The Effect of Extracorporeal Shock Wave Therapy on the Repair of Articular Cartilage

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ABSTRACT

This study investigated the stimulative effect of extracorporeal shock wave therapy (ESWT) on the articular cartilage regeneration. Eight New Zealand rabbits were used and randomly assigned to A and B groups in the experiment, 4 rabbits for each group. An osteochondral defect, 3 mm in diameter and 3 mm in depth, was drilled in the patellar groove at the distal end of each femur. The left and right patellar defects were designated as the control and experimental samples, respectively. Only the right patellar defects (the experimental group) received 500 impulses of shock waves (at 14 kV) at one week after surgery. At 4 (group A) and 8 (group B) weeks after ESWT, cartilage repair was evaluated macroscopically and histologically. The preliminary results suggested that regeneration of articular cartilage defects might be promoted by ESWT, due to the release of growth-inducing substances such as basic fibroblast growth factor, insulin-like growth factor-I and transforming growth factor -＋β .

Keywords : extracorporeal shock wave the rapy ; cartilage ; repair ; H& ; E stain

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