Arthroscopic Management of Synovial Osteochondromatosis of the Hip

CHARLES M. BLITZER, MD; KYLE A. SCARANO, BS

abstract

Synovial osteochondromatosis is a benign metaplasia of the synovium resulting in the formation of osteocartilaginous nodules within the synovial lining. At presentation, radiographs typically reveal these nodules to have broken free from the synovial lining, becoming loose bodies residing in the free space of the affected joint. These fragments readily receive the necessary nutrients for continued growth from the synovial fluid in which they reside. Controversy exists over the management of the disease. Some physicians call for arthrotomy with a complete synovectomy, whereas others vouch for a minimally invasive arthroscopic approach. In the case described here, the surgeon decided on hip arthroscopy to treat synovial osteochondromatosis in a 61-year-old woman. All but one loose body that was adherent in the anterior hip capsule was successfully removed and the patient recovered promptly. This case highlights the importance of hip arthroscopy and its usefulness not only in treating conditions such as synovial osteochondromatosis, but also in accurately diagnosing them. Recognition and management of hip conditions such as synovial osteochondromatosis through arthroscopy result in minimally invasive treatment and decreased morbidity and may markedly accelerate patient rehabilitation. It is the authors’ belief that this unique case further suggests the practicality of using hip arthroscopy to successfully treat synovial osteochondromatosis. [Orthopedics. 2015; 38(6):e536-e538.]
Synovial osteochondromatosis (SOC) is a disorder characterized by the benign change of the synovium, usually within the larger joints of the body including the knee, shoulder, elbow, or hip. It is a rare disease in which cartilaginous metaplasia occurs within the synovial membrane of the affected joint. The most common form of this condition is typified by the growth of cartilaginous nodules in the synovium, many of which break free and become loose bodies. These osteocartilaginous fragments readily receive the necessary nutrients for continued growth from the synovial fluid in which they reside. The other form of the disease is markedly rarer and displays synovial soft tissue masses instead of loose body formation. Synovial osteochondromatosis primarily affects middle-aged patients and occurs twice as often in men than women. The specific pathogenesis of the disease is largely unknown. Patients with SOC often present with swelling, chronic pain, and stiffness in the affected joint.

**CASE REPORT**

A 61-year-old woman presented with hip symptoms of several years duration that predominately included stiffness and pain after rising from prolonged sitting. She also experienced occasional catching. Initial magnetic resonance imaging showed discrete loose bodies throughout the hip joint (Figure 1). The patient’s ongoing symptoms warranted surgical management. An arthroscopic approach was selected to minimize the potential for surgical morbidity and facilitate rapid recovery. The patient was positioned supine, and traction allowed for excellent visualization of the central compartment of the joint. She was in a mild Trendelenburg position to minimize pressure on the perineum while in traction. Using anterior and anterolateral portals, multiple osteocartilaginous loose bodies were observed moving freely in the hip joint (Figure 2). Many of these ranged from a few millimeters to just over a centimeter in size and were removed successfully with a 4.5-mm shaver and long grasper (Figure 3). A 1.7-cm osteochondral fragment was embedded in the anterior capsule. This was partially debrided with a shaver and burr, but in the interest of protecting the anterior capsule, a portion was left within the synovial lining.

Postoperative imaging showed ample removal of intra-articular loose bodies. The only remainder was the aforementioned extremely large nodule, which showed adequate debridement. The patient was discharged from the hospital the same day the operation occurred. She was allowed to bear weight as comfortable. At 5-month follow-up, the patient reported significant improvement as comfortable. At 1-year follow-up, the patient displayed progression of underlying arthritis.

**DISCUSSION**

In this case, arthroscopic removal of loose bodies in the hip was conducted to properly manage SOC. Such an example highlights the importance of hip arthroscopy and its usefulness not only in treating conditions such as SOC, but also in accurately diagnosing them. In the current patient’s scenario, the original radiographs were fairly indicative of SOC, with numerous loose bodies observed. Magnetic resonance imaging was also highly suggestive of SOC and revealed the largest nodule in the anterior synovium. Although this case was successfully diagnosed radiographically, many patients will present with rather ambiguous findings.

When such a subject is at hand, hip arthroscopy may prove beneficial as both a diagnostic tool and a minimally invasive approach. Although there is discrepancy among physicians regarding the management of SOC, arthroscopic removal was chosen in this case over arthrotomy with a complete synovectomy. It has been shown that arthroscopic techniques yield results superior or equivalent to open arthrotomy for many conditions without the associated morbidity of open procedures. Other complications of open arthrotomy of the hip include avascular necrosis of the femoral head, cosmesis, dislocations of the hip, and prolonged hospital stay.

When one analyzes clinical findings and detects hip pain, irritability, and catching in an adult, the differential diagnosis includes several monoarticular
conditions: SOC, rheumatoid arthritis, osteoarthritis, septic arthritis, pigmented villonodular synovitis, various forms of trauma, femoroacetabular impingement, and osteochondritis dissecans. The presence of osteochondral loose bodies narrows the differential diagnosis to SOC, rheumatoid arthritis, osteoarthritis, osteonecrosis, trauma, and osteochondritis dissecans. Proper identification of disease is paramount, but if preliminary findings fail to offer a conclusive diagnosis, then hip arthroscopy may be used to confirm the diagnosis and debride the joint.

The current case documents the effectiveness of using arthroscopy to successfully remove loose bodies from the hip joint in a patient with primary SOC. Early evidence suggests that arthroscopic removal of loose bodies not only is a cost-effective procedure, but also allows for substantially shorter rehabilitation and less analgesic medication. During the current patient’s procedure, the surgeon was able to successfully identify and remove multiple osteocartilaginous loose bodies moving freely in the hip using common arthroscopic equipment.

In describing the current state of hip arthroscopy, Goto et al stated that the field has progressed considerably in the past 10 years. The indications for hip arthroscopy continue to grow and when used, the procedure is accompanied with well-documented low complication rates. In specifically addressing SOC of the hip, De Sa et al stated that arthroscopic removal of osteocartilaginous fragments with synovectomy is effective and safe. The current authors believe that both of these inferences are true and that the unique case described here further suggests the practicality of using hip arthroscopy to successfully treat SOC. Overall, hip arthroscopy is a successful procedure with low recurrence and complication rates. Further investigation should address these findings in comparison with open arthroplasty of the hip to determine which modality provides a better outcome for the patient.

References