

Paper #67

Long-Term Survival of Meniscus Allograft Transplantation in an Arthritic Population: Time to Abandon Restricted Indications for Transplantation

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Summary:

Long-term survival of meniscus allograft transplantation and cartilage repair in arthritic patients

Abstract:

Introduction

Meniscus allograft transplant (MAT) is traditionally not recommended for patients with moderate to severe osteoarthritis. We hypothesize that clinical and graft survival of MAT will not be impacted by the severity of cartilage damage assessed by Outerbridge (OB) grade at the time of surgery, if the damaged cartilage is also treated.

Methods

Patients undergoing unicompartmental MAT consented to participate in this prospective IRB approved study. Clinical data and patient reported outcome measures (PROMs) were recorded for 343 procedures (310 patients). Articular cartilage damage was repaired at time of MAT, and intraoperative OB grade was recorded for later analysis. PROMS were assessed using WOMAC, IKDC and Tegner scores. Graft failure was defined as allograft removal without revision, progression to unicompartmental or total knee replacement. Clinical failure was defined as 10% increase in WOMAC pain score from baseline. Statistical analysis included χ^2 , t-tests, paired t-tests, Kaplan-Meier (KM) survival analysis and Cox proportional hazards model; $\alpha < 0.05$.

Results

Intraoperative articular cartilage status did not significantly affect graft failure (log-rank test, $p=0.206$) or clinical failure (log-rank test, $p=0.889$) as assessed by KM survival analysis. Mean graft survival and clinical survival were 17.8 years and 16.7 years respectively. 245/343 (71.4%) patients had moderate to severe articular cartilage changes (OB III-IV); of which 198/245 (80.8%) had previous or concomitant articular cartilage repair. Patients greater than 2 years post-op experienced significant ($P=0.0001$) improvement in PROMs as measured by pain, activity and function; mean follow-up time was 5.72 ± 4.37 years. Mean age at time of surgery was 42.9 ± 11.6 years.

Discussion

ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

12th Biennial ISAKOS Congress • May 12-16, 2019 • Cancun, Mexico

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Graft and clinical survival is independent of OA status, measured by ipsilateral compartment OB grade at time of surgery, provided chondral lesions are repaired prior to or during MAT. Mean estimated benefit time is 16 years. Indications for MAT should be expanded to include older subjects with more severe cartilage degenerative changes.

SIGNIFICANCE/CLINICAL RELEVANCE: This data provides support for the field of biological joint replacement and the treatment of arthritic knees with tissue regeneration and replacement.