



# Clinical case of alveolar ridge preservation with alloplastic material: Results at 6 months

Selene P. Navarro Suárez. Odontologist. Master in dental surgery, Seville.  
Daniel Torres Lagares. Co-director, Master in dental surgery course, Seville.  
Jose Luis Gutiérrez Pérez. Co-director, Master in dental surgery course, Seville.

## Introduction

The aim of this study is to demonstrate the results of treatment with dental implants placed after using bone filling biomaterial: beta-tricalcium phosphate (RTR bone grafting material - Septodont). As is known, when the absence of a tooth is to be restored through a dental implant after extraction, even though the implant is not placed immediately for a reason, e.g. infection in the dental alveolus, the alveolus is preserved to minimize bone resorption as far as possible. The postextraction resorption or bone loss mainly occurs in the vestibular wall. The measurements were made at 1.24 mm (vertical) and 3.79 mm (horizontal).<sup>1</sup> Some authors estimate that 50% of the resorption volume occurs in the 12 months following the extraction and that two-thirds of this volume are lost in the first three months.<sup>2</sup> The need to maintain hard and soft tissue means that it is crucial to avoid or minimize the bone resorption caused by the loss of a tooth.

Current studies indicate that, using the socket preservation technique, it is possible to reduce this loss of volume by around 1 mm vertically and around 3 mm horizontally.<sup>3</sup> In the case shown here, the patient presented an infected alveolus due to failed endodontic treatment and irreparable fracture. Given the risk involved in placing an implant in these conditions, it was decided to carry out the procedure in a second session. In these cases, the preservation of the alveolus is highly recommended to avoid bone resorption as far as possible. From among the techniques available, we opted for filling with biomaterial of choice. The different steps taken are documented in a previous article. Once the regeneration period was over, we took a 3D image of the dental arch to plan the placement of the implant, which we describe below.

# Clinical Case

The implants were placed six to nine months after the regenerative surgery following a surgical protocol similar to the one previously indicated for the extraction. The 53-year-old female patient was anaesthetized in the area, a crestal incision made (Fig. 1-4) with mucoperiosteal flap [total thickness] procedure without any vertical incisions. We visualised the appearance of the regenerated bone (Fig. 5) in line with the 3D image (Fig. 1-3) previously made and studied. We placed the two implants (Figs. 6-8) in accordance with the manufacturer's milling protocol (Straumann®). Finally, the flap was adapted by suturing and a post-operative image was taken (Fig. 9-10). The patient was advised to rinse with 0.5 chlorhexidine three times a day for 10 days, starting from the second day. As medical treatment, 1 g of amoxicilin every 8 hours for 7 days and 600 mg of Ibuprofen every 8 hours for days. The stitches were removed after 10 days. The patient was checked over three months, and the re-entry and placement of the healing abutments carried out to create the soft tissue and begin the prosthetic procedure.

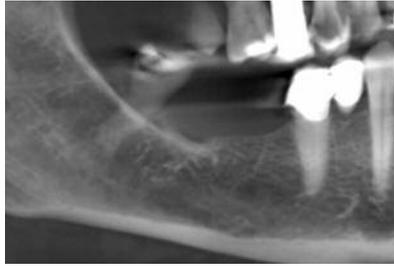


Fig. 1: Control Preoperative radiography of alveolar preservation.



Fig. 2: 3D study cut.

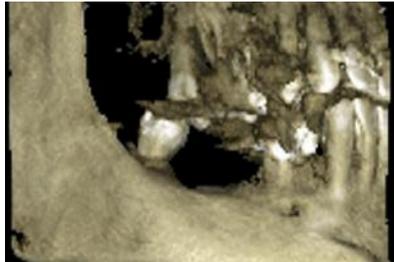


Fig. 3: 3D reconstruction where the height of the preserved ridge is seen.



Fig. 4: Preoperative intraoral view of the quadrant to be intervened.



Fig. 5: Image showing the height and width of the preserved alveolar ridge.

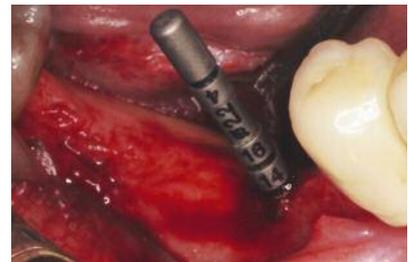


Fig. 6: Image of implant placement process I.



Fig. 7: Image of implant placement process II.



Fig. 8: Placement of the two implants in an ideal position.

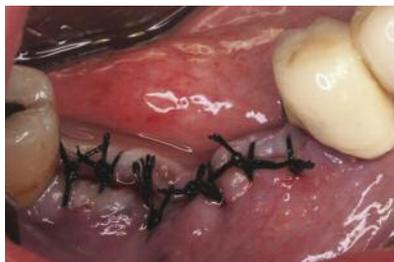


Fig. 9: Immediate postoperative image where the suture is observed.



Fig. 10: Immediate postoperative orthopantomography radiography.

## Discussion

The dimensional changes in the alveolar ridge following a tooth extraction considerably compromise the functional and aesthetic results of restorations made in partially edentulous areas.

The restoration of isolated alveolar defects using implants, as is the case here, shows that bone regeneration through the use of beta-

tricalcium phosphate is an option to be considered, both from the clinical point of view and from the patient's perspective.

Following a healing period of between 6-9 months it was possible to place the implants without the need for any other regeneration procedure.<sup>4-7</sup>

## Conclusion

The case presented indicates that beta-tricalcium phosphate (RTR bone grafting material - Septodont) can be used successfully for bone regeneration in dental implant treatment.

One of the main advantages of this technique is the elimination of the inevitable morbidity and problems associated with autologous bone

graft, both in the intraoral and the extraoral areas.<sup>8-11</sup>

The patient's opinion on the treatment was very positive, both on the process itself and on the appearance achieved, and on the functioning observed after 12 months of monitoring.



### Authors:

#### **Selene P. Navarro Suárez**

Dentist, University of Seville.

Master Oral Surgery, University of Seville.

Assistant Professor of the Master of Oral Surgery, University of Seville.

Member of the Spanish Society of Oral Surgery (SECIB)

Private practice limited to oral surgery.

#### **Daniel Torres Lagares**

Co-director, Master in dental surgery course, Seville.

#### **Jose Luis Gutiérrez Pérez**

Co-director, Master in dental surgery course, Seville.

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