

Arthroscopic Meniscal Allografts Transplantation Without Bone Blocks: Evaluation With MR-Arthrography

Philippe P. Hardy, PhD, FRANCE
Thibaut Roumazielle, MD, FRANCE
Shahnaz Klouche, MD, FRANCE
Benoit Rousselin, FRANCE
Vito Bongiorno, MD, FRANCE
Nicolas Graveleau, MD, FRANCE
Nicolas Billot, FRANCE

Ambroise Pare Hospital
Boulogne-Billancourt, Ile de France, FRANCE

Summary:

This study has proved that meniscal allografts transplantation improved clinical status of the meniscectomized knees. The MR-arthrography showed that most patients had a total graft healing at 6-months follow up.

Abstract:

Introduction:

Meniscectomies in young patients are responsible of pain and limitation of activities. Meniscal allografts would restore the knee function and limit the development of osteoarthritis. The main objective of the study was to assess the healing of the graft after arthroscopic meniscal allograft transplantation (MAT) without bone plugs. The secondary objective was to evaluate the efficiency of this treatment.

Methods:

A retrospective study included all patients who underwent arthroscopic MAT between May 2005 and September 2010 in our institution. The MAT indications were (1) pain and/or functional sequelae (2) due to previous total or subtotal meniscectomy (3) in young patients (≤ 45 years old). The surgical technique was completely arthroscopic with an insertion of the meniscal horns without bone blocks. The primary endpoint was the healing of the graft according to the Henning criteria on MR arthrography at 6 months. The secondary end points were the KOOS questionnaire, the IKDC subjective score, the joint line space measurement on Schuss view and the positioning of the graft on MRI after at least two years of follow-up. The series included 22 patients, 8 women and 14 men, mean age 37 ± 7.5 years. The lesion involved the lateral meniscus in 19 cases and the medial meniscus in 3 cases. The average follow-up was 4.4 ± 1.6 years with one patient lost to follow-up. No revision surgery was performed.

Results:

At 6-months follow up, MR arthrography was performed in 14/21 patients: 8/14 (57.1%) had a total graft healing, 2/14 (14.3%) a partial healing and 4/14 (28.6%) no healing. At last follow-up, the mean KOOS score was significantly improved: the score "Pain" from 50.2 ± 21.7 to 74.3 ± 18.2 ($p=0.001$), the score "Symptoms" from 51 ± 20 to 64.3 ± 16.7 ($p=0.046$), the score "Daily Life" from 62.4 ± 24 to 83 ± 19.6 ($p=0.0005$), the score "Activities" from 30.3 ± 26.4 to 48.1 ± 24.8 ($p=0.03$) and the score "Quality of Life" from 27.2 ± 22.1 to 42 ± 20.1 ($p=0.046$). The mean IKDC subjective score was 48.1 ± 16.1 preoperatively and 60.5 ± 17.4 at last follow-up ($p=0.02$). The average thickness of the joint space was similar preoperatively (3.7 ± 1.7 mm) and at last follow-up (3.2 ± 2.6 mm), $p=0.3$. At last follow-up, MRI showed meniscal extrusion in 75% of patients.

Conclusion:

The technique of MAT without bone blocks is efficient in treating painful and functional sequelae due to meniscectomy. At 6-month follow-up, most patients had a total graft healing. On the other hand, most meniscuses

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were extruded at last follow-up. Long-term effects of meniscal extrusion must be evaluated.