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How I do it

Extensive congenital asymptomatic renal arteriovenous malformation

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Abstract

Renal arteriovenous malformations (AVM) are abnormal communications between the intrarenal arterial and venous systems. These lesions may present with a wide range of signs and symptoms, including hypertension and hematuria. We report a case of a 71-year-old woman with incidentally diagnosis of asymptomatic right renal AVM.

Congenital Arteriovenous Malformations (AVMs) are abnormal communications between arteries and veins with a vascular nidus that bypass the capillary bed.[1] Congenital renal AVM are rare, with reported incidence of 0.04%.[2] However, the true prevalence may be higher because many renal AV shunts remain clinically asymptomatic. Symptoms include massive hematuria, retroperitoneal hemorrhage, flank pain, hypertension, and high-output heart failure.[3]

We report a case of a 71-year-old woman with incidentally diagnosis of asymptomatic right renal AVM. The patient's consent for publication was obtained.

The patient had no hematuria, no hypertension, and renal function was normal with a serum creatinine of 0.75 mg/dL and a glomerular filtration rate of 81 mL/min/1.73m^2. Medical history included dyslipidemia and arthrosis. The patient did not report any history of renal trauma or recent medical intervention in which percutaneous instrumentation was used.

A Computed Tomography (CT) angiography showed a large AVM in the right kidney (*Figure 1*, *Appendix 1*). Multiple tortuous and coiled feeding arteries directly shunting into a single venous sac were observed (*Figure 2*).

In consideration of the absence of symptoms and the age of the patient, no treatment was performed. Imaging follow-up with Color Doppler ultrasonography was performed at three and six months from the diagnosis, and yearly thereafter. A strict clinical follow-up and monitoring of the renal function was performed.

Indications for treating an AVM are the progressive increase in the size, recurrent or persistent hematuria, and hemodynamic effects associated with the abnormality, especially hypertension, and high-output cardiac failure.[3] Surgical procedures, including nephrectomy and ligation of the feeding

artery and endovascular embolization have been described.[4] However, in case of asymptomatic incidentally diagnosed renal AVM, conservative treatment should be considered.

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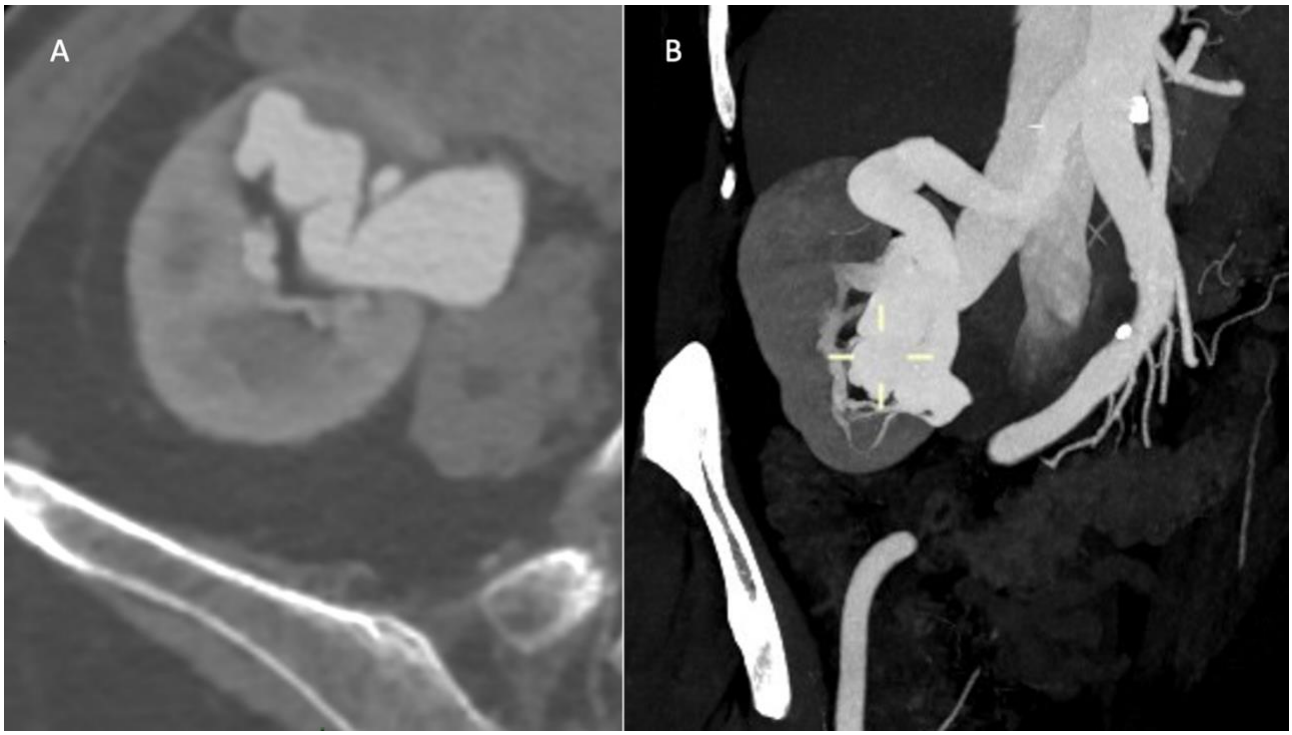
Figure 1. 3D Volume-rendering of the Computed Tomography (CT) angiography showing the right renal arteriovenous malformations.

Figure 2. Maximum intensity projection, in axial **A)** and coronal **B)** plane of CT renal angiography in arterial phase demonstrating aneurysmal dilatation of segmental branch of main renal artery with early opacification of renal vein.



Supplementary Materials:

Appendix 1. 3D Volume-rendering of the Computed Tomography (CT) angiography showing the right renal arteriovenous malformations.