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Case Report

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Huge Renal Angiomyolipoma: A Case Report

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ABSTRACT

Renal angiomyolipoma (AML), are rare solid benign renal tumors, referred to as renal hamartoma. The inheritance pattern of renal AML is autosomal dominant. Although renal angiomyolipoma is a rare benign neoplasm, it may still impose significant morbidity and mortality due to the tumor's unique vascular characteristics and the possible complications associated with treatment. We presented here a case of giant renal AML in a 28-year-old female patient, who presented with Right-sided abdominal swelling for 4 months. Following radiological investigation by abdominal ultrasound and computed tomography examination, the patient underwent nephron sparing surgery. The resected mass was sized 25×15x10 cm. Postoperative histopathological examination confirmed the lesion as a giant renal AML. In conclusion, it is believed that surgery will continue to play important roles in the treatment of AML by nephron sparing surgery or by nephrectomy and preserving normal renal function is the main therapeutic target.

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Introduction

Renal angiomyolipomas (AML) are rare benign renal tumors with an overall prevalence of approximately 0.13%–0.44% and a females to males ratio of 2-4:1 and are typically identified in adults (mean age of presentation 43 years) [1,2]. Angiomyolipomas (AMLs) occur sporadically in 80% of cases, and the remaining 20% are associated with genetic mutations causing tuberous sclerosis complex or lymphangioleiomyomatosis [1,2]. Most of the sporadic cases are discovered accidentally, 5555 Angiomyolipomas (First described by Grawitz in 1900) [3].

Previous studies reported that renal AML may grow by 4 cm each year in its maximum dimension [4]. When renal AMLs grow to a size of >10 cm, they are referred to as 'giant' AMLs. Giant renal AML is uncommonly reported in the literature. with the largest renal AML (39×25x9 cm) reported in 2013 by [5].

Patients may present with numerous symptoms and signs, e.g. palpable mass, flank pain, urinary tract infections, hematuria, renal failure, or hypertension [2]. Radiology Renal angiomyolipomas can manifest as either fat-rich, fat-poor, or fat-invisible masses [6]. The cornerstone of diagnosis on all modalities is the demonstration of macroscopic fat. Fat-rich angiomyolipomas are diagnosed easily on imaging due to the high amount of adipose tissue in the mass [6,7].

Case Report

In June 2025, a 28-year-old female patient was admitted to the Al-Daqaf hospital, Taiz, Yemen, with a 6-month history of progressive dull aching abdominal pain in the right loin without any radiation. On physical examination a sizeable mass was palpated in the right lateral abdominal area.

An ultrasound was done to the patient and a hyperechoic mass sized about 20cm was identified in the right abdominal area, mostly originating from the right kidney.

Computed Tomography (CT) examination demonstrated large ill-defined high vascular heterogeneous mass, contain varying amount of fat component, the mass infiltration the upper, middle and small part of the lower pole of the right kidney measuring 25x 15 x 10 cm in average size. The mass indenting upon the lower surface of the liver, post contrast revealed marked heterogeneous enhancement of the soft tissue component, no calcification, along with stranding surrounded fat peri-renal space. As well a large collateral vessels in the posterior para-renal space, no sign of acute hemorrhage while the remnant part of the kidney, show no stone or hydronephrosis, reveal good concentration and excretory function. There were no symptoms or radiological findings suggesting Tuberous Sclerosis Complex (TSC).

The adrenal glands on both sides and the left kidney seemed normal, and the blood biochemistry tests showed results within the normal range.

Following right Para median abdominal incision exploration was done. The huge mass was found to have originated from the right kidney. A partial nephrectomy was done to remove the large tumor and the non-functioning part of the right kidney.
1000 ml blood was delivered to the patient during the operation.

After the operation, the patient received supportive care through fluid therapy and experienced a smooth recovery with no complications. Patient discharge after three days with good general condition and normal renal function test.

As of the latest follow-up on February, 2026, the patient continued to be free of disease.

The histopathological examination revealed that the size of the lesion (24 superior to inferior ×14 side to side x10 cm anterior to posterior). An angiomyolipoma, classic variant. it is formed of triphasic components of adipose tissue, myoid spindle cells and thick wall blood vessels.

Immunohistochemical staining of the tumor revealed that the tumor cells were positive for smooth muscle actin, human melanoma black-45 (HMB-45), melan-A and S-100, and the Ki-67 proliferation index was 1%. Base on those findings, the Patient was Diagnosed with Huge Renal an Angiomyolipoma.

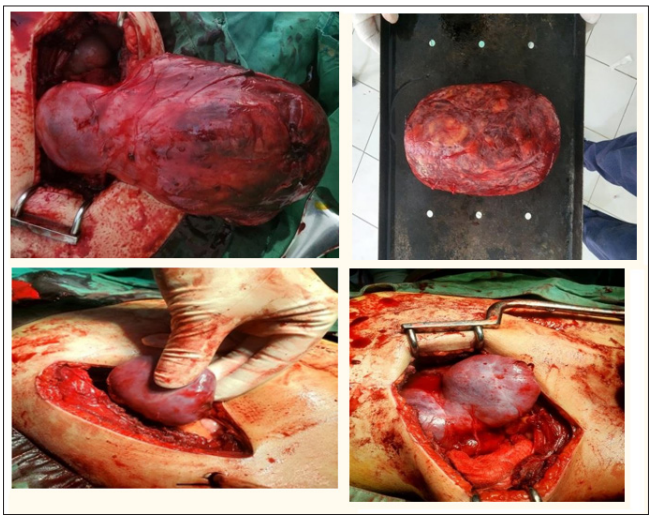

Figure 1: Surgical Specimen of a Giant Renal Angiomyolipoma

Discussion

AML is also referred to as renal hamartoma due its varying composition [1]. The members of the perivascular epithelioid cells tumor group, characteristically composed of fat, smooth muscle tissue, and thick-walled vessels [3,4].

Symptomatic presentation is most frequently with Shock in approximately one-third of cases due to severe hemorrhage from rupture is described as Wunderlich syndrome with incidence up to 15% [2-4].

The association with pregnancy is rare, Pregnant women experience an accelerated growth rate of angiomyolipomas and face a higher risk of rupture with massive retroperitoneal hemorrhage [8,9].

Tumor size is the most important predictor of bleeding due to rich in thick-walled blood vessel, and other factors such as rate of growth, women of child-bearing age, aneurysm size, and symptoms should be considered [5].

Risk factors for AML rupture used to focus on tumor size. It has been commonly proposed that tumor with diameter >4 cm is more likely to develop aneurysm and rupture [10]. However, a series of clinical studies have reported that hemorrhage and aneurysm formation was not present even in patients with AML >4 cm or with intratumoral aneurysms >5 mm; by contrast, tumor as small as <4 cm may also rupture spontaneously. For example, Gomha et al found that large AML (>10 cm) could also remain stable undergoing conservative management [11]. Prischl and Spottl discovered 9.4% of small AML (<4 cm) could also rupture [12].

More importantly, recent evidences suggest that the rupture of AML may be also influenced by other factors regardless of tumor size [11].

Other studies revealed that using the 4 cm criterion as a predictor of hemorrhage has lower specificity than the tumoral aneurysmal diameter of larger than 5 mm. The degree and complexity of the lesion's vascularity (multiple, large, tortuous vessels, aneurysms) is a better general indicator of the need for an intervention to prevent significant bleeding [11,12].

In the past, the main indications for intervention included symptoms, suspicion of malignancy, presence of the tumor in women of childbearing age, and size larger than 4 cm [12]. However, recent studies challenge the historical 4 cm size threshold criterion, as only 30% of renal angiomyolipomas larger than 4 cm were symptomatic [13].

Nephrectomy whether total or partial nephrectomy is usually indicated when the suspicion of malignancy is high, the renal mass is particularly large, or other treatment modalities cannot be performed [12]. However, in an emergency, a total nephrectomy can be a lifesaving option [14].

References

1. Sophie Vaggers, Patrick Rice, Bhaskar K Somani, Rajan Veeratterapillay, Bhavan P Rai (2020) Evidence-based protocol-led management of renal angiomyolipoma: A review of literature. Turk J Urol 47: S9-S18.
2. Lucian Iorga1, Raluca S Costache, Radu Anghel, Ioana Bratu, Maria Manea, et al. (2019) Renal angiomyolipoma a short review of the literature. Rom. J. Mil. Med: CXXII.
3. William P Skelton, Stephen W Leslie (2024) Renal Angiomyolipoma. National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/NBK585104/.
4. Peijie Chen, Lu Jin, Yu Yang, Zebo Chen, Liangchao Ni, et al. (2017) Giant renal angiomyolipoma: A case report. Mol Clin Oncol 7: 298-300.
5. Zeid M, Sayedin H, Nabi N, Abdelrahman M, Jacob PT, et al. (2022) Active Surveillance for Renal Angiomyolipoma Less Than 4 Centimeters: A Systematic Review of Cohort Studies. Cureus 14: e22678.
6. Abdelsalam ME, Ahrar K (2020) Ablation of Small Renal Masses. Tech Vasc Interv Radiol. 23: 100674.
7. Schieda N, Davenport MS, Pedrosa I, Shinagare A, Chandarana H, et al. (2019) Renal and adrenal masses containing fat at MRI: Proposed nomenclature by the society of abdominal radiology disease-focused panel on renal cell carcinoma. J Magn Reson Imaging 49: 917-926.
8. Soerensen FE, Nielsen TK, Madsen MG (2022) Renal Angiomyolipoma in Pregnancy: A Case Report and Systematic Review. SN Comprehensive Clinical Medicine 4: 240.
9. Soerensen, FE, Nielsen, TK Madsen MG (2022) Renal Angiomyolipoma in Pregnancy: A Case Report and Systematic Review. SN Comprehensive Clinical Medicine 4: 240.
10. Wang Chenyang, Li Xinyuan, Peng Linglong, Gou Xin, Fan Jing (2018) An update on recent developments in rupture of renal angiomyolipoma. Medicine 97: 0497.
11. Kim JY, Ahn ST, Park TY, Oh MM, Moon DG, et al. (2019) Spontaneous perirenal hemorrhage (Wunderlich syndrome): an analysis of 28 cases. Am J Emerg Med 37: 45-47.
12. Estrepo JCÁ, Millan DAC, Sabogal CAR, Bernal AFP, Donoso WD (2022) New Trends and Evidence for the Management of Renal Angiomyolipoma: A Comprehensive Narrative Review of the Literature. J Kidney Cancer VHL 9: 33-41.

13. Mues AC, Palacios JM, Haramis G, Casazza C, Badani K, et al. (2010) Contemporary experience in the management of angiomyolipoma. J Endourol 24: 1883-1886.

14. Zsuzsanna Fejes, Fanni Sánta, Alex Jenei, István Előd Király, Linda Varga, et al. (2023) Angiomyolipoma of the kidney-Clinicopathological analysis of 52 cases. Pathol Oncol Res 28: 1610831.