

# THE SIGNIFICANCE OF THE SO-CALLED "IRRITABLE HIPS" IN CHILDREN

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In spite of the extensive use of radiographs and laboratory investigations, it is still impossible to clarify the nature of the syndrome known as 'irritable hip'. Although the nomenclature of the condition varies, the term 'irritable hip' will be used in this paper because it does not prejudge either the aetiology or pathology and it has the added historical merit of having been used by Hugh Owen Thomas.

The syndrome is important not so much in itself but because of the difficulty in differentiating it from more serious conditions of the hip joint. Few articles have been written on this subject; I have found only 12.

Bradford (1912) called the condition a synovitis of the hip, saying that its diagnosis can be given only after the symptoms have subsided and no other cause of the condition has been found.

Todd (1925) described it as a simple transient coxitis and he recommended that the patient should be put to bed without any fixation for observation and differentiation from tuberculosis. Fairbank (1926) described eight groups of non-tuberculous coxitis in children and adolescents. Platt commented on Fairbank's grouping and also used the term 'observation hips'. This term is quite adequate because the patient must be kept under observation.

Miller (1931) described this syndrome and reported 77 cases of what he termed 'acute transient epiphysitis of the hip joint in children'. He said that some radiographs showed small abscesses and bone absorption near the epiphyseal line; 80% of his cases were associated with diseased tonsils. He believed that the radiological findings were due to embolic abscesses. His treatment was to remove the primary focus, with rest from weight bearing, and fixation of the hip by traction and the symptoms usually cleared up in a few weeks or a few months.

Butler (1933) investigated 97 cases of arthritis of the hip joint in children. Radiographs of 34 showed no abnormality and there was a complete return of function. They could therefore be

classified under this syndrome, although Butler referred to them as transitory arthritis of the hip joint and believed that they were sometimes traumatic but more often infective. He also believed in the existence of an infection secondary to a focus elsewhere in the body.

Finder (1936) reported 22 cases of what he termed transitory synovitis of the hip joint. Rauch (1940) reported 37 cases of transitory synovitis of the hip joint in children and also suggested that the condition was due to an allergy. Wiles (1951) said that four out of five children and adolescents with symptoms in the hip joint had transient symptoms only.

Edwards (1952) reported 13 cases which he also called transient synovitis of the hip joint and he concluded that the condition represented an allergic hypersensitivity or toxic reaction to a focus of infection elsewhere in the body. Two of his patients responded dramatically to antihistamine therapy.

Drey (1953) found definite radiological changes with this syndrome. He described unilateral exaggerated shadows of the obturator internus, the iliopsoas and the gluteus minimus muscles, and believed that the swelling of these muscles was evidence of synovitis of the hip joint.

Hermel and Sklaroff (1954) reported two cases in which, in addition to the radiological changes described by Drey, the shadow of the distended hip joint capsule of the affected hip joint could be seen laterally.

## Material

At the Orthopaedic Department of the City General Hospital, Sheffield, 46 children were treated in whom no pathology of the hip joint was discovered, even after prolonged observation and repeated examination.

**Sex Incidence.** Of the 46 patients, 37 (80.5%) were males and nine (19.5%) females. This incidence is similar to that reported by Butler (1933), where the boys predominated over girls in the ratio of 17:5. Edwards

(1952) reported that boys and girls appeared to be equally affected.

**Age Group.** The average age of the 46 patients was 7 years, the youngest being 2 years and the oldest 14 years. The average age group of Finder (1936) was 5.4 years.

**Seasonal Distribution.** In 20% of the 46 cases the onset was in May. The highest frequency noted was during the period April to August.

**Preceding Factors.** Three of the patients had been in contact with tuberculous members of their families. The brother of one patient was being treated for Perthe's disease. Four of the patients had recently been ill with tonsillitis, one with bronchitis and asthma and two with scarlet fever. One patient had had pyrexia for a few days, another attended while suffering from glandular fever, and seven had been reported as having sustained an injury.

### The Syndrome

The predominant complaints are of pain and of a limp. The pain at the onset is not sufficient to cause alarm or to suggest a serious disease. Occasionally the pain radiates to the front of the knee. Few patients were unable to walk. In some the limp was very slight.

Of the 46 patients, 11 (24%) complained of pain only and 35 (76%) complained of both pain and a limp.

The onset of the symptoms in 25 patients (54%) was insidious and in the rest, 21 patients (46%), it was sudden. This corresponds with the findings of Edwards (1952) who reported the insidious and sudden onsets as being equal.

The right hip was involved in 24 children, the left in 22.

The average interval from onset to attendance for 41 patients was 17 days. The other five patients attended after a long interval and, if they had been included in addition to the 41, the average of all 46 would have been 77 days.

**Clinical Findings.** Sixteen of the patients (34%) were in-patients, while 30 (66%) were out-patients.

Twenty-seven (59%) had pain around the hip on active movement and 11 patients (24%) had some pain even when still. In all patients, however, the pain was slight and only one patient complained of the pain disturbing him at night.

Forty-three (93.5%) patients had pain on weight-bearing; three (6.5%) were free from pain on weight-bearing. The pain was described as slight in 93% and severe in 7%.

A limp was present in 43 (93.5%) patients.

Only five (11%) patients had any tenderness over the hip joint. No swelling was found in any patient. Twenty (43%) patients had a flexion deformity varying from 10° to 40°. There was limitation of extension of the hip joint in 15 patients (33%). Forty-three (93.5%) patients had limitation of internal rotation, but in only eight (17.5%) patients was the limitation virtually complete. Abduction was found to be slightly limited in 22 (48%) patients, moderately limited in 12 (26%) and full in 12 (26%). External rotation was full in 23 (50%), slightly limited in 18 (39%), moderately limited in three (7%) and severely restricted in two (4%). Forty-three of the children (93.5%) had muscle spasm, and in eight of these it was severe.

Four patients had a rise in temperature, which reached 100° in one patient and 99° in the other three. Finder (1936), Edwards (1952) and Hermel and Sklaroff (1954) all described a pyrexia to 103°, but this was not seen in the present series.

The Trendelenburg test was negative in all patients.

**Laboratory Data.** The white blood count was normal, ranging between 4,700 and 9,600. The differential count was also normal except that one child was also suffering from glandular fever with the typical changes, and the other had an eosinophilia of 12% due to intestinal worms.

The erythrocyte sedimentation rate ranged between 3 and 12 mm. in one hour. In one patient the E.S.R. rose to 27 mm., but when he was admitted to hospital he also had an infective dermatitis of the scrotum.

In only one patient was the Mantoux test positive and the mother of this child was suffering from active pulmonary tuberculosis.

There were no positive Wassermann and Kahn reactions.

In two cases the hip joint was aspirated, and culture and guinea-pig inoculation were negative for tuberculosis.

No patients had a biopsy of the synovial membrane performed as it was thought to be risky and unjustifiable in a condition which clears up without complications.

**Radiological Findings.** Although two authors have claimed typical radiological changes, none were found in this series. Two patients had a slight degree of bilateral coxa valga and one had osteo-



FIG. 1.—Radiograph, taken three days after the onset of symptoms, showing the oedema of the muscles in the neighbourhood of the affected hip joint.

poikyllosis. In another there was a secondary centre of ossification in the inferior iliac spine. It was considered that none of these findings had any connexion with the symptoms.

Hefke and Turner (1942) reported the shadow of the obturator internus as an early diagnostic finding in septic arthritis and tuberculosis of the hip which was never present in any other condition.

The reported radiological findings of soft tissue shadows have been seen in cases of septic arthritis and osteomyelitis and tuberculosis. These shadows of distended capsule, and of swollen muscles with the translucent lines in the intermuscular septa showing, were not seen in the present series but



FIG. 2.—Antero-posterior view of the hip joints, taken eight weeks after the onset of symptoms, showing the subperiosteal new bone on the outer aspect of the left ilium.



FIG. 3.—Lateral view of the hip joints, taken eight weeks after the onset of symptoms, with the same subperiosteal new bone.

only in patients with an infective arthritis. For instance, in a 5-year-old girl with a three-day history of pyrexia and severe pain in and immobilization of the left hip, a radiograph showed oedema of the muscles in the neighbourhood of the left hip joint. It was considered that she had an infection near the joint and she was treated with penicillin. The pyrexia subsided after three days and all clinical signs had disappeared after four weeks, when fixation was removed. Radiographs taken eight weeks after the onset of symptoms showed subperiosteal new bone on the outer aspect of the left ilium just above the acetabulum indicating an osteomyelitis of the ilium. Three months later all the radiological changes had subsided.

**Differential Diagnosis.** The sole importance of the syndrome of irritable hip lies in the necessity to distinguish it from infective arthritis, tuberculosis, Perthe's disease, rheumatism, osteomyelitis, slipped upper femoral epiphysis and other less frequent



FIG. 4.—Radiograph taken three months later showing that the soft tissue and bony changes have subsided.

conditions. The differential diagnosis is easy eventually because, while an irritable hip settles down slowly without producing any specific sign, the other conditions always produce the typical signs both clinically and radiologically.

#### Treatment and Results

The treatment consisted of complete rest in bed with fixation by traction. The symptoms usually subsided with two to three weeks of non-weight-bearing exercises in bed. Practically all the patients had completely recovered within four weeks, six had some recurrence of pain in the hip joint and in these the total duration of symptoms averaged 37 weeks as opposed to the average duration in the remaining 40 patients of 4.2 weeks. In all the patients there was a complete remission of symptoms.

Two cases, not included in the series of 46 patients, are interesting as showing the importance of following up an apparent irritable hip. In one case, a boy aged 5 years, positive radiological changes of Perthe's disease did not show till 18 months after the start of a limp. In the other, a girl of 13 years, despite three admissions to hospital for investigation and treatment, abnormal radiographical changes were not observed until after 26 months and it was almost five years before a diagnosis of tuberculosis of the hip was confirmed. Early disappearance of abnormal physical signs and symptoms with fixation in bed does not rule out the possibility of latent serious disease.

In considering the follow-up, it must be realized that after a few weeks of fixation the symptoms subsided. It is, therefore, very difficult to persuade the parents to bring to the Out-patient Department what they consider to be a normal child. It is for this reason that the average attendance interval for each patient was 6.8 months and varied from one month to three years. During March, 1956, an attempt was made to re-examine all 46 patients but only 30 of them attended. The longest interval from the onset of symptoms to March, 1956, was eight years and the shortest six months. Each patient was found to be leading a normal life and clinical, radiological and laboratory examinations revealed no abnormal pathology in the hip.

#### Conclusion

The purpose of this paper is to draw attention to the condition of 'irritable hip'. It is a common condition in children but its incidence has been ignored because it is not a disabling condition. The aetiology of the syndrome is difficult to determine. It would be quite wrong in a briefly self-limiting condition to subject the patient to the risk of an exploration and biopsy. It is frequently forgotten that the joint lining consists of highly undifferentiated tissue and that therefore its power to respond differently to different stimuli is nil. The histological picture is essentially the same whether the irritation is due to infection, trauma, rheumatoid arthritis, osteo-arthritis or any other condition. It is quite wrong, for example, to report that 'the synovial membrane shows the typical histological changes of rheumatoid arthritis'. Even if tubercles are found in a joint, these are the specific reaction of any part of the body to tuberculosis, and the synovial membrane itself differs in no way from that produced by any other noxious stimulus. It is probably true to say, therefore, that there is no definite single aetiology in this condition.

#### Summary

The literature on the subject of 'irritable hip' has been briefly reviewed and 46 children with transient symptoms in the hip joint have been studied in detail. Irritable hip appears to be a definite clinical entity whose main importance lies in the necessity for careful observation and follow-up even for years after the symptoms have subsided.

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