

The Use of Osteochondral Allograft Transplantation for Primary Treatment of Cartilage Injuries in the Knee

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Summary:

Osteochondral allograft transplantation is an acceptable primary treatment method for some chondral and osteochondral defects of the knee

Abstract:

BACKGROUND

In most treatment algorithms, osteochondral allograft (OCA) transplantation is regarded as a salvage procedure when previous treatments have failed. No publications have assessed the outcome of OCA transplantation used as primary treatment for cartilage lesions in the knee.

Purpose: To assess the clinical outcome of OCA transplantation used as primary treatment for chondral and osteochondral lesions in the knee.

METHODS

Our OCA outcomes database was used to identify 61 patients (55 knees) who underwent OCA transplantation as primary treatment for a chondral or osteochondral defect and had a minimum follow-up of two years. None of the patients had previous surgery on the involved knee prior to the OCA. Included in the analysis were 30 males and 25 females with a mean age of 32.9 years (range 15.7-67.8 years). The mean follow-up duration was 7.6 years (range, 1.9 to 22.6 years). The most common diagnoses were osteochondritis dissecans (44%) and avascular necrosis (31%), followed by osteoarthritis (8%), degenerative chondral lesion (7%), traumatic chondral injury (7%), and fracture (3%). The mean graft area was 9.6 cm². The majority of grafts were located on the medial (47%) and lateral (25%) femoral condyles. Thirty-five patients (57%) had one graft, 22 (36%) had two grafts, and 4 (6.6%) had three grafts. Each patient was evaluated pre- and postoperatively with the International Knee Documentation Committee (IKDC), a modified Merle d'Aubigné-Postel (18-point) scale, and Knee Society function (KS-F) score. Patients came in for a clinical evaluation or were contacted via telephone for follow-up. The number and type of reoperations following the OCA transplantation was captured. Failure was defined as revision OCA or conversion to arthroplasty. Patient satisfaction was assessed.

RESULTS

Eleven knees (18%) were considered OCA failures with eight conversions to arthroplasty, two revision OCA, and one patellectomy. Seven knees (11%) had procedures unrelated to the allograft. The median time to failure was 3.5 years (range, 0.5-13.7 years). OCA survivorship was 89% at 5 years and 75% at 10 years. Forty-three (70%) knees had their OCA still in situ at latest follow-up. Thirty-eight (84%) were rated good/excellent on the 18-point scale. Mean scores on the IKDC, KS, and KOOS improved from preoperatively to postoperatively. Eighty-six percent of patients reported being "extremely satisfied" or "satisfied."

CONCLUSIONS

OCA transplantation is an acceptable primary treatment method for some chondral and osteochondral defects of the knee. Failure of previous surgical treatment is not a prerequisite for OCA surgery. Outcomes in this group are

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comparable to other cartilage repair treatment options.

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