Idiopathic chondrolysis of the hip

A distinct clinical entity?

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We report 4 cases of idiopathic chondrolysis of the hip in children, a rare disease. In several aspects, there was a close resemblance to classical pauciarticular juvenile chronic arthritis. Hence, we question the clinical entity denoted as idiopathic chondrolysis of the hip.

Chondrolysis of the hip in slipped capital femoris epiphysis is a well-known clinical entity (Cruess 1963, Mankin 1975). It has also been reported after trauma (Pellici 1979) and Bleck (1983), infection (Wenger 1975), and prolonged immobilization (Heppenstall 1974). Duncan (1975, 1979) presented cases of chondrolysis of the hip in children in whom no specific cause could be found. He therefore introduced the prefix "idiopathic." The disease is characterized by pain and impairment of motion, which may lead to fibrous ankylosis. Radiography shows progressive narrowing of the articular joint space.

We present 4 children with chondrolysis of the hip, in whom there was chronic synovitis, consistent with pauciarticular juvenile chronic arthritis.

Patient histories (Table 1)

Case 1

An 8-year-old girl presented with pain and restriction of motion of the left hip for 7 months. A left-sided limp was seen. Radiography showed joint-space narrowing. On arthroscopy, synovitis of the hip joint was found. The cartilage seemed to be intact. Histologic examination of the synovial membrane showed a nonspecific synovitis. Cultures of the synovial fluid were negative.

She was treated with rest, nonweight bearing, and physical therapy. At follow-up after 1 year, motion of the hip still was impaired.

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Figure 1. Case 2. A 14-year-old boy with pain and stiffness in the right hip with joint space narrowing.

Case 2

A 14-year-old boy had pain and stiffness of the right hip for more than a year. He limped and the range of motion was restricted. Radiography showed narrowing of the joint space (Figure 1). Arthroscopy showed synovitis and fibrillated cartilage of the femoral head. Immunofluorescent staining of the synovial membrane showed deposits of immunocomplexes.

After 2 years, pain was less pronounced, but narrowing of the joint space remained.

Case 3

A 13-year-old girl had 2 years of pain and progressive stiffness of the left hip. The range of motion was 20–70°. The hip was fixed in 10° external rotation. Considerable joint-space narrowing was noted on radiographs. A synovitis was found on arthroscopic examination. Microscopy showed a nonspecific infiltration of the synovial membrane (Figure 2).

After 1 year, the hip was ankylosed in a nonacceptable position. Tenotomy, capsulotomy, and osteotomy did not improve her condition.

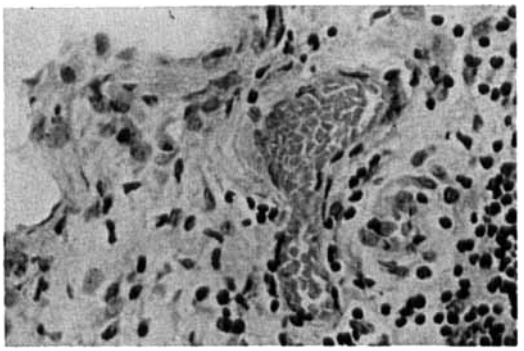

Figure 2. Case 3. Synovial membrane biopsy of the left hip, showing synovitis with nonspecific infiltration consisting of plasma and lymphoid elements at microscopy. Hematoxylin/eosin x40.

Figure 3. Case 4. Three years after onset of chondrolysis of the left hip, joint-space narrowing is still present.

Case 4

An 8-year-old girl presented with increasing pain and stiffness of the left hip of 3 months' duration. Radiography showed osteoporosis and narrowing of the articular joint space (Figure 3). Arthroscopy revealed synovitis. The cartilage was soft and fibrillated. In the synovial membrane, immunocomplexes around the blood vessels were detected. She was treated with rest, nonweight bearing, and NSAIDs.

At follow-up after 3 years, the function of the hip was impaired as before.

Discussion

Chondrolysis of the hip in association with slipped capital femoris epiphysis was first described by Waldenström (1930). He suggested that there was a disturbance of the synovial membrane of the hip joint, resulting in death of cartilage by malnutrition (Cruess 1963). Maurer and Larsen (1970), in a survey of the literature, found that the incidence of chondrolysis in slipped epiphysis of the hip ranged from 1 to 28 percent. This type of chondrolysis is characterized by a villous synovitis and a patchy cartilage degeneration with fibrocartilage repair (Heppenstall 1974).

Chondrolysis of the hip has also been described after infection, prolonged immobilization, and trauma (Jacobs 1972). A few papers suggest a role of immunologic disorders in the pathogenesis of chondrolysis (Golding 1973, Duncan 1975, 1979, Mankin 1975, Wenger 1975). Golding (1973) suggested that the condition might be due to the formation of immunocomplexes in the superficial layers of the articular cartilage, causing cartilage destruction and synovitis.

Duncan (1975) characterized idiopathic chondrolysis of the hip by onset in early adolescence, pain and limp, progressive stiffness, narrowing of the articular joint space, and nonspecific synovitis. In his view, there was no association between chondrolysis of the hip and juvenile chronic arthritis.

Our 4 children conformed with the clinical picture of chondrolysis of the hip, as described in the literature. None of the cases had evidence of previous trauma or infection. In 2 patients, antinuclear antibodies were present. All the patients had synovitis according to arthroscopy. Histologic examination of the synovial membrane showed nonspecific synovi-

Table 1. Clinical observations in 4 children with chondrolysis of the hip. Histologic examination showed a nonspecific synovitis in all the cases

Case	Age	Sex	Side	Function	Laboratory examinations			Immunofluorescent deposit
					ESR (mm/h)	RF	ANA	
1	8	F	L	Internal rotation 10°	10	–	–	not examined
2	14	M	R	Abduction 10° Flexion 35° Internal rotation 40°	1	–	+	IgM, C1q, C3
3	13	F	L	Flexion 60° Rotation 0° Fixation in 10° ext. rot.	5	–	–	IgM, C1q
4	8	F	L	Flexion 25° Rotation ±35°	5	–	+	IgM, C1q, C3

RF rheuma factor, ANA antinuclear antibodies.

tis. Three patients had deposits of immunocomplexes in the synovial membrane.

The significance of these findings in idiopathic chondrolysis of the hip is unclear. However, antinuclear antibodies and circulating immunocomplexes are often associated with rheumatoid arthritis and juvenile chronic arthritis (Munthe 1971, Zubler 1976, Petty 1977, Permin 1978, Male 1980, Moore 1982, Haynes 1986). In fact, the clinical manifestations of our patients are compatible with the diagnosis pauciarticular juvenile chronic arthritis (Taplow's criteria; Kvien 1982). Therefore, consideration should be given to treating these patients according to the diagnosis juvenile chronic arthritis.

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