Recurrent Transient Synovitis of the Hip in Childhood. Longterm Outcome Among 39 Patients

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ABSTRACT. ***Objective***. To describe the outcome of children with recurrent transient synovitis (TS) of the hip.
Methods. A retrospective chart review of children with at least 2 separate episodes of TS between 1986 and 2003. We described the diagnostic investigations and outcome of these patients. A followup telephone survey for disability and pain scores was performed in 2004.
Results. We studied 39 children, 26 boys and 13 girls, from 6 pediatric rheumatology centers. The mean age at initial episode was 6 ± 2.6 years. There were a total of 102 episodes (mean 2.9 ± 1.6, median 2, range 2–10). All but 2 children had normal plain radiographs of the hip. All patients were contacted 4.2 ± 2.5 years after the first episode. None developed clinical Perthes disease or other chronic orthopedic condition. Three (8%) patients developed chronic disease: one had familial Mediterranean fever and 2 developed spondyloarthropathies, 0.5, 2, and 6 years after presentation. At followup 26 of 36 patients were asymptomatic, and 10 reported rare hip pain after intensive physical effort.
Conclusion. Children with recurrent TS usually have a benign course. In some patients recurrent TS may be the presenting feature of a chronic inflammatory condition. No progression to chronic orthopedic conditions was observed. (J Rheumatol 2006;33:810–11)

Key Indexing Terms:
TRANSIENT SYNOVITIS RECURRENT CHILDREN TOXIC HIP

Transient synovitis (TS) of the hip is a common condition in children between the ages of 1.5 and 14 years[1]. Studies have reported a recurrence rate between 0 and 17.4%[1-7]. There are conflicting reports on patient outcomes. Our aim was to evaluate the utility of diagnostic tests and outcome of children with recurrent TS seen by pediatric rheumatologists.

MATERIALS AND METHODS

We performed a retrospective chart review of children from pediatric rheumatology centers in Israel with at least 2 separate episodes of TS, at least 2 months apart, from 1986 to 2003[8]. We described the diagnostic investigations and outcome of these patients. Demographic, clinical, laboratory, and imaging data were collected. A followup telephone survey for outcome, disability, and pain was done in 2004. Descriptive statistics and chi-square tests were used, when applicable.

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RESULTS

Thirty-nine children were evaluated (Table 1). All patients had unilateral disease. The interval between the first and second episode was shorter than between subsequent episodes. Recurrences were most common within the first year after the initial episode (27/39, 69%). Five (13%) children had a recurrence during the second year and 7 (18%) children had later recurrence. The same hip was affected in 25 (64%) of the children.

Laboratory investigations were usually within normal range. The erythrocyte sedimentation rate (ESR) was > 50 mm/h in only 2/38 samples (5%). The white blood cell count was above 15×10^9/l in 3/43 (7%) children. Antinuclear antibodies were positive in 3/16 patients; rheumatoid factor was negative in all 10 patients examined. Genetic evaluations for familial Mediterranean fever (FMF) were negative in 3 patients, and HLA-B27 was positive in the sole patient examined. Patients undergoing serology and genetic testing had more episodes than patients not evaluated further (3.9 ± 2.4 vs 2.53 ± 0.95; p = 0.019).

All 39 children had plain radiographic films of the hips at least once. All were normal, except 2 children who had increased hip joint space. Ultrasound evaluation was performed in 30 children during 53 episodes; 51 of them had synovial fluid in the affected hip. Magnetic resonance imaging done in one patient detected a small effusion. Technetium bone scans were performed on 17 patients: in 7 children there was a mild increase in uptake on both sides of the hip joint space. One patient had slightly decreased uptake in the femoral head, suggestive of Perthes disease, which was not confirmed at followup.

Table 1. Clinical characteristics of patients with recurrent transient synovitis (n = 39).

Characteristic	n
Sex, n (%)	
Male	26 (67)
Female	13 (33)
Onset age, yrs, mean ± SD (range)	6 ± 2.6 (1.6–11.2)
No. of episodes, mean ± SD (median, range)	2.9 ± 1.6 (2, 2–10)
Interval between episodes, mo, mean ± SD (median, range)	
First and second	13.7 ± 15.4 (9.5)
Second and subsequent	16.8 ± 13.3 (12)
First and last	21.5 ± 20 (13, 3–72)
Hip involved at first episode, n (%)	
Right	20 (51)
Left	19 (49)

Thirteen patients were treated with nonsteroidal antiinflammatory drugs and 5 by skin traction.

All patients were contacted 4.2 ± 2.5 years after the first episode. None developed clinical Perthes disease or other chronic orthopedic condition. Three (8%) patients developed chronic rheumatic diseases. One patient was diagnosed with FMF, 0.5 years after the first episode; this patient had a family history of FMF and had several prolonged episodes.

Two male patients developed spondyloarthropathy, 2.5 and 6 years, respectively, after presentation. Both patients had their first episode at a relatively older age, 8.7 and 11 years, respectively. The first patient had high ESR during his first episode, but normal ESR during a second episode one year later. Seventeen months after the second episode he developed sacroiliitis, Achilles enthesitis, and knee arthritis. The second patient had a second episode one year after the first. The ESR was in the normal range at both episodes. Five years after the second episode he developed sacroiliitis, Achilles enthesitis, and hip pain, and testing for HLA-B27 was positive. At followup 26/36 (72%) patients were asymptomatic, and 10 (28%) reported hip pain after intensive physical effort; we did not have data on medication use in those patients. The children with pain had more episodes than the asymptomatic group (4.2 ± 2.4 vs 2.4 ± 0.7; $p < 0.005$). No other predictors of pain, such as age at first episode, laboratory findings, or gender, were found. Five patients (14%) continued to have rare episodes of limping.

DISCUSSION

TS is a common condition, usually managed by a primary physician, that resolves completely in most cases. Recurrent TS is often referred to a specialist, and children frequently undergo extensive evaluation, especially radiological studies. Our study of patients referred to pediatric rheumatologists suggested that most children with recurrent TS have a benign course and may not need extensive evaluation. This concurs with findings of Taylor, *et al*, who retrospectively assessed 63 children with a total of 143 episodes[9].

It is unclear whether the TS episodes in our patients with FMF and spondyloarthropathy were early signs of their disease or were coincidental. A relatively older age, prolonged episode duration, family history of rheumatic disease or FMF, or increased inflammatory markers should raise suspicion for chronic rheumatic entities[10].

It is difficult to assess the accuracy of published reports on the outcome of TS due to doubts concerning the initial diagnosis and to inadequate followup. The worst outcome was reported by Valderrama, who reported that 12 of 23 patients with non-recurrent TS followed for 15 to 30 years developed coxa magna, osteoarthritis, or broadening of the femoral neck[11]. Other reports failed to confirm these findings[2,6].

The relation between TS of the hip and Perthes disease is still speculative. In several series Perthes disease or coxa magna followed TS in as many as 30% of the cases, and hip radiographs were recommended 3 months following first episode[12,13]. In our study no patient developed Perthes disease or other orthopedic complication. We suggest that serial hip radiographs are not routinely advocated.

Our results may not be generalizable to the entire pediatric population since our study represents patients seen by pediatric rheumatologists. Orthopedic surgeons often see children with recurrent TS; they may have a higher frequency of chronic orthopedic conditions.

We conclude that recurrent TS usually has a benign course. However, in some patients early chronic inflammatory conditions may mimic recurrent TS and therefore need to be ruled out. The progression to chronic orthopedic conditions is probably lower than previously reported. Larger studies that include orthopedic units are suggested.

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