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Case Reports

Combined anterior cruciate ligament reconstruction and fixed-bearing unicondylar knee arthroplasty: report of two cases

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CASE REPORT

Combined anterior cruciate ligament reconstruction and fixed-bearing unicondylar knee arthroplasty: a report of two cases

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INTRODUCTION

The treatment of isolated medial knee arthrosis in the absence of a functional anterior cruciate ligament (ACL) can be a vexing problem for both surgeons and patients. Moreover, the complexity of treatment increases in an inverse proportion to the patient's age; that is, the younger the patient, the less willing both surgeon and patient are to proceed to total knee arthroplasty (TKA). Unfortunately, the literature is mixed regarding the most efficacious treatment option in this scenario. Reasonable alternatives would include the continued use of nonoperative treatment, isolated ACL reconstruction, high-tibial osteotomy (HTO), isolated unicompartmental knee arthroplasty (UKA), total knee arthroplasty, or combined ACL reconstruction and UKA.¹⁻³

We report the results of two patients who underwent simultaneous UKA and ACL reconstruction. The mean follow-up was 34.5 months. Both patients were informed that the clinical information concerning their cases would be submitted for publication, and both consented. To our knowledge, this is the first report of combined ACL reconstruction and unicondylar knee arthroplasty using a fixed-bearing implant (Unicompartmental High Flex Knee, Zimmer, Warsaw, IN).

CASE REPORTS

Case 1

A 47-year-old man presented with a long-standing history of right knee pain and instability. During high school the patient sustained a variety of injuries to the right knee, including a complete rupture of the ACL. Prior to presentation to our clinic, the patient had undergone two previous knee procedures, including an arthroscopically-assisted ACL reconstruction using bone-patellar tendon-bone autograft, and a revision ACL reconstruction using allograft. The patient complained of knee instability, medial joint pain, and the absence of symptoms involving the patellofemoral joint, or lateral joint line.

On physical examination, the patient was 5 feet 10 inches in height, weighed 205 pounds and was able to ambulate independently without any assistive devices. His right knee examination revealed range of motion from 0°-130°, less than 5° of opening to varus-valgus ligament testing, and grossly positive pivot-shift and Lachman tests. KT-1000 testing demonstrated 15 mm of anterior laxity in the right knee compared to 10 mm of laxity in the left.

Radiographic evaluation revealed significant medial joint space narrowing, subchondral sclerosis, and osteophyte formation. Relative preservation of the patellofemoral and lateral compartments was noted on the Merchant and anteroposterior views. Full-length mechanical axis views demonstrated neutral alignment of the symptomatic lower extremity (Figure 1).

After undergoing an uncomplicated combined ACL reconstruction and UKA according to the surgical technique described below, the patient was followed clinically at 3 weeks, 6 weeks, 3 months, 6 months and then yearly. At the time of the most recent evaluation, 32 months postoperatively, the patient denied any symptoms of pain or instability in the right knee (Figure 2). Ligament testing with the KT-1000 device at 2 years postoperatively demonstrated 10 mm of laxity in both the operated and non-operated knees.

Case 2

A 45-year-old woman who was the manager of a large retail warehouse presented with a history of 5 years of increasing left knee pain. The patient underwent a left knee arthroscopy and medial meniscal debridement 20 years before presentation. She was treated by her primary physician for 2 years with nonsteroidal anti-inflammatory pain medications, physical therapy, and intra-articular corticosteroid injections. History revealed a sensation of instability as well as increasing pain localized to the medial side of the knee. Upon questioning, the patient was effectively able to navigate stairs and denied pain in the lateral or patellofemoral compartments.

On physical examination, the patient was 5 feet 5 inches in height, and weighed 210 pounds. She was able to ambulate independently without any assistive devices. The knee had a range of motion from 0° of extension to 135° of flexion, less than 5° of laxity to varus-valgus stress and grossly positive pivot shift and Lachman tests.

Radiographic evaluation demonstrated significant medial joint space narrowing, subchondral sclerosis and osteophyte formation. Full-length mechanical axis views demonstrated neutral alignment of the symptomatic lower extremity. The risks and benefits of various treatment alternatives were explained to the patient in detail, and after consideration of her options, the patient wished to proceed with a combined ACL reconstruction and UKA.

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