

## THE USE OF A COMPOSITE GRAFT (DOXYCYCLINE + CALCIUM SULPHATE + DEMINERALIZED FREEZE DRIED BONE) IN THE TREATMENT OF OSSEOUS DEFECTS : A CLINICAL, RADIOGRAPHIC AND HISTOLOGIC STUDY

Ghada A. Mansour and Shahira A. El Domiaty \*

### ABSTRACT

This controlled clinical study was designed to evaluate the outcome following surgical implantation of a composite graft (DFDBA+CS+doxycycline) in intrabony periodontal defects. 20 interproximal defects in 10 adult periodontitis patients constituted the study sample, and were randomly divided into 2 groups of 10 defects each either receiving the composite graft (group I), or CS+doxycycline (group II). Clinical parameters were assessed at baseline, 6 and 9 months post-surgically. An overall improvement in these parameters was found from baseline to 6 and 9 months in group I evidenced by PDR, AG and reduction of RBL, without a significant difference between 6 and 9 months ( $F=5.67, 5.87, 4.34$  respectively). Group II revealed comparable results only regarding PDR and AG ( $F=5.78, 4.88$  respectively). Comparison between both groups demonstrates that clinical recordings of group I are significantly higher than group II between baseline and 6 and 9 months, but not between 6 and 9 months. A histologic study was carried out to assess the nature of healing associated with these treatment modalities. 12 interproximal osseous defects were created bilaterally in 6 dogs around 3rd and 4th mandibular premolars. 8 weeks later, the animals were sacrificed, and the mandibles were processed for descriptive histology. Both groups revealed signs of periodontal regeneration, with better results shown by group I.

### INTRODUCTION

The treatment of intrabony defects is aimed at repairing or, ideally, regenerating the lost periodontium. New attachment and regeneration of the periodontium may be facilitated when the healing area is selectively repopulated with periodontal ligament cells.<sup>(1)</sup> Therapies capable of achieving this goal are osseous grafting, root surface conditioning, guided tissue regeneration, or a combination of these techniques.<sup>(2,3)</sup>

Decalcified freeze dried bone allograft (DFDBA) is the most widely used allograft material in periodontics<sup>(4)</sup> due to its availability, safety, osteoinductive and osteoconductive properties.<sup>(5,6)</sup> Results of human histologic studies have shown that DFDBA can promote the formation of a new attachment apparatus on previously diseased root surfaces including new cementum, bone and periodontal ligament.<sup>(7,8)</sup>

\*Lecturer of Oral Medicine, Periodontology, Oral Diagnosis and Radiology, Faculty of Dentistry, Alexandria University.