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Sudden onset of renal failure requiring dialysis associated with large B-cell lymphoma of colon

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Acute renal failure due to lymphomatous infiltration of the kidneys is an uncommon illness. Here, a case of acute renal failure due to lymphomatous infiltration of left kidney in association with renal vein thrombosis and acute tubular necrosis of contralateral kidney due to acute tubular necrosis, resulting in absolute anuria and requiring dialysis is presented.

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Letter to Editor

1. Introduction

Acute renal failure due to lymphomatous infiltration of the kidneys is an uncommon illness (1). Here, a case of acute renal failure due to lymphomatous infiltration of left kidney in association with renal vein thrombosis and acute tubular necrosis of contralateral kidney due to acute tubular necrosis, resulting in absolute anuria and requiring dialysis is presented.

2. Case

A 79 years old woman admitted to the hospital with complaints of abdominal pain, decreased appetite, abdominal distention and generalized body pain. After evaluation, right colon mass was detected and patient underwent left hemicolectomy. The patient discharged with Hb of 9.2 g/dL, serum creatinine of 1mg/dL and BUN of 12 mg/dL. Chemotherapy still was not performed.

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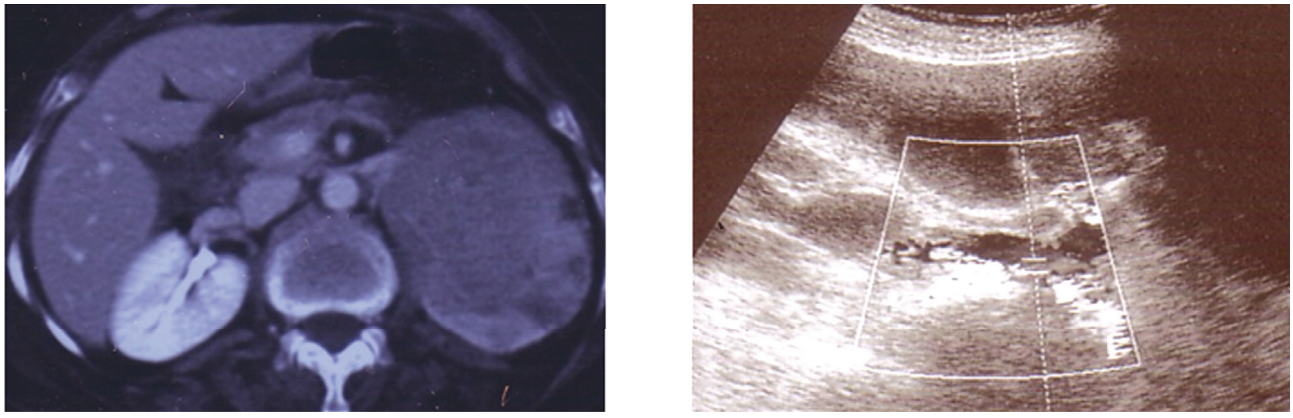
Two weeks after discharge, patient referred to the hospital with decreased consciousness level, nausea, vomiting and anuria. Primary evaluations showed a serum creatinine of 10.8 mg/dL, BUN of 82 mg/dL and serum uric acid of 10 mg/dL. Temporary access was inserted and patient was sent for hemodialysis. During the admission, it was found that the patient had absolout anuria, too. In paraclinical evaluations to investigate an etiology for renal failure, a large heterogeneous mass (7×6 cm2) in the left kidney (kidney size was 134 mm) was noticed. While, right kidney had 116 mm longitude. Chest x-ray and chest CT were normal. Abdominal spiral CT scan revealed a 7×6 cm2 heterogenous mass of the left kidney (figure 1-A). Otherwise, was normal and compatible with sonograghy findings. In gray scale and color Doppler study of the kidneys, a very high resistant flow in left kidney without any diastolic flow, which was in favor of renal vein thrombosis (RVT), was demonstrated (figure 1-B). Left kidney size was 130×90 mm2. Right kidney was normal. The histopathologic result of left hemicolectomy was high grade malignant lymphoma (figure 2). During the admission, hemodialysis was continued. However, patient was involved by resistant infections, not responsive to the broad spectrum antibiotics and also antifungal thera-



(A) (B)

Figure 1: Abdominal spiral CT scan revealed a 7×6 cm2 heterogenous mass of the left kidney (A). Gray scale and color Doppler ultrasonic study of the left kidney, demonstrated renal vein thrombosis (B).

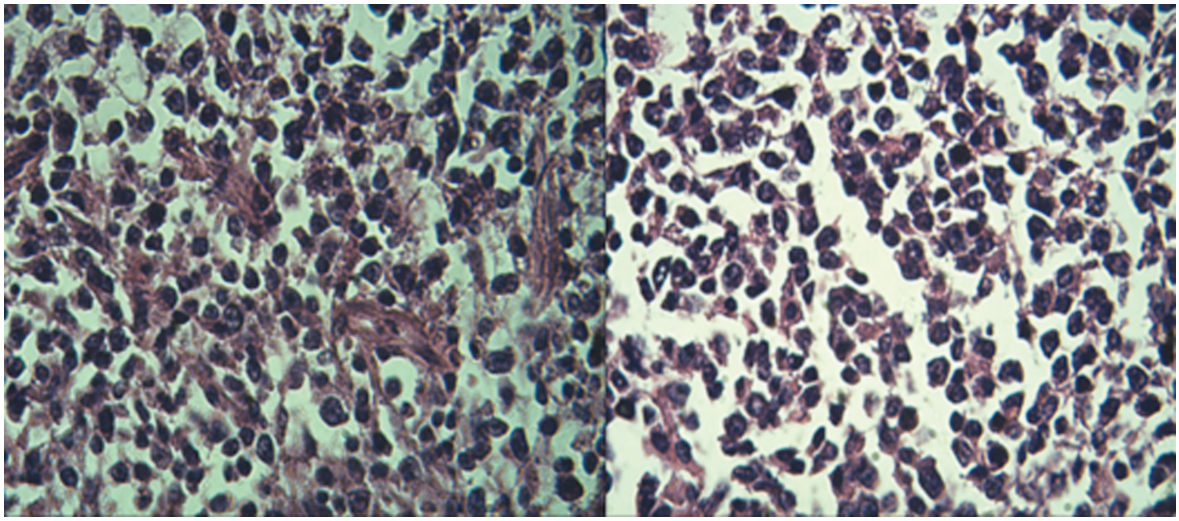


Figure 2: Neoplastic infiltration of lymphoid cells to the left colon mass (H&E ×400).

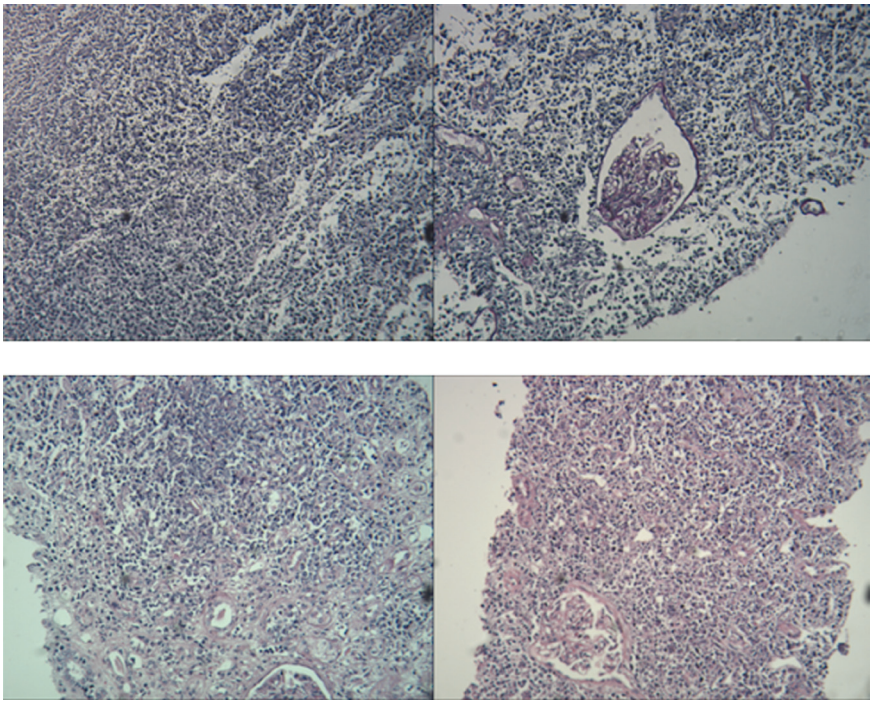


Figure 3: Light microscopy findings of left kidney biopsy: extensive invasion and diffuse dense infiltration of the renal parenchyma by lymphoid cells, which destructed glomeruli, vessels and tubules (PAS & H&E stains ×200).

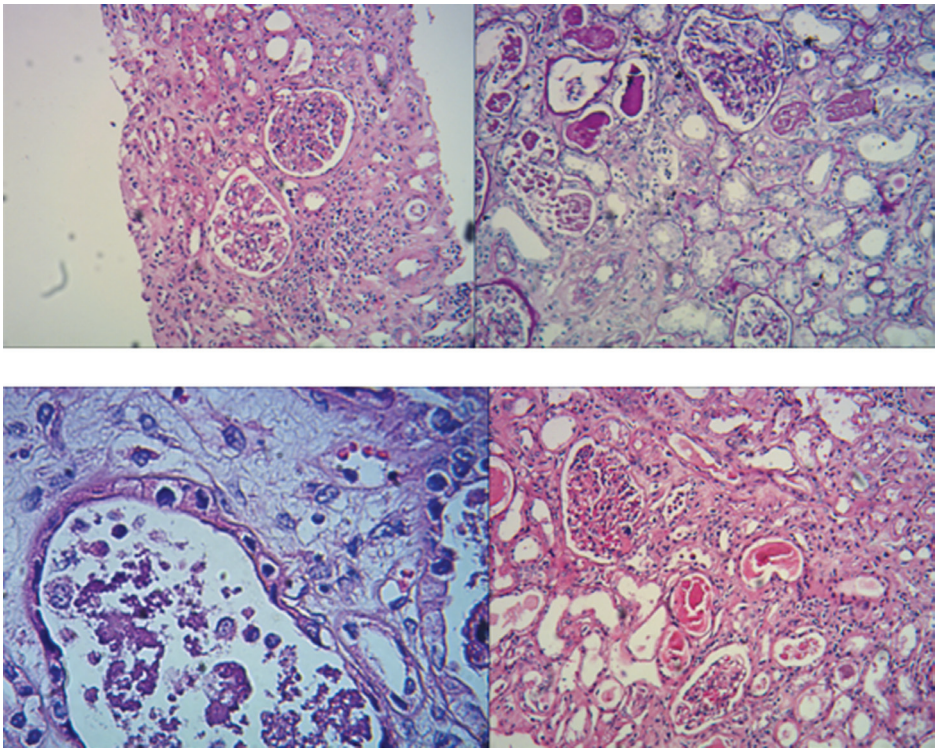


Figure 4: Light microscopy findings of right kidney biopsy: preserved glomeruli and interstitial vessels. Tubular dilatation, destruction of tubular cells and numerous necrotic materials in tubular lumen was seen. There was also interstitial fibrosis and infiltration and in some parts, there was fibro edema too [PAS & H&E stain (×200 and ×400)].

py and after 4 weeks of admission patient was died. The result of light microscopy examination of renal biopsy which was performed just after death was as follows;

Left kidney, extensive invasion and diffuse dense infiltration of the renal parenchyma by

atypical lymphoid cells which was destructed glomeruli, vessels and tubules (figure 3).

Right kidney examination revealed preserved glomeruli and interstitial vessels. There was tubular dilatation, degeneration and destruction of tubular cells with numerous necrotic materials in tubular lumen. There was also mild interstitial infiltration and in some parts, there was a loose edema mostly consistent with acute tubular necrosis (ATN) (figure 4).

Lymphoma cells strongly express CD20 (B-cells) in immunohistochemistry staining of the left kidney (figure 5), confirming the highly malignant large B-cell lymphoma of colon metastasis to the left kidney, too.

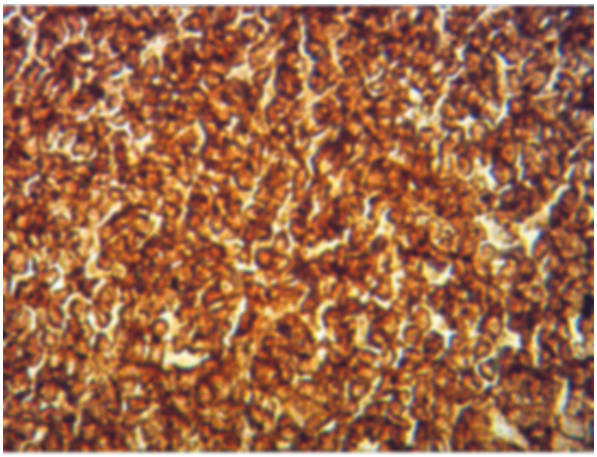


Figure 5: Lymphoma cells strongly express CD20 (B-cells) (Immunohistochemistry ×200).

3. Discussion

In this paper, a patient with acute renal failure due to diffuse left kidney infiltration by a large B-cell non-Hodgkin lymphoma and ATN of the right kidney was presented. This case underlines the importance of renal biopsy to obtain a correct diagnosis and to select an appropriate therapy.

This case illustrated several interesting points. Firstly, there were two different pathologies in two kidneys. There was lymphomatous infiltration and RVT of left kidney. However, this finding cannot explain the etiology of renal failure. Morphologic variables of acute tubular injury were seen in the examination of right kidney biopsy by light microscopy. It is possible that lymphomatous infiltration and RVT of left kidney were chronic processes and were the result of tumor spread from origin in colon. However, at the time of discharge after hemicolectomy, renal function test was normal and this finding revealed that right kidney had normal function and compensate the condition. However, it is possible that after discharge and 2 weeks staying in home various causes, mostly hydration due to decreased appetite and inappropriate care condition, superimposed a hypotensive period and firstly cause a prerenal azotemia to the right kidney, and subsequent acute tubular necrosis which leaded to anuria and renal failure requiring hemodialysis.

Various cancers are associated with RVT (2-5), but very few cancers have the ability to propagate within the lumen of the renal vein (3-5). In this case, it was speculated that lymphomatous cell propagation of renal vein, was responsible for a part of renal failure. Although intense infiltration of renal parenchyma by atypical lymphoid cells causes the left kidney to be nonfunctional.

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