Acute Achilles Rupture and Surgical Treatment: A United States Database Study of Incidence, Demographics and Complications

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Disclosures

Consultant
Arteriocyte, Inc.

Research Support
Ohnell Family Foundation
Mr. & Mrs. Michael J. Levitt
Arteriocyte, Inc.

Board Member
European Society of Sports Traumatology, Knee Surgery, and Arthroscopy (ESSKA)
International Society for Cartilage Repair of the Ankle (ISCRA)
Concerns with AOT Procedure

• Donor site concerns arising from taking graft from asymptomatic knee

• Occurrence 12-14 % - Zengerink et al

• Rates of up to 50% have been reported - Valderrabano et al

• What correlates with outcome
  – Patient Factors ?
  – MRI Findings ?
Hypothesis

Donor site morbidity at mid-term follow up would be low.

Good functional outcomes would be seen at donor knee.

MRI finding at the donor site would not correlate with clinical outcomes.
Methods

- 39 patients underwent AOT of the talus
- Donor graft taken from the lateral femoral condyle → filled with biphasic plug
- Donor site morbidity was assessed at 24 months and at final follow up with Lysholm score was used to assess outcomes
- Post-operative MRI of the donor knee in all cases were graded using the MOCART scoring system.
- Assessed for correlation between clinical and imaging outcomes
Clinical Outcomes

- Donor site morbidity at 24 months = 15%
- By final follow up (mean 41 months) donor site morbidity = 5%
- Mean Lysholm in patients with donor site morbidity was 88.7
- Patella maltracking in 3/6 patients at 2 years – resolved with PT and steroid injection
- No correlation with age, gender or size or number of plugs and donor site morbidity (p > 0.05)
Radiographic Outcomes

- Overall MOCART score = 60 (Range 30-90)

- No correlation between MOCART score and clinical outcomes

- Significantly worse MOCART score seen in double plug compared to single (p=0.03)

- MOCART scores for MRI taken >24 months = 65 compared to 58.4 for those taken <24 months (p= 0.14)
Discussion

Is Donor Site Morbidity a Concern?

• Paul et al (2009)
  • 112 patients with donor sites taken from ipsilateral knee
  • Mean Lysholm score of 89
  • Concluded good functional outcomes and low donor site morbidity

• Yoon et al (2014)
  • 22 patients
  • 9% early donor site morbidity, with 100% resolution by 48 months

• Hangody et al (2010)
  • 354 patients (athletic population) with knee as the donor site
  • 5% long lasting donor site morbidity
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Can MRI predict outcomes?

• De Windt et al (2013)
  - Systematic review assessing the predictive value of MRI imaging for cartilage repair in the knee
  - 28% of studies showed correlation of MOCART and clinical outcomes

• Filardo et al (2014)
  - 240 MRI after cartilage repair in knee (MACI)
  - Presence of subchondral edema did not correlate with clinical outcomes
Discussion

Do we need to back-fill donor site?

• Sward et al (2012)
  • Acute knee injury and hemarthrosis leads to release of pro-inflammatory cytokines / Proteases

• Quarch et al (2014)
  • Assessed donor site morbidity if donor sites filled with synthetic plugs of 37 patients
  • Reported poor osseous integration at 2 years despite donor site morbidity rates of 5%
  • No significant difference in outcomes between defect left untreated and those filled with synthetic plugs (p>0.05)
Conclusions

Donor site morbidity was low at mid-term follow up.

Inflammation and scar tissue at the lateral capsule may cause knee symptoms.

MRI not predictive of outcomes at the donor site.

Use of synthetic plugs showed good outcomes despite variable integration seen on MRI.
References