

ARTHROSCOPIC TREATMENT OF SYNOVIAL OSTEOCHONDROMATOSIS OF THE HIP

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ABSTRACT

Objective: The objective of this study is to show the results achieved in the treatment of hip osteochondromatosis by arthroscopy. **Methods:** Six patients submitted to hip arthroscopy for synovial osteochondromatosis have been assessed for pre- and postoperative function and pain. The time of preoperative complaint ranged from nine to 48 months, in an average of 28.2 months and the follow-up ranged from eight to 25 months (mean: 17.1 months). Mean age was 45.1 years, with four female patients (66.6%)

and the right side affected in five cases (83.3%). **Results:** Concerning the results according to Byrd-modified Harris' criteria, the mean score evolved from 54.1 to 90.4, and the mean score on the face expressions scale for pain assessment ranged from 1.7 to 5.1. **Conclusion:** arthroscopy is a good alternative for hip osteochondromatosis treatment, although longer follow-up times are required to strictly stating this. The results found so far are encouraging, constituting a little-invasive procedure allowing good recovery.

Keywords – Hip; Arthroscopy; Chondromatosis, Synovial

INTRODUCTION

Synovial chondromatosis is a progressive, chronic, benign, and rare metaplasia, in which cartilage is formed in the synovial membranes of joints, tendon sheaths, or bursae. It is of unknown origin and usually affects a single joint⁽¹⁻⁸⁾. Some of the metaplastic foci can be detached, forming loose bodies. When these bodies calcify, the condition is called synovial osteochondromatosis⁽⁴⁾. It affects mainly men between the ages of 30 and 50 years and there is a possibility of recurrence after treatment^(3,5).

The diagnosis should be considered in any patient presenting more than five intracapsular loose bodies. Despite the benign nature of this disease, multiple

loose bodies within the capsule may cause damage to the articular surfaces with bony erosion and subsequent joint destruction⁽⁴⁾.

Ambroise Paré cited in Ginaldi⁽⁹⁾ was the first to report this condition in 1558. Its first histomorphological description was made by Jaffe⁽¹⁰⁾ in 1958, outlining the basis for the histological diagnosis of osteochondromatosis⁽¹¹⁾.

Localization in the hip is not common, it is more frequently localized in the knee and elbow^(2,3,5-8). When it affects the hips, the diagnosis is often delayed because of the insidious nature of the symptoms⁽²⁾.

The objective of this paper is to show the preliminary results obtained in the arthroscopic treatment of osteochondromatosis of the hip.

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We declare no conflict of interest in this article

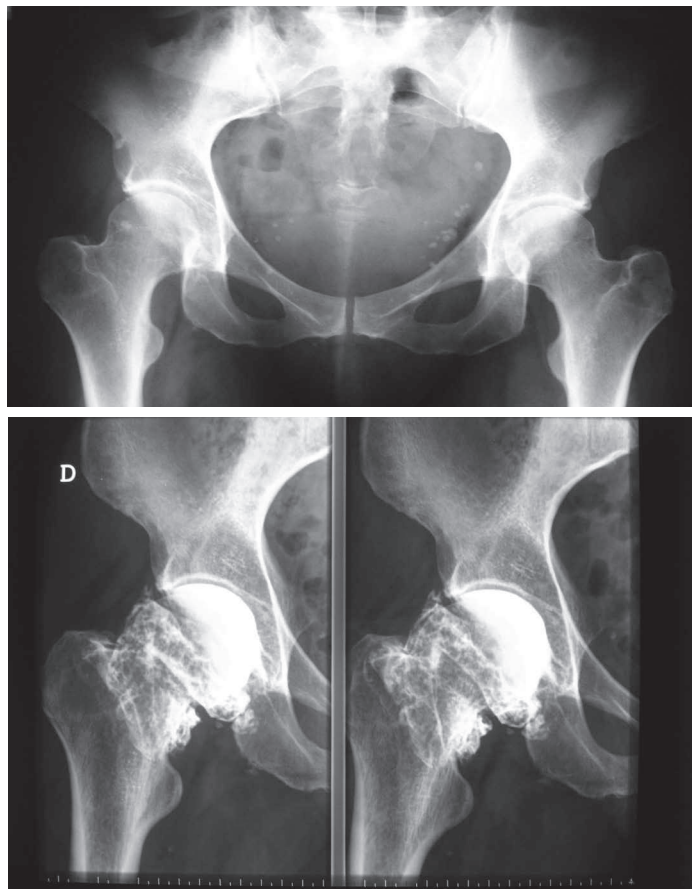
METHODS

Six patients who underwent hip arthroscopy for synovial osteochondromatosis between July 2004 and July 2006 were evaluated prospectively in the Department of Orthopedics and Traumatology, Santa Casa de São Paulo, Fernandinho Simonsen Pavilion. The study was previously submitted to the Research Ethics Committee and approved under No. 317/08.

Ages ranged from 41 to 52 years, with a mean of 45.1 years. Four (66.6%) patients were female. The right side was affected in five patients (83.3%). Five of the patients (83.3%) were white. The duration of preoperative complaints ranged from nine to 48 months, with an average of 28.2 months.

Follow-up ranged from eight to 25 months, with an average of 17.1 months. None of the patients practiced regular physical activity.

The diagnosis was made by clinical history, physical examination, and by imaging. Many of the preoperative radiographs of the pelvis showed no calcification, which can make the diagnosis difficult (Figures 1 and 2).



Figures 1 and 2 – No radiographic signs of loose bodies in the right hip on simple radiographs. The arthrography showed multiple non-calcified intra-articular loose bodies

On physical examination, all had pain on 90° of flexion, especially in the anterior hip. Two patients (33.3%) reported pain going up and down stairs, and three (50%) had pain while getting in and out of the car or standing up.

For evaluation of results, we used the Harris score modified by Byrd (HHS)⁽¹²⁾ and the facial expressions scale to quantify pain (FES)⁽¹³⁾.

We also noted the phases of the disease as described by Milgram⁽¹⁴⁾: stage 1 – active intrasynovial disease with no nodule formation, stage 2 – development of nodules in the synovial membrane (Figures 3 and 4), stage 3 – formation of loose bodies in the joint (Figure 5).

We also evaluated the arthroscopic findings during the procedure and the postoperative complications. All arthroscopies were performed by the same surgeon.

RESULTS

The patients showed clinical and radiographical improvement, and there was improved range of motion and symptoms. On physical examination, pain on flexion and internal rotation improved in all patients. The return to normal activities was allowed eight weeks after surgery.

The Harris score modified by Byrd⁽¹²⁾ ranged from 38.5 to 70.4 points preoperatively (mean 54.1 points) and from 79.1 to 95.7 in the postoperative period (mean 90.4 points).

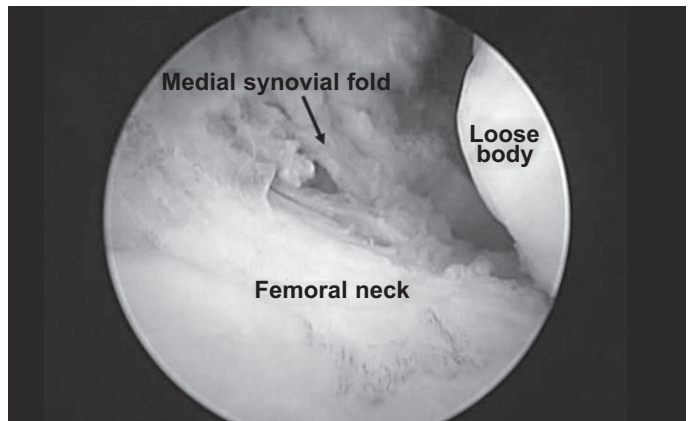
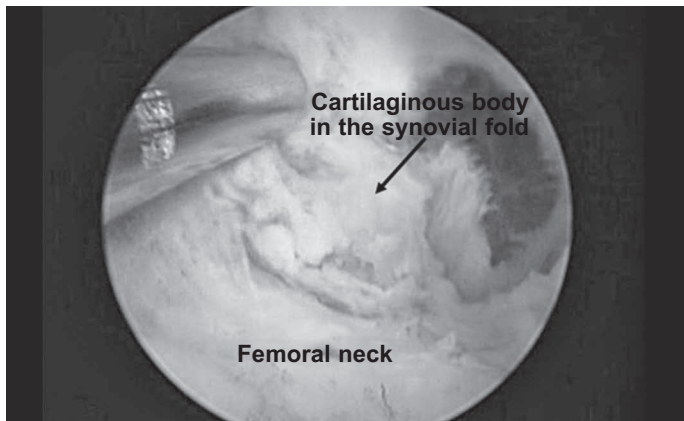
The facial expressions scale for quantification of pain⁽¹³⁾ showed preoperative scores ranging from one to three points (average 1.75 point) and four to six points postoperatively (mean 5.1 points).

Among the arthroscopic findings were evidence of articular cartilage lesions in the acetabulum, accompanied by reactive synovitis in three patients (50%). Cases in both stage 2 and 3, as described by Milgram⁽¹⁴⁾, were observed in this study and acetabular lip injury was observed in only one case (16.6%), as was a case of giant osteochondroma (Figure 6).

In all cases, the preoperative diagnosis of synovial osteochondromatosis was confirmed during surgery and biopsy. There were no complications or recurrences to date.

DISCUSSION

The synovial osteochondromatosis is considered a metaplasia of the synovial tissue⁽²⁻⁸⁾, which affects the subserosal layer of the inner surface of the joint capsule. It is characterized by the development of



Figures 3 and 4 – Cartilaginous nodule attached to the medial synovial fold of the hip. Arthroscopic appearance before and after removal from under the synovial fold

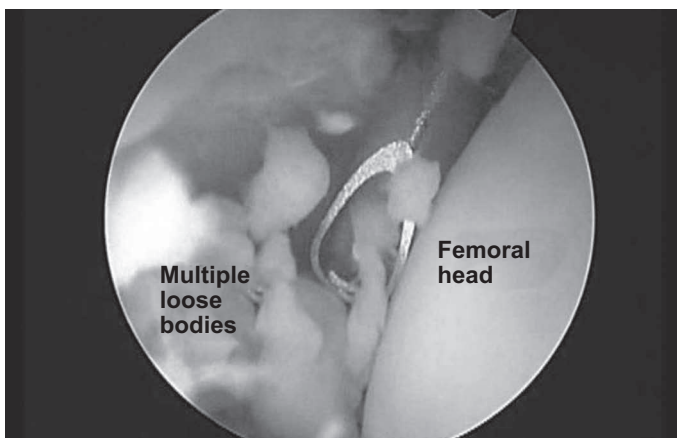


Figure 5 – Multiple intra-articular cartilaginous loose bodies in the hip

multiple cartilaginous bodies from the inner surface of the capsule or other structures formed by the synovium, such as tendon sheaths and bursae⁽¹⁾.

Most injuries are described to have a maximum diameter of 3 cm, although there are rare cases of giant solitary osteochondromatosis, which we observed in this series.

Milgram⁽¹⁴⁾ described three stages of the disease: stage 1 – active intrasynovial disease with no nodule formation, stage 2 – development of nodules in the synovium, and stage 3 – formation of loose bodies. We observed well-defined stages 2 and 3 in arthroscopy.

The disease occurs in all age groups, but is predominant in the fourth decade, and is twice as common in men⁽⁷⁾. There was a predominance in females in our study.

The clinical presentation is usually characterized by the mechanical symptoms that occur when loose or united bodies interfere with joint function, causing limitation of movement, and possibly block accompanied by pain^(1,2).

Most cases occur in the knee and elbow^(2,3,5-8). There are few descriptions of it in the hip⁽¹⁵⁾. In our area, reports have been limited to cases with knee and shoulder involvement⁽¹⁶⁻¹⁸⁾.

The common pathological feature is the extent of the lesions beyond the joint capsule. Extra-articular isolated localization has also been documented, especially in the tendon sheath of the hands and feet. When they involve bursae, they cause pain and stiffness, usually with a slow progression of symptoms⁽⁷⁾.

X-rays reveal only 50% of lesions because most do not show calcification within them, which was also observed in this study⁽²⁾.

McCarthy and Busconi⁽¹⁹⁾ reported a rate of 80% false negatives in the imaging of hips with intractable pain, including radiography, arthrography, bone scintigraphy, computed tomography (CT), and magnetic resonance imaging (MRI). In a review of 30 cases, chondral damage was found to be common and sometimes severe, especially at the edges of the joints, despite normal exam results.

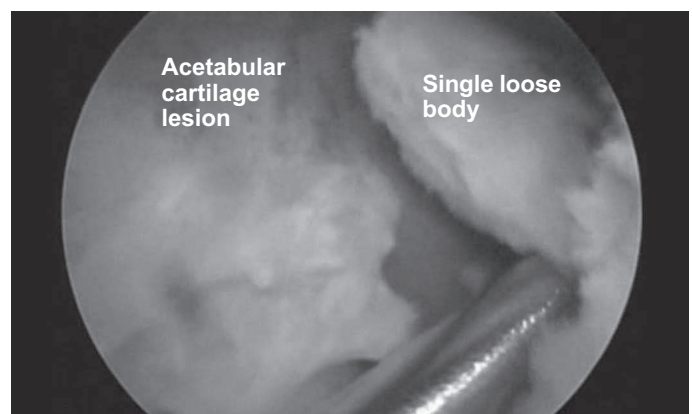


Figure 6 – Presence of single intracapsular loose body with damage to the cartilage of the acetabulum

Some authors^(1,3,5-7) recommend arthrotomy followed by synovectomy and removal of all loose bodies. This approach does not determine the end of the pathological process, but allows for improvement in pain and joint mobility. Synovectomy reduces the potential for new lesions to form and slows disease progression^(1,7). Hip dislocation may be necessary for proper visualization of the joint with extensive synovectomy⁽²⁰⁾. This kind of comprehensive approach implies, however, a higher morbidity and risk of complications^(20,21).

In a recent study, Boyer and Dorfmann⁽¹⁵⁾ reported their experience with arthroscopic treatment of synovial chondromatosis of the hip. Excellent and good results were obtained in more than half of the patients and the mean follow-up was more than six years, with recurrence rates of around 40%.

In this study, we used arthroscopy to treat all cases with removal of loose bodies and subtotal synovectomy of the joint. We had no cases of recurrence, although our follow-up is relatively short. Relapses have been reported up to 14 years after initially successful surgical treatment⁽¹⁵⁾. Hip arthroscopy proved to be an alternative to open surgery, allowing for minimally invasive access and quick recovery.

CONCLUSION

We conclude that in our area, arthroscopy is a good alternative for the treatment of synovial osteochondromatosis of the hip, although we need longer follow-up to affirm this categorically. The results obtained so far are encouraging. It is a minimally invasive and safe procedure, allowing for good recovery.

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