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Tabetic Arthropathy: A Historical Multiple Localization

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Abstract **Case Report**

Tabetic arthropathy is a rare complication of neurosyphilis. It has currently become rare due to the decreased frequency of syphilis and early treatment. We report a case of tabetic arthropathy with multiple localizations. The patient is a 67-year-old individual with no particular medical history. He was hospitalized for painless deformities of both knees and the right elbow, which had been progressing for 25 years, accompanied by the sudden onset of swelling in the left knee, progressing with remission. Later, he developed similar swelling in the right knee and elbow. Subsequently, he experienced progressive and painless instability in both knees, resulting in total functional disability. Standard X-rays of the right elbow, both knees, and the left hand revealed significant joint destruction. Given the discrepancy between the extent of radiological destruction and the painlessness of the affected joint arthropathy, the diagnosis of neurogenic arthropathy was considered. Serology for syphilis was positive (TPHA + and VDRL -) in both blood and cerebrospinal fluid. The diagnosis of polyarticular tabetic arthropathy was confirmed. The patient was treated with a third-generation cephalosporin at a dose of 2g per day intravenously for 21 days. This is a rare case of late-diagnosed multifocal tabetic arthropathy with a catastrophic outcome.

Keywords: Syphilis - Tabetic arthropathy - Multiple localization.

INTRODUCTION

Tabetic arthropathy is a rare complication of neurosyphilis. It occurs in 10% of cases of tabes dorsalis, typically 10 to 20 years after the initial signs. It predominantly affects men with an average age of 60 years. Currently, it has become rare due to the decreased frequency of syphilis and effective early treatment [1, 2]. Here, we present a rare case of tabetic arthropathy with multiple localizations.

CASE REPORT

The patient is a 67-year-old individual with no significant medical history, not known to smoke or consume alcohol, and no history of unprotected sexual intercourse. Admitted to the rheumatology department for painless deformities of both knees, the right elbow, and the left hand, occurring in the context of afebrile condition and overall good general health. According to the patient's history, symptoms began 25 years ago with the sudden onset of swelling in the left knee, progressing with remission. A few years later, similar swelling appeared in the right knee and elbow. Subsequently, he experienced progressive and painless instability in both knees, resulting in total functional disability, as well as deformity of the right elbow and the left hand.

Clinical examination revealed a hemodynamically and respiratorily stable patient. Musculoskeletal examination revealed significant swelling in the left knee, bilateral genu valgum deformity, and leg length discrepancy. Active mobility was impossible, but passive mobility was painless with ligament laxity. Additionally, painless swelling and deformity were observed in the right elbow and the left hand. The patient was unable to stand or walk. Neurological examination showed positive Argyll Robertson sign, absent osteotendinous reflexes, and hypotonia of the lower limbs. Cutaneous examination revealed pigmented papules on the soles of the feet and the palms of both hands.

Standard X-rays showed marked osteoarticular destruction in the right elbow and both knees, with intra-articular fragments and soft tissue calcifications, as well as bone dislocation and luxation with loss of contact between joint surfaces.

Given the discrepancy between the extent of radiological destruction and the painlessness of the affected joint arthropathy, the diagnosis of neurogenic arthropathy was considered. Serology for syphilis was positive in both blood and cerebrospinal fluid (TPHA +,

VDRL -), and synovial fluid aspiration was white. Serologies for hepatitis B, C, and HIV were negative. Further investigations revealed iron deficiency anemia, while inflammatory, renal, hepatic, and diabetes assessments were normal. Brain CT scan was unremarkable, and ophthalmologic examination and cardiac ultrasound were normal.

The diagnosis of tabetic arthropathy with multiple localizations was established. The patient was treated with third-generation cephalosporin at a dose of 2g per day intravenously for 21 days. Surgical treatment was not indicated due to the extent of joint destruction.

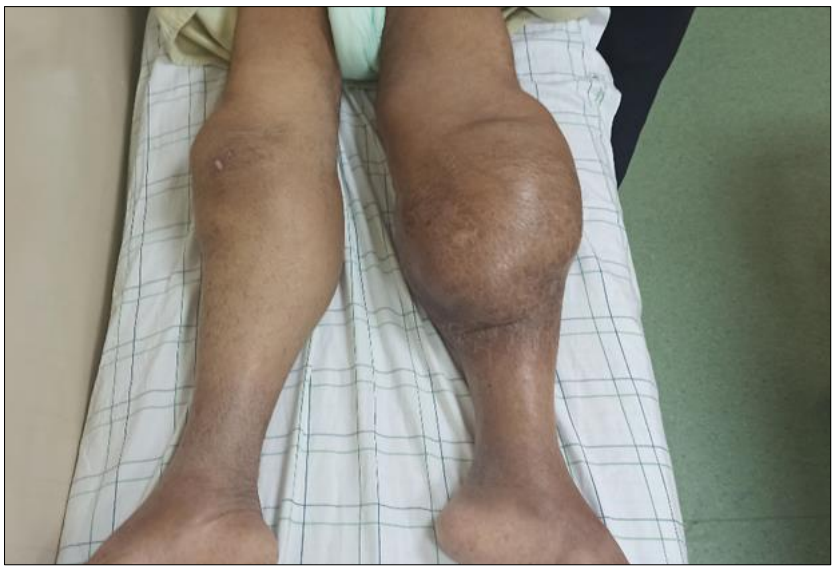

Figure 1: Significant swelling of the left knee, bilateral genu valgum deformity, and inequality of both lower limbs

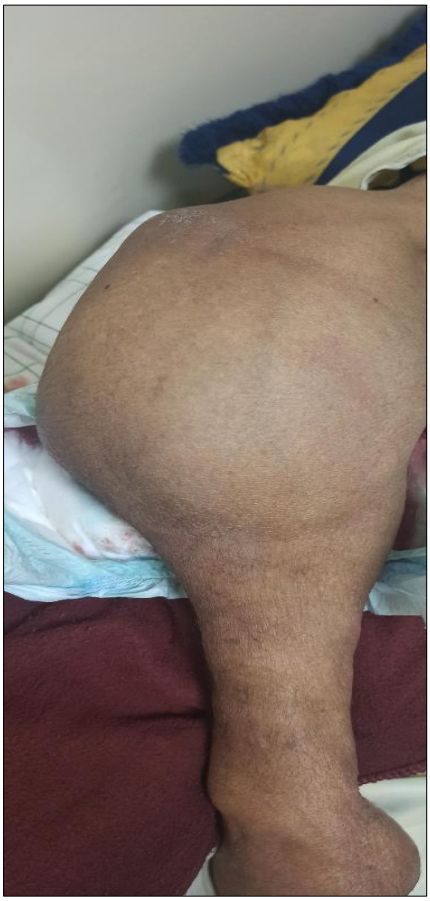

Figure 2: Swelling with deformation of the right elbow

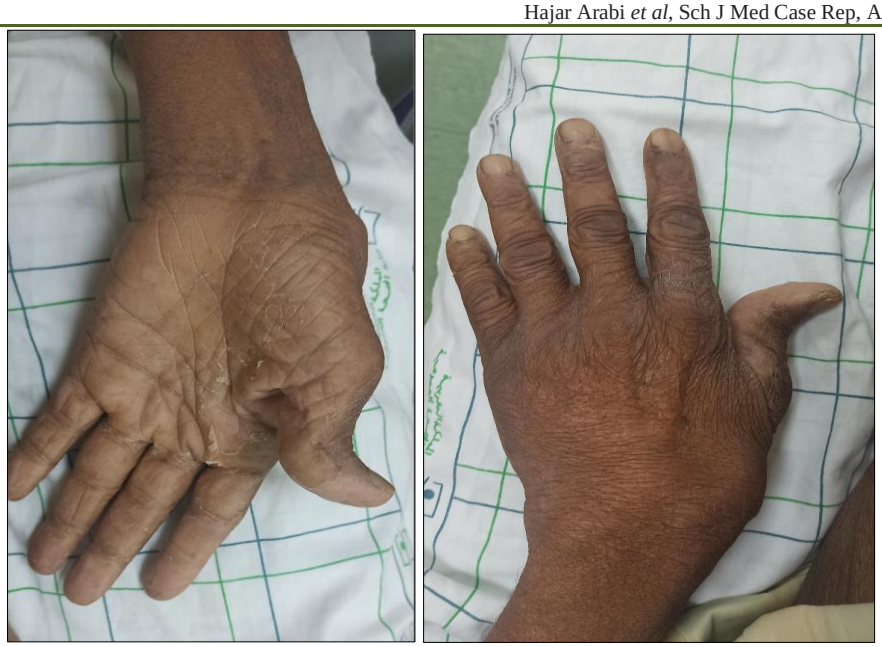

Figure 3: Deformation of the left hand

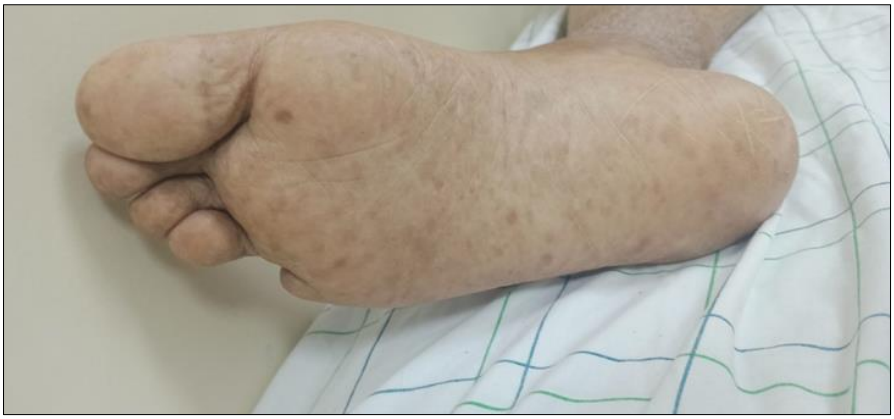

Figure 4: Pigmented papules on the sole of the foot

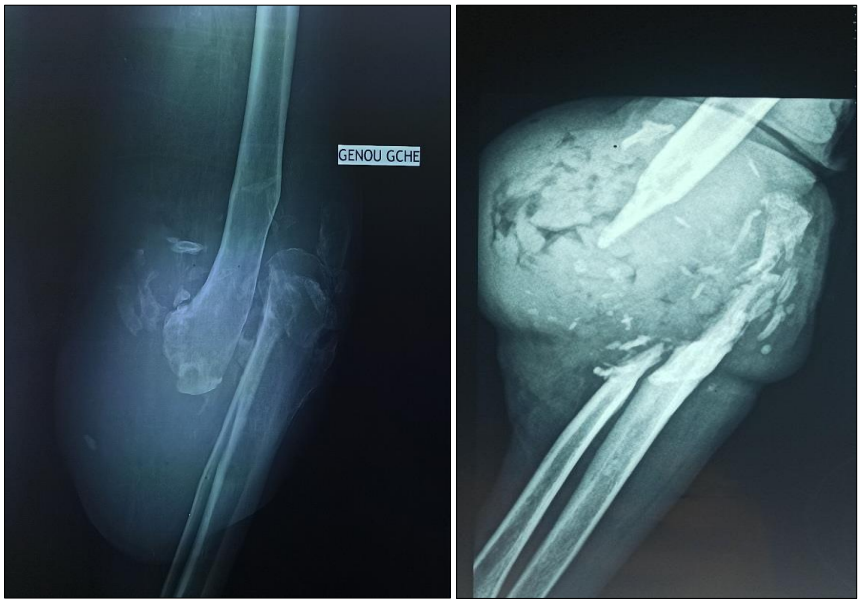

Figure 5: X-ray of both knees: Major joint destruction in both knees with soft tissue calcifications and loss of contact between joint surfaces.

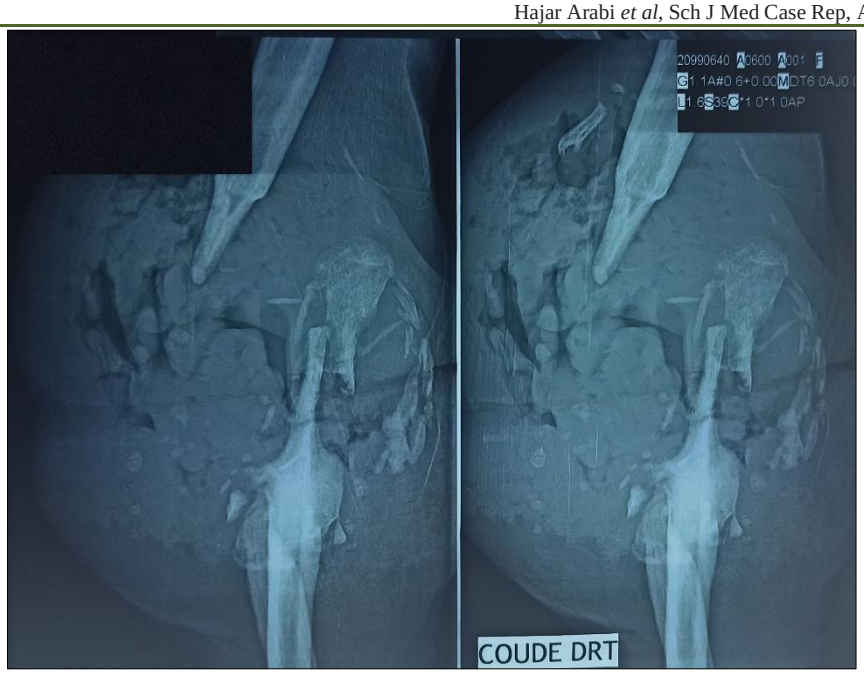

Figure 6: X-ray of the right elbow: Significant joint destruction with loss of contact between joint surfaces.

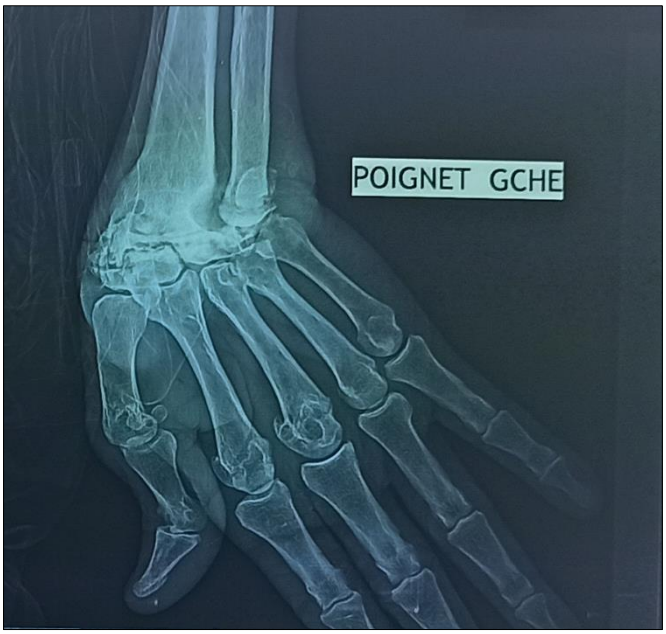

Figure 7: Radiographie de face la main gauche prenant le poignet : lésions lytiques du poignet gauche

DISCUSSION

Tabes dorsalis is a rare complication of neurosyphilis, with multiple symptoms, but joint involvement is the most common. Tabetic arthropathy occurs in 10% of cases of tabes dorsalis, typically 10 to 20 years after the initial signs and often 20 to 30 years after the initial syphilitic infection [1, 2]. It has become rare due to the decreased frequency of syphilis and the improvement in early and effective treatment [2].

Tabetic arthropathy is a chronic degenerative condition that affects one or more joints, deprived of their sensitive painful and proprioceptive innervation and continuously subjected to the traumas of daily life. It predominantly affects men with an average age of 60 years [1].

Its pathogenesis is based on two theories: a trophic theory related to neurovegetative disturbance leading to joint trophicity abnormalities and osteoclastic hyper-resorption, and a mechanical theory due to joint anesthesia that removes all protection from the joint subjected to repeated traumas favored by ataxia and ligament hyperlaxity [1].

The involvement predominantly affects the lower limbs (60 to 75%), with the knee being the most commonly affected joint, followed by the ankle, tarsus,

hip, dorsolumbar spine, and rarely the upper limb joints [3,4]. Multifocal forms are rare [3].

In our patient, involvement included both knees, the elbow, and the hand. What makes our case unique is the polyarticular localization and the involvement of the elbow and hand, which are rare. There are few published cases of multifocal localization during tabetic arthropathy, and no author had mentioned involvement of the elbow [5-9].

In a series of 9 cases, the largest number of affected joints was two. Allali *et al*., reported 24 cases of tabetic arthropathy, of which 8.3% were multifocal; however, in both series, no involvement of the elbow was reported [5].

The diagnosis of tabetic arthropathy is considered in the discrepancy between the extent of joint involvement and the painlessness with or without neurological signs. Confirmation is biological by the positivity of syphilitic serologies in joint fluid, blood, or cerebrospinal fluid [4].

The radiological aspect is characteristic, combining destructive and constructive lesions defining hypertrophic forms dominated by signs of fragmentation associated with abundant and anarchic osteogenesis, and atrophic forms characterized by resorption phenomena [11].

Medical treatment is based on parenteral penicillin G (20-30 million units per day for 3 weeks), and the number and rhythm of treatments vary according to clinical, biological, and evolutionary data. The management of arthropathy is challenging, and prolonged offloading or orthotic use, as well as weight reduction, may limit bone lysis progression. Orthopedic treatment may be indicated but remains disappointing [1].

CONCLUSION

This is a rare case of late-diagnosed multifocal tabetic arthropathy with a catastrophic outcome. Tabetic arthropathy is a rare complication of neurosyphilis. Its diagnosis should be considered in any destructive and painless joint involvement. Due to the difficulty in its management, prevention based on the treatment of syphilis at an early stage before the occurrence of joint and neurological forms is essential. Not forgetting the important role of syphilis prevention as a sexually transmitted infection.

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