Summary.- OBJECTIVE: To describe a case of traumatic rupture of renal angiomyolipoma (AML).

METHODS: The images and clinical data of the present case are presented.

RESULTS: A rare case with exuberant clinical presentation of a perirenal hematoma resulting from traumatic rupture of renal AML is presented with a brief review of the role of ultrasound (US) and body-CT in the diagnosis of this pathology and its complications.

CONCLUSIONS: Whenever there is a collection detected by US in the various anatomic renal spaces, in a patient with flank pain and low hemoglobin shortly after abdominal trauma, it is advisable to perform abdominal CT and search for a hematoma. Small amounts of fat, detected by US and body-CT, may lead to the diagnosis of an underlying AML that can rupture, even in the case minor forces are applied to the kidney.

Keywords: Renal angiomyolipoma. Traumatic rupture. Perirenal hematoma. Ultrasound. Body-CT.

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INTRODUCTION

AML of the kidney are often asymptomatic and rarely cause clinical problems. Complications from AML are relatively rare, the most common being bleeding, compression, necrosis and rupture. Bleeding of an AML is not unusual and often presents with abdominal pain or even shock (1).
The literature of the past 6 years in the radiology publications is very rich as far as spontaneous rupture of AML is concerned (1-6), but the rare event of traumatic rupture of renal AML has seldom been referred in this period of time (7-9).

The authors describe a 68-year-old woman who was admitted to hospital complaining of pain in the right flank, asthenia of 3 weeks evolution, after a fall with contusion on the right side. On physical examination a palpable mass was detected in her right flank. During US and CT evaluation a perirenal hematoma was detected, resulting from the rupture of a renal AML. The role of these imaging modalities in the diagnosis of AML and its complications is briefly reviewed.

**CASE REPORT**

A 68-year-old woman was admitted complaining of pain in her right flank and asthenia of 3 weeks, after she fell at home on her right lumbar region.

On physical examination, pallor of skin and mucosae and a palpable mass in the right flank were detected. The blood analysis showed anemia, with a hemoglobin value of 6.2 g/dL.

The diagnostic work-up included US of the upper abdomen, which demonstrated a crescent-shaped fluid collection enveloping the right kidney, that was interpreted as a perirenal hematoma (Fig. 1).

The patient was then submitted to an abdominal CT which allowed visualization of a spontaneously hyperdense area in the right perirenal space, typical of a blood collection. In its centre a low density focal area was observed with attenuation values under -10 HU characteristic of fat, thus establishing the diagnostic etiology of perirenal hematoma that communicated with the ruptured AML, due to trauma of the right kidney (Figs. 2, 3a and 3b).

**DISCUSSION**

Although there are many descriptions of spontaneous rupture of renal AML in the literature (1-6), traumatic rupture of this type of tumor is very rare and there are no reports on it in a review of the radiology publications in the last 6 years. This is a fact, although the role of underlying kidney tumors in leading or predisposing to traumatic lesions resulting from forces of such a low magnitude that would otherwise be insufficient to cause any tissue lesion at all is well known (9). We presume this was the case in the patient we examined, and explains the exuberance of the clinical form of the presentation.

There are descriptions of some cases of aneurysmal deformation of the vessel components of the renal AML that can be seen on body-CT and may predispose to hemorrhage following minor trauma to the kidney (9, 10, 14, 15).

US allows detection of the majority of AML, with a sensitivity of approximately 100%, (11) being typically highly reflective, well rounded and homogeneous, in

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**Fig. 1:** Axial ultrasound image displays a semilunar perinephric collection.

**Fig. 2:** Abdominal CT without intravenous contrast shows a spontaneously hyperdense area in the right perirenal space; (perinephric hematoma).
contrast to the surrounding renal parenchyma of lower reflectivity (14-16). Nevertheless, the presence of hemorrhage (intratumoral or in the perirenal space) makes detection of an AML very difficult (12-14), which probably occurred in this case. US imaging does not enable us to differentiate AML from other solid masses and blood clot.

In the situations described above, body-CT is the most useful in making the diagnosis, for it demonstrates the topography of the hematoma (peri or pararenal) and also evaluates the function and integrity of the renal parenchyma, and any distortion or other lesions of the excretory system (7, 8).

The body-CT has the capability of demonstrating the low density areas within the hemorrhagic collection, with attenuation values of fat (lower than -10 HU) so characteristic of renal angiomyolipoma (17), and shows any disruption in the parenchyma or renal capsule. The underlying cause of perirenal hemorrhage may be observed.

Although it was not used in this patient, magnetic resonance imaging (MRI) can achieve the same goals as CT, and it is a non-invasive cross-sectional imaging modality (18, 19).

In conclusión, whenever there is a perinephric collection detected by ultrasound, in a patient with flank pain and progressively lower hemoglobin levels, shortly after abdominal trauma, it is advisable to perform abdominal CT and search for hematoma. Small amounts of fat may be found and lead to the diagnosis of an underlying renal AML that may rupture even when minor forces are applied to the kidney.

REFERENCES