Wunderlich’s Syndrome in Advanced Tuberous Sclerosis Complex: A Rare Case of Perinephric Hematoma

Aisha Siraj1,*, Negar Salehi2

1Cardiology Department, Interventional Cardiologist, Case Western Reserve University MetroHealth Medical Center, Cleveland, Ohio, USA
2Department of Cardiology, the University of Arkansas for Medical Science, Little Rock, Arkansas, USA
*Corresponding author: aishasiraj@gmail.com

Abstract Tuberous sclerosis complex (TSC) is a rare, autosomal dominant disease, associated with mutations in either the TSC gene. The incidence of TSC is estimated as 1 in 5,000-10,000 live births and angiomyolipomas (AML) is one of the characteristic findings of tuberous sclerosis. A 36-year-old Caucasian female admitted to the hospital after two episodes of pre-syncope in March 2016. The patient was tachycardic on examination, and laboratory studies revealed acute anemia with hemoglobin of 8.2 g/dL on admission with a decrease to a nadir of 6.2 g/dL. Imaging studies revealed bilateral fat-rich renal masses with distortion of the renal anatomy consistent with angiomyolipomas (AML). Further as a part of treatment embolization of the right renal artery was performed. However, everolimus is also approved for the treatment of AMLs not requiring surgery. Each patient should have an individualized treatment plan based on the clinical situation as determined by the physician.

Keywords: tuberous sclerosis complex, sub-ependymal nodules, angiomyolipoma

Cite This Article: Aisha Siraj, and Negar Salehi, “Wunderlich’s Syndrome in Advanced Tuberous Sclerosis Complex: A Rare Case of Perinephric Hematoma.” American Journal of Medical Case Reports, vol. 7, no. 12 (2019): 334-336. doi: 10.12691/ajmcr-7-12-8.

1. Introduction

1.1. Tuberous Sclerosis

Tuberous sclerosis complex (TSC) is a rare, autosomal dominant disease, associated with mutations in either the TSC1 gene on chromosome 9 or the TSC2 gene on chromosome 16. The incidence of TSC is estimated as 1 in 5,000-10,000 live births [1]. TSC usually presents with neurologic disorders including seizures, mental retardation, autism, brain lesions [cortical tubers, sub-ependymal nodules (SEN)], and sub-ependymal giant-cell astrocytomas. TSC can also present with cardiac, pulmonary, renal, and ophthalmic findings such as angiomyolipomas (AML) of the kidneys and rhabdomyoma of the heart. There are several distinct dermatologic findings, including facial angiofibroma, Shagreen patches, and Hypomelanic macules (Ash-Leaf spots).

Wunderlich syndrome was first defined in 1856 as spontaneous non-traumatic renal hemorrhage into the perinephric space [2].

2. Case Report

We are presenting a case of a 36-year-old Caucasian female admitted to the hospital after two episodes of pre-syncope in March 2016. Characteristic features of TSC including malar angiofibroma, (Figure 1), ash-leaf spots (Figure 2), bilateral fat-rich angiomyolipomas of the kidneys (Figure 3), and sub-ependymal calcifications (Figure 4) were noted. The patient was tachycardic on examination, and laboratory studies revealed acute anemia with hemoglobin of 8.2 g/dL on admission with a decrease to a nadir of 6.2 g/dL.
Abdominal CT revealed bilateral fat-rich renal masses with distortion of the renal anatomy consistent with angiomyolipomas (AML). Fluid along the lateral aspect of the right kidney, thought to represent hemorrhage into Gerota's fascia, was also evident. The patient was stabilized with fluid resuscitation and red blood cell transfusion and was taken for embolization of the right renal artery with coiling and injection of tris-acryl gelatin microspheres. Post-procedure day 2-3 she had nausea and flank pain that was managed with antiemetics and narcotic respectively. She recovered uneventfully without evidence of further bleeding. Renal function remained within normal limits.

### 3. Discussion

There are three major renal complications in tuberous sclerosis, AML is the most common with polycystic renal disease (PKD) and renal cell carcinoma (RCC) being rarely described. AML is one of the characteristic findings of tuberous sclerosis. AML is a benign tumor consisting of blood vessels, smooth muscle cells, and fat cells. AML incidence in the average population is about 2% while prevalence in tuberous sclerosis patients is 50%-80% [3].

One of the best approaches for the management of the symptomatic AML is selective arterial embolization (Figure 5). In our patient, the same treatment was done with the combination of three coils and embosphere injection.

Novel therapeutic options for the large AML which cause retroperitoneal bleeding or has the risk of bleeding (Tumors>4 cm) is mTOR pathway inhibitors, which include Sirolimus (also known as rapamycin) and Everolimus. A trial of Everolimus showed a reduction in AML size by 30% in 81.6% of patients and 50% reduction in AML in 64.5% of patients by 96 weeks of treatment, showing added benefit of longer-term Everolimus therapy without additional adverse events [5,6,7].
4. Conclusion

In large AML tumors in the setting of tuberous sclerosis that have a high risk of spontaneous retroperitoneal bleeding, selective arterial embolization remains a preferred strategy for the treatment. There are other options, like partial or total nephrectomy which have their benefits and risks. Everolimus is also approved for the treatment of AMLs not requiring surgery. Each patient should have an individualized treatment plan based on the clinical situation as determined by the physician.

References

[1] Hallett L, Foster T, Liu Z, Blieden M, Valentim J. (2011). Burden of disease and unmet needs in tuberous sclerosis complex with neurological manifestations: Systematic review. Curr Med Res Opin 27: 1571-1583.

[2] Diaz JR, Agritantonis DJ, Aguila J, Calleros JE, Aypppan AP. (2011). Spontaneous perirenal hemorrhage: what radiologists need to know. Emerg Radiol 18: 329-334.

[3] Williams JM, Racadio JM, Johnson ND, Donnelly LF, Bissler JJ. (2006). Embolization of renal angiomyolipomata in patients with tuberous sclerosis complex. Am J Kidney Dis 47: 95-102.

[4] Andrew SF, Hamou N, Mohammed AS, Ximming JY, Casalino DD, et al. (2016). Update on the Diagnosis and management of renal angiomyolipoma. J Urol 195: 834-846.

[5] Bissler JJ, Kingswood JC, Radzikowska E, Zonnenberg BA, Frost M, et al. (2016). Everolimus for renal angiomyolipoma in patients with tuberous sclerosis complex or sporadic lymphangioleiomyomatosis: extension of a randomized controlled trial. Nephrol Dial Transplant 31: 111-119.

[6] Bissler JJ, Kingswood JC, Radzikowska E, Zonnenberg BA, Frost M, et al. (2013). Everolimus for angiomyolipoma associated with tuberous sclerosis complex or sporadic lymphangioleiomyomatosis (EXIST-2): A multicentre, randomised, double-blind, placebo-controlled trial. Lancet 381: 817-824.

[7] Kan RWM, Kan CF, Au WH. (2015). Acute tumour bleeding in a patient with tuberous sclerosis and bilateral renal angiomyolipomata. Hong Kong, Med J 21: 286.