Case Report

Immediate Loading Mandibular Rehabilitation with Reduced Number of Implants

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Introduction

Implant-prosthetic rehabilitations of immediate jaws represent a therapeutic possibility with a high success rate and satisfaction for the operator and the patient. However, the anatomy of the jaws, periodontal and iatrogenic damages represent limitations to the conventional rehabilitations of edentulous patients and with serious impairment of the residual dental elements that would require pre-implant bone regeneration treatments. These methods are to be considered for patients with a high biological and economic cost, with high morbidity and operator employees. For these reasons, the current implant guidelines focus on clinical protocols that exploit the residual basal bone without the need for any kind of regeneration. These methods, well supported by scientific data, provide for an immediate restoration of the function by positioning implants with immediate loading. The “All on Four” protocol requires the placement of four implants, two anterior “straight” and two tilted posterior ones placed in the basal bone of the jaws. The reduced number of implant rehabilitations, whether they are inclined or not, are proven by numerous scientific studies showing that four implants are sufficient to support full-arch prosthesis. Since the immediate loading of inclined and axial implants with placement of an immediate provisional prosthesis is proposed as a predictable, fast and cheap method to treat maxillary atrophy, the purpose of this article is to illustrate the mandibular rehabilitation with immediate loading of a patient with severe impairment of residual dental elements [1-2-3-4-5].

Materials and Methods

In this case it is described a woman patient of 65 years, in good health, with a negative history, not a smoker. The clinical and radiographic examination (OPT and Cone Beam) (Figure 1-2). shows a serious impairment, with widespread mobility of the remaining dental elements (Figures.3-4-5-6-7). In agreement with the patient is therefore decided to carry out the reclamation of the dental elements Residues, and to insert 4 implants with immediate loading according to the “All on 4” method.

Surgical and Prosthetic Procedures

One hour before the operation, 1 g of amoxicillin is given to the patient, to be taken twice a day for the following 6 days. Surgical procedures are performed under local anesthesia, 20 mg / mL optocaine with 1: 80,000 adrenalin. At the mandibular level the remaining dental elements are emulsified, then a crestal incision is made from the area of the first right molar to the first left molar with two distal discharges and the mucoperiosteal detachment aimed at highlighting the emergence of the chin guard holes. (Figures.8-9-10) the posterior implants, with a diameter of 3.8 mm and a length of 15 mm, are positioned above the mentally foramen and inclined mesially by 30-45 degrees to the occlusal plane. The posterior implants generally emerge in the position of the second premolar. Subsequently, the axial implants are positioned 3.8 mm in diameter and 13 in length (Winsix Biosafin) (Figure.11-12). For the front implants are positioned Extreme Abutments straight, while for those posterior to 30 degrees to compensate for the lack of parallelism between the fixtures. These degrees of angulations are chosen to allow the access hole of the prosthetic screw an occlusal or lingual position with respect to the teeth mounted on the provisional prosthesis. The suture is made with 4/0 silk thread. At the end of the operation the previously made temporary

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prosthesis is re-ribbed and screwed according to the diagnostic set up, whose vertical dimension is established and corrected by the study fingerprints and the cephalometric study (Figure. 13-14-15). The patient is given a semi-solid diet for 2 months following the operation.

At 4 months from the osseointegration and stabilization of the soft tissues the impressions are detected, and a composite screwed Toronto is made (Figures.16-17-18-19-20-21-22-23).
Results and Conclusions

At the 24-month follow-up the clinical and radiological appearance of soft and hard tissues is optimal and no pathological signs or prosthetic complications were recorded (Figure 24). This surgical technique, therefore, represents a valid and predictable therapeutic alternative to the techniques of bone augmentation and regeneration. The biomechanical aspect on which the use of angled implants is based is the reduction of the cantilever and therefore a better and homogeneous distribution of the loads at the prosthetic level. Numerous studies have reported a high survival rate; others have assessed the amount of stress in the peri-implant bone, and these studies showed that the single angled implant [6-7-8-9-10].

Subjected to axial loads presents greater per implant bone stress than the single axial implant; however, when the angled implants is joined to other implants with an edced cantilever, it presents a minor mechanical stress at the per implant level compared to solidarizza implants but with a greater cantilever [11-12-13-14].

References