Unexpected Kidney Finding in a Patient with Anemia

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Case Description
A 72-year-old man with a history of type 2 diabetes and hypertension was seen in the hematology clinic of our hospital for assessing anemia. He noted malaise and weight loss but reported no gastrointestinal symptoms. His hemoglobin level was decreased to 9.3 g/dl. Laboratory studies revealed elevated levels of lactate dehydrogenase (319 IU/L) and soluble IL-2 receptor of 6428 IU/ml (reference range 157–474 IU/ml). His serum creatinine was 0.8 mg/dl, and his urinary protein/creatinine ratio was 0.3 g/g with microscopic hematuria. Computed tomography (CT) showed unilateral kidney enlargement and noncontrast-enhanced bilateral tumors (Figure 1). His lymph nodes were not enlarged, and a bone marrow biopsy demonstrated no evidence of bone marrow involvement by lymphoma. He was referred to the nephrology department, and a kidney biopsy was performed from the lower pole of the right kidney. Light microscopy showed that the kidney parenchyma had been obliterated by extensive infiltration of atypical cells (Figure 2A). The infiltrating cells were diffusely positive for B cell markers, including CD20 (Figure 2B) and CD79a, but were negative for T cell markers, including CD3 and CD5. The tumor cells were positive for CD10, BCL2, BCL6, and NUM1 and negative for the Epstein–Barr virus on in situ hybridization. These findings confirmed diffuse large B cell lymphoma (DLBCL). Although the patient underwent a bone marrow biopsy again, bone marrow infiltration of lymphoma cells was not found. Furthermore, no lymphadenopathy was detected on whole-body CT. He was treated with THP-CHOP (pirarubicin, cyclophosphamide, vincristine, and prednisolone). After six cycles of THP-CHOP, CT showed a shrinking renal tumor and no enlargement of the lymph nodes.

Lymphomatous infiltration of the kidney has been reported as a complication in DLBCL. In a retrospective study, 55 of 2656 (2%) patients with DLBCL had kidney involvement at the diagnosis (1). In most cases, kidney involvement appears to be a secondary process, either by direct extension from a retroperitoneal mass or via hematogenous spread in the setting of disseminated disease. Recently, Corlu et al. reported 34 cases of B cell lymphoma diagnosed by a kidney biopsy over 12 years from a single-center experience (2). However, in a few cases of kidney lymphoma, lymphomas arising from the kidney parenchyma were considered, named primary renal lymphoma (3). In the diagnosis of the present case, although the possibility of primary renal lymphoma was suggested, extrarenal primary lymphatic disease was not ruled out by positron emission tomography. The diagnosis of kidney lymphoma can be challenging due to the subtle clinical presentation with silent kidney masses. A kidney biopsy can be useful for diagnosing lymphoma, especially in cases with renal masses and without lymphadenopathy.

Teaching Points

- Lymphomatous infiltration of kidney parenchyma often shows subtle clinical presentation.
- Kidney lymphoma is not uncommon, and a renal biopsy is useful for diagnosing this disorder.

Disclosures

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Author Contributions
A. Mizumoto and K. Mitsumoto reviewed and edited the manuscript. T. Uzu wrote the original draft of the manuscript.

References

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Figure 2. | Light microscopy of the kidney histology. The kidney pathologic examination revealed the extensive infiltration of atypical cells (A). Atypical cells were diffusely positive for CD20 (B).