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Case Report

A rare case of reactive arthritis with intermittent hematuria in a young male

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ABSTRACT

Reactive arthritis (ReA) is an inflammatory arthritis that manifests days to weeks after a gastrointestinal or genitourinary infection. It is also described as a classic triad of arthritis, urethritis, and conjunctivitis. Here we discuss the clinical presentation of ReA in a 20-year-old male who presented with typical triad of symptoms. But there was presence of hematuria which couldn't be explained by this single diagnosis. So further investigations where necessary to find the cause of his haematuria. A 20-year-old male student with history of childhood onset renal stone disease presented with complaints of dysuria for 3 days followed by bilateral conjunctival congestion along with pain around right hip joint, painful swelling around right ankle joint for 2 days. All examination were normal except for bilateral conjunctivitis and features of right ankle joint arthritis. His blood investigations showed neutrophilic leucocytosis with raised CRP levels. Chlamydia IgM Antibody was detected positive, which revealed the causative organism being *Chlamydia Trachomatis*. Urine routine showed 50-55 RBC'S and 2+ proteinuria. Hematuria was attributed to the CT evidence of renal stone and abnormal retroaortic coarse of his left renal vein described as posterior nutcracker syndrome.

Keywords: ReA, Reiter's syndrome, Hematuria, *Chlamydia trachomatis*, Posterior nutcracker syndrome

INTRODUCTION

Reactive arthritis (ReA) is inflammatory arthritis, a subset of post infectious arthritis that manifests several days to weeks after a gastrointestinal or genitourinary infection. It presents with arthritis, urethritis, and conjunctivitis when the preceding infection is genitourinary. It is common in adult males in the second and third decades of their life.[1] It was previously called "Reiter's syndrome," named after Hans Reiter, who first described this syndrome. Following infection, organisms or their components find their way to joints, where they provoke inflammatory immune responses. It is relatively rare, and incidence in population-based studies is reported to be 0.6 to 27 per 100,000. So, most patients do not present with the classic triad.[1]

Here we discuss the clinical presentation of ReA in a 20-year-old male who presented with typical triad of symptoms along with an unusual finding of intermittent hematuria.

CASE REPORT

A 20-year-old male, studying in Bangalore with childhood history of renal stone disease presented with complaints of dysuria for 3 days followed by bilateral conjunctival congestion along with pain around right hip joint, painful swelling around right ankle joint for 2 days. On examination he had bilateral conjunctivitis and features of right ankle joint arthritis. His blood investigation showed neutrophilic leucocytosis and elevated CRP levels.

Peripheral smear showed neutrophilia. RFT, LFT and Lipid profile were normal. Work up to exclude other causes of arthritis including ESR, ASO titre, RA factor, HLA B27, ANA Profile, cANCA, pANCA and C3, C4 were normal. COVID RT-PCR, HIV screening and genital infection panel were negative. ECHO showed Mitral valve prolapse with mild MR. Urine routine showed 2+ proteinuria, 50-55 RBC's/hpf and 4-5 pus cells/hpf. Urine protein/creatinine ratio was normal. USG abdomen showed tiny left renal calculus. CECT abdomen and pelvis showed tiny left renal calculus and retroaortic course of left renal vein without renal vein thrombosis. Work up for his childhood onset renal stone disease including serum calcium, phosphorous, PTH and Uric acid were normal. Serum vitamin D levels was low. His 24-hr urine (Protein, calcium, phosphorous, uric acid, oxalate) were in normal range, however his urine citrate levels were low. His blood, urine, stool and throat swab culture were sterile.

Based on the above findings, a final diagnosis of Reiter's disease, intermittent haematuria due to renal stone disease with retroaortic coarse of left renal vein, hypovitaminosis D and hypocitraturia was concluded.

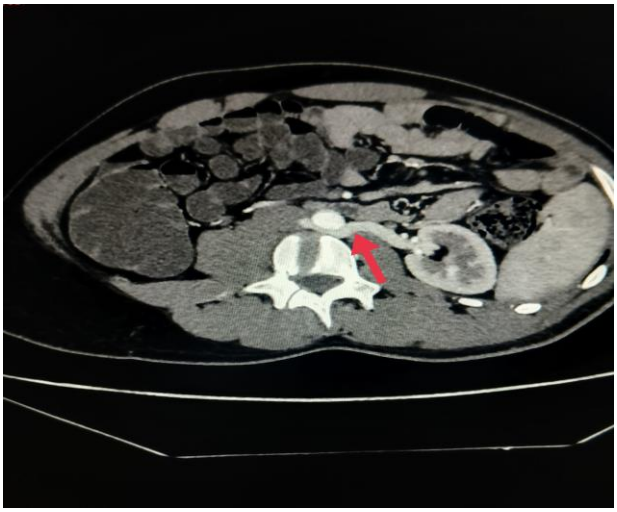

Figure 1: CECT abdomen.

DISCUSSION

Infection with certain bacteria has been linked to ReA. The ones most associated are: *Chlamydia trachomatis*, *Neisseria gonorrhoea*, *Mycoplasma hominis*, and *Ureaplasma urealyticum*-It is spread through sexual contact. *Salmonella, Shigella, Yersinia and Campylobacter*. typically infect the gastrointestinal tract. The incidence is about 2% to 4% after a urogenital infection, mainly with Chlamydia trachomatis, and varies from 0% to 15% after gastrointestinal infections with *Salmonella, Shigella, Campylobacter*, or *Yersinia*.[2] Any recent illness such as urethritis, diarrhoea, or any history of sexual intercourse, usually with a new partner, within 3 months of arthritis symptoms etc should be enquired.[3]

Clinical presentation

An acute oligo-arthritis of weight bearing joints like Knee, ankle joint, sacroiliac joint and lumbar spine being the most involved. In addition to it synovitis and enthesitis are also seen. Extraarticular features include conjunctivitis, keratoderma, balanitis, and painless oral ulcers. HLA B 27 can be measured as it correlates with the severity of the disease but is not diagnostic. It is also important in the localization of arthritis. Sacroiliitis occurs more commonly in HLA B 27 positive patients.[4]

According to American college of rheumatology, diagnostic guidelines for ReA in 1999.[5]

Major

Asymmetric oligoarthritis involving lower extremities. Evidence of preceding infection-either enteritis or urethritis within a time interval of 3 days to 6 weeks

Minor

Evidence of a triggering infection -by culture positivity/serology. Evidence of persistent synovial involvement-positive immunohistology or PCR for Chlamydia. 2 major or 1 major +1 minor makes the diagnosis.

Our patient did satisfy 2 major and 1 minor criteria. Salient feature of our case was his intermittent hematuria which was attributed to Posterior nutcracker syndrome after ruling out vasculitis, renal parenchymal disease, and other obstructive pathologies. There are no case reports of ReA with hematuria so far in the literature. He was treated with tab. naproxen 500 mg Q12H for 7 days, cap. doxycycline 100 mg Q12H for 14 days, tab. sulfasalazine 500 mg Q12H and tab. hydroxychloroquine 200 mg Q12H for 4 weeks. Vitamin D and calcium supplements were added in view of hypovitaminosis D. As the disease was progressing to involve other joints manifested by bilateral knee joint effusion and enthesitis left elbow on day 4 of illness, patient was started on tab. prednisolone 10 mg OD for 7 days. There was partial relief of symptoms and reduction in size of knee joint effusion, hence he was discharged on Day 8 of illness. On follow up after one week, he was almost asymptomatic. His chlamydial IgM Antibody was reported as positive, indicating recent infection with *Chlamydia trachomatis*. On further enquiry, he revealed a history of sexual relation with his partner for about one month.

The cause of his hematuria was attributed to a congenital anomaly that is posterior nutcracker syndrome and renal stone disease.

Posterior nutcracker syndrome is a rare congenital anomaly in which left renal vein is compressed between aorta and vertebrae leading to hematuria and flank pain.

Hematuria is attributed to the rupture of thin-walled varices, due to elevated venous pressure into collecting system. Definitive treatment is corrective surgery.[6] Patients are also advised for weight gain which can increase the perinephric fat deposition and change position of kidney and thus relief of compression.[7] One of the dreaded complications of this anomaly is Renal vein thrombosis, hence patients are kept under close follow up. There is also another entity called anterior nutcracker syndrome where left renal vein is compressed between superior mesenteric artery and aorta which also present with similar clinical features.[8]

Prognosis

Self-limited course usually. It can also be recurrent or continuous, and about 20% to 25% of the patients may progress to have chronic articular, ocular, and cardiac complications, especially in those who are HLA-B27 positive.[9] Sacroiliitis is the most common chronic joint involvement. There is significant reduction in mortality due to advancement in treatment. In general, causes related to sexually transmitted infections have worse outcome than those caused by gastrointestinal infections. Elevation of ESR, lack of response to NSAIDs, and the hip joint involvement usually indicate poor outcomes.

Limitation

Work up for causes of hypocitraturia including investigations to rule out renal tubular acidosis type 1 couldn't be done due to loss of follow up of patient.

CONCLUSION

ReA is a part of the Spondyloarthropathy family. Its diagnosis is established on the association of clinical and microbiological criteria. Progression of the disease towards chronicity in a few cases explains the necessity of an early initiation of treatment with DMARD's as well as steroids and need for follow up. This case had a unique finding of intermittent hematuria which could not be explained by our single diagnosis of ReA alone and after ruling out all other causes of hematuria including vasculitis, a congenital cause-posterior nutcracker syndrome along with renal stone disease as the cause was concluded.

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