

A CASE OF PELVIC TUBERCULOSIS WITH DIFFICULT DIAGNOSIS

BY

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I think the following case deserves to be recorded in the orthopedic literature, because its diagnosis, and especially the interpretation of the roentgenological findings, may possibly present the same difficulties for others as it did for myself.

CASE HISTORY

J. H., male, born March 7th, 1922. The family history offers little of interest. The mother is said to have been under medical care for a brief period, hilus glands being suspected. The father, as well as a sister, three years older than the patient, are in good health. So far as known, there is no tuberculosis in his immediate surroundings. In his earliest childhood he had appendicitis, for which he was operated, and from time to time he suffered from passing catarrhal affections. Otherwise his health has been good.

His present disease manifested itself for the first time in the summer of 1922, when he was six years old. He then began to complain of pain in the inguinal region when he moved his left leg, especially of nights. A roentgen examination gave the result that there was believed to be a certain thickening along the line of demarcation between the pubic bone and the ischium (periostritis?), which was suspected to be tuberculosis. There were at that time no clinically or roentgenologically demonstrable changes in the hip-joints. Stay in bed and light-treatment for some months were prescribed.

When a new roentgen examination was made in 1928, the

above named thickening of the pubic bone had apparently disappeared completely, and it was now concluded that it had hardly been of tuberculous nature (growth anomaly?). But above the acetabulum, on the left side, there was a curious thin spot in the bone, with a formation, about the size of a pea, that looked like a sequestrum (*Fig. 1*). The roentgenological pronouncement concerning this was as follows:

»The former abnormality on the line between the pubic bone and the ischium has now disappeared. Above the acetabulum, on the left side, there is a halfmoon-shaped area, about 3 cm. broad and 1.5 cm. high, where the bone is slightly thin, while from the head of the femur no deviations from the normal can be observed. This thinner area is evidently the seat of a destructive process. Its line of demarcation from the surrounding, normal, bone is rather irregular, but sharply drawn. In its lateral part there is a sequestrum, the size of a pea, or a little larger. About the nature of the pathological process it is difficult to express any opinion, as the picture is very unusual; but we are inclined to think that most likely it is a case of some slowly progressive process, possibly osteitis fibrosa.«

Clinically, the patient was now free from symptoms. He was allowed to be up, and soon recovered the normal strength of his leg. During the summer of 1930 he limped for a while after a fall with his bicycle, and it was not until *the spring of 1932* that fresh symptoms declared themselves, which resulted in another medical examination being made (by the author).

The mobility in the joint was fairly normal, but roentgen examination now showed a very marked change, about which the roentgenologist (Dr. Runström) pronounced himself as follows:

»Over the whole of the *left hip bone* there are large, conjoined, bladder-like rarefactions, covering the whole lower half of the ilium and extending downward in the ischium as far as to the ischial tuberosity, and in the inferior ramus of the pubis as far as to the middle of the latter. The superior ramus of the ischium and the inferior ramus of the pubis are bulging out, and curving in medially. In the posterior inferior part of the

os ilium there is an almost unbroken hollow, about the size of a tangerine, where the wall is defective medially and posteriorly. The other bladder-like rarefactions are sharply contoured; the septa thin as paper. The destruction extends to the posterior aspect of the acetabulum. The interarticular space is of normal width; there is no visible change in the caput. The demarcation from the surrounding bone is distinct; there is no reaction in



Fig. 1.

the surroundings. In the cavities there are a number of calcifications, the size of grains. The appearance of the anterior wall of the acetabulum, with the Y-shaped cartilage, is normal. The rest of the hip-joint skeleton shows normal lime-salt contents. In the soft tissues medially and below the collum there is a denser area, the size of a tangerine, in which are seen several small calcifications. The rest of the pelvis shows no changes. The pathological process in the bone has progressed markedly since the previous examination.

We have here a destructive process in the left hip bone, which does not involve the joint. It grows, expanding; causing the bone to swell, and breaking through it posteriorly and medially. Pathoanatomically, the picture seems most likely to be conditioned

by a benign giant-cell tumor or a localised osteitis fibrosa, — perhaps a chondroma.«

Fig. 2 gives a view of the whole pelvis, which shows that there is nothing wrong with the right hip-joint, while the left, besides the changes already named, shows a certain deformation of the caput and collum. *Fig. 3* shows the left side of the pelvis alone.

I was very much inclined to make an exploratory incision and chisel out a bit of the bone for examination; but after consulting



Fig. 2.

with the radiologists I decided to try a roentgen treatment instead, and in the summer of 1932 the patient was consequently given a series of such treatment. During the whole of that year he was in bed most of the time, had considerable pain, and became markedly thin. During the early part of 1933 the pain got worse, the mobility became less, and he was now obliged to stay in bed altogether. Through the whole time there had been no fever.

On *August 3rd, 1933*, he was admitted to the surgical dep't of the Sahlgrenska Hospital. His general condition at the time of admission was fairly good; the temperature subfebrile; there was nothing clinically or roentgenologically wrong with his lungs. Urine, O. SR, 46/78. The left hip-joint was in medial position; its active mobility practically nil. Attempts at passive

movement caused intense pain. There was an actual shortening of about 1 cm. Marked atrophy of the muscles of the thigh.

Roentgen examination now showed increased destruction, and visible diminution of the interarticular space (*Fig. 4*). It was evident that the process had broken through to the joint. The



Fig. 3.

diagnosis was still doubtful; but I considered that the possibility of tuberculosis could not be altogether excluded, and decided to operate.

Operation, August 7th, 1933.—Incision *ad modum* Smith-Petersen. The whole anterior aspect of the iliac crest was laid bare, the os ilium uncovered, and the anterior surface of the

capsule exposed. The cortex was chiseled through in the region of the anterior inferior iliac spine, and thus we came into a system of cavities which discharged a great flow of pus-like necrotic contents. The cavities were excochleated and swabbed out. In their contents were found, besides those softer contents, even necrotic bone. After the cavities had been carefully dried out, they were filled with iodoformised paraffin, whereupon the



Fig. 4.

muscles were sutured into position. Skin sutures with catgut. Hip bandaged with plaster-of-Paris. *Bacteriological examination* of the material obtained showed tubercle bacilli in the direct specimens; *pathoanatomical examination*, tuberculoid granulations and typical tubercles. On *August 31st, 1933*, the patient was discharged.

On *January 16th, 1934*, he was admitted again, to get the plaster-of-Paris bandage changed. His general condition was now considerably improved, he had put on weight; there was no fever. SR, 43/74.

On *April 30th*, his condition was still further improved, he had put on more flesh, and was free from pain. He now got a leather bandage, and was allowed to begin to put his weight on the leg. A roentgen examination showed that the inter-articular space had become obliterated; the caput was strongly atrophied.

Among the many hundreds of cases of surgical tuberculosis that in the course of years have come under my observation, I have never seen one in which the roentgenological picture looked in any way like the present one; nor have I found any such described in the literature. Jüngling has in 1919, in the *Fortschritte a. d. Gebiet der Röntgenstrahlen*, vol. XXVII, described a peculiar multiple affection of bone, which has since been named after him, and which he himself calls: *ostitis tuberculosa multiplex cystoides*. This affection is symmetrically localised to hands and feet—phalanxes and, respectively, metacarpal and metatarsal bones,—has a markedly chronic course, and is often combined with *lupus pernio*. Its roentgenologic image is very characteristic, and shows cystoid cavities of varying size, localised to the diaphyses. Stalman has in one case, described in the *Arch. f. klin. Chirurgi*, vol. CLXXVIII, for 1934, been able, in one case, by means of experiments on animals to demonstrate the presence of tubercle bacilli in the fluid obtained by puncture from such a cyst. I mention Jüngling's disease in this connexion not because I believe that has any relation to my case—except etiologically,—but merely because the process leads to cystoid changes that roentgenologically are different from those which we otherwise regard as characteristic for tuberculosis.

Robert Hanson has, in the *Acta Radiologica* for 1927, discussed these changes, and especially their etiology, in connexion with some cases of his own that presented similar roentgenological alterations, localised to carpal bones and, in two cases, even to metatarsals and phalanxes. In his cases he felt certain that it could neither be tuberculosis, lues, rheumatism or *ostitis fibrosa*. He thinks that the description of them as »cystic« in inadequate, inasmuch as it is not a case of actual cystic formations, but merely of foci of destruction that resemble cysts; and suggests the appellation: *ostitis multiplex circumscripta*.

Kienboeck has claimed, in a paper in the *Archiv f. Orthopædi* for 1929, that a number of cases described by him, in which there were circumscribed, cyst-like foci—or abscesses—either in the epiphyseal hollows or in the outer layers of the

diaphysis (corticitis), should represent a special, very rare and seldom described form of tuberculosis. As far as I can see, it is a matter of what we use to call isolated osseous foci; and while it is true that such are not very common, they have nevertheless been described long ago by many of those who had to do with surgical tuberculosis. In my own book: »Knochtuberculosis im Kindesalter«, for instance, which was published ten years ago (by Fischer's Verlag) there are several illustrations of cases of such circumscribed, cyst-like foci—in the distal end of the humerus and femur, and the proximal end of tibiæ,—exactly similar to the ones published by Kienboeck. Henning Waldenstrom's focus in the lower part of the collum belongs to the same category. Also these things I mention simply in passing,—as examples of cyst-like tuberculous changes in bones.

To return to my own case, I wish to point out that what constitutes its peculiarity and makes it difficult to diagnose is the circumstance that the tuberculous process manifests itself in the form of *multilocular* cystic cavities, and without the roentgenologically demonstrable changes which we generally consider as characteristic of tuberculosis. All the principal possibilities in the way of differential diagnosis, from the roentgenological point of view, are, in fact, convincingly set forth by Dr. Runström, in the opinion which he gave on the case in April 1932.

Osseous destruction, coupled with peripheral atrophy of the bone, but without expansion of the latter, and—except in the case of *spina ventosa*—without formation of periosteal bone deposits, is considered to be characteristic for tuberculosis. In this case there was certainly destruction of the bone, but there was no noticeable atrophy. On the other hand, there were sharply circumscribed cavities and expansion of the bone; all of which are roentgenological symptoms indicative of tumor—possibly enchondroma—or so-called *osteitis cystica*.

In his opening paper on: The value of Roentgen Diagnosis in Tuberculosis of Bones and Joints, at the congress of the Northern Association of Surgeons, in 1916, *Forssell* pointed out the importance of these symptoms for the differential diagnosis, and even showed, by examples, how difficult it can sometimes

be to distinguish between those three groups: tuberculosis, enchondroma and cystic osteitis. It is therefore perhaps excusable, and not to be wondered, that in this case the true diagnosis could not be made on the basis of the roentgenograms alone. Afterwards, when the nature of the case has been made clear, one will perhaps attach a somewhat greater importance to the presence of the granular lime deposits in the soft-tissue shadows in the medial part of the collum and farther down (abscess?); though, as a matter of fact, these should have aroused suspicion of tuberculosis.

About the clinical picture only little needs to be said. Its evolution was the typical, sneaking one common for cases of extraarticular tuberculous foci, with alternate periods of pain and freedom from such; the general condition but slightly affected; the temperature at times subfebrile, at other times normal. At times, at least, the blood sedimentation reaction was rather high. When the process broke through to the joint and afterwards, there came typical, pronounced symptoms of coxitis.

Of the difficult diagnosis I have already spoken. Tuberculin test was not made. I very much doubt if it would have been of any decisive value as long as the joint was not affected.

The patient's present general condition, which is excellent, and the considerably improved local condition, give hope of complete healing, though probably with ankylosis, or at least destruction, of the joint.

I do not regard this as being any »new«, typical form of tuberculosis of bone. On the other hand, it is undoubtedly a both pathoanatomically and roentgenologically peculiar and unusual form, which shows in what variable forms surgical tuberculosis is apt to manifest itself. The case should be a reminder not to be too reluctant about an exploratory surgical intervention. It should do no harm, whether the case be then found to be one of enchondroma or of cystic osteitis. And if it *is* tuberculosis, it may—if it is done in time, and is followed by a more radical operation—save a joint that would otherwise have been doomed to destruction.

SUMMARY

The author describes a case of tuberculosis of the pelvis in a boy aged 11, in which the roentgenograms showed an extensive destructive process arising from the acetabular region and localised to the pelvic bone, and the roentgenological appearance of which made the diagnosis of tumor or osteitis fibrosa the most likely one. Operation, however, proved it to be a case of tuberculosis. The case serves to show that tuberculosis in bones can assume atypical forms, with a roentgenological appearance different from what is usually considered as characteristic for surgical tuberculosis.

ZUSAMMENFASSUNG

Verfasser beschreibt einen Fall von Beckentuberkulose bei einem 11-jährigen Knaben, bei welchem die Röntgenaufnahmen einen ausgebreiteten Zerstörungsprozess zeigten, der von der Acetabularregion ausging und im Beckenknochen lokalisiert war, und dessen röntgenologisches Aussehen die Diagnose auf Tumor oder Osteitis fibrosa als das Wahrscheinlichste vermuten liess. Die Operation zeigte hingegen, dass es sich um einen Fall von Tuberkulose handelte. Der Fall kann uns lehren, dass eine Knochentuberkulose auch atypische Formen annehmen kann, deren röntgenologisches Bild abweicht von dem, was gewöhnlich als charakteristisch für eine chirurgische Tuberkulose angesehen wird.

RÉSUMÉ

L'auteur décrit, chez un garçon âgé de 11 ans, un cas de tuberculose du pelvis, dans lequel la radiographie montre un processus destructif étendu, provenant de la région acétabulaire et localisé dans l'os du pelvis. Etant donné l'aspect radiologique, le diagnostic tumeur ou osteitis fibrosa semblait le plus vraisemblable. Cependant, à l'opération, on constata que c'était un cas de tuberculose. Ce cas sert à démontrer que la tuberculose osseuse peut prendre des formes atypiques, dont l'aspect radiologique diffère de celui qui est généralement considéré comme étant caractéristique pour la tuberculose chirurgicale.