CHRONIC BONE INFECTIONS IN AFRICANS

Ten Cases from Nigeria

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The cases presented in this paper exemplify the diagnostic problems that have been met in orthopaedic practice among the African population of Nigeria. The discovery of a positive Wassermann or equivalent test is, by itself, of little significance, for the test is positive in a large proportion of African patients. A diagnosis of syphilis of bone must be based on a combination of all the available evidence—clinical, radiological and serological. Moreover a diagnosis of syphilis must be taken to imply syphilis or yaws, for no convincing evidence has been brought forward so far to allow differentiation between the two diseases.

FIG. 1

FIG. 2

Case 1. Figure 1—Before treatment. Figure 2—Two months after antisyphilitic treatment.

Case 1. *Generalised syphilitic osteitis*—A male African aged twenty-one years gave a history of pain and swelling of the left forearm for two months. The swelling was diffuse and bony hard and involved both radius and ulna. He had also a localised swelling in the frontal region of the skull. The Kahn test was positive (+). Radiographs showed bone changes suggestive of syphilitic osteitis (Fig. 1). *Treatment*—An arsenical compound was used intravenously and potassium iodide was given by mouth for six weeks. *Progress*—At the conclusion of the first course of treatment the radiographic improvement was remarkable (Fig. 2) but the Kahn test remained positive (++). A further course of arsenic therapy was given.

Case 2. *Syphilitic epiphysitis*—An African boy aged three years was brought to hospital because of pain and swelling of both elbows, both wrists and the right knee; he was unwilling to use the limbs. Radiographs suggested the diagnosis of syphilitic epiphysitis

FIG. 3

FIG. 4

Case 2—Radiographs of right elbow (Fig. 3) and right knee (Fig. 4) before treatment.

FIG. 5

FIG. 6

Case 2—Radiographs of right elbow (Fig. 5) and right knee (Fig. 6) two months after antisypilitic treatment.

(Figs. 3 and 4), although the marked subperiosteal new bone formation suggested a nutritional (possibly scorbutic) factor also. *Treatment*—A course of arsenical therapy was given. *Progress*—Rapid improvement testified to a syphilitic origin (Figs. 5 and 6).

Case 3. *Syphilitic osteitis of left carpus*—A man aged fifty years gave a history of localised pain and swelling at the lower end of the lateral side of the left forearm and wrist for one year. There was slight limitation of movements. Radiographic examination suggested a diagnosis of syphilitic osteitis (Fig. 7). The patient did not return for treatment.

Case 4. *Syphilitic osteitis of right clavicle*—An African woman aged thirty-five years complained of swelling of the right clavicle for three months. The swelling was smooth, ovoid and slightly tender. The skin was not adherent. The Kahn test was positive. Radiographic examination suggested the diagnosis of syphilitic osteitis (Fig. 8). The patient did not return for treatment.

FIG. 7

Case 3—Destructive changes in the carpus suggestive of syphilitic osteitis.

FIG. 8

Case 4—Syphilitic osteitis of the right clavicle.

Case 5. *Osteitis of skull, possibly syphilitic*—A ten-year-old African boy was admitted with a sinus of the right side of the skull with profuse purulent discharge. His temperature was 103 degrees Fahrenheit and pulse rate 96, but his general condition was good. Radiographs showed a destructive lesion of the skull (Fig. 9). The Kahn test was positive (++) . *Treatment*—A course of penicillin was given for four weeks and a small sequestrum was removed. *Progress*—Radiographs immediately after the cessation of treatment showed an increase in the destructive process and the sequestra gave the appearance of dissolution (Fig. 10). Three

FIG. 9

Case 5—Radiograph of skull before treatment. Destructive changes and sequestration of calvarium.

FIG. 10

FIG. 11

Case 5. Figure 10—Showing increased destruction five weeks later. Figure 11—Three months after treatment by penicillin and sequestrectomy. Clinically and radiographically the lesion was healed.

months later radiographs showed evidence of healing (Fig. 11), and clinically the sinus was closed.

Comment—It was not possible to establish whether the lesion was syphilitic or pyogenic.

Case 6. *Syphilitic osteitis of the right femur*—A boy aged eight years complained of pain in the right hip for four years. There was a 30 degrees flexion deformity of the right hip with marked limitation of all movements and gross wasting of the glutei and thigh muscles. The Kahn test was positive (++) . Radiographic examination showed multiple "punched-out" areas in the upper end of the femur (Fig. 12). The diagnosis remained in doubt. *Treatment*—A therapeutic trial of antisyphilitic arsenical and bismuth treatment was begun. *Progress*—After

FIG. 12

FIG. 13

Case 6. Figure 12—Before treatment. Note multiple "punched-out" areas in the upper end of the femur. Figure 13—Four months after antisiphilitic treatment. The lesions have been partly filled in with bone.

FIG. 14

FIG. 15

Case 7. Figure 14—Before treatment. Marked osteoporosis with much subperiosteal new bone formation. Figure 15—Six months after treatment by rest, penicillin and sequestrectomy.

six weeks' treatment he was able to walk without pain or limp and there was only slight limitation of movement at the hip. Radiographs four months after the beginning of treatment showed filling of some of the areas of destruction (Fig. 13), evidence that a diagnosis of syphilis was correct.

Case 7. Pyogenic infection of the foot—An African girl aged eight years complained of swelling and pain of the right foot after an injury three months before. The whole foot was greatly swollen and tender; walking was impossible. There were several sinuses on the dorsum of the foot and the child's general condition was poor. Radiographs showed marked osteoporosis of the foot with much subperiosteal new bone formation around the metatarsals (Fig. 14). Amputation was advised but was refused by the parents. *Treatment*—The foot was immobilised in plaster and repeated intensive courses of penicillin were given. The sequestered head of the talus was subsequently removed. *Progress*—Radiographs six months after the beginning of treatment showed satisfactory ankylosis of the tarsus (Fig. 15) and the child walked well without pain.

Comment—Originally it was considered that the condition was possibly a form of Madura foot, but cultures and sections at the time of sequestrectomy showed nothing definite. The clinical course suggests that the lesions were of pyogenic origin.

FIG. 16

Case 8—Madura hand. Marked bone atrophy and much subperiosteal new bone formation. The hand was useless and amputation was performed.

FIG. 17

Case 9—Destructive lesion of humerus and subperiosteal new bone formation. Probably tuberculous. Caseous material removed at operation.

Case 8. Madura hand—A male African aged sixty years complained of gross swelling of the right hand and wrist with multiple sinuses of many months' duration (Fig. 16). On examination the hand was not as tender as would have been expected but it was completely useless. None of the sinuses yielded spores. *Treatment*—The hand was amputated. *Pathological report*—Madura hand.

Case 9. Destructive lesion of humerus, probably tuberculous—A five-year-old African boy was brought with a painful swelling of the lower end of the right humerus noticed for several months. There was slight tenderness, and limitation of flexion and extension at the elbow. Radiographs showed a destructive lesion with subperiosteal new bone formation (Fig. 17).

Biopsy was performed and a cheesy mass was scraped out, leaving fairly healthy walls. Histological examination showed that the material was necrotic and caseous; it suggested a tuberculous rather than a neoplastic origin.

FIG. 18

Case 10—Osteitis of the radius (Fig. 18) and tibia (Fig. 19), secondary to infection with guinea-worm. Note the calcified worms.

FIG. 19

Case 10. *Osteitis secondary to infestation with guinea-worm*—An African woman aged forty-five years attended with small ulcers on the dorsum and medial aspect of the left foot and left forearm. The surrounding tissues were oedematous and there were multiple scars. Radiographs (Figs. 18 and 19) showed periostitis and osteitis, probably caused by infection along the track of a guinea-worm which was dead and calcified.