

Synovial Osteochondromatosis of Right Hip Joint with Mismatch of Symptoms and Stage of Disease - A Rare Case Report at Tertiary Care Hospital, Mysuru

Sheshagiri V¹, Vidya C S², Siddalingamurthy G³, Madhukesh R⁴, Vidya GD⁵, Madan Kumar⁶

¹Associate Professor, Department of Orthopaedics, JSS Medical College

²Professor, Department of Anatomy, JSS Medical College

³Professor & Head, Department of Orthopaedics, JSS Medical College

⁴Senior resident, Department of Orthopaedics, JSS Medical College

⁵Associate Professor, Department of Oral Pathology and Microbiology, JSS Dental College

⁶Postgraduate student, Department of Orthopaedics, JSS Medical College

Disclose and conflicts of interest: none to be declared by all authors

ABSTRACT

Introduction: synovial osteochondromatosis is a rare, benign condition characterised by synovial metaplasia and the formation of cartilaginous and osseocartilaginous bodies in the capsule. It is a monoarticular condition affecting men and women equally from 3rd to 5th decade of life commonly affecting knee joint. We describe a case report of synovial chondromatosis of right hip joint in a 14-year-old female patient who complained of pain while walking due to twisting of leg. On radiographic examination multiple loose bodies were seen around right hip joint along head, neck, and trochanter of femur.

Keywords: Synovial chondromatosis; Synovial osteochondromatosis; Hip joint; Chondroma.

Introduction

Synovial osteochondromatosis is a unique condition caused by osteocartilaginous loose bodies affecting large joints such as knee, hip, elbow or shoulder. Synovial chondromatosis is mainly due to cartilaginous metaplasia from joint, tendon or bursal synovial lining which differentiates from other conditions like degenerative arthritis, osteochondritis dissecans and osteochondral fractures. Three phases of synovial chondromatosis are – a) active intrasynovial disease without loose bodies b) transitional lesion with both active intrasynovial proliferation and free loose bodies and c) multiple free osteochondral bodies with no evidence of intrasynovial disease.¹ Synovial chondromatosis usually affects middle aged person and it of two types namely: primary and secondary. Primary synovial osteochondromatosis typically affects adults, predominantly men, in the third to fifth decades of life. Patients with secondary synovial osteochondromatosis affects in older age, hence both types are uncommon in younger age group.²

Patients with synovial chondromatosis present with symptoms like pain, swelling and flexion contractures. The diagnosis can be based on imaging such as radiography, CT and MRI. Radiographs usually show the calcified nodules in about 70% of the patients with Synovial chondromatosis and this can be confirmed histopathologically by synovial biopsy.³

Although the condition is benign, it can severely damage the affected joint and eventually lead to osteoarthritis. Surgical removal of loose bodies is recommended, but as there is no guidelines on whether resection of the osteophytes at the femoral head-neck junction is necessary to prevent secondary osteoarthritis.⁴

Very few cases have been reported in India and here we describe a case report of synovial osteochondromatosis of right hip joint in a fourteen-year-old female patient. The merit of this case in light of the previous literature is female presentation, advanced stage and less limitation of activities even at advanced stage of the disease.

Case report

A 14-year-old female patient attended orthopaedics outpatient department with history of pain in right hip joint for 2 years and pain was due to sudden twisting of leg while walking. Pain was sudden in onset, progressive, aggravated on walking and relieved on taking rest. On local examination gait was biphasic antalgic type. On 3D CT reconstruction and MRI examination of right hip joint showed multiple intra and extraarticular well-defined 2-3 mm signal intensities (Figure 1) around hip joint along head, neck and trochanter of femur suggestive of synovial chondromatosis. Also well-defined sclerotic focus measuring 9.2x6 mm

with spiculated margins was noted in the acetabulum. There was no evidence of avascular necrosis, erosion, and dislocation of hip joint. As symptoms were mild, patient was treated conservatively and planned for arthroscopic debridement and synovectomy depending on progression of symptoms.

Discussion

Primary synovial chondromatosis is a rare monoarticular synovial proliferative disease which most commonly affects the knee joint. Three distinct arthroscopic appearances of synovial chondromatosis were described by Coolican and Dandy i.e. deep lesions, superficial lesions and free cartilage fragments. Joints with a tight capsule such as hip joint bony erosion may be seen.⁵



Figure 1. Showing 3D CT reconstruction of right hip joint with multiple intra and extraarticular well-defined 2-3 mm signal intensities (calcified loose bodies) around right hip joint.

Jie Wen and others reported a case of synovial chondromatosis of right hip joint in a 7-year-old boy. On radiological examination, effusion in the right hip joint, widening of the right hip-joint spacing was seen, computed tomography showed the destruction of the right acetabulum inner wall and magnetic resonance imaging (MRI) showed a large amount of effusion in the right hip joint with several white semitranslucent circular loose bodies. The patient underwent open hip surgery to remove all loose bodies and after 6 months follow up, pain and limping disappeared and the range of activity of the hip joint was restored to a normal level.⁶

Sham sunder C reported a case of right hip synovial chondromatosis in 70-year-old male patient. The symptoms and signs were quite similar to present case report. On microscopic examination of soft tissues of affected joint revealed discrete nodules of lobulated cartilaginous tissue in the synovium, characterized

by cellular crowding with cytologic atypia and was confirmed histopathologically post-operatively. Open synovectomy with partial removal of loose bodies was performed through postero-lateral approach.⁷

Two cases were reported by Masanao and others, in case 1 synovial chondromatosis of left hip joint was reported in a 65-year-old woman. Magnetic resonance (MR) imaging, coronal and axial images of the left hip joint revealed a large lesion with heterogeneous signal intensity that extended to both the intra-articular and extra-articular joint spaces. It was confirmed by histopathological examination open surgery was performed using an anterior approach. In case 2, synovial chondromatosis of left hip joint was reported in a 45-year-old woman and arthrography showed a honeycomb appearance around her left hip joint. Upon MR imaging, axial images of the left hip joint revealed intra-articular and extra-articular mass lesions, one of which was located adjacent to the femoral vessels and arthroscopic resection was performed.⁸

A rare case report of Legg Calve Perthes disease with synovial osteochondromatosis of right hip joint in a 14-year-old male was reported. Radiographic examination showed numerous round calcific densities of similar size and shape seen within the right hip joint, most likely intraarticular calcific bodies.²

Ching-Wei Lin reported two cases with primary synovial osteochondromatosis of the hip joint. Intraarticular calcified loose bodies filling the hip joint were seen on plain radiographs and Magnetic resonance imaging revealed the expansion of the joint capsule containing multiple loose bodies around the femoral neck. The presentations of this case report was quite similar to our case report. Synovectomy and loose body removal were done through limited hip joint arthrotomy and with the assistance of an arthroscope.⁹

Boyer and others reported the outcome of arthroscopic management for primary synovial chondromatosis of hip joint in 120 patients. The outcome of 111 patients revealed more than one arthroscopy required in 23 patients and 42 patients required open surgery. Hip arthroscopy proved beneficial for patients diagnosed with primary synovial chondromatosis of the hip, with excellent outcomes in more than half the cases.¹⁰ Gilbert and Lachiewicz in their long term study of synovial chondromatosis synovectomy relived pain but it may prevent or delay the progression of degenerative changes.¹¹

Synovial chondromatosis being a rare entity, patients present usually at an advanced stage even when there is a limited loss of range of motion at the hip joint or rarely pain, stiffness hence we would like to highlight two points early CT with 3D reconstruction will help to know how advanced is the stage even with less symptoms.

Out of the surgical options of arthroscopic removal of loose bodies even though has certain limitations of incomplete removal, require a learning curve, inability to address cam and pincer impingement and higher cost of surgery but it still merits over the open (safe surgical dislocation or osteochondroplasty) procedures which carries an risk of avascular necrosis. Even in surgically intervened patients there was a decrease in pain, but long term follow up suggests likely to prevent osteoarthritis. Since in most cases the symptoms are mild, advanced surgical options should be offered to patients who really seek treatment in view of the risks involved.

Conclusion

In the present case report as symptoms were mild, patient was treated conservatively, and surgical intervention will be planned depending on progression of symptoms. There is no study to dictate at what stage of synovial chondromatosis surgery is mandated, conservative line of watchful observation if the symptoms are mild and the surgical options should be explored in cases of progressive pain, loss of range of movement and limitation of daily activities to those really seeking treatment in view of risk and benefits involved with these procedures and high chance of recurrence.

References

1. Anil K Jain. Turek's orthopedics principles and their applications. Wolter's Kluwer Publishers.7th edition.2015;28-30.
2. Gali Shapira-Zaltsberg, Kerri Highmore. Synovial osteochondromatosis in a 14-year-old boy with a history of Legg-Calve-Perthes disease, Radiology Case Reports. 2017; Volume 12(2):405-408.
3. Mara R. Vander Valk, Ewout S. Veltman, Joeri Assink, M. Remmelt Veen. Synovial chondromatosis of the hip, a case report and literature review. Journal of Orthopaedics.2019; Vol16(3) :249-253.
4. Kiyokazu Fukui, Ayumi Kaneuji, Shinjiro Amaya, Tadami Matsumoto. Synovial osteochondromatosis of the hip with femoroacetabular impingement and osteoarthritis: a case report. Journal of Orthopaedic Surgery. 2013;21(1):117-21.
5. MR Coolican, DJ Dandy. Arthroscopic management of synovial chondromatosis of the knee. Findings and results in 18 cases. J Bone, Joint Surg [Br]. 1989;71-B:498-500.
6. Wen *et al.* Synovial chondromatosis of the hip joint in childhood- A case report and literature review. Medicine. 2018; 97(51):1-4.
7. Shamsunder C, Khalid SA, Sujit Kumar VR. Synovial chondromatosis of the hip - Management with synovectomy and partial removal of loose bodies: Case study. Muller J Med Sci Res 2014; 5:64-6.
8. Masanao Kataoka *et al.* Complete resection of a massive synovial osteochondromatosis Of the hip using an anterior approach: A report of two cases. Case reports in orthopedics. 2017;1-4.
9. Lin CW, Wu CD. Primary Synovial Osteochondromatosis of the Hip Joint Treated with Arthroscopic-assisted Mini-open Surgery- Two Case Reports. J Orthop Case Rep. 2018 Mar-Apr;8(2):38-41.
10. Boyer T, Dorfmann H. Arthroscopy in primary synovial chondromatosis of the hip: description and outcome of treatment. J Bone Joint Surg Br. 2008. Mar;90(3):314-8.
11. Gilbert SR, Lachiewicz PF. Primary synovial osteochondromatosis of the hip: report of two cases with long-term follow-up after synovectomy and a review of the literature. Am J Orthop (Belle Mead NJ). 1997Aug;26(8):555-60.

Received: May 27, 2022
Accepted: June 5, 2022

Corresponding author
Vidya C S
E-mail: vidyacs@jssuni.edu.in