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Radiographic Outcomes of FDBA Block Graft for Maxillary Ridge Augmentation: A Case Report

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Abstract

The primary donor sites for collecting bone in the oral cavity to replace missing ridges are the mandibular symphysis or ramus. Although successful, these bone transplants can nevertheless raise a number of issues, including donor site morbidity, nerve paresthesia, the devitalization of native teeth, and postoperative sequelae . Allogeneic block grafts were developed to address these concerns and a lack of autogenous intraoral bone available for grafting. The main advantage of FDBA graft is, it is unlimited supply, low morbidity and shorter operative time when compared with autogenous bone grafts. FDBA basically acts as a scaffold to conduct bone. It has been shown that FDBA can be successfully used for socket augmentation as well as bone augmentation, either for the repair of implant defects or to promote bone formation in the maxillary sinus. Allograft processing has recently undergone a new method of implementation. In essence, rather than using the standard freeze-drying method, the graft is treated using a patented procedure called chemical solvent dehydration.Mineralized cancellous or cortical bone chips are among the items that are now on the market.

Introduction

AIM - To evaluate horizontal and vertical bone gain after three month followup.

Chief Complaint - A 44 year old Female patient reported to the Department of Periodontics with loose tooth in the right and left lower and upper back teeth since 6 years. On clinical examination with the University of North Carolina-15 (UNC-15) periodontal probe, Miller's class III irt 24 & class IV irt 26 Cairo's RT 2 irt 24 and 26 were observed.

Scaling and root planning was carried out and oral hygiene instructions were given. The patient was re-evaluated every week and recalled after a month for surgery following hemetological investigation. The procedure were explained verbally and a written informed consent was obtained. A 0.2% chlorhexidine gluconate solution as a mouth rinse and 2% lignocaine with adrenaline 1:200,000 was administered as a topical anaesthetics.

A full thickness flap was raised to allow for complete visibility of the alveolar ridge, and cortical holes were made to improve the flow of blood to the grafts. The grafts were rehydrated for at least 30 minutes in saline solution prior to fixations. Under extensive irrigation with sterile saline solution, bone blocks were cut to size and height to fit the defects. The blocks were then fixed with the cancellous bone side facing the host bone using titanium screws. Following fixation, flaps were moved to completely cover the bone grafts. Previous periosteal releasing incisions allowed the flaps to be closed without tension using 4-0 silk sutures. A liquid/-soft diet for two weeks and mouthwash containing 0.2% chlorhexidine were part of the postoperative instructions for the patient, and the sutures were removed 12 to 14 days after the reconstruction. The patient also received postoperative antibiotic therapy (1 g amoxicillin every 8 hours for the following 7 days).Patient were prohibited from wearing prosthetics for at least 8 weeks following surgery. Patients got another clinical and radiographic assessment with CBCT scans after a 3-month follow-up.

Figure 1: Pre-Surgery Photograph

Figure 2: Extraction of 22, 23 & 26

Figure 3: Socket Debridement (22 & 23)

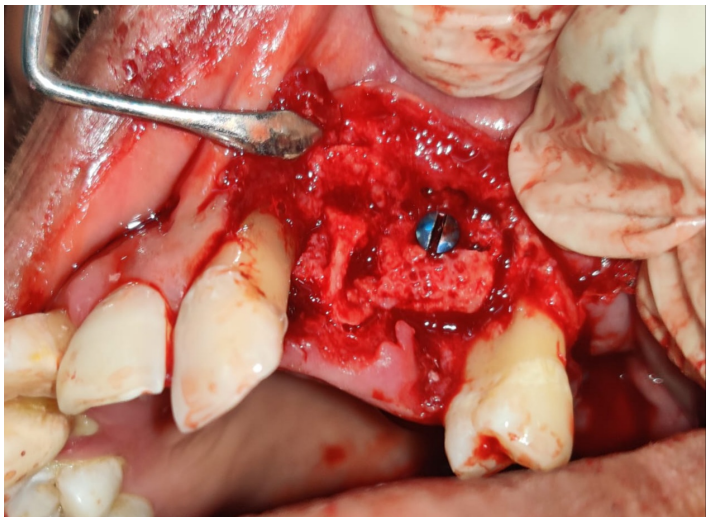

Figure 4: The FDBA block was fixed with screw on block to exclude dead space and ensure immobility. In addition, the block grafts received perforations with a quarter-round carbide bur

Figure 5: THE flap was closed without tension using silk 4-0 sutures

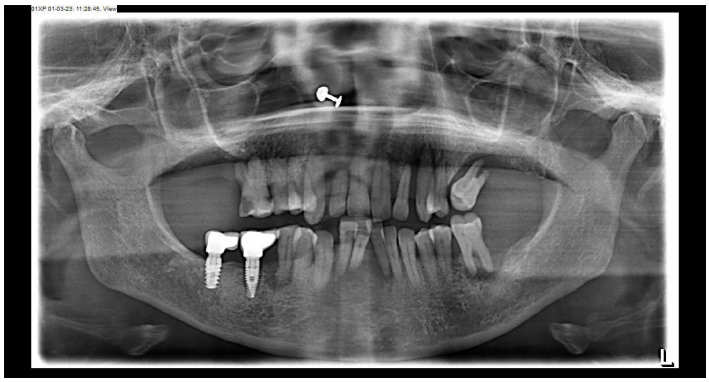

Figure 6: Pre Extraction Photo

Figure 7: Immediate Post-operative Iopars

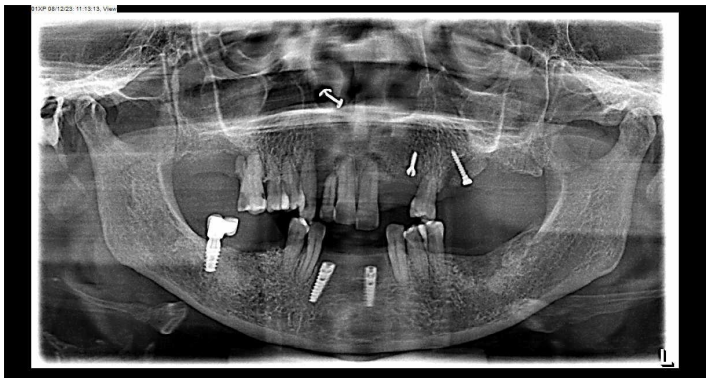

Figure 8: 3 Month Post Follow Up

Figure 9: 3 month post of clinical picture

Result

A 3-month follow-up examination demonstrated evidence of bone formation and continuous bone remodeling. In This study a statistically significant differences were found at baseline and after 3 month. There was a mean gain of 4.5 mm horizontal and 2 mm vertical, bone respectively.

Conclusion

Based on the clinical findings of this study, it can be inferred that FDBA block graft presents itself as a feasible and cost-effective treatment alternative for ridge augmentation procedures. This technique holds potential for future utilization in implant placement.

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