

Repair of Bone Defects with Absorbable Membranes: An Experimental Study on Rabbits

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Summary

Self-reinforced polyglycolic acid (SR-PGA) devices were developed in the mid-eighties, applied for fixation purposes and proved to be biocompatible. In this study SR-PGA membranes (10 x 10 mm) were used to augment defects on the medial aspect of distal femoral metaphysis in 31 New Zealand rabbits. Defects of 3.5 mm were either filled with autografts or left non-grafted. In a control group, no membranes were used. The rabbits were followed up for six, 12 and 24 weeks. Radiography, histology, oxytetracycline (OTC) fluorescence labelling and microradiography were used. Defects where membranes were used, healed by new bone formation. In some cases where polyglycolic acid (PGA) membranes were not used, defects were invaded by fibrous tissue. Membranes sometimes slipped away from their positions opposite to grafted defects. This study proved that the advantage of the use of PGA membranes could be taken in augmentation of cancellous bone defects in rabbits.



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