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Transient hip synovitis in an early adolescent: A rare case report

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ABSTRACT

Transient hip synovitis (THS) is a sudden and self-limiting inflammation targeting the synovial lining of the hip. It is the commonest cause of nontraumatic hip pain and limping in kids in the age group of 3-8 years, where males are more prone than females and very rarely seen in adults, hence not regarded as an adult illness and most often affects one hip joint. Hence, the patient mainly presents with unilateral hip or groin pain which may worsen on walking and lead to limping; however, some patients also report medial thigh and knee pain. The exact pathology of THS is not known. Still, many patients have reported a pre-existing viral infection. In this case a 24 years old male patient presented with the complaint of acute left hip pain which was further examined and diagnosed as a rare case of THS in adults by using MRI as the primary diagnostic strategy; the patient was shifted to the ward and was managed conservatively with symptomatic treatment and was discharged with good outcomes.

Keywords: Hip pain, Transient Hip Synovitis, Septic arthritis, MRI

1. INTRODUCTION

THS is a disorder having acute inflammation along with effusion in the joint, which mainly occurs in the first decade of life (Quintos-Macasa et al., 2006). The diagnosis of the disease is not easy as there is a lack of specific tests, so it is made by excluding the other differentials (Hart, 1996) like perthes disease, Slipped Capital Femoral Epiphysis (SCFE) and Septic arthritis (Eich et al., 1999; Krul et al., 2010). Among these differentials, Transient Synovitis (TS) and Septic arthritis (SA) are the two most likely aetiologies of hip pain. SA and TS can be differentiated to some extent by the presence of fever, ESR (Erythrocyte Sedimentation Rate) >44mm/hour, WBC >12X109/L and inability to bear weight which is seen in SA more commonly than TS (Krul et al., 2010). Children who report to the emergency department (ED) frequently with limping gait have Transient hip synovitis as the most typical cause of this symptom, with a yearly incidence of 0.2% and a lifetime risk of 3%, respectively (Landin et al., 1987). 4.7 years was the median age of presentation according to a Dutch study done in 2010 (Whitelaw and

Varacallo, 2022). The disease has a male to female ratio of 2:1. Bilateral involvement is observed in 1-4 % of the reported cases (Ehrendorfer et al., 1996).

2. CASE REPORT

A 24 years male complained of sudden onset pain in the left hip for three days with no history of trauma, erythema, fever, chills and no history of similar complaints in other joints. Movements like walking and weight-bearing activities were associated with increased discomfort in the affected limb. The patient said the pain was spontaneous and woke him up. He also said that the pain increased at night (nocturnal). Physical examination revealed that the range of motion was restricted and painful in every direction, with forty-five degrees of flexion and zero degrees of external and internal rotation. All other joints were normal and showed no signs of synovitis. The pain was so severe that the movements became difficult. The ESR was 19 millimetres per hour and the C-reactive protein level was 15.7 mg/L. Urine culture was negative. The plain hip X-ray showed in Figure 1 shows increased medial joint space with irregular articular surfaces in the left hip joint. The right hip joint seems to be normal.

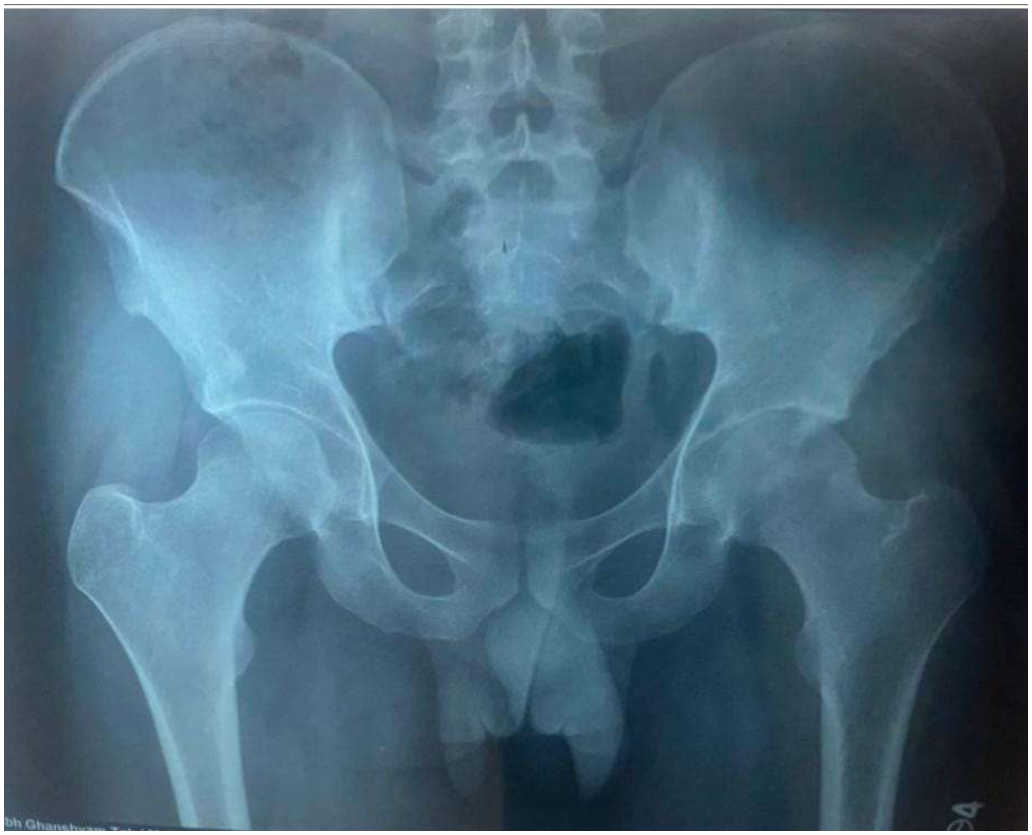

Figure 1 Plain X-ray of the left hip joint shows increased medial joint space with irregular articular surfaces. The right hip joint appears normal

Plain MRI PBH was advised shown in Figure 2 (a, b, c) which showed altered signal intensities in the articular surfaces of the left hip joint appearing hyper intense on SPAIR and T1WI FS (fat suppressed), hypo intense on T2WI with irregular articular margins and joint effusion consistent with features of left-sided transient hip synovitis. The right hip joint is normal.

On admission, the patient was given morphine to control pain and cyclobenzaprine was given at night to relax the muscles which had gone into spasm in the left hip area. On the next day, the symptoms reduced drastically and the patient could perform some movements. On the third day, the symptoms were relieved and he was discharged. After 15 days, the patient's C-reactive protein was 0.5mg/L and the patient remained symptom-free.

Treatment

After a complete, extensive diagnostic workup yields the correct diagnosis of THS, supportive treatment and rest is used to manage the disease. NSAIDs can reduce pain (Hart, 1996). The use of local heat application and massage is also beneficial. After an initial supportive care, the patient can be admitted to keep him under observation to offer better healthcare services or when the exact

cause has not been found. In most cases, symptoms become better after one to two days. In about 75% of patients, the full recovery of symptoms can take anywhere between 1 to 2 weeks. The symptoms of the remaining patients may be less acute for several weeks. Consider additional diagnoses if substantial symptoms continue for seven to ten days after the first presentation. A different pathology has been found in patients whose symptoms persisted for greater than one month (Whitelaw and Varacallo, 2022). Antibiotics are not given as the condition is not caused by a bacterial infection.

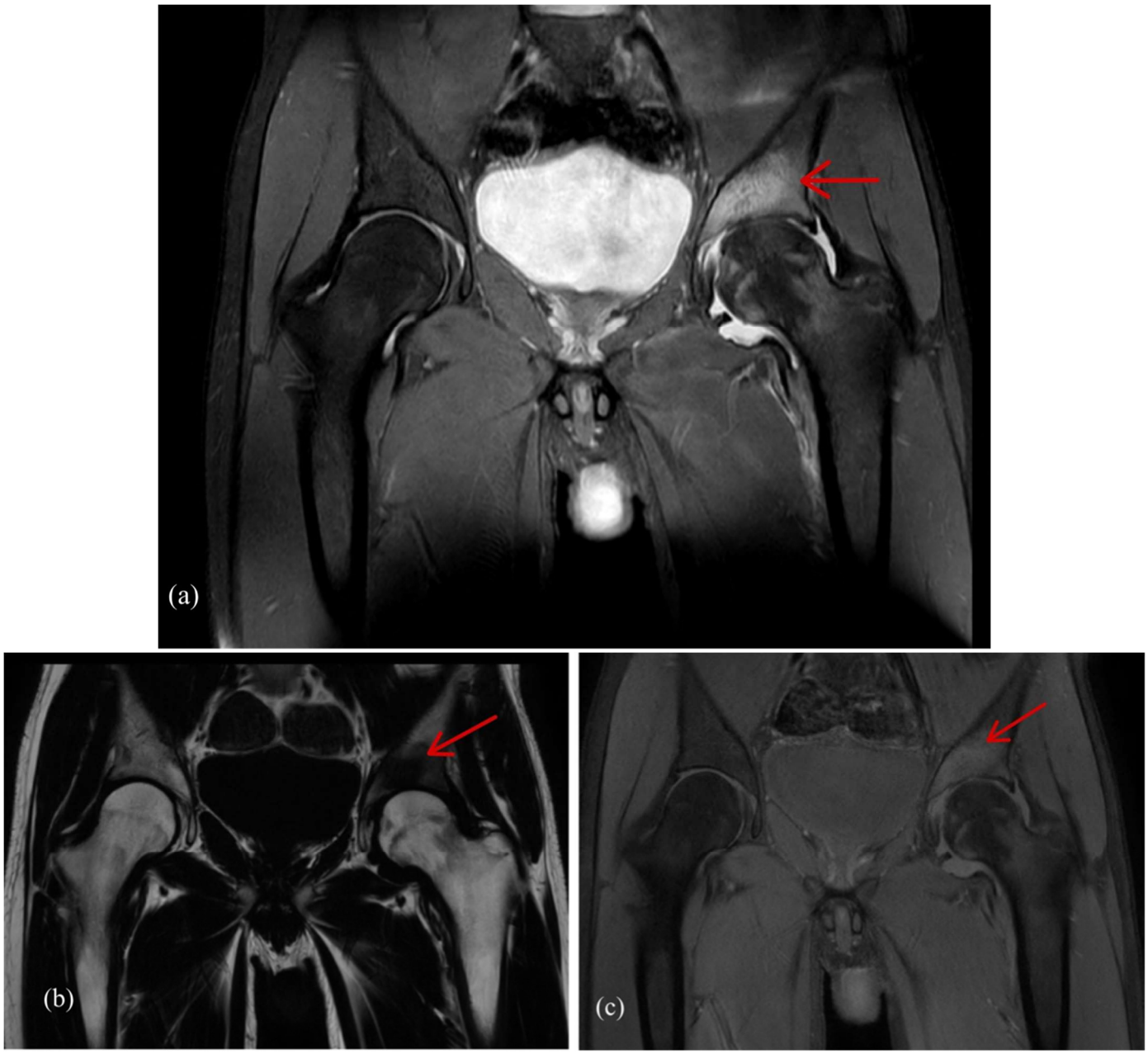

Figure 2 (a, b, c) Plain MRI PBH (Pelvis and both hips) coronal reformatted image demonstrates altered signal intensities in the articular surfaces of left hip joint appearing hyper intense on SPAIR and T1WI FS (fat suppressed), hypo intense on T2WI with irregular articular margins and joint effusion consistent with features of left-sided transient hip synovitis. The right hip joint is normal

3. DISCUSSION

THS is a cause of sudden hip arthralgia with joint effusion in the first decade of life. It is a self-recovering disease related with complaints like pain and restricted hip movement (Pauroso et al., 2011). It resolves gradually with conservative treatment and has no apparent cause for its onset. In the above case of a 24 years old male patient presenting with the complaint of sudden onset pain in the left hip, with histopathological evidence of inflammation but no signs of an infection or rheumatoid etiology, all cultures

were negative. Hip synovitis brought on by rheumatoid arthritis should also be taken into account but that involves multiple joints and is accompanied by inflammation of synovium in other joints (Bullock et al., 2019). This patient complained of pain which was only restricted to the left hip and lacked any signs of active synovitis in other joints, like in his hands and fingers so hip synovitis brought on by rheumatoid arthritis was ruled out. In the end the exact diagnosis was clinched early using MRI and the patient's condition improved to a great extent in just two days. As diagnosis of transient hip synovitis is considered a rare occurrence in adults, so the diagnosis is missed leading to delay in the start of treatment which leads to deterioration of the patient's condition hence worsening the outcome and increasing morbidity due to undue stress on the affected limb (Cook, 2014). A high recurrence rate has been observed in patients if proper care is not taken (Uziel et al., 2006). Early detection and treatment can help prevent the condition from worsening (Whitelaw and Varacallo, 2022). MRI is considered the best diagnostic modality as it helps to rule out the other differentials and diagnose the deformity early and improve the outcome. We are reporting a case of THS in early adolescence resembling one seen in the paediatric population, which is diagnosed early and treated well with MRI as a diagnostic tool; hence the practitioner should not keep THS aside by thinking of it as a disease of children and it should be diagnosed early to decrease the morbidity and chances of complications.

4. CONCLUSION

Transient hip synovitis is a self-limiting condition with no residual deformity that can occur in every age group with the same presentation as children. For early diagnosis and better outcomes for the patient, MRI should be considered a primary strategy that avoids invasive investigations and this condition can be managed conservatively.

Contribution of the Authors

Uniform contributions have been put into the study by each author.

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Informed Consent

The procedure along with the risk involved was thoroughly explained to the patient before the onset of the procedure, written & oral informed consent was obtained from the participant.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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