A rare case of syphilitic Charcot joint involving left elbow

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Abstract

Charcot arthropathy is characterized by joint dislocations, pathologic fractures, and debilitating deformities. Syphilis was believed to be the most common cause of Charcot arthropathy a century back, but now, it is one of the rare causes which get missed in the routine evaluation. We present a rare case of syphilitic Charcot joint in a middle aged, paraplegic, wheel-chaired bound male, who presented with a history of recurrent painless joint swelling. He underwent multiple surgeries on the left elbow to deal with his soft tissues and bony infections along with multiple courses of systemic high end antibiotics including anti-tubercular drugs without much benefit. He was even planned for midarm amputation. Timely opinion of dermatologist and correct interpretation of serological tests clinched the diagnosis. This case highlights a high index of suspicion and correct interpretation of serological test of syphilis is essential to diagnose tertiary syphilis. Timely management with injection benzathine penicllin resulted in life time gratifying outcome.

Key words: Charcot joint, serological test, syphilis

Introduction

The incidence of tertiary syphilis had remarkably decreased due to widespread availability of systemic antibiotics.[1] This case report brings forward one such rare case of recurrent joint swelling whose timely diagnosis by the help of dermatologist resulted in life time gratifying outcome.

Case Report

A 57-year-old male, known paraplegic, since 1990 following road traffic accident (fracture D12, L1 vertebra) presented with recurrent history of painless joint swelling in the left elbow joint for April 2017. He was evaluated and managed in the line of soft-tissue infection and septic arthritis on multiple occasions with high end systemic antibiotics and debridement. He was even given presumptive trial of 9 months of antitubercular drugs without much improvement. Pus culture and sensitivity and histopathological examination done on multiple occasions did not reveal any specific diagnosis.

He was admitted with similar complaints in January 2019. In view of repeated admission, chances of developing septicaemia, to improve the quality of life he was planned for midarm amputation. However, at last, ditch effort before going for such critical operation, dermatologist opinion was sought to rule out any underlying dermatological condition. Detailed history revealed, multiple unprotected sexual exposures to amateur more than 30 years ago but denied occurrence of genital ulcer. Dermatological examination revealed, a large, bulky, flail left elbow joint with well healed scar marks on its surface [Figure 1a and b]. He was taking support of the right hand to lift the left arm. On initial evaluation, he had lecukocytosis (Total White blood cell-16700/cc) with few toxic granules in the peripheral blood smear with shift to left side, raised erythrocyte sedimentation rate (60 mm fall in 1 h) and positive C-reactive protein. Viral markers (hepatitis B virus, HCV, and HIV) and Venereal disease research laboratory (VDRL) done at multiple occasions were negative. His tests for tuberculosis such as Mantoux, tissue histopathology, and chest X-ray PA view were negative. Blood sugar level, liver, and renal parameters were within the normal limits. X-ray left elbow joint [Figure 2] revealed destructive bony changes with soft-tissue swelling.

Keeping high index of suspicion of tertiary syphilis, fluorescent treponemal antibody absorption test (FTA-ABS) and treponema pallidum hemagglutination test (TPHA) tests were ordered. Both FTA-ABS and TPHA were positive. His cerebrospinal fluid VDRL and TPHA were negative. He was diagnosed with a case of Charcot joint left elbow due to tertiary syphilis and managed by injection benzathine penicillin 2.4MU intramuscular every week for 3 weeks. His joint swelling significantly reduced over a period of

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1 month [Figure 3]. Even after 6 months of therapy, he did not have any recurrence of joint swelling. However, preexisting bony destruction still persists [X-ray elbow join Figure 4]. He has now been planned for elbow joint replacement for better rehabilitation.

Discussion

Tertiary syphilis is rare and develops in a subset of untreated syphilis infections. It can appear 10–30 years after infection was first acquired, and it can be fatal if not diagnosed on time. Symptoms of tertiary syphilis vary depending on the organ system affected.[2] Charcot arthropathy is a progressive condition of the musculoskeletal system that is characterized by joint dislocations, pathologic fractures, and debilitating deformities. It can occur at any joint; however, it occurs most commonly in the lower extremity, at the foot and ankle. Any condition that causes sensory or autonomic neuropathy can lead to a Charcot joint, for example, diabetes, syphilis, chronic alcoholism, leprosy, meningomyelocele, spinal cord injury, syringomyelia, renal dialysis, and congenital insensitivity to pain.[3] Till 1936, syphilis was believed to be the most common cause of Charcot arthropathy described in medical literature.[4,5] Later, Jordan WR linked this condition to diabetes, since then it is considered to be the most common etiology of Charcot arthropathy.[6] The exact pathogenesis of Charcot arthropathy remains still elusive.[7] Tertiary syphilis involving joint will have a variety of clinical manifestations, including swelling, joint instability, dysfunction, painful, and painless. Radiological examinations may show severe joint deterioration, subluxation, and significant bone loss.[8]

Our case was unique in the presentation as joint involved was left elbow and which is not the common site for Charcot joint. There are three basic tests used in the diagnosis of syphilis. These include direct observation of the spirochete by dark field microscopy, and nontreponemal and treponemal serologic antibody studies. More sensitive nontreponemal tests such as the rapid plasma reagin and the VDRL are used for initial screening, whereas specific treponemal tests such as the FTA-ABS and TPHA are used to confirm the diagnosis. The VDRL usually becomes reactive within the first few weeks after infection, peaks during the 1st year, and then slowly declines, so that low titers (levels) are seen in late syphilis. In late latent syphilis, it can be negative in 30% of cases.[9] Thus, it has

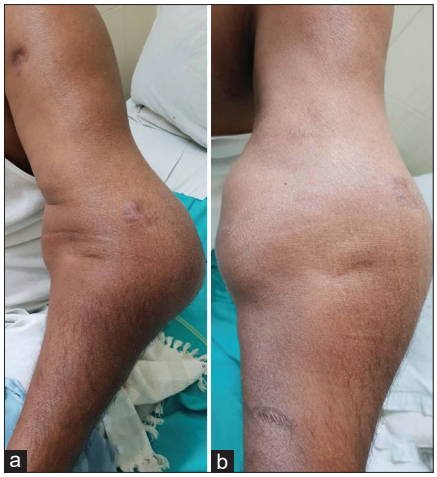

Figure 1: (a and b) Clinical photographs of left elbow joint at the time of admission. There is large soft-tissue swelling giving appearance of bag of worms

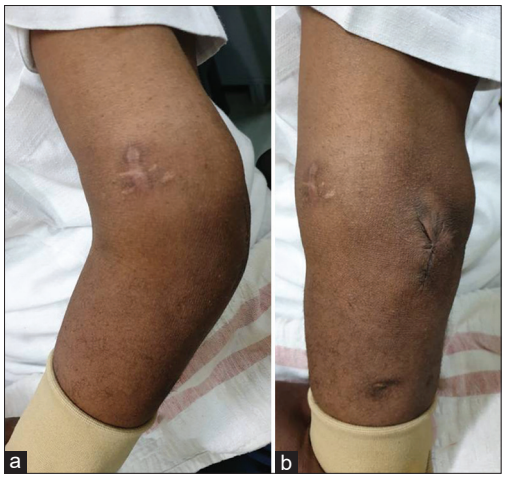

Figure 3: (a and b) Clinical photographs of the left elbow joint after 6 months of therapy. There is significant reduction in soft-tissue swelling

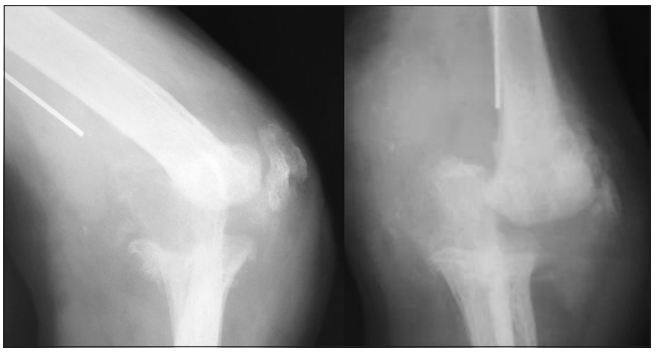

Figure 2: Radiograph of elbow reveals joint destruction with partial resorption of fragments. There is an absence of osteosclerosis and osteophytes. There is soft-tissue thickening with foci of soft amorphous calcification

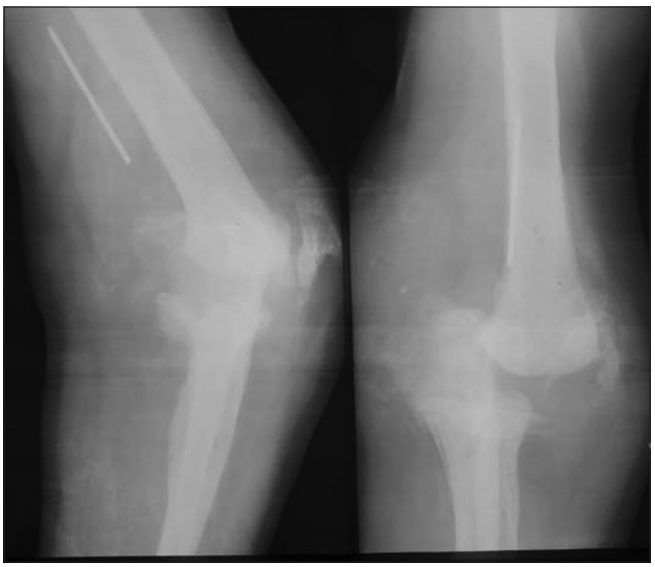

Figure 4: The osseous findings have remained static and have not progressed further in comparison to previous radiograph. There is significant reduction of the soft-tissue thickening

good screening value for primary syphilis and secondary syphilis but not in late syphilis. On the basis of strong clinical suspicion of tertiary syphilis, we did FTA-ABS and TPHA even although his VDRL was negative. Thus, timely referral to dermatologist helped in establishing the diagnosis. He had shown remarkable recovery following the three dosages of injection benzathine penicillin. He has been planned for joint replacement after months of observation. Even though tertiary syphilis of the bone has become very rare entity now but on certain circumstances where conventional lines of therapies do not work, this should always be kept as one of differentials as it being known "great imitator" of many uncommon to common symptoms. The treatment of such rare entity gives remarkable result to the patient and everlasting gratifying memory to the treating physician or surgeon.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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