Commentary


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Is Management of Angiomyolipoma Different After Kidney Transplantation?
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Angiomyolipoma (AML) is a common benign lesion of various organs,1 which was first described by Morgan and colleagues.2 Despite its benign behavior and no reportedly metastasis, it can...
cause massive hemorrhage that makes it a life threatening tumor. Angiomyolipoma contains blood vessels, smooth muscle cells, and fat in various amounts, and because of that many call it hamartoma. It presents as 2 separate categories: sporadic without a known syndrome, that includes 80% of cases, and as a part of tuberous sclerosis complex (TSC), accounting 20% of cases. Tuberous sclerosis complex associated AML has specific properties. It is more likely to be bilateral and multencentric and present earlier with larger tumors and can cause hemorrhage more frequently than the sporadic type. Moreover, the TSC-associated type is more likely to grow and require surgical intervention. However, sporadic AML presents as a solitary lesion that can grow much slower than TSC associated tumors.3

Classic symptoms of AML are known as a triad of flank pain, gross hematuria, and palpable tender mass. It is commonly found as an incidental mass on ultra sonographic evaluation for other reasons. Frequently, it can cause fever, anemia, hypertension or hypotension, nausea, and rarely, kidney failure. Angiomyolipoma is the second most common cause of spontaneous retroperitoneal hemorrhage, after renal cell carcinoma, which is due to spontaneous rupture of the tumor.

Angiomyolipoma has a unique property on ultrasonography and computed tomography (CT) scan due to having fat elements that are echogenic and the combination of hypodense fat with the absence of any calcification or vascular elements. On plain CT scan, tissue attenuation of less than -10 HU is characteristic of fat tissue. Although some authors reported several cases of renal cell carcinoma that contained fat on CT scan, all of them had visible calcification. Fat tissue is high signal on unenhanced T1-weighted magnetic resonance imaging images and low signal intensity in T2-weighted images and is isosignal intensity with retroperitoneal fat, which is in contrast to renal cell carcinoma characteristics; therefore, magnetic resonance imaging can be used for differentiating AML from renal cell carcinoma. This diagnostic modality is helpful when CT scan is equivocal and in pregnancy.

Many cases with AML do not need any treatment, but if present with pain, spontaneous hemorrhage causing significant symptoms, or risk of rupture and hematuria and if it is suspicious for malignant tumor, it needs intervention. Indeed asymptomatic tumors may need treatment that should be based on many factors including tumor size, association with TSC, kidney function, activity, and child bearing age.4 When AML is diagnosed, the patient should be assessed with brain magnetic resonance imaging, abdominal CT scan, chest radiography, echocardiography, fundoscopy, and skin examination, and neurologic consultation is necessary for concomitant lesions of TSC.10

After kidney transplantation and because of immunosuppressive agents, risk of malignancies such as renal cell carcinoma and infections will increase.11 Several cases of AML are reported concomitant with other renal masses or after kidney transplantation.8,12-16 Indeed several kidney transplantations are done in TSC patients that almost all of them had good graft survival, but renal cell carcinoma or AML was diagnosed after transplantation.17 In these instances, different treatment methods are successfully described, such as partial or total nephrectomy and conservative management.14,15,18 In this issue of the Iranian Journal of Kidney Diseases, Roozbeh and coworkers describe a rare case of isolated angiomyolipoma in a kidney allograft occurred 3 years after transplantation.16 They treated the tumor with partial nephrectomy of the kidney allograft. It seems that AML of the kidney allograft can be managed with the same indications for surgery or conservative surveillance.

CONFLICT OF INTEREST

None declared.

REFERENCES


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