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Arthroscopic Treatment of Cystic Talus Osteochondral Lesions: Long-Term Results

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BACKGROUND/AIMS
- Osteochondral lesions of the talus (OCLT) are commonly seen with traumatic ankle injuries
- OCLTs can be difficult to treat
- Other etiologies: repetitive microtrauma, degenerative joint arthropathy, metabolic derangements
- Can significantly impact patients’ occupations and activities of daily living
- Nonoperative treatment include bracing, physical therapy, injections
- Conventional operative strategies include:
  - Arthroscopic debridement and bone marrow stimulation techniques
  - Including microfracture, curettage, abrasion chondroplasty and antegrade/retrograde drilling
  - Fibrocartilage
  - Effective for small lesions
- Osteochondral allografts or autologous chondrocyte implantation.
- Larger lesions with accompanying subchondral bone
- More invasive treatment which may require harvesting from the knee or malleolar osteotomies, which have associated donor site morbidities and complications of osteotomy healing.
- We describe an alternative method, an all-arthroscopic technique to treat these large OCLTs, and sought to determine long-term quality of life metrics for a cohort of patients.

TECHNIQUE
- Supine position, ankle within noninvasive distraction (Figure 1)
- Begin with diagnostic ankle arthroscopy under standard settings using a 2.7 mm scope (30-35 mm Hg water pressure)
- Location and size of defect is noted using measuring probe (Figure 2)
- Begin with diagnostic ankle arthroscopy under standard settings using
- Bone graft and Allograft cartilage are loaded retrograde into arthroscopic cannulas to allow for easier delivery
- This may be an effective long-term treatment for patients with difficult to treat OCLTs.

METHODS
- Single surgeon
- 6 patients with difficult to treat OCLTs from 2010-2012
- Underwent arthroscopic-assisted implantation of particulated juvenile allograft cartilage along with autogenous bone grafting from the calcaneus
- Inclusion criteria (at least 2 of the following)
  - Shoulder lesions
  - Lesion size > 125 mm²
  - Failed previous microfracture treatment
  - Age > 40 with BMI > 25 kg/m²
- All 6 patients fully evaluated with physical examination, patient interviews, and outcome score measures
- Follow-up completed at 2 years, 4 years, and between 6-9 years at most recent follow-up
- Functional outcome score measures analyzed:
  - Visual Analog Score (VAS)
  - Foot and Ankle Ability Measures (FAAM) Scores and Activities of Daily Living (ADL)
  - AOFAS Score
- Short Form-36 (SF-36) Physical and Mental Component Scores (PCS/MCS)
- Wilcoxon Signed Ranked Test used to compare values

RESULTS
- Average age: 43.8 ± 14.0 years
- Average BMI: 28.4 ± 6.7 kg/m²
- Average lesion sizes of 188.5 ± 50.9 mm² (range: 125-260 mm²)
- Average most recent follow-up of 8.4 ± 1.2 years (range: 6.0-9.3 years).
- Post-operatively:
  - Average VAS pain scores decreased by 4.2 points, 95% CI [1.6-6.8].
  - Average FAAM ADL scores improved from 41.8 to 72.5, 95% CI [11.3-50.1].
  - Average SF-36 Physical Component Scores also showed significant improvement by 37.8 points, 95% CI [20.8-54.8].
  - Average FAAM Sports (p = 0.055) and AOFAS (p = 0.066) scores clinically improved from 13.3 to 39.2 and 57.7 to 96.3, respectively, and approached statistical significance.
- There were no intraoperative or perioperative complications with calcaneal bone grafting.

CONCLUSION
- Small cohort of patients followed over the course of ~8 years
- Patients significantly improved compared to pre-operative measures, with no complications observed after implantation of particulated juvenile allograft cartilage and autogenous calcaneal bone.
- This may be an effective long-term treatment for patients with difficult to treat OCLTs.

REFERENCES
