

Xanthogranulomatous Pyelonephritis Presenting as Elevated Inflammatory Markers

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Introduction: Xanthogranulomatous pyelonephritis is a rare form of pyelonephritis characterized by chronic granulomatous inflammation in which the renal parenchyma is replaced by sheets of lipid-laden macrophages. It mainly affects middle-aged women but has been reported in men and all ages including children (1). Symptoms are largely non-specific and include flank pain, weight loss, fever, lower urinary tract symptoms, and palpable masses (1). Mainstay diagnosis is made by CT, although MRI also be used (1, 2). Standard treatment includes antibiotics, percutaneous decompression, and radical nephrectomy (3).

Case Presentation: A 32-year-old female was referred to rheumatology for evaluation of elevated C-reactive protein at 130 mg/L, elevated Sed rate at 82 mm/hr, and positive rheumatoid factor. She reported a 1-month history of joint pain affecting the ankles, posterior ribs, and lower back, as well as a 22 lb. weight loss over 3 months, fatigue, and hypotension with dizziness and lightheadedness. She was initially diagnosed with systemic inflammatory response syndrome of unknown etiology, and extensive further workup was pursued. Labs showed persistent leukocytosis with a white blood cell count of 15.79-19.61 $10^3/\mu\text{L}$ and anemia with hemoglobin 6.7-8.0 g/dL. No clear rheumatologic etiology was discovered. CT abdomen and pelvis then revealed an enlarged right kidney with a cystic lesion measuring 13.8 x 9.8 x 11.6 cm. She was diagnosed with xanthogranulomatous pyelonephritis. Two right percutaneous nephrostomy tubes were placed, followed by a right ureteral stent due to staghorn calculus. Urine culture was positive for *Proteus*, and antibiotics were initiated. She ultimately underwent a curative right nephrectomy. Pathology showed severe acute and chronic pyelonephritis with xanthogranulomatous inflammation likely secondary to obstructing calculus.

Conclusion: We present a case with elevated inflammatory markers that ended up with non-rheumatologic diagnosis. Xanthogranulomatous pyelonephritis is an elusive diagnosis that should be considered in patients with flank pain and non-specific inflammatory signs.

Keywords: Pyelonephritis, Xanthogranulomatous pyelonephritis

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