REPORT

Recurrent hip arthritis diagnosed as juvenile idiopathic arthritis: A case report

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Abstract: Juvenile idiopathic arthritis is the most common rheumatic disease in childhood. It is a chronic inflammatory disease associated with arthritis of unknown etiology that begins before the age of 16 and persists for longer than 6 weeks. In this report, the case of a child who suffered recurrent alternative hip arthritis with bilateral hip arthritis is examined, in which he was finally diagnosed as suffering from Juvenile idiopathic arthritis. A 14-year-old boy of Taiwanese origin presented with a normal birth and developmental history. At the age of 10, right-side hip joint pain was experienced, which later migrated to the left side. On further inspection, synovium hypertrophy, cartilage erosion and hip turbid fluid accumulation were found and aseptic arthritis was presumed to be the primary cause. However, after re-examining both his clinical history and presentation, Juvenile idiopathic arthritis was the final diagnosis. Any child presenting with repeat joint swelling are at risk of Juvenile idiopathic arthritis. This is still to be the case if symptoms recede or heal and no initial diagnosis is made. Therefore, a better understanding of the risk of recurrent arthritis is needed. It cannot be emphasized strongly enough that Juvenile idiopathic arthritis should be suspected at all times when a child suffers from recurrent aseptic arthritis of the hip joint.

Keywords: Juvenile Idiopathic Arthritis, Recurrent Arthritis

INTRODUCTION

Juvenile idiopathic arthritis (JIA) is a chronic inflammatory disease associated with arthritis of unknown etiology that begins before the age of 16 and persists for longer than 6 weeks. 1-3 Migratory hip pain associated with aseptic arthritis is rarely mentioned in JIA. In this report, the case of a child who suffered from recurrent hip arthritis that alternated sides which was finally diagnosed as JIA is examined.

CASE PRESENTATION

A 14-year-old boy of Taiwanese origin had a normal birth and developmental history. Neither family history nor medical past were of any note. At 10 years old, he experienced right hip pain and fever for a period of one month. A routine physical examination revealed right hip tenderness and limited right hip range of motion (ROM). Pathology tests revealed a white blood cell (WBC) count of 7000/uL, C-reactive protein (CRP) of 1.06mg/dL (<0.748) and erythrocyte sedimentation rate (ESR) of 64mm/hour (<15). The child was admitted to hospital due to intractable hip pain and was prescribed intravenous antibiotics with oxacillin therapy. Magnetic resonance imaging (MRI) revealed an increased fluid accumulation in the right hip joint (fig. 1). Arthroscopic shaving and arthroplasty were performed and the findings were right hip turbid fluid accumulation, synovium hypertrophy and cartilage erosion (fig. 2). A Pathological exam revealed some fibrotic fragments with mild chronic inflammation and fibrinoid substances. The patient showed improvement after arthroplasty. The final diagnosis was aseptic arthritis. The patient was discharged symptom-free after 4 weeks of treatment.

Three weeks later, the patient suffered further left hip pain without traumatic injury. The condition was similar to the previous episode, with the exception being the transference of the pain to the alternate side. Left hip tenderness and Patrick's test maneuver revealed left hip ROM limitation. Pathology tests revealed a WBC count of 4000/uL, CRP of 1.03mg/dL, ESR of 65mm/hour, and rheumatoid factor (RF) of 10 IU/mL (<20 IU/mL); an anti-nuclear antibody (ANA) test was 1:160 positive (<1:80). Contrast enhanced MRI showed left hip joint effusion (fig. 3). JIA was finally diagnosed through the clinical history of hip pain for a period of 6 weeks or longer, after infection such as tuberculosis) and tumors were excluded. Prednisolone was prescribed initially, however, once tampering was initiated, the hip pain returned, so a prescription of 10mg a day was resumed. Oral methotrexate (3 tablets every week) and prednisolone (30mg per day) were later prescribed due to

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persistent hip pain and an inability to run freely. These symptoms, particularly the associated pain, continued to be experienced sporadically for 3 months afterwards. The oral methotrexate was then switched with hydroxychloroquine due to the gastrointestinal intolerance of methotrexate causing the patient some discomfort. Finally, an etanercept subcutaneous injection was prescribed due to worries re corticosteroid dependency and a fluctuation in tenderness of the knee. Physical therapy was also prescribed in order to encourage the patient to do more exercise and prevent flexion contracture.

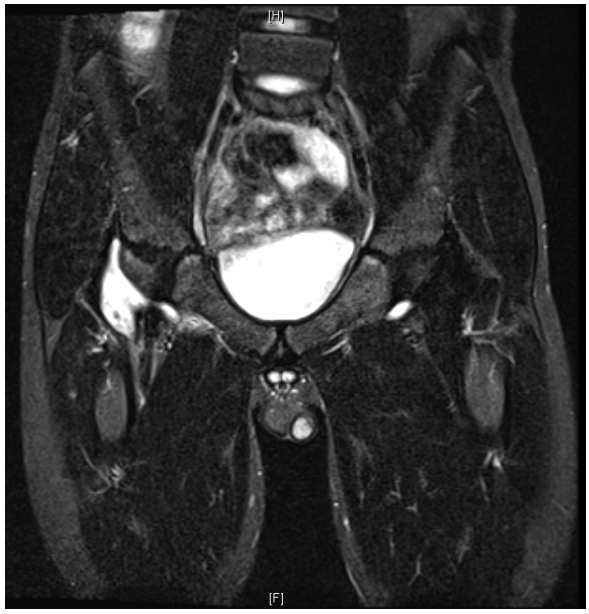

Fig. 1: Magnetic resonance imaging (T2-weighted) showed right hip arthritis (arrow) and spared the left side

DISCUSSION

JIA is the most common chronic arthritis in children. The condition often results in pain, joint deformity, and can develop into persistent active arthritis in adulthood. The current classification system, from the International League of Associations for Rheumatology (ILAR) (Prakken *et al*., 2008; Sandborg and Mellins, 2012; Wu *et al*., 2014), defines categories of disease based on clinical and laboratory findings. Some of the categories are subdivided into different forms. JIA is a chronic inflammatory disease and has different sub-classifications, such as extended-oligoarticular JIA, psoriatic arthritis, enthesitis-related arthritis and undifferentiated arthritis. JIA includes several forms of chronic arthritis in childhood (less than 16 years old) with no apparent cause. Typical symptoms and signs include arthritis, fever, rash, adenopathy, splenomegaly, and iridocyclitis. JIA is also a diagnosis of exclusion disease, after infectious arthritis, tumor or rheumatology has been evaluated. The progressive joint destruction and joint contracture (due to fibrosis) can result in the patient having to rely on a cane or walking frame, or even being bound to a wheelchair for life. In Taiwan, the average incidence of JIA is 4.93 cases per 100,000 per year and the prevalence is 33.8 per 100,000 population (Yang *et al*., 2014; Yu *et al*., 2013).

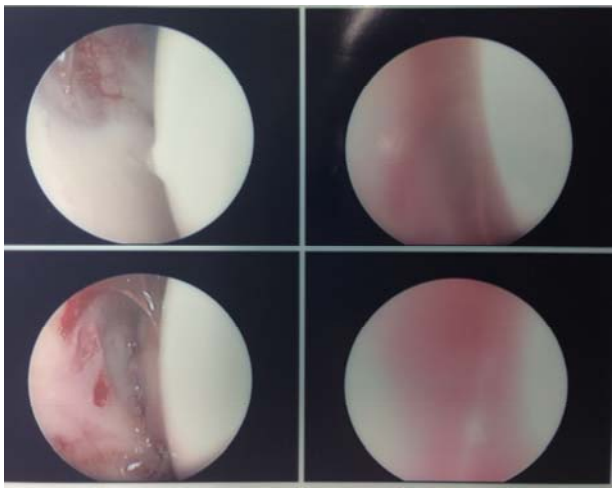

Fig. 2: Arthroscopic findings showed synovium hypertrophy, cartilage erosion and turbid fluid accumulation in the hip joint

Acute joint inflammation marked by severe pain and swelling is the hallmark of septic arthritis (Shen *et al*., 2012; Lin *et al*., 2011). Joint pain results from the stretching of the fibrous joint capsule. If lower extremity joints are involved, parents often report that children cannot bear weight and that they resist all efforts to move the involved joint and can't walk freely or unaided as in the case of our patient.

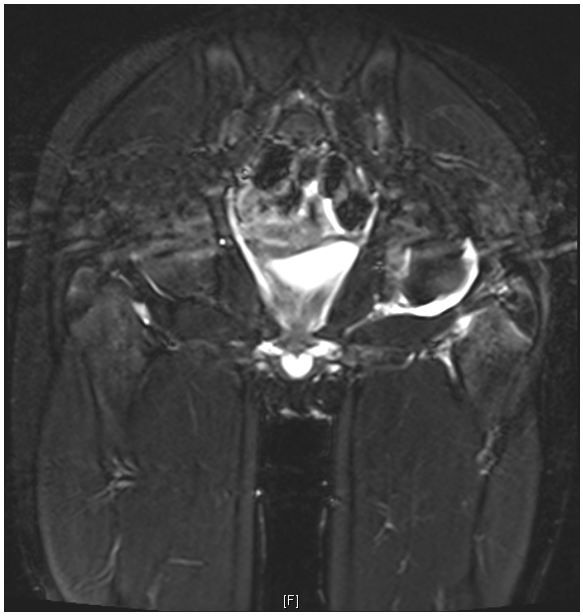

Fig. 3: Contrast-enhanced magnetic resonance imaging showed joint effusion and thickening of the synovial membrane of left hip joint and spared the right side

Distinguishing septic arthritis from aseptic arthritis of the hip joint in children can be challenging, but is a vital diagnostic differential. Septic arthritis requires early intervention, including intravenous antibiotics and operative irrigation and debridement to avoid an unfavorable outcome. Caird *et al*. (2006) reported that 70% of patients were diagnosed as having hip septic arthritis (34/48), yet only 50% (17/34) had evidence of culture-positive hip aspiration. A CRP level > 2.0mg/dL is a strong independent risk factor and valuable tool when assessing and diagnosing children with hip septic arthritis. The case study presented with fever and hip pain and difficulty in mobilization. The orthopedic service diagnosed aseptic arthritis after taking a comprehensive patient history, physical examination and laboratory data findings of sterile culture by arthroscopic synovectomy.

JIA patients often have persistent joint effusion, synovial hyperplasia and pain that has a poor response to medical treatment, all of which are indications for synovectomy. In 2008, Dell'Era *et al*. (2008) reported that the purpose of a knee synovectomy is to preserve the articular cartilage and remove synovial pannus, which impedes normal ROM. Arthroscopy also enables the evaluation of cartilage destruction at an earlier stage than radiography. The case study experienced improved ROM after arthroscopic synovectomy. To prevent postsurgical contracture, mobilization of the hip joint was started 2 days after the operation, initially with a passive therapy program and later with active physiotherapy.

Teramoto *et al*. (2013) reported a 10-year-old girl with recurrent knee arthritis who was finally diagnosed as having JIA. The girl underwent arthroscopic synovectomy after presenting with migratory hip pain and finally received medical treatment for JIA. The case's clinical manifestation was similar to our case study, except for the difference in the joints involved.

Our patient experienced right hip pain originally which later presented in the left hip. Oral corticosteroid was prescribed for the hip pain initially, but the patient became dependent on the prescribed medication. JIA was diagnosed clinically after exclusion of infection and malignancy, and DMARDs medication (methotrexate, sulfasalazine) was subsequently given. However, the patient still experienced hip pain and difficulty running well after initial diagnosis and treatment. A biological agent, etanercept, was prescribed after 3 months of oral DMARDs medication and seemed to be beneficial.

Children who suffer from joint swelling are at risk of JIA. Synovectomy can be beneficial in relieving acute tenderness. In clinical practice, more attention should be paid to recurrent arthritis of the large joints, especially in teenagers, who are candidates for developing JIA.

CONCLUSION

In conclusion, the case of a child was presented with recurrent, migratory hip arthritis, who was finally diagnosed as having JIA. Pediatrics physicians in general should be more alert to recurrent arthritis. This is particularly the case for teenagers, who are candidates for developing JIA and would therefore need more effective therapy in the early stages of the disease in order to attain a better outcome.

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