OLGU SUNUMU / CASE REPORT

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Selective Arterial Embolization of Renal Angiomyolipoma in an Elder Patient: Case Report

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Öz

Yaşlı Hastada Renal Anjiomiyolipomun Selektif Arteriyel Embolizasyonu: Olgu Sunumu

Renal anjiomiyolipom (AML) nadir benign mezenkimal bir tümördür. Semptomatik hastalarda veya retroperitoneal kanama riski ve malignesi riski olan hastlarda tedavi düşünülmelidir. Burada, 77 yaşındaki bayan retroperitoneal kanmaya neden olan AML hastaya selektif embolizasyon ile tedavisini sunduk.
Anahtar Kelimeler: Anjiomyolipom, Embolizasyon, Retroperitoneal Kanama, Selektif Anjiografi,

Abstract

Selective Arterial Embolization of Renal Angiomyolipoma in an Elder Patient: Case Report

Renal angiomyolipoma (AML) is a scare benign mesenchymal neoplasm. It is important that treatment be regarded for symptomatic subjects or for people who are at risk for complications, especially for retroperitoneal bleeding, which is related with the size of the tumor, degree of the angiogenic cosstituent, existence of pain and suspicion malignancy. In this respect, we report the case of a 77-year-old woman having renal AML that caused life-threatening retroperitoneal hemorrhages by selective embolization.
Keywords: Angiomyolipoma, Embolization, Retroperitoneal Hemorrhage, Selective Angiography

INTRODUCTION

Renal angiomyolipoma (AML), also known as renal hamartomas, is a benign mesenchymal tumor made up of fat, smooth muscle and blood vessels. These tumors are a constituent of perivascular epithelioid cell tumors (1). The incidence of AML in the population is 0.4% (2). AML takes place irregularly in 80% of subjects, whereas the others are linked with various genetic disorders such as tuberous sclerosis (3). Many of the patients are asymptomatic and diagnosed accidentally owing to the extensive use of imaging techniques (4). Severe complication of AML is retroperitoneal hemorrhage that is triggered by a rupture of the tumor, which has been reported in 15% of patients, which can be life-threatening (5). Up to date series needed interferences to take the control of retroperitoneal hemorrhage, 58% in need of nephrectomy, and 42% needing selective embolization (6). There are various options for AML management: (i) active surveillance (AS), (ii) selective arterial embolization (SAE), (iii) surgical removal, (iv) thermal ablations (7) (8). Significant target for new therapeutic approaches (i.e. SAE) will be the protection of renal function (9). In this study, we present a case of retroperitoneal hemorrhage AML which was cured with SAE; as a result, renal function was able to be conserved.

CASE REPORT

A 77-year-old woman patient admitted to our emergency service with severe pain in her right side. Her medical history showed essential hypertension. There was no surgery history. Palpable masses on the patient's right side was detected upon physical examination. Patient had a hematocrit level of 25.4%, and the outcomes of serum creatinine and urinalysis tests were normal. Fat density 70*70mm lesion and 113*127mm right peri-renal hematoma was seen by means of Contrast-enhanced computed tomography (CT) scan, and the AML was able to be shown to have ruptured. Hydronephrosis was observed in the

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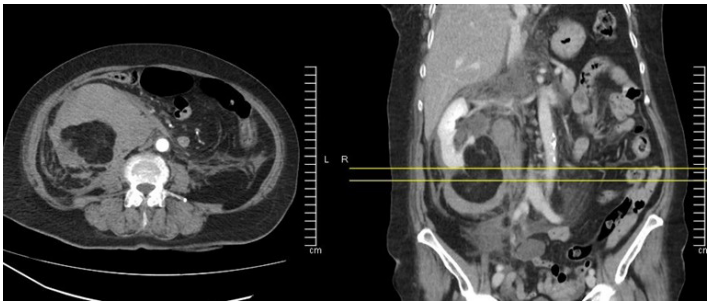

Image 1. Contrast-enhanced computed tomography (CT) scan revealed a 10 cm right peri-renal hematoma and the AML could be demonstrated to have ruptured

right kidney (Image 1). The lesion seemed to emerge from the right kidney, which changed the position of the kidney and intestines towards the left. The patient was sent to the interventional radiology service for an emergency selective angiogram and transcatheter embolization. Upon selective catheterization of the upper, middle, and lower polar arteries of the right kidney through employing a 5 French catheter, a thin branch which feeds the kidney lower pole posterior was regarded a potential feeder of the AML depending on where it is located and its course. System changed with the 7F Renal Double Curved (RDC) distal guiding Catheter (Cordis VISTA BRITE TIP®; California-USA) stabilized in the right renal artery. The patient went through successful selective and super selective catheterization of arcuate artery and AML feeder arteries using a microcatheter and its own guide wire (Progreat®; Terumo-Japan). Embolization of the renal artery branch and recuperated with no complications (Image 2-3). A hemostatic embolization agent (Embosphere 300-500µm Microspheres; Merit Medical Utah-USA) was employed and at the end coil (The Axium™ detachable coils; Medtronics Minnesota-USA) plug was put in the feeder arteries. No pushable coils were performed because there was no supply of theme in the hospital because of problems of the Covid-19 pandemic. No significant change was detected in creatinine levels before and after the procedure. Postoperatively, the patient was given supportive treatment as well as fluid infusion, and the patient's recovery was uneventful. In the follow-up at 5 days after the procedure, the patient was discharged. In 2 years' time, the followings were good of the patient. We did not detect an active hemorrhage and the hematoma was resorbed in part. As of this date, we detected that the sizes of the peri-renal hematoma and of the right renal AML declined.

DISCUSSION

AML is a kind of benign mesenchymal tumor that is common in literature, it includes fat cells, smooth muscle cells, and blood vessels (10). AML is referred to as 'hamartoma' as well (11). It was first defined by Fischer, in 1911 (12). The incidence of AML in the population is 0.4% (2). AML comes about irregularly in 80% of cases, whereas the others are linked with different genetic disorders such as tuberous sclerosis (3). Flank pain, palpable mass, and hematuria are the classical triad of symptoms. A few patients (10%) may demonstrate retroperitoneal hematoma or hypovolemic shock as a first symptom. Wunderlich syndrome is a life-threatening emergency condition determined by nontraumatic spontaneous hemorrhage in the perinephric space (13). Sporadic cases present at the fifth and sixth decades (14). In contrast to the cases reported in the literature, our patient was seventy-seven years old and seems to be the oldest patient who experienced selective arterial embolization in the literature.

The main indications for active cure for AML were as follow (i) increased tumor size, (ii) presence of symptoms (bleeding and pain) and (iii) suspicion of cancer on imaging (7) (8).

Since the first report that was presented by Adler et al. transarterial embolization has been applied to a great extend; thus, it has turned out to be the novel standard for preventive or emergency cure of AML, in which small arterial feeders are aimed selectively and minimally invasively (15) (16). Embolization is the first line cure for bleeding AML and a preventive method for patients with a high risk of bleeding (17). In the literature, the preferred cure is percutaneous transcatheter selective arterial embolization. In this treatment, the purpose is to occlude the angiogenic component to take the control the acute bleeding, to impede prospective hemorrhage, and to protect nephron function (5). Are ethanol, polyvinyl alcohol particles, and coils are commonly used agents. A hemostatic embolization agent (Embosphere 300-500µm Microspheres; Merit Medical Utah-USA) was employed and at the end coil (The Axium™ detachable coils; Medtronics Minnesota-USA) plug has been put in the feeder arteries.

In SAE series, the recurrence rate ranged from 4% to 39%. Symptom results were reported in eight series including 273 subjects and improvement ranged between 41% and 100%. Eighty-four patients (30.7%) needed secondary AML cure. When it was necessary to conduct a secondary treatment, SAE was applied in 69 procedures and surgery in 18 procedures. Minor complications came about in 179 (56%) of the subjects. SAE syndromes accounted for most of the complications. Renal function change did not appear clinically related (7). Surgical and SAE series were rarely comparable due to the heterogeneity of data. Tumor growth or recurrence happened in 4-15% of patients cured by surgery and in 6-39% of patients cured through employing SAE. Secondary treatment rate was 1% upon surgery and 31% after SAE. The preferred for retreatment was SAE. Endovascular therapy for AML has less postoperative morbidity (6.9%), having minimal invasiveness and shorter hospitalization in comparison with partial nephrectomy (12%). There is limited literature comparing nephrectomy and nephron-sparing surgery with SAE in the management of AML (7). In our study, we performed SAE which retroperito

neal hemorrhage AML. In the course of long-term follow-up, an unimportant decrease in the renal function was detected. We carried out follow-up this patient, and we detected no complications.

Image 2. Cobra-I catheter in right renal artery and angiogram after injection of contrast medium sows small branches of minimally vascularized angiomyolipoma in the inner polar of the right kidney.

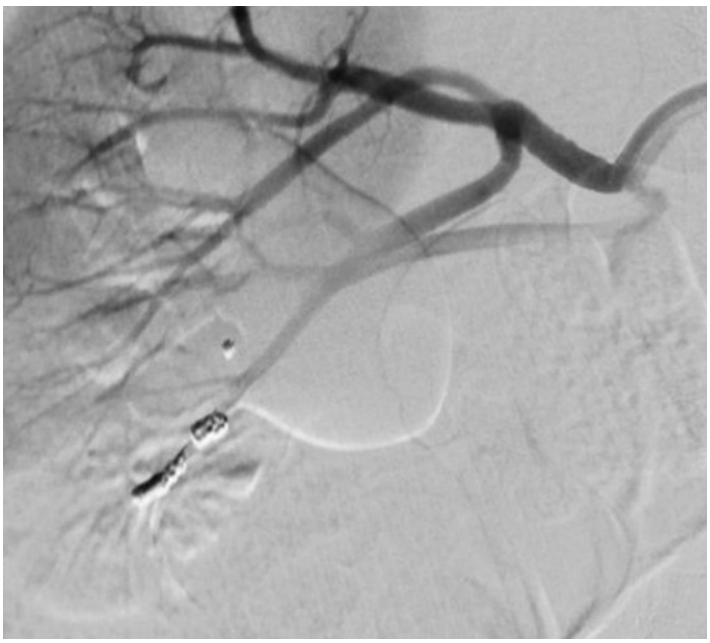

Image 3. The last angiogram after procedure shows complete embolization of angiomyolipoma and coil plugs in the inferior pole of the kidney to ensure that no blood supply would feed the embolized lesion.

CONCLUSIONS

Selective arterial embolization (SAE) is an efficient minimal invasive alternative procedure to the surgery in treating renal angiomyolipoma (AML), which could give rise to life-threatening retroperitoneal hemorrhages.

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Peer-Review

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Conflict of Interest

The authors declare that they have no conflict of interests regarding content of this article..

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Ethical Declaration

Informed consent was obtained from the participant and Helsinki Declaration rules were followed to conduct this study.

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