

# Meniscectomy, meniscal repair, and prosthetic substitution

## Clinical and experimental investigations

Karola Messner (Sommerlath)

Department of Orthopedic Surgery and Sports Traumatology, Linköping University, S-58 185 Linköping, Sweden

This study is concerned with different treatment of meniscal injuries. The aim was to analyze today's clinical methods and the possibility for prosthetic substitution in the future. Open peripheral meniscal repair was compared with partial arthroscopic meniscectomy in a 7-year follow-up evaluation of 130 patients. The reoperation rate was about 25% after both alternatives. The patients' willingness to undergo repair, however, was low because of the long rehabilitation period. Meniscal repair led to greater improvement in function than did partial meniscectomy and was associated with a lesser degree of arthrosis. Knees with anterior cruciate ligament deficiency followed a clinical course dominated by the instability.

Meniscal substitution with a prosthesis of polyurethane-coated Dacron or Teflon or uncoated Teflon was studied in 114 rabbits. Despite their large size and mechanics different from those of a normal rabbit meniscus the Dacron prostheses became incorporated, with fibrous tissue ingrowth. Knees furnished with such a prosthesis developed less arthrosis on the tibial surface than did meniscectomized knees, but synovitis and osteophyte formation were common. Knees subjected to sham operation or meniscal incision showed no such changes. Knees furnished with a modified prosthesis of appropriate size and with improved material mechanics developed no naked-eye cartilage changes, but osteophyte formation, cartilage softening, and synovitis continued to appear. Despite better in vitro mechanics, uncoated prostheses gave inferior results owing to changes in shape and to debris formation during the implantation period. In ACL-deficient knees the benefits of a prosthesis were seen only during the first 6 weeks, when the prosthesis had been implanted immediately after meniscectomy. After 3 months differences in treatment could no longer be distinguished owing to the overall effects of ACL resection.

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