness and height. The aim of this work is to present an alternative technique to maxillary sinus lift procedure to reduce the invasivity and to do immediate loading at the same time.

Keywords: Tilted Implant; Maxillary Sinus; Immediate Loading; Minimal Invasive Approach

Introduction

From an aesthetic point of view, the wrong implant placement can cause the bad prosthetic work. Since aesthetics is a primary requirement, this mistake can be prevented through proper surgery planning.

Therefore, the clinical examination is not limited, the study of the models on the articulator, the diagnostic wax-up, the radiographic images (OPT, cone beam) and the use of any surgical guides are important. Until recently, removing an implant meant heavy bone loss and the need for bone grafting procedures. Recently the development of a new tools can facilitate implant removal through conservative and simple procedures. The aim of this article is to describe an extreme case about wrong placement implants with severe periimplantitis and bone loss in the right site of maxilla [1-3] (Figure 1-5).



Figure 2: Wrong implants placement.



Figure 1: Initial clinical situation to show the wrong placement implants.



Figure 3: Occlusal view of initial situation.

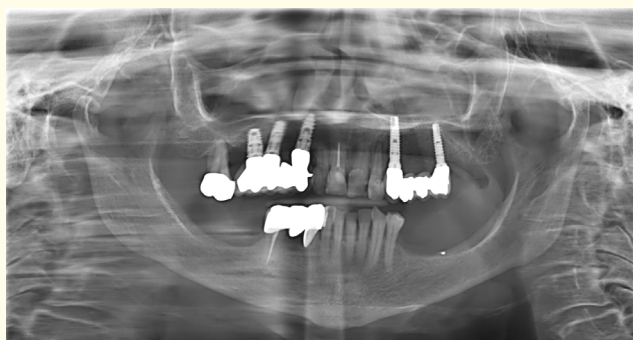


Figure 4: Initial X RAY.



Figure 6: TAC cone beam.



Figure 5: TAC cone beam view.



Figure 7: Removal implants with dedicated device to preserve the bone.



Figure 8: Unscrewed implants.

So, using a tilted implant it was possible to avoid the sinus lift procedure and also to do immediate loading at the same time using only basal bone.

Case Report

In this case it is described a woman patient of 68 years, in good health, with a negative history, not a smoker. The clinical and radiographic examination (OPT and Cone Beam) shows a serious periimplantitis around the implants in right site of maxilla with a wrong placement and a not correct prosthetic rehabilitation (Figure 6-8). So, it was decided to remove the implants and at same time to place two implants with immediate loading using tilted implant to avoid maxillary sinus.

Vertical bone insufficiency in the maxillary posterior teeth is a common clinical situation. At present, the bone insufficiency in

the maxillary posterior teeth is mainly overcome by bone grafting through maxillary sinus floor elevation.

Compared with traditional axial implantation, tilted implantation can better avoid bone grafting, reduce complications,

shorten the treatment cycle, reduce the treatment cost for patients, and gradually be promoted in clinical settings.

The term tilted implants refers to implants placed at an angle of normally 30 degrees or more with respect to axially or vertically positioned implants. According to many authors, the use of tilted implants in the posterior maxillary sector offers advantages over axial implants.

The placement of tilted implants offers both surgical and prosthodontic benefits. In effect, the combination of tilted and axial implants allows the use of longer implants, thereby increasing the osseointegration surface; improves primary stability by anchoring in more than one cortical layer; avoids cantilever extremities by placing the implants more distal and with better load distribution over the dental arch [4-6].

Surgical and prosthetic procedures

One hour before the operation, 1g of amoxicillin is given to the patient, to be taken twice a day for the following 6 days. Surgical procedures are started under local anesthesia, 20 mg/mL aptocaine with 1: 80,000 adrenaline. So, the implants are removed with dedicated device then a palatal incision is made from the area of the first right molar after the extraction to the lateral incisor with two mucoperiosteal incisions to research the anterior wall of maxillary sinus. The distal osteotomy has tangential to the anterior wall of the maxillary sinus; this inclination is necessary to achieve an emergence of the implant platform at the level of the first molar, so for this reason is positioned an implant with 3,75 of

diameter and 16 mm of length with 30 degree extreme abutment (AB IMPLANT Israel). Then is placed an anterior implant with 3,75 of diameter and 11,5 of length with straight extreme abutment (AB IMPLANT Israel). After the sutures is screwed a temporary rehabilitation waiting for the Osseointegration in next 4 months (Figure 9-21).



Figure 10: Failed implants.



Figure 9: Occlusal view after implants removal.



Figure 11: Failed implants with not correct prosthetic rehabilitation.

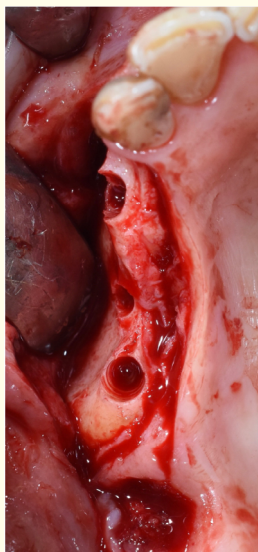


Figure 12: Bone skeletonization with palatal flap approach to increase also the soft tissue around the implants.

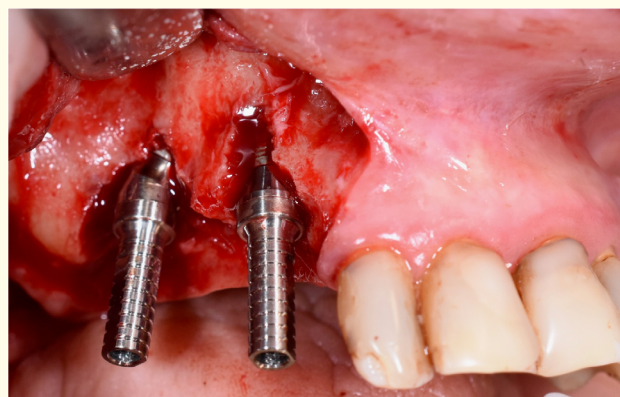


Figure 15: Implants placement with extreme abutments.

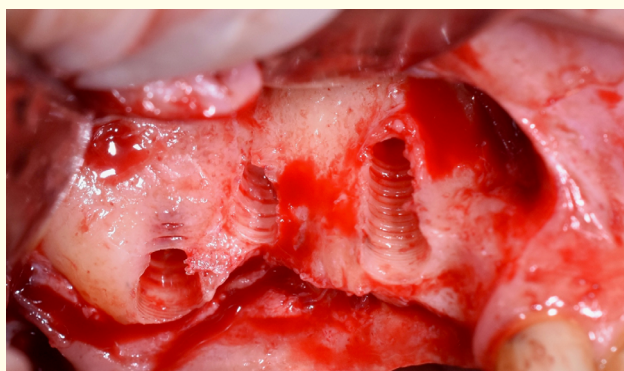


Figure 13: Surgical view after implants removal it's possible to see the preservation of the bone using a dedicated device.



Figure 16: Occlusal view after implants placement.



Figure 14: Distal osteotomy tangential to the anterior wall of the maxillary sinus.

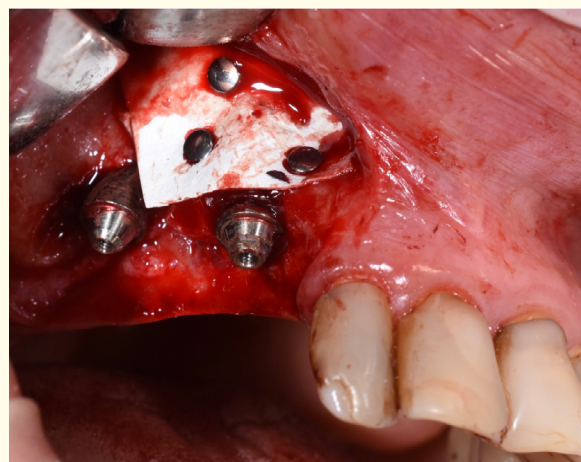


Figure 17: gbr to cover the bone dehiscence.

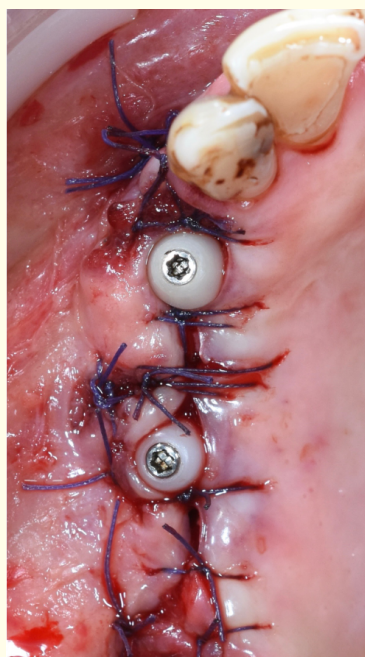


Figure 18: Sutures with healing caps.



Figure 19: Temporary rehabilitation screwed.



Figure 20: Immediate loading without occlusal contacts.

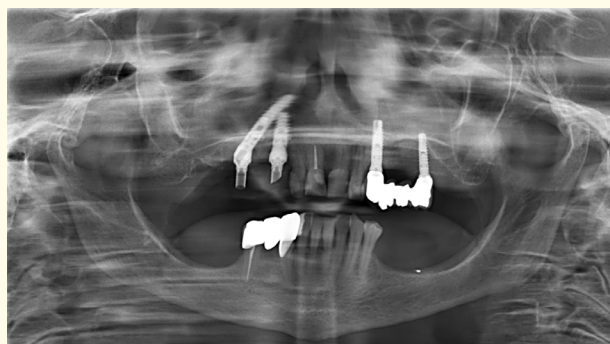


Figure 21: Post op x-ray

Conclusion

Independently of the cause, when an implant is not well positioned, prosthetic rehabilitation may not be adequate from a mechanical, functional and aesthetic point of view.

In this case presented here, was necessary to remove the implants and to do a new surgical and prosthetic plan in the patient with severe loss of bone. The goal of this technique is the use of the basal bone of patient to increase a long term success of our implants rehabilitation. So, this surgical approach represent a valid and predictable therapeutic alternative to the bone augmentation and regeneration [7-9].

Prosthetic rehabilitation of the edentulous maxilla includes the placement of tilted implants as a relatively recent option. The advantages of tilted implants are: the use of longer implants, thereby increasing the contact (osseointegration) surface; improved primary stability by anchoring in more than one cortical layer; the avoidance of cantilever extremities by placing the implants more distal and with better load distribution over the dental arch; and avoidance of the use of bone grafts and sinus lift procedures - with the resulting reduction in morbidity.

The marginal bone loss observed with the tilted and axial implants likewise proved very similar. It thus can be deduced that tilted implants exhibit the same evolutive behavior as axial implants.

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