KEY PROCEDURES

OSTEOCHONDRAL ALLOGRAFT CARTILAGE TRANSPLANTATION FOR A FULL-THICKNESS FEMORAL CONDYLE CHONDRAL LESION

Kelsey L. Wise, MD, Taylor J. Ridley, MD, Jeffrey M. Macalena, MD

Published outcomes of this procedure can be found at: *Arthroscopy*. 2013 Mar;29(3):575-88, *Arthrosc Tech*. 2016 Feb 15;5(1):e157-61, and *J Am Acad Orthop Surg*. 2014 Feb;22(2):121-33.

Investigation performed at the University of Minnesota, Minneapolis, Minnesota

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Abstract

Cartilage lesions of the knee pose a difficult challenge for orthopaedic surgeons. Osteochondral allograft transplantation is an option in the setting of large chondral or osseous defects, or after failure of other treatment options¹⁻³. The use of allograft offers the benefit of utilizing both viable hyaline cartilage and bone⁴. Fresh allografts are usually transplanted into the femoral condyle, although they can also be used in the patella, tibial plateau, or femoral trochlea¹. Research has shown that patients who undergo this procedure for the treatment of focal and diffuse chondral defects have favorable outcomes and satisfaction scores¹. The procedure is performed as follows. (1) Preoperative evaluation: patients are evaluated for a cartilage procedure after obtaining history, examination, and imaging (radiographs and magnetic resonance imaging). (2) Approach: a longitudinal parapatellar tendon arthrotomy is performed. (3) Debridement: the lesion is identified, and unstable cartilage is debrided back to stable cartilage. (4) Measure defect: the recipient site depth is measured in 4 positions, as on the face of a clock (12, 3, 6, and 9 o'clock). (5) Template allograft: a sizer is used to template the allograft hemicondyle. (6) Secure and harvest allograft: the allograft is secured in the Osteochondral Allograft Transplantation Surgery (OATS) Workstation (Arthrex) and harvested from cadaver bone. (7) Measure depth: the recipient depth measurements are marked on the allograft. (8) Cut graft: the graft is held with allograft-holding forceps while graft is cut with a saw. (9) Check measurements: allograft measurements are checked to ensure that they match recipient measurements. (10) Round edges: the osseous ends are rounded to assist with insertion of graft. (11) Irrigate: the allograft is irrigated after final cuts. (12) Graft insertion: the graft is inserted after lining up the 12-o'clock position recipient and donor reference marks and is held in place with a press fit. (13) Closure: standard closure in layers is performed.

Kelsey L. Wise, MD¹

Taylor J. Ridley, MD¹

Jeffrey M. Macalena, MD¹

¹University of Minnesota, Minneapolis, Minnesota

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E-mail address for K.L. Wise: kwise@umn.edu

ORCID iD for K.L. Wise: [0000-0003-3731-0929](https://orcid.org/0000-0003-3731-0929)

ORCID iD for T.J. Ridley: [0000-0003-3867-6738](https://orcid.org/0000-0003-3867-6738)

ORCID iD for J.M. Macalena: [0000-0003-3930-9964](https://orcid.org/0000-0003-3930-9964)

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