Case Report

Occult renal cell carcinoma presenting as carcinomatous polyarthritis

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ABSTRACT

Carcinomatous polyarthritis (CP) is a rare paraneoplastic disorder which can be associated with various solid tumors and can even precede detection of the underlying malignancy. A 54-year-old male presented with migratory asymmetric inflammatory polyarthritis and high-grade fever for 6 months. On evaluation, he was diagnosed to have renal cell carcinoma (RCC). CP as an initial presentation of RCC was not described previously.

INTRODUCTION

Malignancies are associated with an array of paraneoplastic syndromes involving multiple organ systems, including the musculoskeletal system. Carcinomatous polyarthritis (CP) is a rare paraneoplastic disorder which can be associated with various solid tumors and can even precede detection of the underlying malignancy.

CASE REPORT

A 54-year-old male presented with migratory asymmetric inflammatory polyarthritis and high-grade intermittent fever for 6 months. There was no history of Raynaud's phenomenon, digital ulceration or gangrene, skin rash, back pain, and bowel abnormality. He had a history of significant weight loss and was a chronic smoker. He had hypertension for 15 years. He was febrile (102°F) and blood pressure was 150/80 mmHg. He had asymmetric inflammatory polyarthritis involving large joints (right elbow and both ankle and left knee joints). Hemoglobin was 11.4 g/dl, total leukocyte count 7200/µl, platelet count 2.8 × 10^9/L, erythrocyte sedimentation rate 64 mm in 1 h, and C-reactive protein was high (18.0 mg/L). Serum ferritin was mildly elevated (450 ng/mL). Peripheral smear showed normocytic normochromic anemia. Urinalysis showed no albumin with 2–3 red blood cells/high-power fields. Biochemical parameters showed normal blood sugar levels, renal function tests, liver function tests, and serum electrolytes. Chest X-ray and electrocardiogram were normal. His autoantibody profile including antinuclear antibody, rheumatoid factor, anti-cyclic citrullinated peptide antibody, c-antineutrophil cytoplasmic antibody, and p-antineutrophil cytoplasmic antibody were all negative. Serum complement levels and angiotensin-converting enzyme level were normal. Joint aspiration of the left knee showed no crystals. Gram stain and cultures were negative. Infective workup including dengue, brucella, rickettsia, Epstein–Barr virus, Lyme's disease, HIV, and hepatitis B and C serologies was negative. Purified protein derivative test was negative. Blood, urine, and bone marrow cultures did not reveal any growth. Echocardiogram and bone marrow study were also normal. Serum protein electrophoresis was normal. Ultrasonogram of abdomen was normal. The workup for fever with polyarthritis – infective and connective tissue diseases were all negative. Hence, a contrast-enhanced computed tomography of abdomen was done, which showed a focal lesion in medial pole of the right kidney measuring 1.7 cm × 1.6 cm with contrast enhancement [Figure 1]. Contrast-enhanced computed tomography of thorax was normal. He was suspected to have RCC with possible CP since other causes for fever

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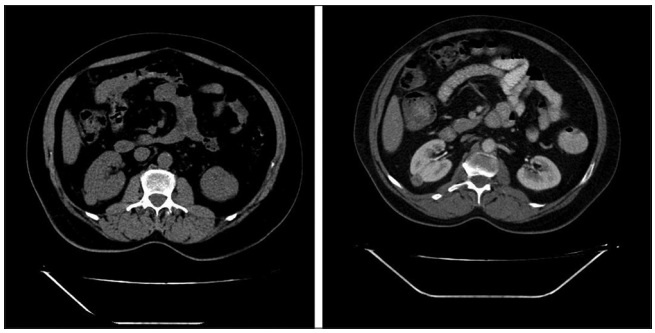

Figure 1: Computed tomography of abdomen showing a focal lesion in medial pole of the right kidney measuring 1.7 cm × 1.6 cm with contrast enhancement

with polyarthritis were ruled out by appropriate tests. Right partial nephrectmy was done which showed an exophytic lesion in the posterolateral aspect of the right mid pole. Histopathological examination of the lesion showed few cystic spaces lined by epithelial cells having well-defined borders with clear-to-pale eosinophilic cytoplasm, rounded uniform nuclei, and dense chromatin along with focal collection of epithelial cells suggesting multilocular cystic RCC (Fuhrman nuclear grade 1) [Figure 2]. He was given symptomatic therapy with nonsteroidal anti-inflammatory drugs for pain, and when followed up after 6 months, he was afebrile and had no polyarthritis.

DISCUSSION

Paraneoplastic rheumatic disorders are rheumatic symptoms due to an underlying malignant disease, which is not directly related to the tumor or metastasis. Various paraneoplastic rheumatologic manifestations have been described which include dermatomyositis, leukocytoclastic vasculitis, CP, polymyalgia rheumatica, hypertrophic pulmonary osteoarthropathy, and remitting seronegative symmetrical synovitis.[1] CP is a late-onset seronegative asymmetrical, inflammatory, and migratory type of polyarthritis.

Paraneoplastic syndromes cause manifestations at a site distant from the primary tumor with the clinical course often paralleling that of the tumor. Pathogenesis of this disorder remains unclear. Various factors including hormones, peptides, autocrine and paracrine mediators, antibodies, and cytotoxic lymphocytes are attributed in the pathogenesis of these disorders.[2]

CP has been associated with solid-organ tumors and lymphoproliferative diseases. Solid-organ tumors including breast, lung, colon, ovary, esophagus, gastric, thyroid, and oropharynx were found to be associated with CP from previous reports.[3-5] Multilocular cystic RCC is a rare variant (comprising approximately 1%–2% of all renal tumors) of clear cell RCC with a good prognosis.

Differential diagnosis for migratory polyarthritis includes infectious causes, crystal-induced arthropathy, rheumatoid

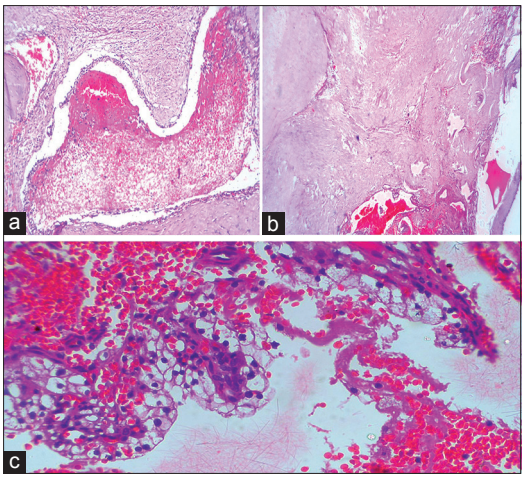

Figure 2: Photomicrograph of renal biopsy showing few cystic spaces lined by epithelial cells having well-defined borders with clear-to-pale eosinophilic cytoplasm, rounded uniform nuclei, and dense chromatin along with focal collection of epithelial cells suggesting multilocular cystic renal cell carcinoma (a and b – H and E staining, ×10; c – H and E staining, ×40)

arthritis, vasculitic syndromes, connective tissue disorders, and spondyloarthropathies. Rarely, it may be due to metastatic disease and paraneoplastic syndromes such as CP. Overlapping features of differing etiologies can complicate and delay proper diagnosis. A good history, clinical examination, and relevant blood tests provide an accurate diagnosis mostly. Our patient was extensively evaluated for migratory polyarthritis and fever without a diagnosis. Since most of the causes including infections and connective tissue diseases were excluded, a search for an underlying malignancy was made which revealed the diagnosis. The presence of microscopic hematuria was an important indication to the diagnosis in our patient.

Awareness and suspicion of rare paraneoplastic disorders such as CP helps in early detection of an occult neoplasm which is critical for prompt management. CP as an initial presentation of RCC was not described previously.

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