Cooled Radiofrequency Ablation of Genicular Nerves in a Patient with Severe Knee Pain and History of Total Knee Replacement: A Case Report
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Introduction
Knee osteoarthritis is one of the common causes for knee pain in middle aged adults. Many patients are not surgical candidates for knee replacement and some continue to have debilitating pain post knee replacement. Cooled radiofrequency ablation has been proven to have good longterm pain relief in patients with and without total knee replacement.

Case presentation
We present a case of a 63 year old female with history of bilateral total knee replacement secondary to severe osteoarthritis who presented with complaints of bilateral knee pain. The pain was achy, non radiating, worse with walking, improved with rest, present for several months, progressively worsening, at its worse was 8/10 and improved to 4/10 at its best with medications. She was taking Norco 7.5/325 mg TID and naproxen 500 mg BID. Despite her pain regimen, she continued to complain for functional decline, decreasing interest in her daily activity leading to poor quality of life. On physical exam, she demonstrated tenderness to palpation along the medial joint line, decreased range of motion of the knees. Patient was scheduled for a diagnostic genicular nerve block of superior lateral, superior medial and inferior medial genicular nerves of bilateral knees with 2.0 cc of 0.25% bupivacaine. Post procedure, she reported 100% improvement lasting more than 24 hours. Patient was subsequently scheduled for fluoroscopy guided radiofrequency watercooled ablation.

In an AP position under fluoroscopic guidance, the skin and soft tissue structures overlying the superior lateral notch between the shaft of the femur and epicondyle, the superior medial notch between the shaft of the femur and epicondyle, the inferior medial notch between the shaft of the tibia and epicondyle and the midline of femur just superior to the patella were anesthetized with 1.0 cc of 1.0% lidocaine. Then a 17 gauge, 75 mm cooled RF transducer needle was guided to the bone, aiming for bony landmarked in each of these locations. The needles were advanced, sliding past the bone, to approximately 60% depth of the diaphysis and directed towards the bone in the midline of the femur, superior to the patella. After confirming placement on lateral views, the cooled radiofrequency probes were placed, once again the position was confirmed and 2 volts were tested to ensure there was no motor stimulation. Prior to burning, 1.0 cc of 1% lidocaine was placed to minimize post procedure pain. The machine was set at 60 degrees Celsius for 2 mins and 30 seconds and each of the targeted nerves were lesioned. Furthermore, 0.25 cc of Depomedrol (40 mg/ml) was injected in each of the three needles for anti inflammatory purpose after procedure. 6 months post procedure, patient continued to report 100% pain relief and improvement in her functional status.

Discussion
Cooled radio frequency ablation has been proven to be effective in relieving knee pain. This case illustrates a unique population of patients who continue to have knee pain even after total knee replacement. Compared to traditional radio frequency, cooled radiofrequency ablation is designed to cover a greater area thereby reducing any anatomically variability that may exist.

References