

# Incidence and management of transient synovitis of the hip: a study in Dutch general practice

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**SUMMARY.** Little is known about transient synovitis of the hip in the community. Using data from the Dutch national survey of morbidity and interventions in general practice, a study was undertaken to look at the incidence and management of transient synovitis of the hip in children under 15 years of age. Transient synovitis of the hip was diagnosed in 19 children, 17 of whom were new cases. The mean age of the children was six years six months with a sex ratio of 2.8:1.0 boys to girls. An incidence rate of 1.1 per 1000 person years was calculated. General practitioners prescribed drug treatment for six children and bed rest was advised for six children. Two children were referred for an x-ray examination. Clear follow-up arrangements were made for 16 of the 19 children. It appears that general practitioners preferred to adopt a wait-and-see approach to transient synovitis of the hip rather than referring children for diagnostic ultrasound or x-ray examination.

**Keywords:** synovitis; hips; morbidity; children and infants.

## Introduction

A child presenting with a limp and complaining of pain and restricted movement in the hip represents a diagnostic problem for the doctor. The differential diagnosis may include transient synovitis of the hip, Legg-Calvé-Perthes disease, septic arthritis, osteomyelitis, juvenile chronic arthritis, a tumour or, depending on the child's age, congenital hip dislocation or epiphysiolysis of the femur head.<sup>1,2</sup> Diagnosis is also complicated by the fact that a problem in the hip may manifest itself as a painful knee, while pain felt in the hip may arise from conditions in the lumbar spine. Of all these disorders, transient synovitis of the hip has the highest incidence.

Research concerning the incidence of transient synovitis of the hip is scarce; a literature search revealed only two studies. Landin and colleagues reported an incidence of 2.0 per 1000 person years for children under 15 years of age in Malmö, Sweden.<sup>3</sup> A study of children aged 16 years and under in Helsinki, Finland, reported an incidence of 0.52 per 1000 person years.<sup>4</sup>

Transient synovitis of the hip is a short lived inflammatory condition where there is effusion in the hip joint. In the study by Haueisen and colleagues the symptoms disappeared within

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one week in 67% of patients, while in 12% the symptoms persisted for more than one month.<sup>5</sup> Transient synovitis of the hip occurs more often in boys than in girls,<sup>5</sup> and is usually found in children between the ages of three and 10 years.

The pathogenesis of the condition remains obscure. As there are no specific diagnostic criteria only a provisional diagnosis of transient synovitis of the hip may be made initially and then confirmed after the symptoms have disappeared.<sup>6,7</sup> Therefore the diagnosis is usually one of exclusion.

In hospital, ultrasound examination is used increasingly as a diagnostic tool to detect hip disorders because of its high sensitivity for demonstrating effusion in the hip joint.<sup>8-10</sup> Meradji and Diepstraten considered pelvic x-ray to be unnecessary in uncomplicated cases with clear sonographic and clinical findings.<sup>9</sup> Bickerstaff and colleagues devised a protocol for the management of hip complaints in children,<sup>10</sup> proposing that ultrasound examination be performed on presentation and, if the effusion persisted for at least 10 days, an x-ray examination should be performed in order to exclude Legg-Calvé-Perthes disease. In this way, the radiation load of children suffering from transient synovitis of the hip could be reduced while other, possibly more serious, hip disorders could still be identified at an early stage. For x-ray as well as for ultrasound examination Dutch general practitioners have to refer the patient to a radiologist. When requested, the radiologist will perform the examination the same day. As not every radiologist has the experience to perform a diagnostic ultrasound examination of the hip in children, general practitioners may have to consult radiologists at major hospitals for this.

Treatment of transient synovitis of the hip consists of a few days of bed rest, preferably with the affected hip in flexion and slight abduction.<sup>1</sup> The *Dutch textbook of orthopaedics* states that if after a fortnight of bed rest the symptoms have not disappeared or if the symptoms recur, further clinical examination is necessary.<sup>11</sup> However, the orthopaedic surgeon, Visser, suggested performing x-ray examination of every child that limped and for whom internal rotation was restricted and/or painful.<sup>1</sup>

The aims of this study were first, to investigate how frequently transient synovitis of the hip was diagnosed by Dutch general practitioners, and secondly to find out how Dutch general practitioners managed these cases.

## Method

Between 1 April 1987 and 31 March 1988, the Dutch national survey of morbidity and interventions in general practice was carried out by the Netherlands institute of primary health care.<sup>12</sup> For this survey 103 general practices (161 general practitioners), divided into four groups, recorded all contacts with patients during one of the four successive three month fieldwork periods (contact registration). The practices were a stratified random sample across the whole of the Netherlands.

As well as collecting demographic data on all patients, data were recorded for each consultation (including home visits, follow-up visits and so on) concerning reasons for the consultation, provisional diagnosis, diagnostic tests, treatment, referral to a specialist, paramedic or hospital and any follow-up appointment. Both the reasons given for the visit and the working hypothesis, together with the differential diagnosis were written down by the general practitioner on the contact registration

form and subsequently coded by a researcher using the *International classification of primary care (ICPC)*. The version used by the Netherlands institute of primary health care differs slightly from the original classification by Lamberts and Wood.<sup>13,14</sup>

The national survey was based on an episode oriented registration of morbidity. An episode was considered to be the period during which a patient was ill, from the appearance up to the disappearance of the symptoms. If, after a period without symptoms, the patient consulted the general practitioner with the same symptoms, this was considered to be a relapse and the beginning of a new episode. The preceding episode could have taken place prior to the registration period.

Since transient synovitis of the hip is hardly ever found in patients over the age of 14 years, only data for children under 15 years were used in this study. Only those patients for whom the general practitioner had made a provisional diagnosis of transient synovitis of the hip were included. The diagnosis of transient synovitis of the hip was provisionally classified under 'other disorders of the soft tissues and joints' (code L91.9<sup>14</sup>). On closer study of the data, a number of patients with the provisional diagnosis of transient synovitis of the hip were found to have been given the code 'infections of musculoskeletal system not classified elsewhere' (code L70.3<sup>14</sup>). By examining the original forms it could be established whether the general practitioner had actually used the diagnosis of transient synovitis of the hip as a working hypothesis. Patients were included in the study if the first contact of the episode had taken place within the registration period and at least a fortnight prior to the end of the registration period in order to allow study of the follow up of the disease. General practitioners' management of children with transient synovitis of the hip was studied on the basis of data relating to diagnosis, treatment, referral and follow up. The incidence rate was calculated by dividing the number of new cases by the product of the number of children under study and the length of the registration period.

## Results

There were 64 198 children under the age of 15 years in the national study. Of these children, 27 462 had a total of 49 309 contacts with their general practitioners during the registration period. Nineteen patients had a provisional diagnosis of transient synovitis of the hip. Two cases were relapses, the patient having had a previous episode which occurred before the registration period. An incidence rate for new cases was calculated to be 1.1 per 1000 person years. There were 14 boys and five girls (sex ratio 2.8:1.0) aged between one year four months and 14 years five months, mean age six years six months. Fourteen of the 19 children (74%) were more than three years and less than 10 years old.

Twelve patients had one consultation with the general practitioner, four patients had two and three patients were seen three times. The total number of contacts was therefore 29. The symptoms presented by the patients at the initial contact, as written down by the general practitioner, are listed in Table 1. Five patients complained of two symptoms and the other 14 reported one symptom. At the initial contact every patient had a history taken and a physical examination of the hip performed. The general practitioner also performed a physical examination of the hip at subsequent consultations. One patient had an x-ray following the initial consultation with the general practitioner and another patient had an x-ray after a subsequent consultation.

The general practitioners prescribed a drug for six patients; two patients were prescribed paracetamol, three patients were prescribed calcium carbaspirin (a form of aspirin) and one patient was given diclofenac sodium. The general practitioners

advised bed rest for six patients (one of these had also received medication). Except for the two diagnostic referrals to the radiologist none of the patients was referred to a specialist and none of the general practitioners consulted a specialist for therapeutic advice.

Of the 29 contacts, 25 were concluded with clear follow-up arrangements (Table 2). In 16 of the 19 initial contacts (84%) a definite follow-up arrangement was made. Follow-up arrangements were not known for one patient after the initial consultation. Data were missing for four of the five follow-up arrangements where the patient was asked at the initial consultation to telephone the doctor, and for one of the five follow-up arrangements where the patient had been asked at the initial consultation to return to the practice, even though the follow-up period fell within the registration period in all five cases. Six patients were asked to return after the initial contact if their symptoms did not improve; one patient returned.

**Table 1.** Symptoms presented by the 19 patients at their initial consultation with the general practitioner.

ICPC description	% of patients <sup>a</sup> (n = 19)
Symptoms/complaints leg/thigh	42
Symptoms/complaints hip	37
Restriction/handicap	32
Symptoms/complaints knee	5
Other localized abdominal pain <sup>b</sup>	11

n = number of patients. <sup>a</sup> Five patients presented with two complaints. <sup>b</sup> Pain in groin.

**Table 2.** Follow-up arrangements made by the general practitioners at the 19 initial consultations and the 10 subsequent consultations.

Follow-up arrangement for patient	No. of initial consultations	No. of subsequent consultations
To return if no improvement	6	2
To return to the practice	5	3
To telephone the doctor	5	1
Need not come back	0	3
No follow-up appointment	2	1
Not known	1	0

## Discussion

As the national survey was not designed to look at transient synovitis of the hip specifically and as there is no separate code for transient synovitis of the hip within the *International classification of primary care*, the original contact registration forms were examined. In view of the diagnostic problems of transient synovitis of the hip, the possibility cannot be ruled out that some general practitioners only described the symptomatology of the child and did not make a diagnosis. This probably led to an underestimation of the actual number of patients with transient synovitis of the hip, so the incidence rate found in this study (1.1 per 1000 person years) should be viewed as a minimum.

The ratio of boys to girls (2.8:1.0) found in this study corresponds with those of other studies. Landin and colleagues reported a ratio of 2.6:1.0.<sup>3</sup> In their article, Haueisen and colleagues gave a summary of literature in the field of transient synovitis of the hip and found a ratio of 1.86:1.0.<sup>5</sup> The average age of the children in this study (six years six months) was higher than that reported by Haueisen and colleagues (5.9 years).<sup>5</sup>

Relapses in children suffering from transient synovitis of the

hip have been recorded previously.<sup>4,15</sup> Two patients in this study were suffering a relapse, a preceding episode having occurred before the registration period. Since the study only took place over a three month period it was not possible to monitor patients long enough to establish the rate of relapse reliably.

Rather than consulting a paediatrician or orthopaedic surgeon for an early opinion, it appeared that Dutch general practitioners chose to await developments in patients with a provisional diagnosis of transient synovitis of the hip.

The diagnosis of transient synovitis of the hip made by general practitioners was based on history taking and physical examination. Two patients also had an x-ray examination. General practitioners did not use ultrasound scanning as a diagnostic tool for patients suffering from hip complaints. This may have been the result of any of the following factors: the general practitioners may have been unfamiliar with ultrasound scanning as a diagnostic tool in the case of hip complaints, there may have been limited availability of ultrasound scanning for general practitioner patients at the time of the national survey, and general practitioners may have lacked confidence in ultrasound as a means of diagnosis in hip disorders. In 32% of the cases, general practitioners advised bed rest for patients. When prescribing medication, general practitioners seem to prefer non-steroidal anti-inflammatory drugs, which was logical in view of the inflammatory nature of the complaint.

The wait-and-see approach of the general practitioners necessitated definite follow-up arrangements. Clear follow-up arrangements were made for 16 children after the initial consultations. Where data were missing for five follow-up appointments, it is assumed that the patients did not keep these appointments. The self limiting nature of the condition underlies this assumption. The chance of patients returning for the follow-up appointment may be decreased as their symptoms may not affect their ability to perform daily activities.<sup>16</sup> However, it could be that follow-up consultations took place without having been recorded.

In conclusion, the estimate of the incidence rate of transient synovitis of the hip found in this study is similar to that found in Nordic countries.<sup>3,4</sup> Dutch general practitioners practise a wait-and-see approach when suspecting the diagnosis. The question of whether the wait-and-see policy was justified can not be answered on the basis of this study.

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