

10. SELECTIVE WRIST ARTHRODESIS: STANDARD VS COMBINED GRAFT WITH STEM CELLS. EXPERIMENTAL RESEARCH

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Introduction. Selective arthrodesis is a surgical procedure used to be done in advanced wrist joint arthritis. The aim of the surgery is to achieve a stable joint, by intercarpal ankylosis, which removes the pain syndrome and restores the strength of the hand, unfortunately with the risk of decreasing the range of motion in the wrist joint.

Aim of study. Comparative evaluation of the method of selective wrist arthrodesis using standard vs combined graft with stem cells.

Methods and materials. Our study is based on experimental research on 10 New Zealand rabbits. In the first study group, on 5 laboratory animals was performed standard arthrodesis of wrist joint. In the second study group, on other 5 laboratory animals, was developed the new treatment technique using the combined graft with stem cells, obtained by tissue engineering.

Results. In all cases, an immediate postoperative radiograph was performed. The clinical and radiological evaluation, performed at 4, 8 and 12 weeks after the surgery. Computer tomography of each operated wrist was done 12 weeks postoperatively. Imagistic results showed us, that the group were performed arthrodesis using combined graft with stem cells, the ankylosis were achieved faster. Preliminary histological examinations of experiments indicate more active involvement in the process of osteogenesis in the use of combined stem cell transplantation.

Conclusions. Our experimental research highlights an innovative method of surgical treatment - arthrodesis using the combined graft with stem cells. It turned out to be a harmless and safe method. A comparative study with the standard treatment method was performed, the imaging and preliminary histological results are encouraging. The final analysis of the results is still in process.