

ELECTRONMICROSCOPIC STUDY OF POST-TRAUMATIC BONE REPAIR

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INTRODUCTION: Although bone histology, histomorphometry and immunohistochemistry studies have yielded a great deal of new information on the bone fracture repair, there are still gaps in knowledges of resorptive and formative processes in post-traumatic bone repair. The aim of the study was the comparative electronmicroscopic investigation of bone repair after internal fracture, osteotomy and bicortical perforation of tibia.

MATERIAL AND METHODS: The investigation was performed on 72 male Wistar rats (200-220 g) subdivided in the cases of osteotomy and perforation into control, training (swimming) and immobilization subgroups. Bone repair was observed during the first post-traumatic weeks.

RESULTS: Indirect ossification after internal fracture; primary periosteal, secondary endosteal ossification after osteotomy and primary endosteal, secondary periosteal ossification after perforation were noticed.

CONCLUSIONS: Although the bone repair in general had similar repair stages in all groups, the repair process was dependent on the mode and degree of injury thus being different in the experimental groups. The results of the electronmicroscopic study on the bone repair confirmed our previous reports on similar post-traumatic bone repair studies where basically routine histology, histomorphometry and immunohistochemistry were used.