

Adrenal Cavernous Hemangioma: A Rare Incidental Finding from A Routine Ultrasound Assessment

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ABSTRACT

Cavernous hemangioma of the adrenal gland is a very rare benign vascular tumour. Its rarity and non-specific presentation pose a challenge to the radiologists and surgeons in making the correct diagnosis. We report a case of adrenal cavernous hemangioma in a 76 years old gentleman, in which a large heterogeneous mass was incidentally found at his left hypochondriac region during a routine KUB and prostate ultrasound assessment for benign prostatic hyperplasia. A multiphasic CT study performed and revealed a large mass with a maximum diameter of 18 cm occupying the left suprarenal area. Considering the large size of the left suprarenal mass with mass effect to the surrounding structures, the patient undergone left adrenalectomy. His final histopathological diagnosis revealed a cavernous hemangioma. This case highlighted literature review and role of imaging in this extremely rare benign tumour as one of the differential diagnosis of an adrenal incidentaloma.

Keywords

Adrenal cavernous hemangioma, Adrenal incidentaloma

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INTRODUCTION

Cavernous hemangioma of the adrenal gland is a very rare benign vascular tumour with the first clinical case was published in 1955 by Johnson and Jeppesen.¹ To date, there are only 73 cases reported.² Its rarity and non-specific presentation pose a challenge to the radiologists and surgeons in making the correct diagnosis.

This case describes a large adrenal hemangioma as incidental finding during routine ultrasound assessment of another condition. Preoperatively, among all adrenal incidentalomas, it is difficult to exclude the possibility of a malignant adrenal tumour due to its size and imaging characteristics.

CASE PRESENTATION

A 76-year-old Eurasian male who was under urology follow-up for benign prostatic hyperplasia went for an

ultrasound examination as part of a routine monitoring plan for the underlying disease. There was an incidental finding of a heterogeneous mass at the left hypochondriac region with central hypoechoic area. Upon further clinical history, the patient actually had abdominal discomfort, early satiety for one-year duration associated with altered bowel habits. He also complained of loss of appetite and weight for two months but was unable to quantify.

Physical examination revealed a 5x 10 cm vague abdominal mass at the epigastric region. Subsequently this patient had a multiphasic CT study performed for further assessment of the lesion. The CT scan performed includes a non-contrast, corticomedullary, nephrographic and delayed phases from the dome of the diaphragm to the symphysis pubis. This scan revealed that the patient has a large solid cystic mass (Figure 1) occupying the left suprarenal area measuring about 18cm x 16cm x 15cm (AP x W x CC).

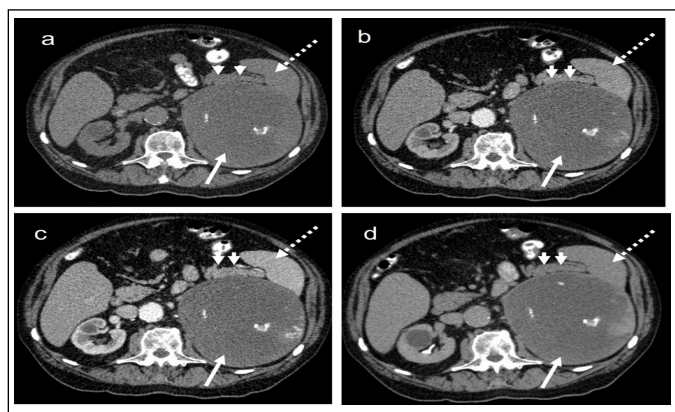


Figure 1: Axial CT scan in soft tissue window (a) plain, (b) corticomedullary, (c) nephrographic and (d) delayed phases shows a well-encapsulated left adrenal mass (white arrows) with specks of calcifications within it. The peripheral solid component appears isodense to the renal parenchyma (31.6 HU) on plain scan and shows irregular increasing patchy enhancement on arterial phase (57.3 HU) and nephrographic phase (108.9 HU). The center of the mass is hypodense and remains non-enhancing in all phases. The mass is displacing the pancreas (arrowheads) and spleen (dashed-arrows) anteriorly.

The large mass is causing a mass effect towards the surrounding structures (Figure 2a). However, no features of local infiltration were seen. There was no evidence of enlarged aortocaval, portal, coeliac or mesenteric nodes. Another striking finding in the CT images was the presence of fusiform aneurysmal dilatation of the infrarenal abdominal aorta with mural thrombus (Figure 2b). It has a maximum diameter of 6.2 cm with a craniocaudal length measuring about 11.0 cm. No feature to suggest dissection or impending rupture.

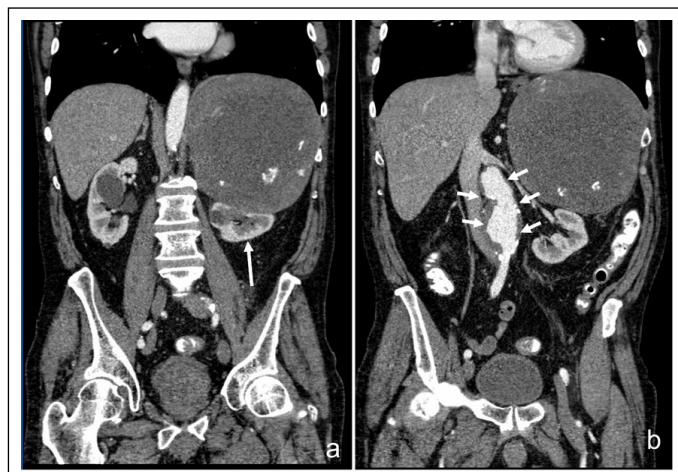


Figure 2: Coronal reformatted image in soft tissue window post contrast; (2a) shows the left kidney is pushed inferiorly by the mass (long arrows), (2b) shows the fusiform aneurysmal dilatation of the infrarenal abdominal aorta with mural thrombus (short arrows).

A series of laboratory investigations done to explore the functionality of the tumour was unremarkable and excluded the adrenal hyperfunction. However, considering the large size of the left suprarenal mass with mass effect

to the surrounding structures, midline laparotomy adrenalectomy was performed under general anaesthesia after multidisciplinary team discussion and adequate preoperative preparation. Intraoperative findings are well encapsulated left adrenal tumour with dense peritoneal adhesion to retroperitoneal organs, measuring about 20 x 20 cm. The mass was closely related to the spleen, pancreas and left kidney. After careful separation, the tumour was completely removed with minimal oozing over the spleen. The patient had an intraperitoneal collection and hospital-acquired pneumonia postoperatively; requiring percutaneous drainage and antibiotics. Nevertheless, he was discharged well afterward and referred to another centre for endovascular aneurysm repair (EVAR).

DISCUSSION

Cavernous hemangiomas are uncommon tumours which arise from endothelial linings of blood vessels. These tumours are usually found in the liver, skin and brain but rarely affect the genitourinary system.³ The presence of hemangioma in the adrenal gland is extremely rare with only 73 cases reported to our knowledge.² However, the incidence of this non-functioning, benign vascular tumour has been increasing in number due to the advancement and widespread utilization of the abdominal imaging modalities for the workup of various patient's complaints. Adrenal cavernous hemangioma is commonly unilateral and affects more females in their 6th to 7th decade of life with a 3:2 female to male predilection.³

The majority of these tumours are asymptomatic or have a vague clinical presentation owing to the tumour's compressive effects towards the surrounding organs when they reach a large size.² Most frequently, these adrenal cavernous hemangiomas are incidentally found on ultrasound and CT. Preoperatively, the diagnosis of adrenal cavernous hemangioma is challenging as it is difficult to differentiate from adenoma and adrenal cortical carcinoma.⁴ CT scan shows a well demarcated mass with heterogeneous appearance.³ Presence of calcification within the mass raises the possibility of a hemangioma but not specific, as other adrenal masses such as carcinoma and cysts may also exhibit this feature.⁵ The presence of

peripheral patchy enhancement with centripetal pattern on multiphase CT study is commonly reported in majority of the cases and crucial for diagnosing cavernous adrenal haemangioma.^{6,7} Central necrosis and fibrosis which likely attributed by the huge size of the tumour and poor central vascularity; are also commonly reported in the cases of adrenal hemangiomas which measure more than 10 cm.⁷ Magnetic resonance imaging (MRI) has sometimes been used to further characterize the mass. A number of studies have proposed that adrenal cavernous hemangiomas appear hypointense on T1- weighted images, hyperintense on T2-weighted images with peripheral enhancement post IV Gadolinium administration.³ However, the presence of haemorrhage or necrosis may lead to variable features of the mass on T1-weighted images.⁸

On T2-weighted images, most of the cases show hyperintense signal due to the vast amount of blood within.⁶ During the workup of these tumours, it is crucial to keep hemangioma in mind as the attempts of needle biopsy may lead to extensive haemorrhage.⁵ Removal of the adrenal tumours are necessary when it is impossible to exclude malignancy. Furthermore, the tumour size, mass effects and possible serious complications such as thrombosis and spontaneous haemorrhage are also the indications for adrenalectomy.¹ The smaller and asymptomatic cavernous hemangiomas can be treated conservatively with regular assessment. However, for a large tumour such as in our case, surgical resection is required to exclude malignancy, prevent a devastating haemorrhage and also to relieve the pressure related symptoms.⁹

CONCLUSION

Cavernous hemangiomas of the adrenal gland are rare with lack of specificity in the pre-operative clinical presentation and imaging feature leading to high rate of misdiagnosis. It prevents a conclusive exclusion of malignancy from the differential diagnosis. Nonetheless, the awareness of this entity and its imaging features are important. It should be included among the differential diagnosis of adrenal incidentaloma, thus highlighting the need of avoiding percutaneous biopsy.

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