Answer

Renal Cell Carcinoma

After the patient's anemia was corrected with blood transfusions, he continued to have a slow drop in his hemoglobin level and there was concern of continued bleeding into this retroperitoneal space. Therefore, he was taken to the operating room to determine the origin of the mass and undergo resection. In the operating room, the mass was well encapsulated and noninvasive (**Figure 2**). It was circumferentially dissected and found to originate from the inferior pole of the kidney. A right radical nephrectomy was performed and pathology examination revealed the mass to be undifferentiated renal cell carcinoma with tubular and papillary features. In this particular case, the patient was bleeding into the tumor and the tumor was filled with a large hematoma.

The differential diagnosis for a retroperitoneal mass can include sarcoma, lymphoma, adrenocortical tumors, neurogenic tumors, hematoma, or an abscess. Lipomas and their malignant counterpart, liposarcomas, are the most common primary retroperitoneal soft tissue masses.[1]

Renal cell carcinoma is increasing in incidence with almost 55 000 new cases and an estimated 13 000 deaths in 2008.[2] The classic clinical presentation consists of flank pain, hematuria, and an abdominal mass. However, this triad occurs in only 5% to 10% of cases. Symptoms may be nonspecific and can commonly include anorexia, lethargy, weight loss, or fever. Rare but dangerous presentations include tumor thrombus into the renal vein or inferior vena cava, hepatic dysfunction (Stauffer syndrome), and paraneoplastic syndromes from tumors secreting erythropoietin, parathyroid-like hormone, renin, or cortisol.[3] Recently, there was a report of renal cell carcinoma presenting as hemorrhagic shock due to retroperitoneal bleeding from the mass.[4] In this case, there was constant bleeding at a slower rate, resulting in transfusion requirements and anemia but not shock.

Renal cell carcinomas are histologically categorized as clear cell, papillary, chromophobe, collecting duct, or not otherwise specified, with clear cell being the most common. Patients with papillary or chromophobe subtypes have a better prognosis than patients with the clear cell subtype.[5] In the United States, the most widely used grading schema is the Fuhrman nuclear grade, which has been shown to correlate with tumor stage and long-term survival for clear cell renal cell carcinoma.[6]

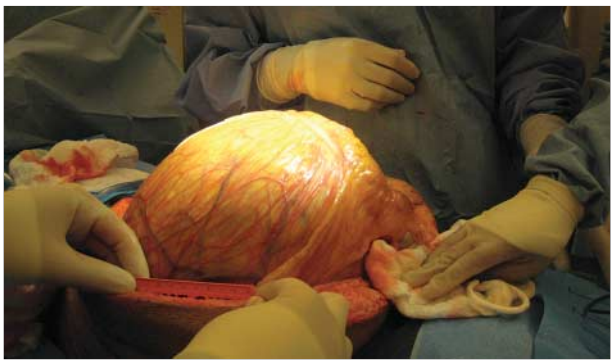

Figure 2. During surgery, the large mass was found to be well encapsulated and noninvasive and originating from the inferior pole of the left kidney.

The only potentially curative therapy for localized renal cell carcinomas is surgical resection. Percutaneous biopsy of the mass before resection is generally not necessary since it will not affect therapy. Select circumstances when a preoperative biopsy may be useful are when an abscess or another primary tumor, such as lymphoma, is suspected. Partial nephrectomy is equally efficacious as total nephrectomy and may be performed if the tumor is less than 4 cm and is peripherally located, or when there is renal insufficiency, a solitary kidney, or bilateral renal tumors. Surgical resection can still be done if there is contiguous organ invasion, which is usually to the liver, diaphragm, psoas muscles, pancreas, and bowel. Postoperative disease surveillance includes abdominal computed tomography and chest radiography. Chest computed tomography, bone scanning, and brain magnetic resonance imaging are reserved if there is clinical suspicion of metastatic disease.[3] The 5-year survival rate for patients with renal cell carcinoma is more than 70% for those with organ-confined disease and approximately 55% and 17% for those with regional and metastatic disease, respectively.[6] For metastatic disease, systemic therapy consists of immunotherapy, such as interleukin 2 or interferon alfa, or newer targeted agents such as sunitinib malate, sorafenib tosylate, temsirolimus, and bevacizumab.[3,7]

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Correspondence: Barish H. Edil, MD, Department of Surgery, Johns Hopkins University, 1550 Orleans St, Cancer Research Building II, Room 508, Baltimore, MD 21231 (bedil1@jhmi.edu).
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