

Guided Tissue Regeneration Treatment of Periodontal Intrabony Defects with Maxxeus FDBA

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Introduction

The correction of periodontal intrabony defects with bone grafts has been an accepted treatment modality for nearly 30 years. In 1976, Melcher¹ discussed the compartmentalization of tissues to achieve regeneration and the clinical application of this concept was first demonstrated by Nyman et al.² when a barrier was used to isolate and treat a periodontal intrabony defect in a mandibular incisor. By 1986, Gottlow et al.³ coined the term guided tissue regeneration (GTR) to describe this treatment modality which allows for the formation of bone, cementum, and periodontal ligament in degranulated periodontal defects.

Since its introduction, GTR therapy has evolved and changed greatly. Initially, non-resorbable occlusive barriers were used to simply isolate degranulated periodontal intrabony defects. Over the years, bone or bone substitutes were used to fill these defects and when covered by a barrier, the term combination GTR was employed.

Non-resorbable barriers were eventually replaced with bioabsorbable barriers, and more recently, biologic growth factors have been used to enhance healing. The concept of GTR involves the use of barrier membranes to provide space maintenance, wound stability, epithelial cell exclusion, and graft containment. Studies have found that the combination of GTR with bone grafts typically provides superior results to bone grafting alone and/or GTR alone.^{4,5} Maxxeus produces a full array of periodontal regenerative allografts including quality bone allografts and GTR membranes such as pericardium. This case report documents gains in bone growth and reduction in probing depths following use of Maxxeus allografts for treatment of intrabony periodontal defects.

Case Report

A 72 year Caucasian male was referred for treatment of deep probing depth at the distal of tooth #19 and mesial of tooth #18 (Figure 1). Pre-surgical radiographic evaluation revealed a significant vertical intrabony defect between the mandibular molars (Figure 2). Initial probing depths were 9.0 mm and both bleeding and suppuration were elicited upon probing.

A full thickness mucoperiosteal flap was reflected from the mesial of tooth #17 to the mesial of tooth #20. The intrabony defect between teeth 18/19 was thoroughly debrided with hand instruments and ultrasonic scalers (Figure 3). Following copious irrigation with sterile saline, the defect was grafted with Maxxeus Cortical Bone 0.125-0.850mm and covered with BioXclude[®] amnion-chorion membrane from Snoasis Medical to achieve guided tissue regeneration.

The flap was replaced with 4-0 chromic gut sutures and the patient was provided with prescriptions for pain medications and antibiotics post-surgically.

Healing was uneventful and remaining sutures were removed 10 days after surgery. The patient was placed on a 3 month periodontal maintenance recall schedule. After 12 months of healing, the surgical site was re-examined radiographically and clinically. Probing depths between teeth #'s 18 and 19 were reduced to 3.0 mm with no bleeding or suppuration (Figure 5). The 12 month radiograph suggested significant osseous fill of the intrabony defect (Figure 6).

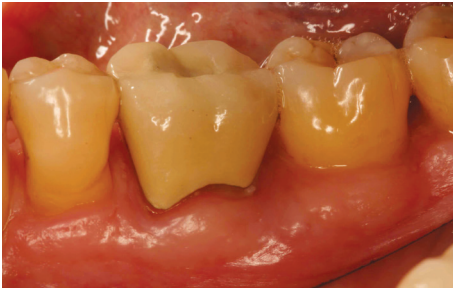


Figure 1: Pre-surgical clinical photo showing edematous and inflamed gingiva between teeth 18 and 19. Probing depths were 9.0 mm on both teeth.



Figure 2: Pre-surgical radiograph with suggestion of deep intrabony defect between teeth 18 and 19.

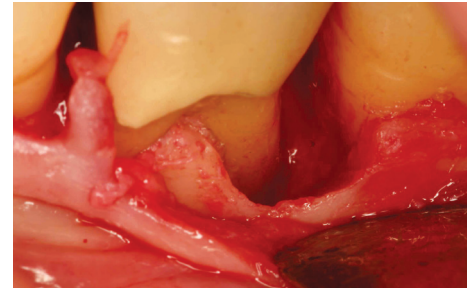


Figure 3: Degranulated intrabony defect between teeth 18 and 19 prior to grafting treatment.

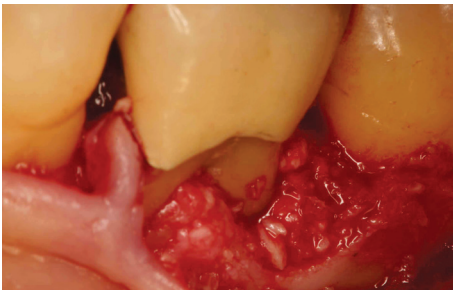


Figure 4: Intrabony defect between teeth 18 and 19 grafted with Maxxeus Cortical Bone 0.125-0.850mm.

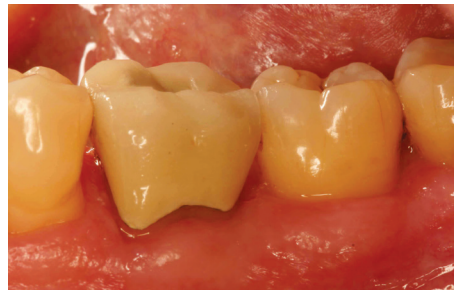


Figure 5: Post-surgical clinical photo showing healthy gingival tissue at the surgical site for teeth 18 and 19.



Figure 6: 12 month post-surgical radiograph showing significant regeneration of bone between teeth 18/19.



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