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Bullet in Hip Joint

Kalça Ekleminde Mermi Çekirdeği

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Abstract

Recently, hip arthroscopy has become more popular in the diagnosis and extraction of intraarticular foreign bodies compared to open surgery. If a foreign object such as a bullet is not extracted from the hip joint, it may cause mechanical arthritis, infection and systemic lead toxicity. We present the arthroscopic excision of a bullet from the hip joint of a 33-year-old male patient who sustained a gunshot injury.

Key Words: Arthroscopy, bullet, hip joint

Özet

Kalça artroskopisi son yıllarda daha fazla bir şekilde eklem içi patolojilerin tanısı ve tedavisinde açık cerrahiye göre kullanım alanı bulmuştur. Mermi çekirdeği kalça ekleminden çıkarılmadığı takdirde mekanik artrite, enfeksiyona yada sistemik kurşun zehirlenmesine yol açabilir. Ateşli silah yaralanması sonucu sağ kalça eklemi içinde mermi çekirdeğinin artroskopik olarak çıkarıldığı 33 yaşında erkek olgu sunuldu.

Anahtar Kelimeler: Artroskopi, kurşun çekirdeği, kalça eklemi

Introduction

The role of arthroscopy in the diagnosis and treatment of hip joint pathologies has become more significant since it was first described in 1931 [1]. Common indications are the treatment of femoroacetabular impingement syndrome, labral tear, chondral pathologies and the extraction of intraarticular loose and foreign bodies. Compared to arthrotomy, patients return back to daily activities more quickly [1]. When left in the joint, a bullet may cause synovitis, secondary arthritis, systemic lead intoxication and septic arthritis [2-7]. In light of the current literature, we discuss a case in which an intraarticular bullet was extracted arthroscopically from a patient's hip joint in our clinic.

Case Report

A 33-year-old male patient presented to our emergency room with a right lower extremity gun shot injury. Two round-shaped wounds were detected in the anterior and posterior of the right crus corresponding with the gunshot bullet entering and exiting the extremity. A third wound was detected on the anterior aspect of the hip, indicating a second bullet. X-ray and computed tomography of the right crus and right hip revealed a non-displaced incomplete fracture of the tibia and a foreign body in the hip joint. There was no neurological compromise, but the patient presented with activity-related right hip pain. The patient was operated upon one week after the injury after having been informed about the operation and having signed the related consent forms. Under general anesthesia and joint distraction achieved by use of a traction table, the hip joint was explored from the anterior and anterolateral portals using a 70-degree optic device. Portals were prepared using fluoroscopy. Following capsular release with Arthrocare, probe and optics mobility and visualization of the entire joint were achieved. After careful inspection of the joint, the bullet was found to be loosely anchored at the anterior portion of the linea acetabulum and was extracted using a grasper. The injured articular cartilage was shaved, and the joint was debrided with 2 liters of saline. After the surgery, partial weight-bearing was permitted with double crutches for 2 weeks. Total traction time was 25 minutes, and no consecutive neurologic complications were encountered.

Discussion

Because the hip joint is relatively deep and surrounded by a thick muscle mass, recently, arthroscopic surgery has taken precedence over open surgery in hip-related injuries, while keeping in mind the well-known complications, such as avascular necrosis of the femoral head as a result of circulatory compromise following safe dislocation and relatively demanding rehabilitation [4]. Intraarticular bullet extraction using arthroscopy is a practical surgery that has been previously described by Sozen YV [1, 2] and Singleton SB.

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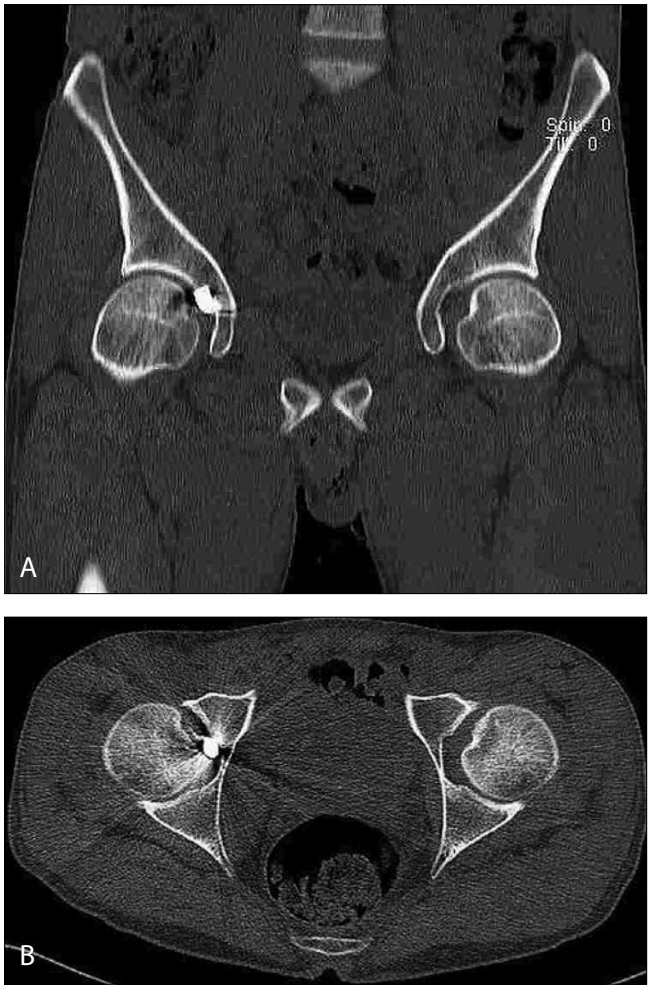

Figure 1. *A) Coronal and B) axial view of the bullet in the hip joint.*

Extraction of a bullet from the hip joint has been indicated to avoid the long-term risk of mechanical arthritis, involvement as a potential nidus of infection and systemic lead toxicity caused by the dissolution and absorption of the lead through the synovial fluid (4).

Preoperative computed tomography helps to establish the localization of the foreign body in the joint space and is also useful to determine accompanying pathologies [4, 8]. Some authors prefer the supine position, whereas others operate in the lateral decubitus position [1, 4, 8]. We prefer the supine position.

Major complications of hip arthroscopy include: perineal complications when traction time exceeds 2 hours and the perineal region is not well padded, major arterial and nerve injury associated with careless portal selection and abdominal extravasation of the intraarticular solution in prolonged surgeries [2, 4, 9]. As we experienced in our own cases, traction time exceeding 2 hours may lead to pudendal nerve lesions. To prevent this complication, the perineal region must be well padded prior to surgery.

Figure 2. *Arthroscopic view of the bullet.*

When performed by experienced surgeons, arthroscopic extraction of foreign bodies such as bullets in select patients prevents extensive soft tissue dissection, causes less osteonecrosis of the femoral head and is consistent with better cosmetic appearance and shorter rehabilitation time.

Conflict of interest statement: The authors declare that they have no conflict of interest to the publication of this article.

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