Spontaneous rupture of an adrenal myelolipoma

A 35-year-old female patient with no medical history presented to the emergency room with complaints of acute abdominal pain in the right flank and mild hypotension. Laboratory and culture tests were negative.

Due to the persistent pain an abdominal ultrasound (US) was performed which revealed a heterogeneous hyperechoic mass with undefined margins located in the upper part of the right kidney. Non-contrast and contrast-enhanced computed tomography (CT) scan revealed a large adrenal mass (11 cm) with predominantly fat tissue interspersed with higher-attenuation myeloid tissue. In the superior part of the mass an area of blood attenuation was identified. The lesion caused liver superior and anterior displacement, right kidney inferior displacement that was associated with perinephric haematoma and fat stranding. After the administration of the contrast medium, no active bleeding was observed inside the tumour. Adrenal hormones were within normal ranges.

Adrenal myelolipomas (AML) are benign tumours, often asymptomatic, composed of mature adipose tissue and haematopoietic elements. The tumours are non-functional and the aetiology remains unclear. Following the adrenal adenomas is the second most common primary adrenal incidentaloma [1].

The diagnosis increased up to 10% in the last years [1] due to the widespread use of imaging modalities. It is an incidental finding often detected in the sixth decade of life [2]. If a complication appears, the most common is spontaneous rupture of the tumour. It may result in abdominal discomfort with hypochondriac or flank pain or extremely rarely in haemorrhagic shock [3].

Abdominal US normally shows a well-defined, rounded, heterogeneous mass in varying degrees hyperechoic due to the fat tissue. CT is effective to characterise this type of lesion because it can distinguish accurately the myeloid components from the adipose tissue. Normally CT reveals a delineated mass with heterogeneous attenuation and low-density tissue (fat) with more dense areas (myeloid tissue). Normally AML does not infiltrate the adjacent tissues and calcifications are rare [4]. On CT after the contrast administration the myeloid tissue shows enhancement.
The AML management should be individualised according to the dimensions and associated symptoms. An asymptomatic AML mostly requires no surgical intervention. Some authors recommend surgery removal through an extraperitoneal approach if the lesion is more than 5 cm in size due to the risk of rupture [5].

Our patient was maintained in observation without complications and because of the size of the lesion (11 cm) surgical treatment was chosen. Histopathological examination confirmed myelolipoma.

Written informed patient consent for publication has been obtained.

Differential Diagnosis List: Spontaneous rupture of an adrenal myelolipoma, Angiomyolipoma, Adrenal adenoma, Adrenal carcinoma, Adrenal lymphoma, Retroperitoneal liposarcoma, Pheochromocytoma

Final Diagnosis: Spontaneous rupture of an adrenal myelolipoma

References:
Description: Abdominal US shows heterogeneous, hyperechoic solid lesion (star), measuring 11 x 9.5 cm, situated in the right suprarenal region. Origin: Área Clínica de Imagen Médica, Hospital Universitario y Politecnico La Fe, Valencia, España, 2019
**Description:** Axial CT image: a heterogeneous large adrenal mass was seen with predominantly adipose density (arrowhead) interspersed with higher-attenuation myeloid tissue (arrow). **Origin:** Área Clínica de Imagen Médica, Hospital Universitario y Politecnico La Fe, Valencia, España, 2019
Description: Axial contrast-enhanced CT image shows a heterogeneous large adrenal mass with predominantly adipose density (arrowhead) interspersed with higher-attenuation myeloid tissue (arrow).

Origin: Área Clínica de Imagen Médica, Hospital Universitario y Politécnico La Fe, Valencia, España, 2019
Figure 3

Description: Coronal non-contrast CT image: a heterogeneous large adrenal mass was seen with predominantly adipose density (arrow), located inferiorly to the liver, causing right kidney inferior displacement associated with perinephric haematoma and fat stranding (arrowhead). In the superior part of the mass an area of blood attenuation is seen (star). Origin: Área Clínica de Imagen Médica, Hospital Universitario y Politecnico La Fe, Valencia, España, 2019

Description: Coronal contrast-enhanced CT image shows a heterogeneous large adrenal mass with predominantly adipose density (arrow), located inferiorly to the liver, causing right kidney inferior displacement associated with perinephric haematoma and fat stranding (arrowhead). In the superior part of the mass an area of blood attenuation in seen (star). Origin: Área Clínica de Imagen Médica, Hospital Universitario y Politecnico La Fe, Valencia, España, 2019