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Case report

A Stauffer's syndrome variant associated with renal cell carcinoma and thrombocytopenia



İ. Ateş*, M. Kaplan, N. Yılmaz

Ankara Numune Education and Research Hospital, Internal Medicine Clinic, Ankara, Turkey

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KEYWORDS

Cholestasis;
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Abstract

Stauffer's syndrome is a rare paraneoplastic manifestation of renal cell carcinoma which is characterized by elevated alkaline phosphatase, erythrocyte sedimentation rate, α -2-globulin, γ -glutamyl transferase, thrombocytosis, prolongation of prothrombin time and hepatosplenomegaly, in the absence of hepatic metastasis and jaundice. In this case report, we report a patient who was admitted with fever, fatigue, abdominal pain, weight loss and pruritus in whom renal cell carcinoma was incidentally found in the right kidney during an initial workup.

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Introduction

Neoplasms can cause cholestasis and abnormal liver function tests (LFTs) by liver metastases or occluding the common bile ducts mechanically. Cholestasis with or without jaundice can be seen in a variety of paraneoplastic syndromes (PNS) related to malignancies, especially in renal cell carcinoma (RCC) and malignant lymphoproliferative disorders [1]. Stauffer, for the first time in 1961, described this PNS in a patient with renal adenocarcinoma

and intrahepatic cholestasis without liver metastasis [2]. Stauffer's syndrome is a rare paraneoplastic manifestation of RCC that is characterized by elevated alkaline phosphatase (ALP), erythrocyte sedimentation rate (ESR), α -2-globulin, γ -glutamyl transferase (GGT), thrombocytosis, prolongation of prothrombin time (PT), and hepatosplenomegaly (HSM), in the absence of hepatic metastasis and jaundice [2]. In this case report a Stauffer's syndrome variant associated with renal cell carcinoma and thrombocytopenia will be discussed.

Case report

A 48 year-old male patient who had fever, fatigue, abdominal pain, weight loss and pruritus for a month was admitted to the internal medicine clinic. His history revealed right flank pain, intermittent fever, fatigue, and weight loss for the prior month. He did not

* Corresponding author.

E-mail addresses: dr.ihsanates@hotmail.com (İ. Ateş), mustafakaplandr@yahoo.com (M. Kaplan), nisbetyilmaz@gmail.com (N. Yılmaz).

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Table 1 Laboratory parameters before and after operation.

Variables	Before the operation	After the operation
Alanine aminotransferase (IU/L)	100	51
Aspartate aminotransferase (IU/L)	127	48
Alkaline phosphatase (IU/L)	197	73
Gamma glutamyl transferase (IU/L)	143	63
Total bilirubin (mg/dL)	1.7	0.3
Total protein (mg/dL)	65	75
Albumin (mg/dL)	35	45
Prothrombin time (s)	17.3	14.1
ESR (mm)	67	28
White blood cell ($\times 10^3$ U/L)	5.17	5.40
Hemoglobin (g/dL)	11.9	13.1
Platelets ($\times 10^3$ U/L)	70	180

ESR: erythrocyte sedimentation rate.

have a history of chronic disease, smoking, alcohol or drug use. His physical examination revealed a body temperature of 37.5 °C, pulse of 105/min, arterial blood pressure of 100/60 mm Hg, and respiratory rate of 18/min, examination of other systems was normal except hepatosplenomegaly. In laboratory work-up white blood cell count was 5.17×10^3 /L, neutrophil count was 2.42×10^3 /L, hemoglobin was 11.9 g/dL, platelet count was 70×10^3 /L, alanine aminotransferase was 100 IU/L (10–50), aspartate aminotransferase was 127 IU/L (10–50), ALP was 197 IU/L (40–130), GGT was 143 IU/L (10–71), total bilirubin was 1.7 mg/dL (<1.4), direct bilirubin was 0.73 mg/dL (<0.3), ESR was 67 mm (0–20), and PT was 17.3 s (11.5–14.5). In ultrasonography of upper abdomen, the size of the right lobe of the liver was found increased and vertical dimension was measured 18.5 cm, however border and eco-forming mass lesion was not detected in the liver parenchyma. Gallbladder wall thickness was within normal limits, stone or mass within the lumen was not observed. The common bile duct was in normal width and pathology was not detected within the lumen of the common bile duct. Spleen size was increased (14.5 cm) and borders were smooth. There was no ascites in the abdomen. To elucidate the etiology of abnormal LFTs and the clinical situation, a variety of tests were performed. Anti-mitochondrial antibody, anti-nuclear antibody, anti-smooth muscle antibodies, anti-neutrophil cytoplasmic antibody, TORCH, epstein barr virus, human immunodeficiency virus, acute and chronic viral hepatitis markers were negative for serological tests. In addition, iron, iron binding capacity, ferritin, 24-h urine copper, ceruloplasmin, alpha-fetoprotein, alpha-1 antitrypsin levels were within normal limits. In the peripheral blood smear platelet counts were consistent with thrombocytopenia, anisopoikilocytosis was observed and there were no atypical cells. Blood, urine, throat and sputum cultures were ordered for the patient who had permanent fever and cultures came out negative. According to the present findings, thorax, abdomen and pelvic computed tomography (CT) scan was requested to screen malignancy. In lower abdomen CT, a contrast holding mass lesion sized 25×23 mm was detected in the lower pole of the right kidney, all other structures were normal and no finding that suggests metastasis was detected. According to these findings, patient was referred to the urology clinic for right nephrectomy surgery. After two weeks, partial nephrectomy was performed and pathology result was clear cell type RCC. Three months after the operation, patient's entire laboratory parameters returned to normal (Table 1).

Discussion

Renal cell carcinoma may be seen with a lot of non-specific symptoms that are not kidney related. The classic triad is hematuria in 50–60% of patients, palpable mass in 30–40% of patients and abdominal pain in 40% of patients [3]. However the classic triad is seen in only 9% of patients [4]. In our patient, only abdominal pain was present. Most of the time RCC, as in our case, presents with paraneoplastic and systemic symptoms. Stauffer's syndrome which is one of the PNS is characterized by elevated ALP, ESR, alpha-2 globulin, GGT levels, thrombocytosis, HSM, PT prolongation without liver metastases and jaundice [5]. This PNS is characterized with total improvement in laboratory tests after surgical removal of the tumor [6]. Although the pathophysiology of this PNS is not fully understood, overexpression of IL-6 by the primary tumor is considered to be involved [7]. Since 1961, many Stauffer syndrome cases were presented in the literature. While the most cases were characterized by classic Stauffer syndrome feature, jaundice was only present in only a few cases [8]. In our case, abdominal pain, weight loss, fever, rash, anemia, elevated ESR, impairment of LFTs, PT prolongation, thrombocytopenia, HSM were present. All eventualities that may cause impairment of LFTs were excluded. The malignancy scan revealed a mass in the right kidney. There was no evidence of metastasis. The urology department operated the patient and removed the mass. Three months after the surgery, all laboratory parameters were improved. With these findings patient was diagnosed with RCC related Stauffer's syndrome related to RCC. Although there was thrombocytosis in all the case reports in the literature, in our case the patients' preoperative platelet count was 70×10^3 U/L. In physical examination or laboratory tests, nothing abnormal was found for the etiology of thrombocytopenia. The patients' platelet count one month after the surgery was increased to 180×10^3 U/L. According to these clinical and laboratory findings, we can say that RCC must be kept in mind in the etiology of patients with systemic findings and abnormal LFTs. However, the fact that thrombocytopenia may be seen in Stauffer syndrome must not be forgotten.

Conflict of interest

The authors declare that they have no conflict of interest.

Acknowledgments

None.

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