Case Report

Arthroscopic Extirpation of an Osteoid Osteoma of the Acetabulum

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Abstract: We present the case of a 16-year-old boy with an 18-month history of pain in the left groin for 18 months. In addition to the simple radiographic examination, magnetic resonance imaging, bone scan, and computed tomography were necessary to finally diagnose an acetabulum osteoid osteoma (AOO). Excision of the lesion was performed arthroscopically and pathologic testing confirmed the diagnosis. The patient's symptoms disappeared immediately after the surgery, and had not reappeared as of the 6-month postoperative evaluation. We conclude that arthroscopic excision of an AOO is possible and avoids the aggressive open approach as well as operative hip dislocation. **Key Words:** Acetabulum osteoid osteoma—Hip arthroscopy.

Osteoid osteoma is a benign osteoblastic tumor. Only 1% to 3% of all cases are located in the pelvic area.[1,2] It is difficult to visualize on conventional radiographs, especially in its articular location. Thus it is a difficult lesion to consider as a cause of pain in the hip, and it may take too long from the start of the symptoms until there is a correct diagnosis.[3] Several techniques are useful in the noninvasive diagnosis of this lesion, such as scintigraphy, magnetic resonance imaging (MRI), and computed tomography (CT), the latter being the most accurate. The clearly established treatment is surgical excision through an intra-articular approach. In the past few years, arthroscopy has been considered as the therapeutic method of choice in intra-articular pathology, making its way as a diagnostic and occasionally as a therapeutic method in pathology of the hip. The purpose of this report is to describe the use of hip arthroscopy as a surgical method for excision of an acetabulum osteoid osteoma (AOO).

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CASE REPORT

A 16-year-old boy presented with an 18-month history of left groin pain that radiated toward the thigh and was worse with exercise as well as at night. He denied a history of trauma. Analgesics and nonsteroidal anti-inflammatory drugs alleviated the symptoms. On physical examination we found pain limitation in abduction and external rotation of the left hip. None of the multiple plain radiographs (Fig 1) showed any pathology. The MRI (Fig 2) showed only coxofemoral synovitis and scintigraphy showed increased uptake at the acetabulum (Fig 3). Under the suspicion of an osteoid osteoma, CT scanning was performed (Fig 4) to confirm the lesion and visualize the exact location as well as to evaluate the therapeutic possibilities. The CT scan showed a lesion compatible with articular osteoid osteoma of the medial acetabulum.

Hip arthroscopy was performed under general anesthesia on an orthopaedic table with fluoroscopy. We used 3 portals, anterior paratrocanteric for the camera and a posterior paratrocanteric and another anterior for instrumentation (Fig 5). A prominent red soft mass

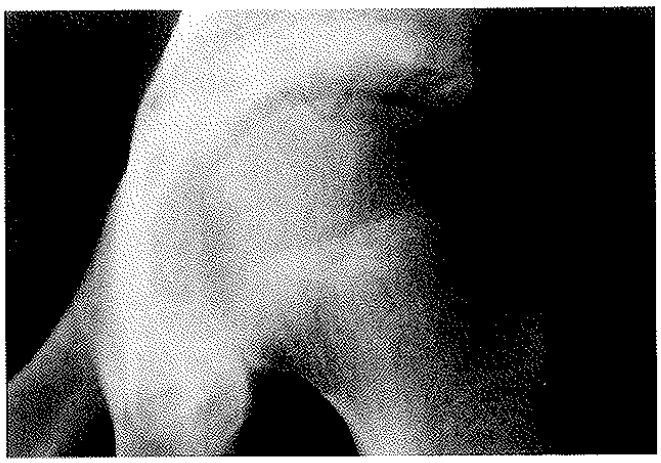

FIGURE 1. Radiograph showing no pathologic features.

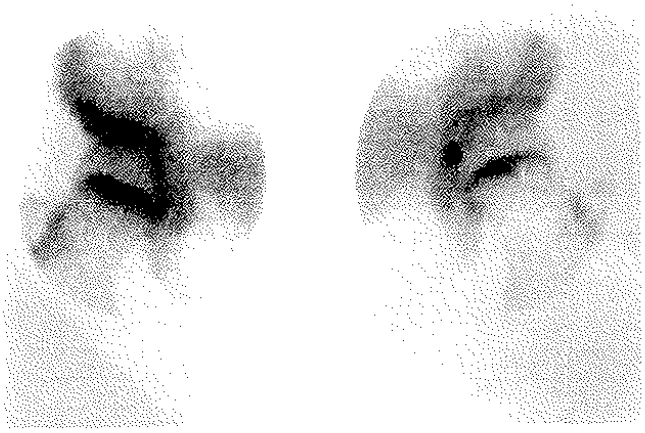

FIGURE 3. Radionuclide bone scan of the hip shows area of the intense increased uptake.

was visualized at the fovea. It was resected by a motorized shaver and a double-pulse holmium-YAG laser, allowing us to see the bone lesion (Fig 6), which protruded inside the joint. We carefully isolated the bony lesion to get an en block excision using manual instrumentation. A loose body forceps was used to extract it from the joint cavity. We then proceeded to ream the borders to be sure there was complete excision of the tumor (Fig 7), which was confirmed on CT (Fig 8). Histologic examination confirmed the diagnosis of AOO showing the whole nidus and catarrhal synovitis. Disappearance of symptoms was immediate, and the patient was also asymptomatic at 6-month follow-up. Postoperatively, the patient complained of impotence and perineal numbness. This was believed to be caused by neuroapraxia of pudendal nerves that occurred secondary to prolonged pressure from the perineal post. All symptoms had resolved by 4 weeks following surgery.

DISCUSSION

Intra-articular osteoid osteomas are generally diagnosed late, in part because they occur rarely. A review of the literature yielded only 11 reported cases.[4-11] Authors agree in stating that CT is the best diagnostic method.[5,8,9,12] It was able to show it in our case, where the bone scan gave us a high index of suspicion. CT was the ultimate diagnostic test, helping in a very important way to show the location and lead to the decision to undertake an arthroscopic approach.

Treatment of these tumors consists of intralesional surgical excision, with the anterior open approach of dislocation of the hip being the method used in most

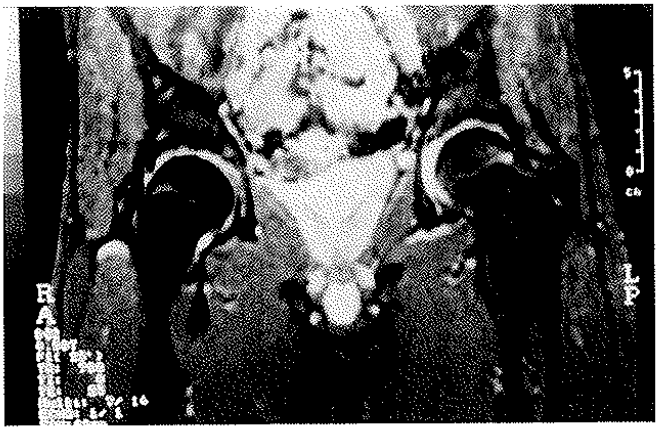

FIGURE 2. Coronal MRI showing abnormal increased signal intensity in left hip interpreted as synovitis.

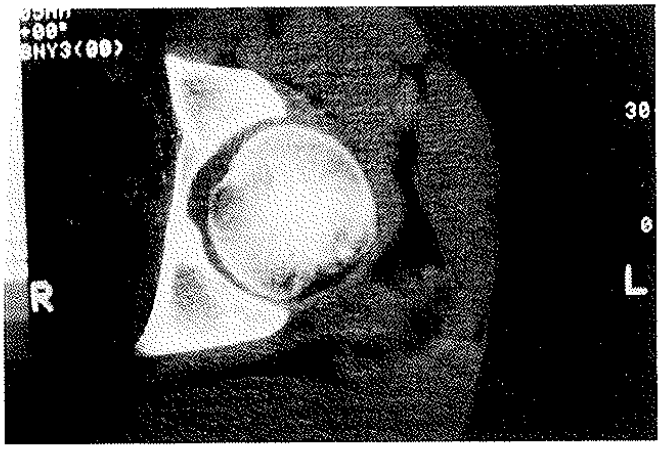

FIGURE 4. CT of left hip shows area of sclerosis in the inner acetabulum.

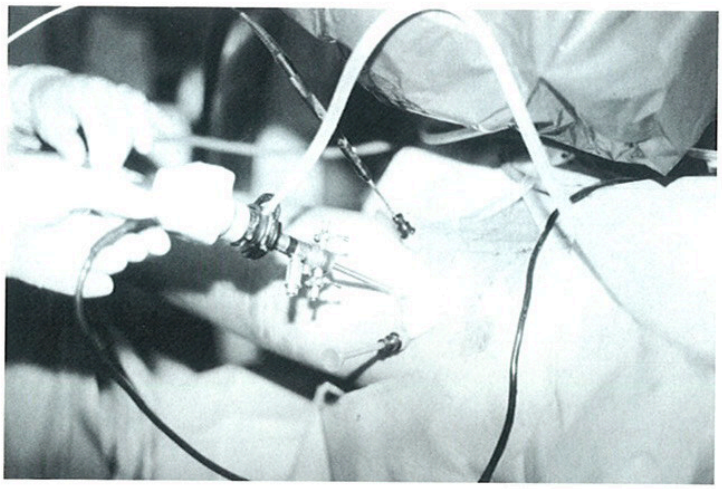

FIGURE 5. The 3 arthroscopic portals, anterior, anterior parathrocanterian, and posterior parathrocanterian.

reported cases. In 1988, Callaghan et al.[5] described the excision of 2 AOOs using the Ludloff approach and reported good accessibility to the medial acetabular wall without dislocation and lesser hematic loss.[4,7-9] In 1994, Cohen and Rzetelny[6] used the intrapelvic approach through the medial acetabular wall for the surgical excision of an AOO, the exact location in our case.

The arthroscopy of the hip described by Burman in 1931[13] still has few indications, although it has been used especially for diagnostic purposes in synovial and chondral studies. It has also been used to remove loose bodies and for washing and cleaning in degenerative arthritis,[14] labrum resection, and osteocondritis. Several portals have been used and frequently authors describe their own portal. The paratrocanteric[15] and the anterior[16] portals are the most common. The use of an image amplifier and traction table are essential. The use of traction is not free of risks. Neuroapraxia of pudendal nerves has been reported by Locker and Beguin[17] and Dorfman et al.[18] This is a complication we encountered as well.

We approach the joint with the use of fluoroscopy and a traction table through the anterior paratrocanteric portal. Johnson's anterior and posterior paratrocanteric portals[16] were used interchangeably for instrumentation.

Resnick et al.[19] were able to get a pathologic diagnosis of the lesion in the case of osteoid osteoma of

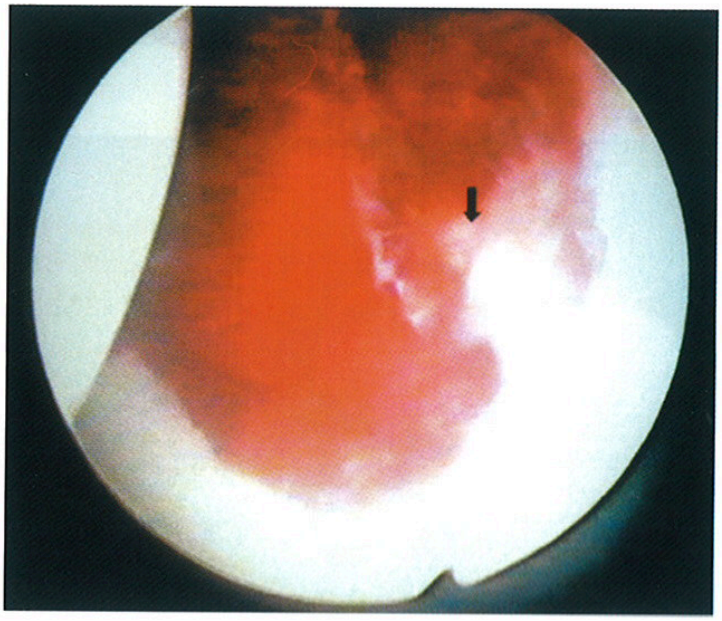

FIGURE 6. Intra-articular view. The arrow indicates the bone lesion along with an extensive synovitis.

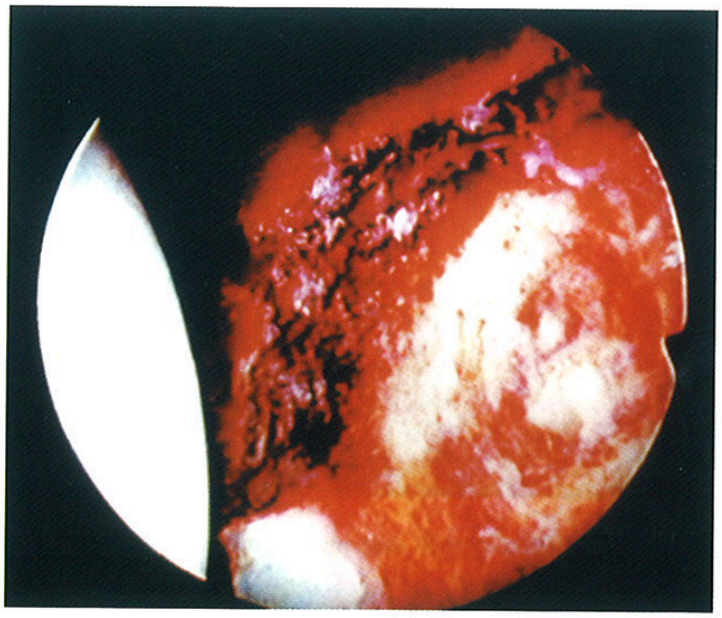

FIGURE 7. Intra-articular view after removal of the bone lesion.

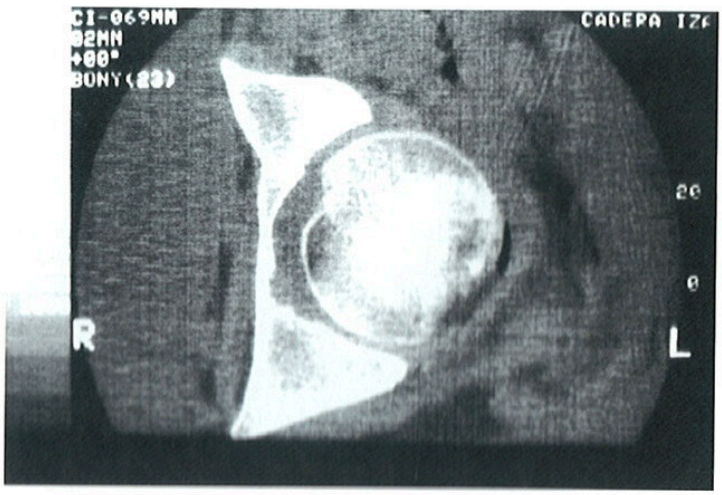

FIGURE 8. CT scan showing complete excision.

the talus. Joyce and Markin[20] do not consider arthroscopy to be adequate for obtaining samples for biopsy examination because of the possible fragmentation of the piece. In our case, we carefully resected around the lesion to extract the suspicious 1.5-cm osseous fragment with a loose bodies forceps.

CONCLUSION

Intra-articular AOO can be approached arthroscopically for excision and pathological study. Arthroscopy avoids open approaches and the dislocation of the hip, significantly decreasing the postoperative morbidity.

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