Case 11330

Traumatic rupture of a renal angiomyolipoma with retroperitoneal hematoma
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Section: Uroradiology & genital male imaging
Area of Interest: Abdomen
Procedure: Contrast agent-intravenous
Procedure: Computer Applications-3D
Imaging Technique: CT
Special Focus: Pathology Case Type: Clinical Cases
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Patient: 60 years, female

Clinical History:
A 60-year-old woman presented with sudden-onset right flank pain after falling on ice. Her vital signs were stable and her physical examination was normal except right abdominal pain without rebound. Laboratory data showed low haemoglobin level (10 g/dl, normal range: 13.5-17.5 g/dl) and haematocrit (29.3%, normal range: from 38% to 46%).

Imaging Findings:
Contrast-enhanced computed tomography (CT) revealed a fat containing mass with retroperitoneal haematoma and contrast extravasations inside of the mass. Traumatic rupture of renal angiomyolipoma (AML) was impressed. The patient underwent radical nephrectomy and haematoma removal. The histopathological examination showed the microscopic findings of the renal angiomyolipoma. After uneventful postoperative progress the patient was discharged.

Discussion:
Renal angiomyolipoma is a benign renal neoplasm composed of varying amounts of vessels, adipose tissue and smooth muscle [1]. The incidence of renal AML is higher in females (0.22%) than in males (0.1%) [2]. Although most angiomyolipomas are benign and asymptomatic, symptoms develop in 68%–80% of patients when tumour size reaches 4 cm or greater. Rupture of renal AML is the most severe complication [2]. The most severe symptoms are associated with rupture of the tumour. Patients with ruptured angiomyolipoma often present with acute pain as a result of haemorrhage; up to 20% are in shock at the time of initial presentation [3, 4]. Therefore, it is important to predict the possibility of rupture in the care for patients with angiomyolipoma. Measurement of tumour, identification of aneurysm formation and size are helpful in predicting rupture of angiomyolipomas [1-3]. Patients are generally asymptomatic, but some may present with flank pain, palpable abdominal mass and haematuria; also anaemia and hypotension can be seen on laboratory [1-4]. The abundant and abnormal elastin-poor vascular structures in angiomyolipomas make these vascular lesions prone to aneurysm formation and haemorrhage [5]. However, there have been few reports concerning the relationship between aneurysm formation and rupture. Aneurysm formation may be a predictor of rupture and may therefore provide useful information in the care of patients with angiomyolipomas [4]. The finding that all ruptured tumours had large (> 5 mm) aneurysms suggests that large aneurysms seen at angiography are haemorrhagic pseudoaneurysms.

Koh and George observed large intratumoural pseudoaneurysms on contrast-enhanced CT images in two patients.
with massive haemorrhage. They speculated that the presence of a pseudoaneurysm in an angiomyolipoma may be an important predictor of potential life-threatening haemorrhage and recommended that patients with this finding receive immediate treatment [6]. Investigation with CT is a recommended diagnostic tool because it can determine the extent of fatty mass and haemorrhage. Current treatment options for rupture renal AML are embolization, total or partial nephrectomy [3]. Transcatheter arterial embolization has been used for the treatment of symptomatic angiomyolipomas since Moorhead et al reported its clinical utility [7].

**Differential Diagnosis List:** Traumatic rupture of a renal angiomyolipoma, Adrenal myelolipoma, Renal cell carcinoma

**Final Diagnosis:** Traumatic rupture of a renal angiomyolipoma

**References:**


**Figure 1**

Description: It shows a lipid containing (L) mass located posterior of the right kidney with haemorrhage in the right retroperitoneal space (star); also contrast extravasations can be seen within the mass as high attenuation areas (arrow). **Origin:** Ataturk University School of Medicine Department of Radiology
**Description:** It shows a lipid containing (L) mass located posterior of the right kidney with haemorrhage in the right retroperitoneal space (star); also contrast extravasations can be seen within the mass as high attenuation areas (arrow). **Origin:** Ataturk University School of Medicine Department of Radiology
**Figure 3**

**Description:** It shows a lipid containing (L) mass located posterior of the right kidney with haemorrhage in the right retroperitoneal space (star); also contrast extravasations can be seen within the mass as high attenuation areas (arrow). **Origin:** Ataturk University school of Medicine Department of Radiology
Figure 4

Description: 3-D volume rendering reconstruction image looking from posterior to anterior shows contrast extravasations (arrows) posterior of right kidney. Origin: Ataturk University School of Medicine Department of Radiology