

Epiphyseal osteoid osteoma

Two case reports

James R. van Horn and Remko P. Karthaus

Two cases of epiphyseal osteoid osteoma presented with a 1-2 year history of monoarthritis with swelling and impaired function of the knee and ankle, respectively. In both cases, removal of the lesion resulted in complete recovery.

Osteoid osteoma in the epiphysis with an open growth plate may give rise to the picture of a painful arthritis^{6,8}. Because of the rarity, the epiphyseal location together with the signs of synovitis may cause a considerable delay in establishing the correct diagnosis^{2,4}. To the 9 published cases we add two more (Table 1).

Case 1

An 11-year-old boy complained of pain for 2 years in his right leg, which was most pronounced at night. He was first seen by a neurologist who found clinical and serological signs of mannosidosis, which, however, did not explain the symptoms.

Orthopedic examination showed a flexion contracture of 25° of the right knee, which was swollen and painful with severe quadriceps atrophy. Radiographs and scintigraphy (Figure 1) showed an osteolytic hypermetabolic lesion in the lateral condyle beneath the open physis of the distal femur. On the presumptive diagnosis of chondroblastoma, the lesion was thoroughly curetted and filled with autologous bone from the tibia metaphysis. The histologic diagnosis was osteoid osteoma. Within 3 weeks, the boy regained full function of the knee without swelling. At 1 year, he was asymptomatic, and radiographs showed no residual lesion.

Case 2

A 15-year-old boy had pain in his left ankle for 1 year. He also noticed swelling of the ankle joint and reduced strength of the left leg. He was referred to a neuro-pediatrician and a rheumatologist; a diagnosis of monoarthritis was made. Salicylates relieved the swelling and the pain, which was most pronounced at night. There was slight swelling and stiffness of the left ankle. Radiographs showed a nidus just below the growth plate of the distal tibia (Figure 2), diagnosed as osteoid osteoma. The lesion was removed with the aid of an image intensifier, and the defect was filled with cancellous bone from the proximal tibia. Histology showed an osteoid osteoma, which had been marginally removed. The pain disappeared within 2 weeks and the swelling after another 2 weeks. Ankle function returned to normal, and radiographs after 2 months showed a normal epiphysis.

Table 1. Eleven published cases of epiphyseal osteoid osteoma

Ref. no	A	B	C	D	E
1	14	M	3	24	3
4	9	M	2	12	3
5	9	M	1	6	1
7	11	M	2	18	2
9	16	M	2	2	2
10	15	M	2	9	1
12	9	M	2	2	3
13	8	F	2	12	3
16	12	M	4	4	3
This study	11	M	2	24	1
	15	M	4	12	2

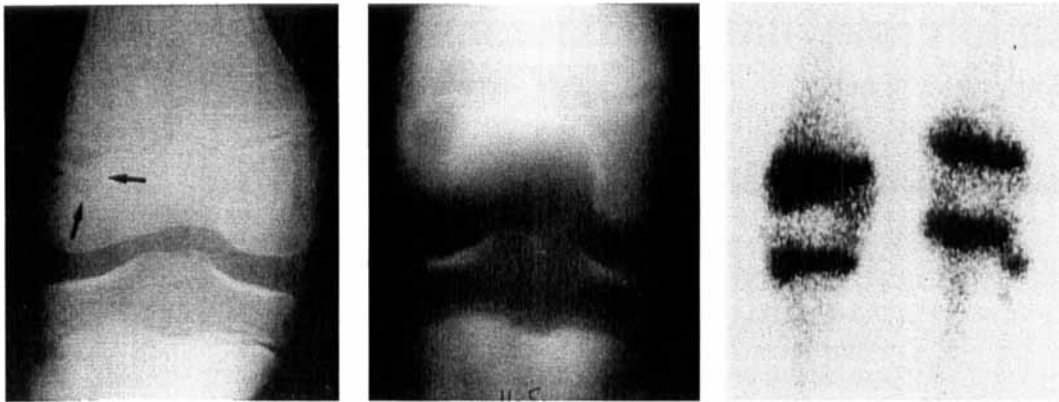
A age

B sex

C location: 1 proximal femur, 2 distal femur, 3 proximal tibia, 4 distal tibia

D diagnostic delay (months)

E treatment: 1 curettage, 2 core excision, 3 excision



The right knee with an osteolytic lesion in the lateral femoral condyle abutting the undersurface of the growth plate.

Tomogram, which shows the slightly sclerotic rim of the lesion.

Isotope scan with the "hot spot" of the lesion in the lateral condyle, which is confluent with the normal uptake of the growth plate.

Figure 1. Case 1.



An osteolytic lesion can be seen close to the undersurface of the the growth plate (arrows) in the anterior part of the distal tibial epiphysis.

Core biopsy containing the lesion.

Figure 2. Case 2.

Discussion

Circumscribed lesions in the epiphysis of growing children are most likely either chondroblastoma or Brodie's abscess. These lesions characteristically are lytic surrounded by a thin rim of sclerosis³. In Case 1 the presumptive diagnosis was chondroblastoma with reactive arthritis. The complaints of the knee were in part overshadowed by the signs of mannosidosis. Only a careful analysis of his complaints made a distinction possible between this general disease and the problem of his knee. The correct diagnosis was arrived at only after excisional biopsy. In both patients, there was a

considerable doctor's delay in the final diagnosis, as was also noted by Goldberg and Jacobs⁶. Even though the epiphyseal location of osteoid osteoma is extremely rare, plain radiographs should have revealed the lesions at an earlier stage; radiography is mandatory in monoarthritis.

The diagnosis of an osteoid osteoma and the concomitant picture of monoarthritis in both patients accord well with the findings of Corbett et al.², Shifrin and Reynolds¹⁵, Séruzier et al.¹⁴, and Ninomiya et al.¹¹, who described intraarticular locations of osteoid osteoma.

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