

## ALL-ON FOUR IN SEVERELY ATROPHIC MAXILLA WITH IMMEDIATE LOADING USING CONVENTIONAL IMPLANTS – CASE REPORT

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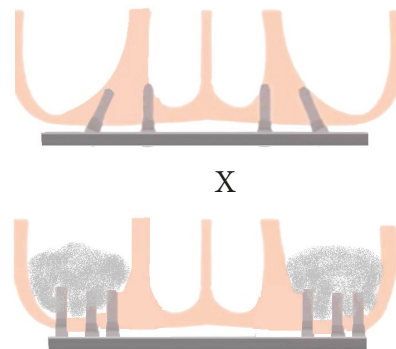


**Abstract:** A moderately to severely resorbed maxilla represents a challenge for functional occlusal rehabilitation, especially in cases arising from local infections, severe bone resorption or surgical treatments for oncological resection. Given the adversities of the techniques previously recommended, it was necessary to present an alternative that included the patient's rehabilitation capacity without major side effects. Thus, an alternative found was the All-on-four technique, which consists of placing four implants anchored in noble structures forming a polygon and a splinted prosthesis on top. A clinical case report of an All on four surgery was carried out. Patient JMS, 74 years old, Caucasian, completely toothless at the age of 22 due to car trauma, sought the clinic for dental implant treatment in search of undergoing superior protocol surgery. Serological tests were requested prior to surgery and computed tomography of the jaw. After the pre-surgical medication protocol, local anesthesia was performed with vasoconstrictor, relaxing incisions in the distal and midline for the total folding of the periosteum, instrumentation kit and implants NEODENT Alvim 3.5x 16mm, and Alvim 3.5 x 13mm all with locking greater than 60N and with universal transmucosal of 1.5mm straight anteriorly and 30 degrees posteriorly. The patient's complete denture was captured with metal braces and self-adhesive acrylic resin. It is concluded that All on four surgery in atrophic jaws with conventional implants has great predictability, being a differentiating proposal from maxillary sinus grafts and zygomatic implants.

**Keywords:** All on four, Atrophic maxilla. Immediate charge

## INTRODUCTION

When the maxilla is moderately or severely resorbed, it represents a challenge for functional occlusal rehabilitation, especially in cases with a history of local infections, severe bone resorption or surgical treatments for oncological resection. Therefore, strategies that use bone grafts, maxillary sinus lifting, Le Fort I osteotomy with interpositional bone graft and pterygoid implants are elective treatments and offered for the rehabilitation of partially and completely edentulous patients (Fernandez et al., 2014; Pèrez et. al., 2022). However, such techniques present a series of implications for the patient, such as the need for multiple surgeries, donor areas, offering extra morbidity, in addition to the time required for the correct healing of the graft and the performance of oral rehabilitation (Schiavon, et.al, 2022; Molina, et al., 2022).



(Image 1- Treatment proposals)

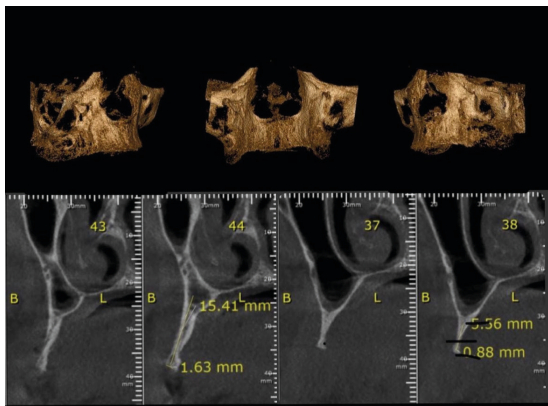
In addition to bone quality, another determining factor for the success of the technique used is the choice of the appropriate implant for the case to be performed. In general, it is believed that implants must be able to withstand tensions of up to 900 N/mm<sup>2</sup>. However, failures do occur and may be due to the amount of bone available for anchorage, which may in turn affect the stress concentration within the fixation (Munoz et al., 2021).



(Image 2- Progressive alveolar atrophy after tooth extraction)

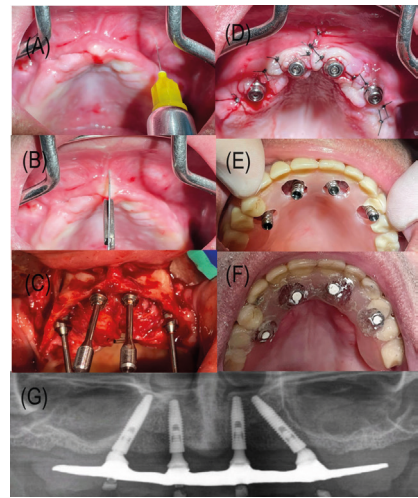
The objective of the study was to report an immediate surgical and prosthetic clinical case in a severely atrophic maxilla using the All on four technique with conventional implants.

Patient JMS, 74 years old, Caucasian, completely toothless at the age of 22 due to car trauma, has used a mobile complete denture since then.



(Image 3- maxillary tomography)

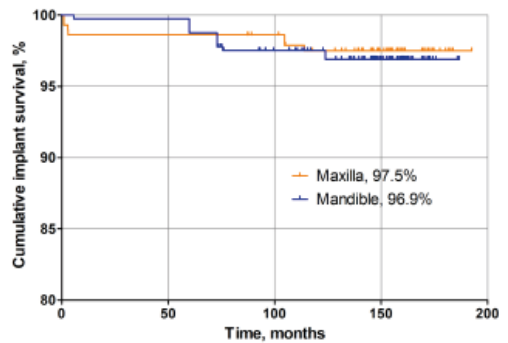
Local anesthesia was performed with vasoconstrictor, relaxing incisions in the distal and midline for the total folding of the periosteum, instrumentation kit and neudent implants, all with locking greater than 60N and with universal transmucosal 1.5mm straight and angled at 30 degrees, the prosthesis of the patient's total body was captured with metal uclas and self-polymerizing acrylic resin.



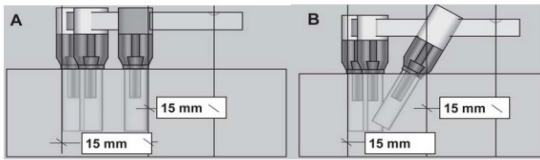
(Image 4- (A) Local anesthesia with ARTICAINA 1:100,000 (B) Vertical midline and horizontal crest incisions (C) installation of implants with palatal approach and parallelism between the mini-pillars (D) Simple interrupted suture (E) Installation of cylinders provisional (F) Capture of complete prosthesis for immediate loading (G) Control panoramic X-ray after installation of the definitive prosthesis with bar after 4 months.

## DISCUSSION

The fixed full-arch prosthesis supported by two axial and two inclined implants today represents a well-accepted option for the treatment of edentulous jaws (Fürhauser et al., 2016; Lin & Eckert, 2018; Pommer et al., 2014).



(Image 5) Implant success rate of 97.51% in the maxilla with 16 years of follow-up (Maló, de Araujo Nobre, Lopes, Ferro, & Nunes, 2019).



(Image 6) The distal inclination of implants reduces axial force and does not increase bending moments when supported by four pillars (NACONECY et al., 2009)

## CONCLUSION

It is concluded through the case report presented that All on four surgery on atrophic jaws with conventional implants has great predictability, speed and comfort, being a scientifically/clinically proven proposal for rehabilitation with fixed total prostheses.

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