(15 years) survival in 92 TKA patients randomized to cemented (n = 45) or cementless (n = 47) fixation. The cementless implants consisted of a porous fiber-metal mesh femoral component and a trabecular metal modular tibial component; the cemented implants were precoated femoral and tibial components. All designs were fixed bearing and cruciate retaining. Knee Society Scores and Oxford Knee Scores were collected prior to surgery and at 4 weeks, 4 months, and 1 and 2 years. Pain was assessed using a visual analog scale preoperatively and at 4 weeks and 4 months. Alignment was assessed using radiographic analysis. Postoperative complications were recorded. All patients received routine antibiotic and aspirin prophylaxis, and all had identical rehabilitation protocols.

The cementless approach was associated with a shorter surgical time (74 vs 81 minutes) but no difference in blood loss. Early pain scores (at 4 months) were higher, but not significantly so, in the cementless group. Dr Fricka suggested that this was likely due to the time needed for osseointegration. Knee Society Scores showed no difference in function at 2 years, but patients in the cemented group had slightly higher clinical scores (96.3 vs 92.3; $P = .3$). Oxford Knee Scores and patient-reported satisfaction, pain levels, and improved function were similar. There were 2 revisions: 1 in the cementless group for instability and 1 in the cemented group for infection. Overall limb alignment was similar on radiographic analysis (Table 1). A nonprogressive radiolucency was identified in 11 patients in the cementless group (vs none in the cemented group). Varus subsidence of the tibia was noted in 4 knees in the cementless group; none have required revision. Of the 11 patients who had staged bilateral TKA with 1 cemented and 1 cementless fixation, 9 patients had no preference, and 2 preferred the cementless design.

This study is limited by its small sample size (although it was sufficient to perform a power analysis) and short follow-up. Additional follow-up is planned for these patients at 5, 10, and 15 years to assess whether cementless fixation provides an overall survivorship advantage.

Table 1. Radiographic Outcomes: Long Alignment Tibiofemoral Angle at 2 Years

	Cemented	Cementless
Tibiofemoral angle, degrees	6.6	6.2
6° ± 3°, % of patients	90	86

Reproduced with permission from KB Fricka, MD.

The Impact of CLAI on Patients With Osteochondral Lesions of the Talus

Written by Maria Vinall

Patients with an osteochondral lesion of the talus (OLT) and chronic lateral ankle instability (CLAI) have an increased proportion of larger chondral lesions compared with patients without instability. They are also more likely to have an increased incidence of lateral OLTs, additional chondral lesions at the tip of the medial malleolus, and a higher likelihood of treatment failure.

OLT is a form of chondral injury in the ankle for which trauma is the dominant etiology. Although CLAI can be considered a form of ongoing microtrauma and thus may influence lesion prognosis and characteristics, the association between the duration of the instability and the severity of OLT remains controversial. Moses Lee, MD, Department of Orthopaedic Surgery, Yonsei University College of Medicine, Seoul, Korea, presented the results of a study designed to determine the effect of, and clinical outcomes associated with, long-standing ankle instability in OLT.

The study comprised 420 patients who received primary arthroscopic marrow stimulation for OLT, 74 with CLAI and 148 without CLAI, matched for age, sex, body mass index, and trauma history. All patients had a history of repetitive inversion sprain and positive findings on stress radiography. Participants were approximately 36 years old, around 60% were men, and study follow-up was approximately 53 months. Demographics and lesion characteristics were compared using preoperative magnetic resonance imaging (MRI) and arthroscopy. Clinical evaluations (the visual analog scale [VAS] for pain, American Orthopaedic Foot & Ankle Society [AOFAS] Ankle-Hindfoot score, and Foot and Ankle Outcomes Score [FAOS]) were performed at 6 weeks; 3, 6, and 12 months; then annually. Radiographic and arthroscopic analysis of the lesion was based on the preoperative MRI with an ellipse formula of coronal length by sagittal length times 0.79. Lesions ≥ 150 mm^2 were defined as large.

Most OLTs were located on the medial side; however, the incidence of lateral OLTs was significantly increased in patients with CLAI vs those without it ($P < .018$). Patients with CLAI were also significantly more likely to have a chondral lesion at the tip of the medial malleolus (42% vs 7%; $P < .018$).

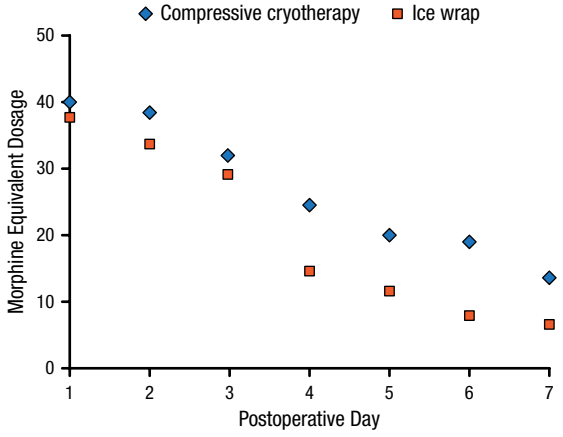
The proportion of large lesions was significantly higher among patients with OLT and CLAI (20.2%) compared with those without CLAI (9.4%; $P = .024$), although the average lesion size was not significantly different

(99.5 ± 51.8 mm^2 vs 86.9 ± 46.2 mm^2). Neither degree nor duration of instability correlated with lesion size. Having CLAI was associated with an increase in ossicle and osteophyte lesions and with syndesmosis widening (all $P < .04$).

Compared with their preoperative scores, clinical outcomes (VAS and AOFAS) were improved for both groups at the last follow-up; however, there was no significant difference in clinical outcomes between the groups at the preoperative stage or at the last follow-up. Significantly more patients with CLAI were considered treatment failures (AOFAS score < 80; $P = .034$). Scores on the FAOS were similar for the 2 groups, except for the Sports/Recreation subscale, which was significantly worse ($P = .005$) for patients with instability.

These results support earlier studies showing an increase in chondral lesions at the tip of the medial malleolus [Sugimoto K et al. *J Bone Joint Surg Am.* 2009]. Importantly, they also provide data indicating increased clinical failure among these patients and inferior performance in sports and recreational activities.

Figure 1. Effect of Compressive Cryotherapy vs Cryotherapy Alone on Morphine Equivalent Units



Reproduced with permission from MJ Kraeutler, BS.

No Additional Benefit With Compressive Cryotherapy After Arthroscopic Shoulder Surgery

Written by Emma Hitt Nichols, PhD

Compressive cryotherapy did not reduce postoperative pain compared with standard cryotherapy in patients who underwent arthroscopic rotator cuff repair (RCR) or subacromial decompression (SAD). Matthew J. Kraeutler, BS, CU Sports Medicine, Boulder, Colorado, USA, presented data from the Compression and Cold Therapy on the Post-Operative Shoulder trial [NCT00703729].

Pain control after RCR and SAD remains a problem. Previous studies have shown reduction in pain with use of cryotherapy in patients following RCR or arthroscopic SAD. In total knee arthroplasty, anterior cruciate ligament reconstruction, and wrist arthroscopy, compressive cryotherapy was demonstrated to improve postoperative pain scores. The purpose of this trial was to evaluate the effect of compressive cryotherapy on postoperative pain in patients following arthroscopic RCR or SAD.

In the prospective, open-label trial, 46 patients undergoing RCR or SAD were randomly assigned to receive compressive cryotherapy (n = 25) or cryotherapy alone (n = 21) for the first postoperative week. Patients randomized to the compressive cryotherapy group used an inflatable shoulder sleeve with an electric pump that filled the sleeve with compressed air and ice water, whereas the cryotherapy-alone group used a standard ACE wrap with ice. Patient-reported pain levels were assessed twice daily with a diary that included a visual analog score, and pain medications were documented and dosages were converted to morphine equivalent dosage.

There was no significant difference in average or worst pain among patients who were treated with compressive cryotherapy or cryotherapy alone during the study period. Similarly, there was no significant difference in morphine equivalent dosage over the 7 days after operation among the 2 arms (Figure 1). In addition, there was no difference in pain between the compressive cryotherapy and cryotherapy-alone groups.

In conclusion, compressive cryotherapy did not reduce postoperative pain after RCR or SAD compared with standard cryotherapy. The results of this study suggest that compressive cryotherapy could not be recommended over standard therapy for the reduction of pain after RCR or SAD. Further studies are needed to evaluate the cost-effectiveness of compressive cryotherapy compared with traditional cryotherapy.