

LATE OSSEOUS SYPHILIS

(Report of 4 Cases)

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Though first discovered and described by Parrot in 1872, the "Finger Prints" of syphilis over bones have been recorded for posterity by the skeletons of the ancients. The bones may be affected in both the secondary and tertiary stages of acquired syphilis. With improvements in the treatment of syphilis, its manifestations in the bones are no longer common. Primary and secondary lesions are indeed rare and tertiary lesions almost have vanished. The paucity of these cases often misleads the clinician in establishing diagnosis, seen in this report of four cases.

PATHOLOGY

The bones most liable to syphilitic lesions are tibia, ulna, clavicle and skull. In long bones the lesions are situated usually in the diaphyses. There is a mild periostitis, culminating in tender sub-periosteal nodes¹. These lesions appear from one to two years after initial infection. Lesions usually commence in the fibrous layer of the periosteum. The cells consist mainly of small lymphocytes and plasma cells with a few epithelioid cells and occasionally giant cells. The infiltration is particularly concentrated round the small blood vessels, which undergo obliterative endarteritis. Fibroblasts appear in large numbers in the area of infiltration. The chronic inflammation in the fibrous layer of the periosteum stimulates activity of the osteoblasts in the adjacent osteogenic layer of the periosteum, with new bone formation on the surface of the cortex under the periosteum. The new bone is deposited in irregular fashion, which results ultimately in thickening of the cortex and roughening and irregularity of the surface. The new bone is more sclerotic than the normal and lacks its usual cortical pattern. Usually, only one part of the bone is involved, and the transition from healthy to diseased bone is abrupt. The ultimate effect upon the bone depends upon the degree of osteoblastic activity, which is greater in the long bones than the flat bones. Continuation of the process may result in either gumma or a dense thickened ivory bone. There is either bone formation or bone destruction - or both may be encountered together. Since the pathological activity spreads very slowly sequestration is rare in long bones. Late in the evolution of these hyperostotic lesions gummatous destruction occurs. They appear as sharply circumscribed areas along the cortex the entire thickness of which they may erode and so reach the medullary cavity.

Occasionally the pathological process starts in the medullary cavity of the long bones and erodes the cortex from within, this has been often called syphilitic osteomyelitis; - a bone syphilis of endosteal form.

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In the long bones the periosteal reaction occurs along the entire course of the involved diaphysis, and is quite evident on the roentgenograms. They essentially produce a very irregular roughened cortical surface.

Case No. 1: R. S. Male, 26 Years: This case was admitted in the hospital with a provisional diagnosis of malignant tumour of right ulna, but was later proved to be a case of late osseous syphilis. His chief complaints were pain and swelling over right forearm for two months with an history of trauma. He had a diffuse, bony, warm, tender, swelling over the proximal part of diaphysis of right ulna. The roentgenograms showed periosteal reaction and destruction of the cortex over upper one third of right ulna with soft tissue swelling around it. In this case the biopsy revealed the true nature of the lesion. The histopathology showed aggregation of the fibroblasts, small lymphocytes and plasma cells with a few epitheloid and giant cells, around the small blood vessels. There was no evidence of malignant tumour of the bone. The histopathological findings were suggestive of chronic nonspecific inflammatory changes. The history of exposure followed by penile sore eight years back (for which the patient did not take any treatment) and the positive blood VDRL test were the corroborative evidence, (established after the biopsy). There was no history of other syphilitic manifestations. He was treated with the long acting penicillin therapy and had complete relief of pain in six weeks. The local thickening of bone remained unchanged, however local tenderness was significantly relieved after treatment. The VDRL test was repeated every month and showed significant gradual fall in the titre. The X-ray repeated at the end of six months showed no periosteal reaction, but the cortex of upper end of right ulna showed thickening in its upper third. The thickened bone appeared hyperostotic and lacked normal cortical pattern.

Case No. 2: P. U. Male, 25 Years: He presented with a complaint of pain over left leg and fever off and on, for two months. He gave history of penile sore following exposure eighteen months prior to these symptoms. He did not take any treatment for the penile sore. The local examination revealed diffuse, bony warm, tender swelling over distal one third of shin of left tibia. There was a bony prominence over proximal one third of right shin which was painless, and not tender on pressure. There was a scar of a healed sore over glans penis. There were no other signs of secondary syphilis. The roentgenograms showed osteolytic lesion with periostitis over distal part of shin of left tibia and cortical thickening of right tibia over its upper one third. The blood VDRL test was positive, 1:64. The provisional diagnosis was chronic osteomyelitis (? syphilitic). The biopsy findings were as follows: The periosteum showed changes suggestive of chronic inflammatory process. The histopathology of bone revealed nothing abnormal. He was treated with long acting penicillin therapy and was completely symptom free at the end of two months. The local bony prominences were persistent though the patient had no symptoms. The VDRL showed significant fall in the titre. The X-rays repeated after six months showed absence of periosteal reaction, but healing at the site of lesion with thickened cortex.

Case No 3: B. B. Male, 30 Years: This patient was admitted in medical ward for jaundice (Infective Hepatitis). He complained vague pains along extremities and pain and swelling of both ankles for about fifteen days. There was no history of trauma. He gave history of penile sore following exposure four years before. There was a tender diffuse swelling around ankles and lower one thirds of both the legs. The left tibia was thickened over its anteromedial surface just above ankle. There were no other manifestations of secondary syphilis. The X-rays showed periosteal reaction around lower ends of both the tibiae. The blood VDRL test was positive, 1 : 64. The biopsy was not done. He was treated with long acting penicillin therapy. The patient did not attend hospital after the treatment as he had complete relief of the symptoms. He was requested to attend hospital at the end of six months after institution of treatment. At that time he had no complaint whatsoever. The range of motion in ankle joints was full. The VDRL test though + ve, had fallen in titre. The X-rays showed thickening of lower ends of both the tibiae. The bone in these areas was more sclerotic and lacked its usual cortical pattern.

Case No. 4: S. J. Male, 45 Years: He attended outdoor department for painful swelling left leg following minor injury four months ago. There was a tender and warm diffuse bony swelling over middle one third of the left shin. The patient emphatically denied history of exposure. But on examination a scar of healed sore on penis was present. The clinical diagnosis was chronic osteomyelitis, left tibia. The X-ray showed changes suggestive of chronic osteomyelitis. There was an osteolytic lesion over the left shin. Biopsy of the lesion was done. The histopathology of the periosteum showed foci of chronic inflammatory cells and that of bone showed changes suggestive of chronic nonspecific osteomyelitis. The patient was subjected to antileptic treatment (long acting penicillin therapy). He was completely pain free within six weeks. During this period at one of the clinical reviews, when taken in confidence, the patient gave the history of exposure twentytwo years back following which he had penile sore for which he took treatment. He had generalised lymphadenitis (after five years of exposure) for which he did not take any treatment.

In this case the blood VDRL test was negative and other serological tests were not done. However in view of the history, clinical and histopathological picture, the final diagnosis of late osseous syphilis was established. The response to the penicillin therapy was excellent, with complete relief of pain within six weeks of treatment, clinically and radiologically. (Fig. 4)

DISCUSSION

Only in one case out of the four, the diagnosis could be established on the clinical grounds. In other cases errors were made as regards the diagnosis, and the final diagnosis was established only after biopsy and the reviews. This shows that one is likely to miss this condition, if not kept in mind. Syphilis has been aptly described as the great imitator, and the late syphilis of bones may resemble

many other conditions some of which are more common. The following are more likely sources of error. Pyogenic osteomyelitis, primary osteogenic sarcoma, Ewings tumour and metastasis.

The diagnosis in cases of late osseous syphilis can be established by clinical findings, roentgenograms, serological tests and biopsy. In general the VDRL slide test shows superior performance in all stages of syphilis². In these 4 cases other tests were not done. In cases of late syphilis of any kind the results of serological tests during observation after treatment rarely help in indicating the prognosis, serological tests are likely to remain positive after adequate treatment in more than 50% of cases although in most of them there is some reduction of the quantitative titre. It has been reported that symptomatic cure in late benign syphilis involving bones can be achieved in 80-90 percent of cases following minimal adequate treatment, the syphilis remaining non-infective for rest of the life⁴.

The response to antileptic treatment is always satisfactory and the lesions heal with consolidation at the site ultimately producing thickened and hyperostotic cortex of the bone. The antileptic treatment comprises of penicillin therapy. In this series the patients were treated with long acting penicillin. The long acting penicillin therapy is more suitable, as it is economic and convenient over the daily injections of penicillin which are likely to discourage the non-operative patients. The course of treatment may have to be repeated after six to eight weeks if deemed necessary clinically or serologically. Treatment in the form of surgery is not required for the bone lesions in benign late syphilis.

SUMMARY :

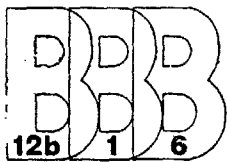
1. This is a report of four cases of late osseous syphilis, with the clinical manifestations mimicking the other clinical conditions.
2. All these cases were investigated, treated till symptomatic cure was achieved and were followed up for over a six months period for clinical, radiological and serological surveillance.
3. The response to antileptic treatment was excellent in all the cases.

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