

Osteochondral Allograft Transplantation For Knee Lesions After Failure Of Cartilage Repair Surgery

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Summary:

OCA transplantation is a successful salvage surgical treatment after cartilage repair procedures. This cohort shows improved survivorship and functional outcomes of OCA transplantation after SMS, ACI and OAT.

Abstract:

INTRODUCTION

In most treatment algorithms, osteochondral allograft (OCA) transplantation is regarded as an alternative salvage procedure when previous reparative treatments fail.

Purpose: The purpose of this study was to assess the outcome of OCA transplantation as a salvage procedure after various cartilage repair surgeries.

STUDY DESIGN

Retrospective Cohort

METHODS

164 knees in 163 patients (mean age, 32.6 years; range 11-59 years; 55% males) were treated with OCA transplantation after subchondral marrow stimulation (SMS), osteochondral autograft transplantation (OAT), and autologous chondrocyte implantation (ACI). The majority of previous procedures were isolated SMS in 145 knees (88.4%). Mean allograft size was 8.5 ± 7.9 cm². The most common location was in medial femoral condyle (73%) followed by lateral femoral condyle (27%) and trochlea (9.2%). The number and type of reoperations on the operative knee were assessed. Failure of the OCA transplantation was defined as any reoperation resulting in removal of the allograft. Functional outcomes were evaluated using the modified Merle d'Aubigné-Postel (18-point) scale, International Knee Documentation Committee (IKDC) subjective knee evaluation form, Knee injury and Osteoarthritis Outcome Score (KOOS), and the Knee Society function (KS-F) scale. Patient satisfaction using a five point scale from "extremely satisfied" to "extremely dissatisfied" was recorded at latest follow-up.

RESULTS

Sixty-eight knees had reoperations after OCA transplantation. Thirty-one knees (18.9%) were classified as allograft failures (18 total knee arthroplasties, 9 OCA revisions, 2 unicompartmental knee arthroplasties, 1 patellofemoral arthroplasty, and 1 arthrodesis). The median time to failure was 2.6 ± 6.8 years (range, 0.7 to 23.4 years). Survivorship of the graft was 82% at 10 years and 74.9% at 15 years. Patients whose grafts were still in situ had a mean of 8.5 ± 5.6 years of follow-up. Scores on all functional outcomes scales improved significantly from preoperatively to latest follow-up. Eighty-nine percent of OCA transplantation patients reported being "extremely satisfied" or "satisfied."

CONCLUSION

OCA transplantation is a successful salvage surgical treatment after cartilage repair procedures. This cohort shows

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improved survivorship and functional outcomes of OCA transplantation after SMS, ACI and OAT.
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