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CASE REPORT

DIFFUSE OSTEOCHONDROSIS OF THE PATELLA

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INTRODUCTION

Pains in the patellar region are relatively common at the growing age. Although their aetiology frequently remains obscure, a majority of the patients become asymptomatic without any therapy. The prolonged patellar pain of an otherwise healthy child is often caused by chondromalacia. Osteochondroses or aseptic bone necroses may also occur in the patella. Osteochondrosis involving the whole patella is a knee complaint seldom described in the literature. We present a case report of such a patient.

CASE REPORT

A 9 year old boy was sent to the outpatient clinic of K-PKS (Keski-Pohjanmaa Central Hospital) because of prolonged pain in both knees. In the summer of 1979 he had been active in sports, running, jumping and soccer. There was no history of trauma and he had had no symptoms while participating in school sports in the spring. Otherwise the boy was healthy and his development was normal. The pain appeared during exercise at the front of each knee. The symptoms persisted occasionally for several hours after exercise, and the pain made it difficult to fall asleep in the evening. Slight swelling had been observed in both knees. The laboratory blood values were normal.

Clinical examination showed the mobility of the knees to be normal; no notable swelling was seen, and the left knee was slightly warmer than the other. Lateral

patellar mobility was evident, but no luxation was noted at either side. Radiologically, the bone structure of both patellae appeared markedly irregular and fragile. The clinical and X-ray diagnosis was osteochondrosis of both patellae. Isotope tracing (Tc^{99}) revealed notable accumulation in both patellae. This finding was more obvious on the left than on the right. The finding supported the diagnosis. Therapy consisted of restriction of sports activities to a moderate level, about 50% of the usual training load.

The patient had relatively few symptoms until the spring of 1980, when the knee pains recurred upon more active participation in school soccer games. The radiographic follow-up showed that the compactness of the bone structure had clearly increased. In the autumn of 1980, irregular bone areas were seen only at the lateral margins of the patellae, best visible in the tangential patellar exposures. The gamma camera finding was similarly normal at that time. Figures 1, 2 and 3 show the radiographic findings on the left (a) and the right (b) knee after the patient's symptoms had persisted for about 5 months. The lateral view shows the flat sclerotic nucleolus at the front margin of the upper pole of the patella. It was more clearly visible in the later radiographs, and was then incorporated in the patellar bone.

DISCUSSION

Disturbed ossification of the whole patella was first

Fig. 1: Patellar osteochondrosis in a 9 year old boy. AP view of the left (a) and right (b) knee.

Fig. 2: Lateral view of both knees (a = left, b = right) after a symptomatic period of about 4 months. The front surface of the upper pole shows a sclerotic "nucleolus" discernible from the remaining structure.

Fig. 3: Tangential views of the patellae show an irregular bone structure (a = left, b = right knee).

described by Köhler in 1908 quoted by Moffatt in 1929. His name remains in the literature as the writer of a description of osteochondrosis of the navicular bone of the foot. He described a corresponding aseptic osteonecrosis in the patella of one patient (cit. Anders, 1956). This condition is regarded as osteochondrosis of the primary centre of ossification of the patella (Ebeling, 1951; Siegel, 1968). It is differentiated from the osteochondrosis of the lower pole or the secondary ossifi-

cation centre of the patella described by Sinding-Larsen (1921) and Johansson (1922) cit. Anders (1956). This condition is also called "osteopathia patellae juvenilis" (Kerstner, 1954). Multicentric ossification of the patella may also give rise to clinical and radiographic symptoms suggestive of osteochondrosis (Schinz and Baensch, 1952; Orava et al, 1979). Osteochondritis dissecans patellae, in turn, is a limited local process of cartilage, a rare condition, having been described in Finland on only a few occasions (Orava et al, 1979).

Numerous variations in the size and shape of the patella are described in textbooks of radiology. Patellar changes are also known to be associated with some diseases and chondrodystrophic states (Schinz and Baensch, 1952). Sometimes the X-ray findings do not correlate with the clinical symptoms. The patient here described was otherwise completely healthy and normally developed. His osteochondritis became manifest upon strain due to sports and physical activity. The symptoms brought about notable subjective discomfort from time to time. Both the patient's age and the aetiology of the complaint, pressure and tension strain of the patella due to physical activity, are in accordance with the findings previously reported in the literature (Kerstner, 1954; Anders, 1956). The change was present in the entire patella and symmetrically at both sides. In Sinding-Larsen-Johansson's disease the radiologically visible bone loss and sclerotic nucleolus appear in the lower pole of the patella. The disease is further characteristic of children older by 2-3 years (Brietländer, 1942; Bürgstein, 1944; Classen, 1949; Siegel, 1968). There are also a few reports describing an associated simultaneous bone loss of the upper pole of the patella, which is followed, at the restitution stage, by increased sclerosis and restored calcification, as in the lower pole (Anders, 1956). In the present case, a "nucleolus" of this kind was visible in the upper pole of the patella at the recovery stage. We consider these two osteochondroses to be closely associated. Aseptic (partial) bone necrosis involving the whole patella gives more severe symptoms and lasts longer than the ossification disturbance of the lower patellar pole, which, according to our experience, becomes asymptomatic within a few months.

In a series of about 200 cases of osteochondroses in young athletes, we could find only this one case affecting the whole patella. There were 75 osteochondroses and 20 osteochondritis dissecans cases of the knee in this material.

The diagnosis of these diseases may be difficult. It is important to follow up the patient. The treatment, however, is simple: it suffices to limit physical activity. Several months' pause in sports activities is certainly justified. It thus appears that "growing pains" located in the knee may sometimes be due to a rarer cause.

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