Importance of CT Imaging on Spontaneous Rupture of Renal Angiomyolipoma: A Case Report

Renal Anjiyomiyolipomların Spontan Rüptüründe BT Görüntülemenin Önemi: Olgu Sunumu

Rüptüre Renal Anjiyomiyolipom / Ruptured Renal Angiomyolipoma

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Özet

Renal anjiomiyolipomların çapı arttıkça anevrizma gelişme ve rüptüre olma riski artmaktadır. Yaşamı tehdit eden intratümoral kanama gibi ciddi komplikasyonlar gelişebilir. Kanamaları durdurmal için acil girişim gerekebilir. Bu yazıda, anjiyomiyolipomun spontan rüptürü sebebiyle retroperitoneal kanaması olan 16 yaşındaki kız hastanın tanısında bilgisayarlı tomografinin önemini sunmayı amaçladık.

Anahtar Kelimeler

Anjiyomiyolipoma; Anevrizma; Rüptür; Tomografi

Abstract

Renal angiomyolipomas have a high risk of rupture when they are large and associated with aneurysms. The most serious complication that may occur is life-threatening intratumoral bleeding. Immediate interventional therapies to stop bleeding are required. Herein, we report on a 16-year-old female patient with a retroperitoneal hematoma due to a spontaneous renal angiomyolipoma rupture by computed tomography.

Keywords

Angiomyolipoma; Aneurysm; Rupture; Tomography

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Introduction

Angiomyolipoma (AML) is a benign hamartomatous tumor consisting of abnormal fat, muscle and vascular elements. AML is most often asymptomatic and incidentally we encounter in routine examination. However, sometimes it may cause symptoms such as recurrent hematuria or pain. Early diagnosis is crucial. Becauset he most serious complication that may occur is life-threatening intraintratumoral bleeding [1].

There are two known types of AML: the isolated angiomyolipoma, which represents 80% of cases, and the one associated with tuberous sclerosis (TS). When associated with TS are often multiple, bilateral and small, and hemorrhage is frequent [2].The MDCT is a gold standard in the diagnosis and complications of AML, whether or not clinical symptoms.

Case Report

A 16-year-old female was admitted with sudden onset of severe left flank pain. She had been diagnosed to have bilateral AML with tuberous sclerosis 5 years earlier.

The non-contrast computed tomography (CT), 7 mm hypodensity multipl nodular lesions in the bilateral kidneys were detected (Fig. 1A,B). However, in contrast enhanced multidetector

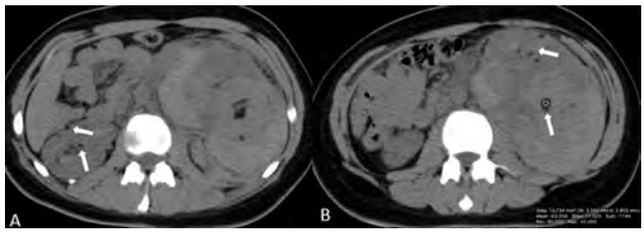


Fig.1. Non-enhanced CT scans at the bilateral kidneys show a low-density small lesions associated with a few interior fat components (arrows) and a hemorrhage presented spread into the left perirenal space (A,B).

computed tomography (MDCT) showed heterogeneous lesion of maximum diameter of 74x98 mm of the left kidney expanding into the perirenal space associated with a perinephric hematoma. The MDCT revealed inhomogeneous enhancement of the lesion and the presence of a few aneurysms ranging from 6 to 18 mm within the tumor (Fig. 2A,B). The lesion was diag-

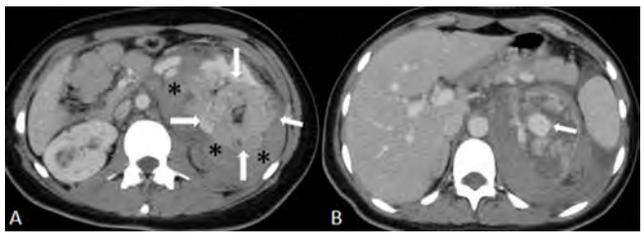


Fig.2. In contrast enhanced multidetector computed tomography (MDCT) showed heterogeneous lesion of maximum diameter of 74x98 mm of the left kidney (arrows) expanding into the perirenal space associated with a perinephric hematoma (asterisks) (A) and a few aneurysms presented within the tumor (arrow) (B)

nosed as an AML that had ruptured into the perinephric space. The patient has referred to Department of Interventional Radiology for transcatheter arterial embolization. Follow-up US performed 5 months after embolization showed significant tumor regression and the disappearance of perinephric hematoma.

Discussion

Angiomyolipoma is a benign hamartomatous tumor consisting of abnormal fat, muscle and vascular elements. AMLs usually arise from the renal cortex and tend to have an exophytic growth pattern, and when ruptured they cause perirenal hematoma to form as in our case. If AMLs will be grow and increase blood flow entering, they are likely to form aneurysms due to abnormal elastin-poor vascular structures [3]. For this reason, spontaneous rupture and induce hemorrhage possibility are quite high. The most reliable predictors of rupture are tumor size and aneurysm formation. If the tumor is larger than 4 cm and is associated with aneurysms larger than 5 mm, AMLs have a high risk of rupture [4]. The another risk factors associated with the spontaneous rupture and perirenal or intratumoral bleeding, include: association with tuberous sclerosis, signs and symptoms, a and pregnancy [5]. In our case, CT performed a lesion of maximum diameter of 74x98 mm and she had been diagnosed to tuberous sclerosis 5 years earlier.

The hemorrhage is usually limited to the perirenal space (PS) but, in some cases, may spread beyond the PS and involve the other retroperitoneal fasciae and fascial spaces. Hemorrhages that occur suddenly in association with acute shock can be life-threatening, and their clinical manifestations are easily misunderstood [6].

Ultrasound (US) has allowed diagnosing it without the need for biopsy in the majority of cases. The tumor presents a hyperechoic mass with great vascularity— existence of arteriovenous shunts on US /Doppler US (3). US scan may always identify the small aneurysms in the tumour. Hence, CT is the gold standard in the diagnosis of AML because it detects fat in the tumor-highly suggestive of AML. MDCT provides multiphasic and/or 3D images with an advantage of shorter scanning times, thinner slice thickness and shows aneurysm formations. Magnetic Resonance imaging (MRI) can also differentiate fat by its high signal intensity and is a helpful tool exam currently used when CT is contraindicated [5]. In the present case, contrast-enhanced MDCT revealed the location of aneurysms relevant to perinephric hemorrhage.

In symptomatic cases or with bilateral lesions, the choice should be selective arterial embolization or conservative renal surgery such as lumpectomy or partial nephrectomy [7]. Radical nephrectomy has been a valuable treatment strategy in cases of urgency, with uncontrollable bleeding and hemodynamic instability [8].

In our case, the patient has referred to Department of Interventional Radiology for transcatheter arterial embolization due to the hemodynamic stability. Five months after embolization showed significant tumor regression and the disappearance of perinephric hematoma on US scan.

Conclusion

MDCT is most reliable method on diagnosis of AMLs and for the evaluation of its complications. Transcatheter arterial embolization prefer safely performed while preserving most renal function

Competing interests

The authors declare that they have no competing interests.

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