WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

An Atypical Presentation of Gouty Arthritis: A Case Report

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A B S T R A C T

Gout is the most common inflammatory and one of the most painful forms of arthritis in men and older women. In most cases, hyperuricemia is caused by a reduction in the excretion of uric acid by the kidney tubules, and in other cases it is due to overproduction. However, rarely, all the laboratory markers are within normal range, but the patient still has gout. This case report is about one such case of normal laboratory parameters and merely the presence of urate crystals in the knee joint aspirate leading to the diagnosis.

Keywords: Gout, Arthritis, Atypical, Presentation, Case Study, Normal Laboratory Parameters

1. Introduction

Gout, also known as gouty arthritis, is an inflammatory disease of the synovial joints, caused by the deposition of monosodium urate monohydrate crystals in and around the joints and soft tissues to produce irregular firm nodules called tophi (Walker et al, 2014). It is one of the most painful forms of arthritis (NIH, 2020). It is the most common inflammatory arthritis in men and in older women, with a prevalence of 1-2% and a 5:1 male to female ratio (Walker et al, 2014). The two most important risk factors associated with the development of gout are an advanced age and high serum uric acid (SUA) levels (Walker et al, 2014). SUA levels are higher in men, increase with age, and are directly associated with body weight and ethnicity (Walker et al, 2014). In recent years, gout has become more common due to increased longevity and a higher prevalence of metabolic syndrome, hyperuricemia being an integral causative factor of the latter (Arromdee et al. 2002).

In over 90% of the patients, hyperuricemia is caused by a reduction in the excretion of uric acid by the kidney tubules (Walker et al, 2014). Other risk factors for gout include metabolic syndrome, high alcohol intake, generalized osteoarthritis, a diet relatively high in red meat or fructose or relatively low in Vitamin C, and lead poisoning (Walker et al, 2014). A less common pathophysiological mechanism of gout is the over-production of uric acid in some patients, such as those suffering from Lesch-Nyhan syndrome (Walker et al, 2014).

2. Case summary

Mr. Khalid, a 24-year-old unmarried tailor from Mianwali, presented in the Holy Family Hospital (HFH) OPD with the complaints of fever for one month, painful swelling of B/L ankle joints for 15 days, and left knee joint swelling for 10 days. The fever was low-grade, intermittent, and documented up to 100F, without rigors and chills, followed by a vague self-limiting pustular rash mainly over the thigh and abdominal region which vanished in a couple of days without treatment. After 15 days of fever, the patient started having B/L swelling of ankle joints with significant restricted mobility so that he had to use a walker for his daily activities. Five days later, his left knee joint also got involved in a similar fashion. He also complained of morning stiffness for a maximum of 3 hours and joint pain that usually worsened with activity. There was an associated documented 11kg weight loss in the last one month.

There were no premorbids.

At the age of 14, he developed pain in B/L hip joints, and was diagnosed with Rheumatic Fever (RF), for which he took Benzyl Penicillin and Aspirin for 7 consecutive years. However, there is no record available on the basis of which the diagnosis was made. Then one year back, he presented to HFH with history of fever, swelling of B/L shoulder joints, left wrist joint, third left metacarpopharyngeal joint, and pain right knee. He had a working diagnosis of Juvenile Rheumatoid Arthritis (JRA) and was discharged on Tab Escitalopram 10mg x OD.

There was positive family history of a similar problem in the elder sister when she was 15 years old; however, no workup was done.

On examination, there were bilaterally restricted movements of the shoulders, and no tophi were inspected in the big toes. Upon investigation, his uric acid levels were normal, culture was negative, and RA factor and anti-CCP were negative. His synovial fluid microscopy revealed monosodium urate monohydrate crystals, on the basis of which the diagnosis of an atypical presentation of gouty arthritis was made. He was treated with an NSAID and Febuxostat, by the names of Naproxen 550mg x BD and Gouric 40mg x OD, respectively. He was also accorded dietary advice, including avoidance of red meat, alcohol, beans, and peas. There was a quick response to treatment, and the swelling and pain resolved within 2 days. Upon follow-up, the patient had quit using the walker and had resumed his daily functioning.

3. Discussion

Gout has been estimated to account for almost 5% of nonsurgical joint disease (Coodley, 1958). Although it still most commonly presents in its classical form, the disease can manifest in a wide array of presentations (Ning & Keenan, 2010). It is theorized that such atypical presentations are a result of a complexity of contributing factors to the disease (Ning & Keenan, 2010).

Premorbids such as advanced age, obesity, and metabolic syndrome are among the most important predisposing factors in the development of gout (Walker et al, 2014). In our patient, however, none of these comorbids existed. In this case, before the confirmation through microscopic examination of the synovial fluid_ and based solely on the history_ the diagnosis of gouty arthritis essentially became a diagnosis of exclusion.

On physical examination, there was no hepatosplenomegaly or lymphadenopathy, thus ruling out Still's Disease. There was no history of sexual contact or alcohol consumption, hence, ruling out Reiter's Syndrome. Rheumatoid Arthritis (RA) was excluded based on the absence of any extrapulmonary manifestations of RA, and negative reports for both RA factor and anti-CCP. Currently, the absence of any rash, oral ulcers, Raynaud's phenomenon, dryness of eyes and mouth, numbness, tingling sensation, or photosensitivity meant that Systemic Lupus Erythematosus could be ruled out. There was no complaint of backache, chest pain, dyspnea, or migratory arthritis, so ankylosing spondilytis was ruled out.

Lesch-Nyhan syndrome, a rare disorder in which gout is inherited in a Mendelian manner, could have been suspected in our case due to the early age of onset of the disease and a positive family history; however, the absence of the associated clinical features such as mental retardation, self-mutilation, choreoathetosis, or ataxia, meant that this could not have been a working diagnosis (Walker et al, 2014).

The clinical presentation of our patient was mostly in contrast with the classical clinical features of the disease, hence, the diagnosis of atypical gouty arthritis. The classical presentation is with an acute monoarthritis, whereas our patient presented with polyarthritis in each of his visits to the hospital, which accounts for only 10-20% of cases of patients with gout (TCD, 2021). Over 50% of the cases present with an affected first MTP joint, which was never a presentation with our patient (Walker et al, 2014). An acute attack of gout is typically self-limiting over 5-14 days, with complete resolution without treatment; however, the acute attack of our patient was not self-limiting and did not resolve without pharmacological intervention (Walker et al, 2014). It is said that simultaneous polyarticular attacks are unusual, which was the case with our patient (Walker et al, 2014). No severe bony deformities developed in our patient. Most importantly, no tophi were observed in any of the involved joints, whether axial or peripheral.

Upon investigation, the most striking feature was a normal SUA level of our patient. Normal SUA levels are observed only in about 11% of the patients of gout, using the lower normal cut-off value of 0.36 mmol/L (Leiszler, Poddar & Fletcher, 2011). However uncommon, though, normal SUA levels during an attack do not exclude gout, as serum urate falls during the acute phase response (Leiszler, Poddar & Fletcher, 2011). Normal or low SUA levels are also found in patients of gout who are diabetics or alcoholic; however, our patient was neither diabetic nor alcoholic (Leiszler, Poddar & Fletcher, 2011). Elevated ESR and CRP are typical of acute gout (Walker et al, 2014). Our patient, however, had normal ESR and CRP levels. A biochemical screen, including RFTs, glucose levels, and lipid profile, is advised in patients of gout because of the association with metabolic syndrome (Walker et al, 2014). In our patient, however, this particular biochemical screen showed values within normal range for all components.

The diagnosis of gout in our patient, therefore, was confirmed only by the identification of urate crystals in the aspirate from his left knee joint (Walker et al, 2014).

4. Conclusion

Although gout is a common form of inflammatory arthritis, with its typical presentation being the most common, it can present in any atypical fashion. When presented with a diagnostic challenge in a patient with gout, the clinician should be aware of unusual manifestations of gout in all patients with a variety of signs and symptoms, and consider it in the differential (Ning & Keenan, 2010).

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