OSTEOCHONDRTIS OF THE CUBOID ASSOCIATED WITH TUBERCULOSIS OF ADJACENT TARSAL BONES

Report of a Case

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A Chinese boy, aged six years, was seen at the Chung Shan Memorial Hospital, Shanghai, on August 12, 1947, for discharging sinuses over the left neck, left elbow and dorsum of the left foot. The sinuses, which had been present for more than a year, began as multiple nodules in the neck, and ruptured. The clinical diagnosis was tuberculosis of the cervical glands, left elbow and left foot. Radiographs of the left foot showed moderate osteoporosis of the bones, but the cuboid presented disc-like flattening with moderate sclerosis and a sharp outline (Figs. 1 and 2). There was moderate soft tissue swelling with cloudiness of the tarsal region, especially dorsally. The radiographic appearances suggested osteochondritis of the cuboid, despite the clinical diagnosis of tuberculosis.

The patient was seen again nine months later, when he complained of a running nose, cough and fever for three days. The general condition was satisfactory. On clinical examination of the lungs there were wheezy breath sounds in all areas and a few inconstant râles over the right upper chest in front. Pulmonary tuberculosis was suspected. The multiple sinuses on the left side of the neck were neither better nor worse, but the condition of the left elbow and ankle seemed improved. A radiograph of the chest showed heavy markings and haziness at the hila, with patchy clouding in both middle and infraclavicular zones and a few calcified opacities in the hilar and lower zones, indicative of pulmonary tuberculosis. There were several calcified nodules of medium size throughout the central abdomen. Radiographs of the left foot showed that the cuboid had become larger and thicker, although still somewhat flat, rather sclerotic and sharply outlined (Fig. 3). A tiny piece of bone was seen at its lateral aspect. There were patchy areas of destruction within the third cuneiform bone, suggesting tuberculosis. The other tarsal bones remained osteoporotic, and there was still moderate soft tissue swelling. The right foot showed a normal cuboid (Fig. 4). Radiographs of the left elbow showed moderate erosion of the articular surfaces of the radius and ulna.

The left foot was treated by immobilisation in plaster. Six months later, radiographs showed further increase in the size and thickness of the cuboid, which was less dense than before and fairly sharp (Figs. 5 and 6). The tiny bony fragment at the lateral aspect of the cuboid was still present. There was further destruction of the third cuneiform bone, but its outline remained sharp (in appearance not unlike caries sicca of the shoulder). The cuneiforms, cuboid and navicular were more crowded together. Soft tissue swelling and clouding were still evident, but less marked. The left elbow showed further slight destruction.

When last seen on December 28, 1948, the patient’s general condition was good but the cough was not improved. The lesions in the cervical region were healed and the sinuses in the left foot were covered with dry crusts.

Comment—There can be little doubt, on the radiographic evidence, that this was a case of osteochondritis of the cuboid. Similarly, from the clinical and radiographic findings and despite lack of bacteriological proof, one can safely regard the other lesions of the left foot, left elbow, neck and chest as tuberculous in nature. Evidence of widespread tuberculosis was further strengthened by the demonstration of calcified mesenteric nodes. It was unfortunate that the patient could not be observed over a longer period.
Figures 1 and 2—The left foot shows disc-like flattening and increased density of the cuboid suggesting osteochondritis.

Figures 3 and 4—Nine months later the cuboid is relatively thicker but still shows increased density. There is patchy destruction of the third cuneiform, suggesting tuberculosis (Fig. 3). The normal right foot is shown for comparison (Fig. 4).

Condition of the tarsus after a further six months. Note better shape of cuboid, which is of more normal density. Slightly increased destruction of the third cuneiform.
DISCUSSION

Osteochondritis of the cuboid is uncommon. King (1935), in his exhaustive monograph on osteochondritis, cited only one recorded example, namely, the case reported by Lance in 1926. Brailsford (1944) mentioned a further case described by Silfverskiöld in 1926. The cause of osteochondritis in general is still uncertain, but trauma, infection or developmental anomaly are often held to be causes. Our discussion here will naturally centre on the question of tuberculosis in relation to osteochondritis.

King (1935) states that most authors consider that tuberculosis is not related to osteochondritis, but some others accept a relationship. Köhler (1935), in his section on osteochondritis of the tarsal navicular, remarks that the condition has no relation to tuberculosis. Nevertheless, Greenwood (1927) among others held that the radiographic appearance of tuberculosis may simulate that of osteochondritis of the navicular. Dale (1942) also reported a case that showed changes in the right tarsal navicular suggestive of osteochondritis (the opposite navicular presenting a similar appearance). Subsequently the condition of the right foot deteriorated and material from the right tarsus yielded a growth of tubercle bacilli. Dale offered three possible explanations: first, that the case was one of tuberculosis originating in the navicular, in which case it would have to be accepted that tuberculosis may simulate osteochondritis; or, second, that there was primarily osteochondritis of the navicular on which tuberculosis had been superimposed (a diagnosis of osteochondritis seeming to be supported by the appearance of the left navicular); or, third, that osteochondritis and tuberculosis of the navicular are one and the same thing, the title osteochondritis being applicable only when the disease is mild and local to the navicular. Subsequently Dale made a search through his collection and found another case which showed radiographic appearances of osteochondritis but which developed pulmonary tuberculosis two years later. He concluded that osteochondritis of the tarsal navicular and tuberculosis are at least clinically associated. He observed that, without radiographic examination, cases of osteochondritis would be—and were—diagnosed as mild tuberculous lesions, and that the characteristic radiographic appearances may simply represent the response of developing bone, at certain sites, to a mild infection, either tuberculous or non-specific.

So far no report has been made on the relationship between osteochondritis of the cuboid and tuberculosis, but it is clear that the problems discussed above are relevant. The case reported here, besides being unusual, seems remarkable for the fact that despite the presence of a slowly progressive tuberculous lesion of the third cuneiform bone, and possibly of contiguous structures, the osteochondritis of the cuboid went on to progressive recovery. It seems probable that in this case the tarsal osteochondritis and tuberculosis were two separate entities pursuing different courses in spite of their proximity to each other.

SUMMARY

1. A case of osteochondritis of the cuboid, with co-existing tuberculosis of the third cuneiform bone, is reported.
2. The possible relationship between osteochondritis and tuberculosis is discussed.

REFERENCES