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OSTEOCHONDRITIS DISSECANS FOLLOWING COXA PLANA

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Osteochondritis dissecans of the femoral head occurring as a complication of coxa plana appears to be extremely rare. Despite the numerous publications on Perthes' disease, only six cases of osteochondritis dissecans following this condition could be found in the literature by Ratliff (1967), who presented another two cases of his owm. In addition to these, there is one case reported by Stillman (1966) who, reviewing the whole literature relating to the association of these two conditions, could trace another four cases, making thirteen the whole number of published cases of osteochondritis dissecans following Perthes' disease.

A condition identical or very similar to Perthes' disease occurs in congenital dislocation of the hip whenever ischaemic necrosis of the capital femoral epiphysis develops, which is also widely accepted as the pathology of coxa plana in childhood. We could not find in the literature any case of osteochondritis dissecans following osteochondritis which develops as a complication in the course of treatment of congenital dislocation of the hip.

The aim of this paper is to report two cases of osteochondritis dissecans of the femoral head, one following Perthes' disease and the other osteochondritis of the upper femoral epiphysis complicating a case of congenital dislocation of the hip.

Case 1

A young man aged 17 was first seen in March 1970 complaining of slight pain in the left groin and limping after prolonged walking. The pain was first experienced about two years previously. There was no

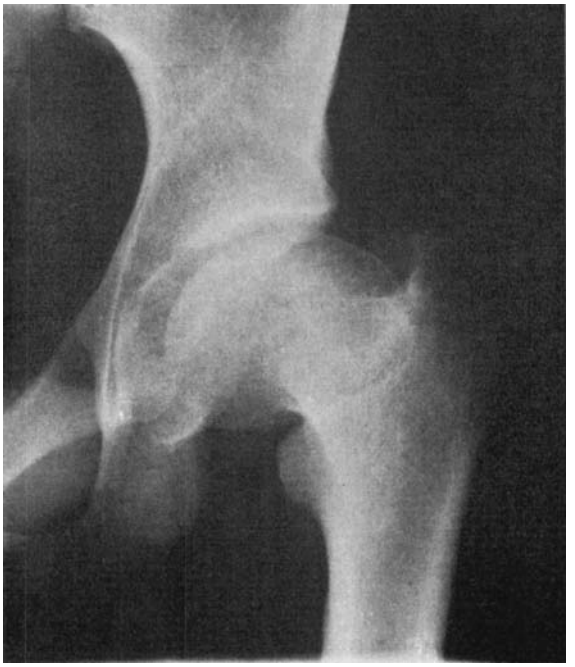

Figure 1. Antero-posterior radiograph showing a broad left femoral head with a short widened neck, typical appearance of the hip after Legg-Calvé-Perthes' disease.

history of injury or acute illness at that time, but at the age of 7 years he had sufferred from Perthes' disease of the left hip for which he was treated by a weight-relieving caliper for one and a half years.

On examination he could walk in a normal way. There was 1 cm shortening of the left limb and some wasting of the thigh. Abduction and external rotation of the left hip were restricted by 15° while internal rotation exceeded that of the opposite hip by 10°. The radiographs (Figures 1, 2 and 3) showed a broad left femoral head with a short widened neck and, in the lateral view, a large well-outlined fragment of osteochondritis dissecans in the superior aspect of the femoral head. Because of the mildness of the symptoms no particular treatment was advised. The patient's condition has been practically unchanged since.

Case 2

A young lady aged 16 was seen in October 1970 because of mild pain in the left hip and a slight limp. The pain had started two years previously for no apparent reason at that time and it gradually became

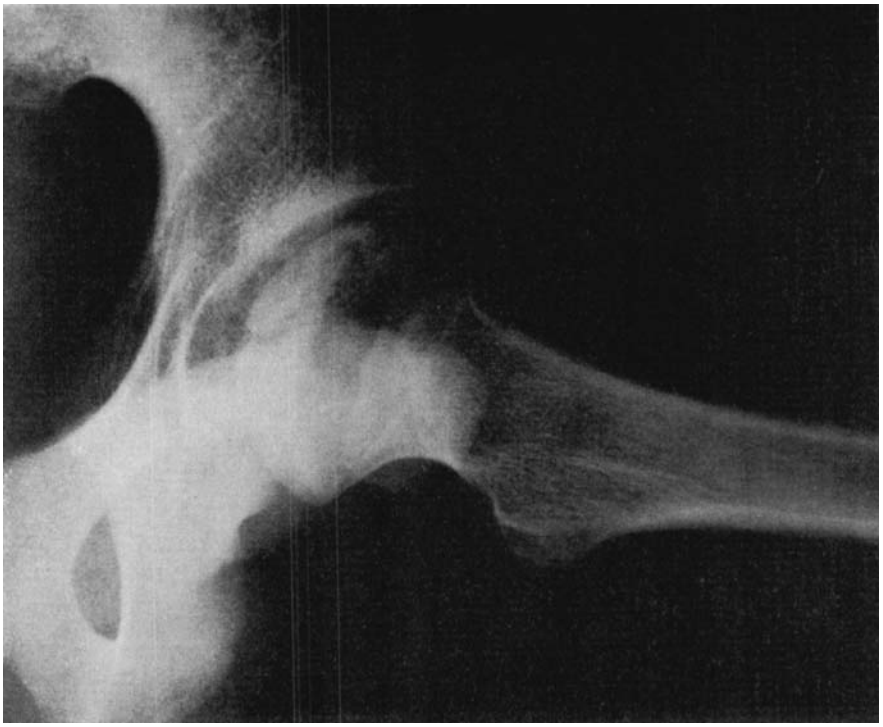

Figure 2. Lateral radiograph of the same hip showing a large well-defined fragment of osteochondritis dissecans in the femoral head.

slightly worse. Over the last few months she had also experienced episodes of loud mechanical blockage of the hip joint accompanied by momentary acute pain. At the age of one and a half years, congenital dislocation of the left hip was diagnosed which was treated conservatively in "frog" plasters for 9 months. At the end of that time it was realized that osteochondritis of the upper femoral epiphysis had developed. She was then treated in plasters for about another year. Since the age of five years she had failed to attend the clinic having had no complaints.

On examination she was walking with a very slight limp and the Trendelenburg test was slightly positive on the left side. There was 1 cm shortening of the left limb and some wasting of the thigh. All the left hip movements were limited by the last 10–15° and painful at their limits. The radiographs (Figures 4 and 5) showed a slightly deformed left femoral head not quite well contained in a near normal

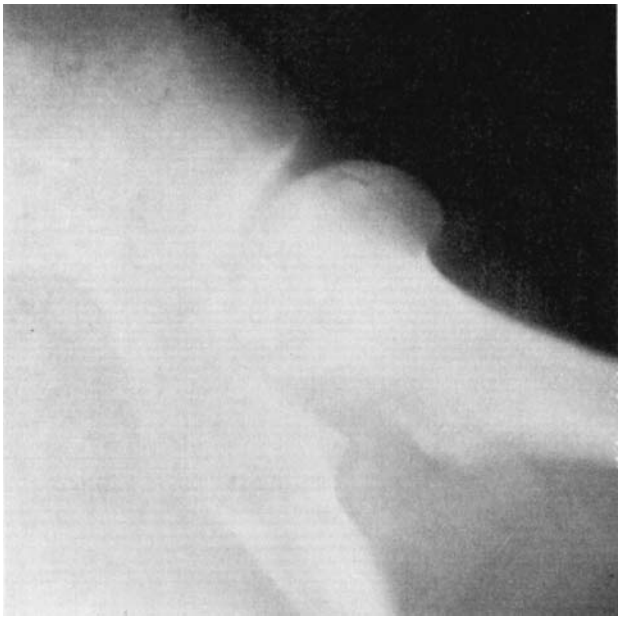

Figure 3. Lateral tomograph of the hip. The line of separation of the osteochondritic fragment is well shown.

acetabulum. The Shenton's line was broken on the left side and the neck of the femur was shorter than that of the opposite side. Osteochondritis dissecans was clearly defined in the supero-lateral aspect of the femoral head in both the antero-posterior and the lateral views of the left hip. In March 1971 she was operated on because the episodes of painful "catching" in the hip occurred quite often, causing her insecurity in walking. The whole area of osteochondritis dissecans was easily seen by adducting the leg without dislocating the joint. The yellowish and slightly elevated articular cartilage overlying the bony fragment was incised at the periphery of the lesion and excised along with the thin subchondral fragment, which was easily detached from its crater. Up to March 1972, when last seen, she had never experienced any "catching" in the hip or insecurity in walking.

DISCUSSION

Since the first report of osteochondritis dissecans of the femoral head occurring as a complication of Perthes' disease (Haas 1937) several references have been made concerned with the possible relationship between these two entities (Ratliff 1956, Guilleminet & Barbier 1957,

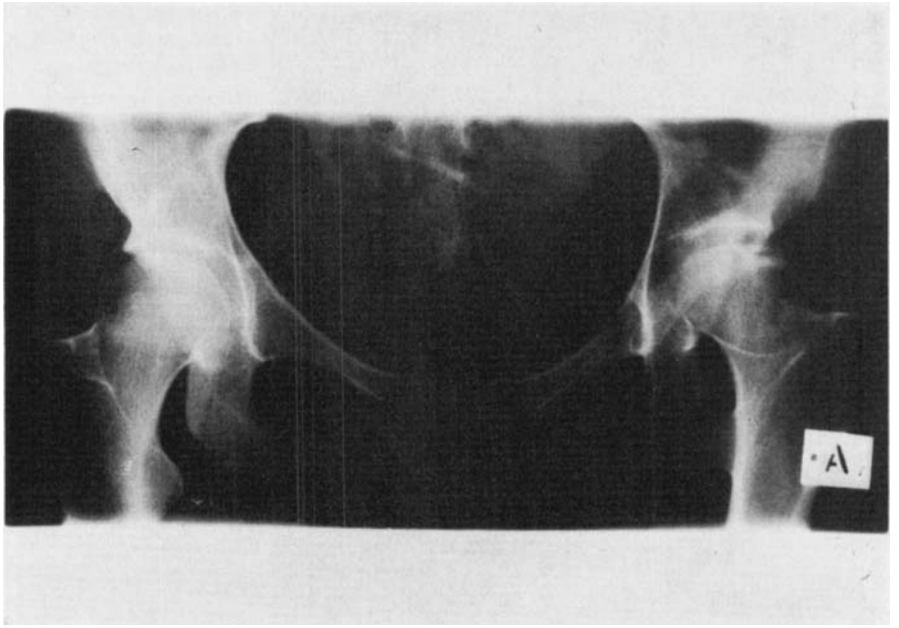

Figure 4. Antero-posterior radiograph of the hips showing the left femoral head not quite well contained in a near normal acetabulum and slightly deformed. The Shenton's line is broken on the left side. Osteochondritis dissecans is clearly outlined.

Freehafer 1960, Morris & McGibbon 1962, Stillman 1966). It is widely believed that both are conditions with identical pathological changes secondary to avascular necrosis, although the unknown etiological factor or factors of the ischaemia in either case could be different. If it is accepted that the not uncommon Perthes' disease is of the same pathological process with that of osteochondritis dissecans, Smillie (1960) suggested that the rarity of this condition in the hip could be explained by the fact that it is a localized form of Perthes' disease occurring at a later stage of development. Guilleminet & Barbier (1957) also thought that femoral capital necrosis of the type of osteochondritis dissecans of the hip in the later years of childhood might be a transitional phase between Perthes' and König's disease.

As for the occurrence of osteochondritis dissecans following coxa plana, malformation of the femoral head after this condition could probably be a predisposing factor. However, the articular end of the femoral head in many of the reported cases of osteochondritis dissecans following coxa plana does not appear incongruous, although the head

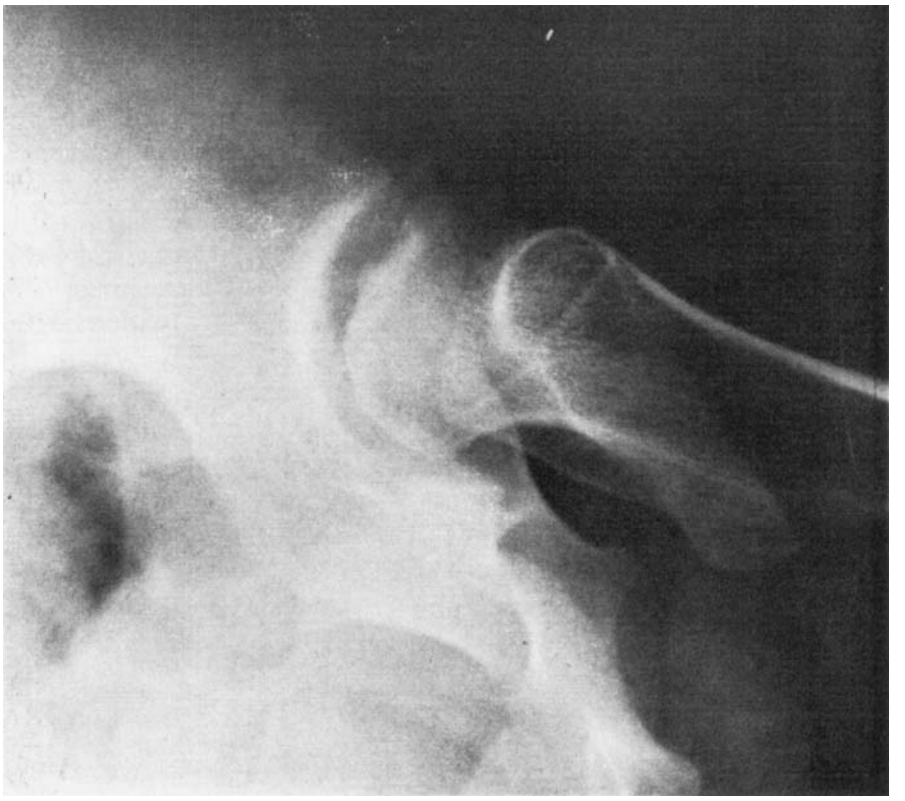

Figure 5. The lateral radiograph of the left hip showing the osteochondritic fragment in the superior aspect of the femoral head.

may not be normal in shape. Furthermore, the association of these two conditions is very rare, and in the cases for which adequate information has been stated the osteochondritic fragment has never been united to the rest of the epiphysis. We are in agreement with Ratliff (1956) who thought that the persistence of a fragment ununited to the rest of the epiphysis into adult life was the cause of osteochondritis dissecans following coxa plana.

The osteochondritic fragment is usually situated in the pressure area of the femoral head as in both of our cases. Therefore, as was suggested by Stillman (1966), the weight-bearing strain in that part of the head may prevent the healing of the necrotic fragment occupying this area.

The symptoms of these patients are minimal and if they deteriorate

they usually do so very slightly and over many years (Ratliff 1967) despite the coxa plana which alone could account for any aggravation of the hip symptoms. Therefore treatment is not required as a rule. Our second patient was operated upon two and a half years from the beginning of her symptoms because of repeated episodes of painful mechanical blockage in the hip causing her insecurity in walking. Freehafer's (1960) case is the only one in the literature operated on five years after the diagnosis of osteochondritis dissecans following Perthes' disease because of increasing symptoms and progressive degenerative changes in the affected hip thought to be due to the osteochondritis dissecans.

SUMMARY

Two cases of osteochondritis dissecans of the femoral head are reported, one following Perthes' disease and the other osteochondritis complicating congenital dislocation of the hip.

Our second case is the only one of its kind to be reported. The osteochondritic fragment was excised as causing repeated painful mechanical blockage of the hip.

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