

Giovanni Ravazzolo, MD, Italy

Massimo Molinari, MD, Italy

Elizaveta Kon, MD, Italy · Istituto Ortopedico Rizzoli Bologna, Italy

Summary:

Improvements in pain, Tegner index, IKDC score and joint-line preservation were detected with use of Medial Collagen Meniscus Implant compared to Partial Medial Meniscectomy at a minimum 10 year FU.

Abstract:

Introduction: We hypothesized that patients receiving a medial collagen meniscus implant (MCMI) would show better clinical, radiographic and Magnetic Resonance Imaging (MRI) outcomes than patients treated with partial medial meniscectomy (PMM) at minimum 10 year FU.

Material and Methods: Thirty-three non-randomized patients (males, mean age 40 years) were enrolled in the study to receive a MCMI (17 patients) or as control treated with a PMM (16 patients).

All of them were clinically evaluated at time zero, 5 and minimum 10 years after surgery (mean FU 133 months, range 120-145) by Lysholm, VAS for pain, objective IKDC knee form and Tegner activity level. SF-36 score was performed pre-operatively and at final FU.

Bilateral weight-bearing XRays were executed at time zero and at final FU. Minimum 10 years FU MRI images were compared with collected pre-operative MRI images by means of Yulish score. Genovese score was also used to evaluate MCMI MRI survivorship.

Results: MCMI group showed significantly lower VAS for pain ($p=0.0091$), higher objective IKDC ($p=0.0026$), Tegner index ($p=0.0259$) and SF-36 ($p=0.0259$ for PHI and $p=0.0036$ for MHI) scores compared with PMM group at minimum 10 year FU.

Radiographic evaluation showed a significantly lower medial joint line height ($p=0.0002$) and side-to-side difference ($p=0.0003$) narrowing in MCMI group respect to PMM group at final FU.

Discussion: Improvements in pain relief, activity level, objective IKDC score and joint-line preservation are detectable with the use of MCMI at a minimum 10 year FU. This data support the use of meniscal scaffold to treat irreparable partial meniscal lesions.

Winner of the Nicola's Foundation Young Researchers Award

Twenty-Six Years of Meniscal Allograft Transplantation (MAT): Is It Still Experimental? Meta-Analysis of 44 Trials *Mohamed Elattar, MD, Belgium*
René E Verdonk, MD, PhD, Belgium

Karl Fredrik Almqvist, MD, PhD, Belgium

Peter Verdonk, MD, PhD, Belgium · Ghent University, Ghent, Belgium
 FDA Status Not Applicable

Abstract:

Introduction: Since the first MAT procedure in 1984, thousands of patients with post-meniscectomy symptoms have been treated through allograft replacement. Nevertheless, MAT is still considered experimental surgery.

Purpose: Collection, presentation and meta-analysis of published trials presenting outcomes of meniscal transplantation to establish safety and reliability of the MAT procedure.

Materials and Methods: A pubmed search was conducted using different combinations of keywords with reviewing of the abstracts excluding all but English-language trials that presented more than 6 months clinical, radiological and/or histological outcome in human subjects. We analyzed 44 trials presenting 1136 grafts in 1068 patients.

Results: The literature presented the outcomes of 678 medial and 458 lateral grafts in 613 male, 265 female and 190 non-defined patients with an average age of 34.8 years. Sixty-four percent of MATs were parts of combined procedures while only 36% were isolated. The outcomes were presented through 12 scoring systems, 4 radiographic modalities, 2nd look arthroscopy plus histological analysis. Whatever the follow-up period and the scoring system used, patients continuously showed clinical improvement. Failure rate averaged 10.6% and a total of 128 (21.3%) non-major complications, mainly observed in combined procedures, was reported.

Conclusion: Continuous satisfactory outcomes with restoration of working ability in this active patients group were observed in all studies. The complication and failure rate are considered acceptable by all authors. Salvage procedures included osteotomy and arthroplasty without secondary difficulties. MAT can be considered safe and reliable for the treatment of refractory post-meniscectomy symptoms in selected patients.

Winner of the Achilles Orthopedic Sports Medicine Research Award

Correlation of Clinical and MRI findings in Professional Dancers' Hip: A New Femoroacetabular Impingement? *Victoria B. Duthon, Resident, Switzerland*

Frank Kolo Christophe, MD, Switzerland
Caecilia Charbonnier, PhD, Switzerland
Sylvain Duc, MD, Switzerland
Christian W. Pfirrmann, MD, Switzerland

NADIA MAGNENAT-THALMANN, PhD, SWITZERLAND

CHRISTOPH D BECKER, MD, SWITZERLAND

PIERRE HOFFMEYER, PROFESSOR, SWITZERLAND

JACQUES MÉNÉTREY, MD, SWITZERLAND · Hôpitaux Universitaires de Genève, Geneva, SWITZERLAND

No financial conflicts to disclose

Abstract:

Background: Professional ballet dancers use extreme hip range of motion (ROM) to achieve ideal ballet technique. Many of them complain of inguinal pain during dancing, and they are at higher risk to present early hip osteoarthritis.

Purpose: Aims of the study were to clinically evaluate dancers' hip, to look for femoroacetabular lesions with MRI explaining their groin pain, to assess femoroacetabular joint congruency in splits, to correlate clinical to MRI findings to MRI.

Study Design: Case-control Study

Methods: Professional female ballet dancers and active healthy female matched for age (control group) completed a questionnaire on hip pain, underwent hip examination with impingement tests and measures of passive range of motion (ROM). All had hips MRI, back-lying, and while doing splits for dancers, to look for femoroacetabular morphology, lesions and congruency.

Results: We recruited 20 professional ballet dancers and 15 healthy active female as controls. 12/20 dancers complained of groin pain, only while dancing; control group was asymptomatic. The mean hip dancers' ROM was 133/0/19 in F/E, 56/0/20 in Abd/Add, and 33/0/56 in IR/ER; and 127/0/20 in F/E, 46/0/20 in Abd/Add and 40/0/44 in IR/ER for controls. MRI revealed a mean acetabular depth of 7.9 mm for dancers and 8.8 mm for controls, a mean neck-shaft angle of 132° for dancers and

135° for controls, and a mean femoral neck anteversion of 12° for dancers and 14° for controls. Mean alpha angle in anterior position is 48° (range 39.9-68.3) for dancers and 47.5° (range 39-55.1) for controls, and 53° (38.2-76) for dancers and 47.5° (37.3-62.3) for controls in antero-superior position. Cam morphology was found in only one dancer, none in the control group. MRI of dancers doing splits showed a femoroacetabular subluxation of 2.05 mm (range 0.63-3.56 mm) and 3 types of lesions: labral tears, cartilage thinning, and pits, in superior/postero-superior position. Lesions on MRI were the same for symptomatic and asymptomatic dancers.

Conclusion: Dancer's passive hip ROM is normal and comparable to control group. In this study, almost all ballet dancers present labral and/or cartilaginous lesions on MRI, symptomatic only for some of them. No criteria in the data explain why some dancers present pain and/or femoroacetabular lesions while others don't. This discrepancy between clinical and MRI findings lets us think that surgical treatment should not be only based on MRI findings. Dancers' labral and acetabular cartilaginous lesions are the same as those found in patients with femoroacetabular impingement. However, they were located in the superior or posterosuperior position of the acetabular rim, as opposed to the anterior or anterosuperior lesions found in patients with cam or pincer FAI type. In this study, only one hip presented a cam impingement explaining usual MRI lesions. For the others, such lesions could be explained by repetitive extreme movements, leading to a superior/posterosuperior dance-related femoroacetabular impingement. Consequently, early osteoarthritis in dancers' hip could be prevented by limiting these extreme movements implying femoroacetabular abutment.