

Publication

Anterior cruciate ligament reconstruction by using bioabsorbable femoral cross pins : MR imaging findings at follow-up and comparison with clinical findings

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 1192955

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Year 2010

Title Anterior cruciate ligament reconstruction by using bioabsorbable femoral cross pins : MR imaging findings at follow-up and comparison with clinical findings

Journal Radiology

Volume 255

Number 1

Pages / Article-Number 108-16

PURPOSE: To determine the frequency of imaging findings and complications related to bioabsorbable femoral cross pins at follow-up magnetic resonance (MR) imaging studies after anterior cruciate ligament (ACL) reconstruction and compare these MR imaging findings with clinical evaluation findings. **MATERIALS AND METHODS:** The institutional review board approved this retrospective study, and informed consent was waived. Follow-up MR imaging studies (average, 26 months after surgery) in 218 patients with prior ACL reconstruction were retrospectively reviewed. Cross-pin fracture, posterior transcortical breach, migration, resorption, and lateral prominence of cross pins, as well as the cross-pin angle relative to the transepicondylar line, were investigated on MR images. The clinical evaluation included Lachman, anterior drawer, and pivot shift tests, as well as assessment for joint tenderness. **RESULTS:** Fracture, posterior transcortical breach, migration, and lateral prominence of cross pins were excluded from analysis when at least one cross pin was completely resorbed ($n = 16$ patients). Forty-five fractured cross pins were seen in 35 (17%) of 202 patients. The posterior femoral cortex was breached in 57 (28%) of 202 patients. Migration of fractured pin fragments occurred in 12 (6%) of 202 patients. There was a significant relationship between fractures and posterior breach of cross pins ($P = .001$), as well as between cross-pin angles and fractures ($P = .002$). Both cross pins were completely resorbed in 12 (6%) of 218 patients (average time since surgery, 53 months; range, 8-92 months). No significant association was found between any MR imaging finding related to cross pins and clinical test findings. **CONCLUSION:** Fracture and posterior transcortical breach of bioabsorbable femoral cross pins, commonly seen at follow-up MR imaging studies, do not correlate with clinical findings of joint instability or pain. Posteriorly angulated cross pins and posterior transcortical breach are significantly associated with cross-pin fractures.

Publisher The Radiological Society of North America

ISSN/ISBN 0033-8419

edoc-URL <http://edoc.unibas.ch/dok/A6003203>

Full Text on edoc No;

Digital Object Identifier DOI 10.1148/radiol.09091119

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/20308449>

ISI-Number WOS:000275863000015

