

E. G. HELLGREN, STOCKHOLM:

A FEW CASES OF »NON-TUBERCULOUS OSTEITIS«
WITH MULTIPLE LOCATION IN THE BONES OF THE
HAND AND FOOT

The cases to be described below with multiple changes in the bones of hand and foot resemble those described by Dr. Robert Hanson in the *Acta Radiologica*, 1927, under the title »Ostite destructive non tuberculeuse à foyers multiples et circonscrits«. Of the four cases to be described, the three last would seem, etiologically, to have some causal connection with rheumatic disease, while in the first case there is no definite indication of such a relationship.

Case I, 23213/31, saw-mill hand, aged 36, had an accident in the spring of 1931 and was incapacitated for his work through injury to his right wrist. He had earlier sustained some trauma to the same region. A very thorough examination at the provincial hospital revealed generalised disease of the bony system. In December of the same year the patient sought advice at the Orthopedic Hospital in Stockholm and was fitted with a jointless wrist-cap, by the aid of which he again became able to work. The mobility of the right wrist was limited to 5° extension and 20° flexion; there was some atrophy of the interossei, especially on the right side, some impairment of sensibility of the forearm and ulnar aspect of the hand and, although not definitely proved, similar impairment also below the external malleolus on the right side. All reflexes were normal, with the possible exception of a somewhat weaker reaction of the abdominal reflexes on the left side as compared with the right. Fundi were normal. The sella turcica measured 10 mm. in length and its floor was raised 12 mm. above the base of the skull. The Wassermann reaction was negative in blood and cerebro-spinal fluid. Red blood-corpuscles: 5,800,000. Hgbn. 113 (corr. Sahli). Sedimentation rate in blood: 15 mm. per 1 hour. Blood-serum: uric acid 3.6 mgm% (one day purin-free food), inorganic phosphorus 2.9 mgm%, calcium 11.0 %. The whole skeleton of the patient was thoroughly examined radiologically. The bones of the hands —

especially on the right side — showed considerable changes, with reduced distance between the joint cartilages and multiple circumscribed, rounded rarefactions close to the joint surfaces, partly of roentgenological erosion type, partly of cystic nature (fig. 1). There was considerable spicula formation on the dorsum. The styloid process of the ulna was angularly deformed. Similar changes were seen (fig. 2) in the bones of the *foot*: in the distal inner part of the first phalanx of the big toe, symmetrically on both sides, in the heads of the third and fifth metatarsal bones on the right side, and in the same place of the fifth metatarsal bone on



Left.

Fig. 1.

the left side. The basal phalanx of the fifth toe on the left side was fractured. In the inner part of the right scaphoid there was a rounded rarefied area, the size of a hazelnut, with a sclerotic marginal zone. In the lateral part of the same bone there were a few similar rarefactions of smaller size; and corresponding changes, though not so well marked, were found also in the scaphoid and 1st cuneiform of the left foot.

Since in the previous case I had thus, more in passing, found simultaneous roentgenological changes in the foot, I made it a rule to examine all patients complaining of their wrists also for possible changes in their feet. Reversely, I have examined all patients who have come with complaints in their feet, and who on roentgen examination showed multiple cystic changes, for possible changes in the wrist bones. In such cases, too, we have found the simultaneous presence of changes in the bones of hand and foot, as happened in case IV.

Case II. 23932/32. A farmer's wife, aged 42, complained of her wrist; the symptoms had lasted for 5—6 years and had come on chiefly during change in the weather. She said she had first noticed the trouble while straining her hand in closing a shutter in the barn, some swelling and bruise having then arisen. The wrist is said to have become stiffer during the last few weeks. It is somewhat swollen, is in a position of



Fig. 2.

Right.

slight ulnar deviation, and its mobility is limited to half. So far as the right hand is concerned, the roentgen appearance of the bones of the hand is very much the same as that in the previous case, while the left hand only shows a couple of rarefied areas in the capitatum. At about the same time as the complaints arose in the right hand she began being troubled with her *right foot* (fig. 3) and a lump arose on the dorsum over the third metatarso-phalangeal joint. This lump subsided after a couple of weeks. The roentgen examination showed a destructive process in the bone localised to the region of the third metatarso-phalangeal

articulation in the right foot, the process having eroded the metatarsal head in question in an irregular manner from two sides. Both here and in adjacent parts of the first phalanx of the third toe there were rounded circumscribed rarefactions. One day some time after her hand had begun to trouble her she felt, when stooping to pick up some wood, a pain on the inside of her *left knee*, which became locked. She immediately went to bed. It was not until a couple of hours later that she was able to



Left.

Fig. 3.

(18/4 1932).

straighten the knee. The following day it was all right again. A radiogram of the knee shows a small exostosis at the site usual for the condition of multiple exostoses, but beyond that nothing of note. The patient had also complained of her left elbow. She had been treated for rheumatic fever and is at present being treated for ulcer ventriculi. She has been curetted on account of irregular menstruation with suspicion of cancer, but with negative result. While at the Ortopedic Hospital for having a wrist cap fitted, she developed an eruption simulating erythema nodosum, which the dermatologists declared to be erythema multiforme toxicum. The sedimentation rate in the blood varied between 16 and 3 mm. per 1 hour in the course of two months of observation. The phosphorus-

calcium- and uric acid values in the blood serum were negative, so were also the Wassermann reaction, the basal metabolism, the blood picture and the result of the neurological examination. The sella turcica measured 13 mm. in length, its floor was raised 13 mm. above the base of the skull. Except for one or two exostosis-like formations just laterally from the lower part of the sacro-iliac joint on both sides, careful roentgen examination of the whole skeleton failed to reveal anything positive beyond what is related above. The patient feels very much better after having obtained the wrist support.

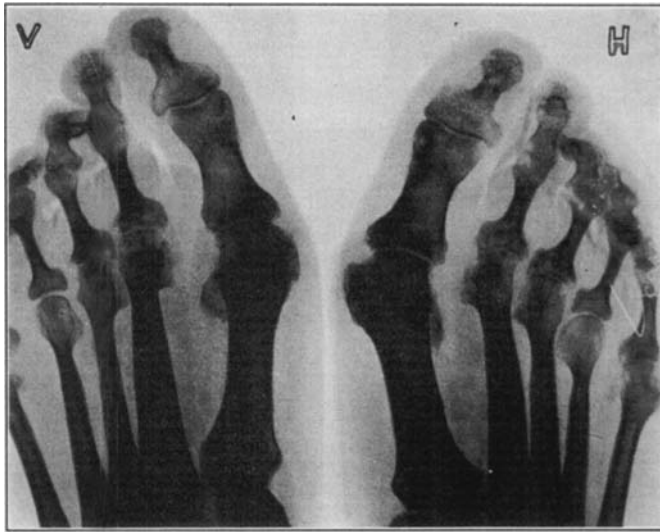


Fig. 4.

Right.

Since this case probable had a so-called rheumatic basis, I investigated a good many so-called purely rheumatic cases with similar changes in the wrist, and in so doing found two more of a like interest.

Case 3. 22840/31. Female, aged 36, who for about 3 years had been complaining of both her wrists was referred to the Orthopedic Hospital from a special hospital, in order that she might obtain a special support for the one most badly affected. She told us that she had sometimes had pains in the fore-part of both feet, and in so doing pointed to the metatarso-phalangeal articulations. Her right hand showed changes similar to those described in connexion with the former cases, although the distal radio-ulnar joint in this case seemed to be the one obviously af-

ected. The *bones of the foot* show changes similar to those observed in the previous case in the third metatarso-phalangeal joint of the right foot, but here the changes are localised to almost all the metatarso-phalangeal joints (fig. 4). In addition there are symmetrical changes in the distal medial parts of the basal phalanx of the big toe on both sides.

Case 4. 19620/30. Another patient, who came to the hospital to get a pair of orthopedic boots for his rheumatic feet, was at the same time observed to have some affection of his right wrist, the changes in

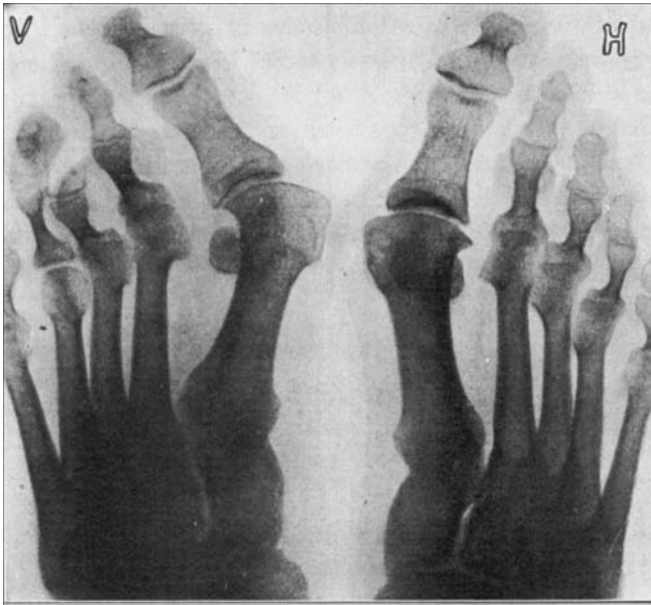


Fig. 5.

Right.

which present about the same appearance as those found in the wrists of earlier cases. His feet, that were »as hard as stone«, showed, besides the changes present in the bone elements forming the metatarso-phalangeal joints, arthritic changes in the left tarsus, with small rounded depressions of an eroded appearance in the small bones of the foot (fig.5).

The cases of which a few instances have been submitted above thus show, beside a chronic arthritis of the wrist, changes in the bones of the foot, of a nature that can be revealed by roentgenological examination. Regarding the differential diagnosis,

the reader is referred to the before mentioned original paper by Robert Hanson. The cases are of great interest, not least from the point of view, among others, of accident insurance.

Therapeutically, a jointless wrist-cap in good working position and some flat-foot support would seem to be recommendable.

As I intend, after a longer time of observation, to subject the cases to a special publication, I have not taken up space here by submitting the clinical histories in greater detail. The fact that among the out-patient material in an orthopedic hospital one is able in a relatively short time to come across, a number of cases of this nature goes to show that this clinical condition, first described and differentiated by Robert Hanson, and called by him »ostitis multiplex circumscripta«, is not particularly uncommon, wherefore it should attract fairly great interest.