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An unusual case of a calcified renal artery aneurysm mimicking a renal calculus

Renal artery aneurysm (RAA) is rare, only occurring in about 0.09% of individuals (1). This condition is more common in females. Risk factors for this pathology include arteriosclerosis, fibromuscular dysplasia, congenital renal malformations, angiomyolipoma of the kidney, pregnancy and trauma (1,2).
Diagnosis of RAA is usually incidental when a patient is being investigated for other symptoms such as vague abdominal pain, haematuria or hypertension (3,4). Calcified RAA may be suspected on calcification in the region of the renal hilum (5). KUB and ultrasound are not sensitive enough to make the right diagnosis.
Current guidelines published by the European Association of Urology describe "renal artery aneurysms close to treated stone" as a contraindication to ESWL (6). The risk of vascular complications (7-10) to this patient would be higher.
Herein, we report a case of calcified renal artery aneurysm misdiagnosed as a renal calculus and we point on the importance of making the right diagnosis to avoid unnecessary and dangerous treatment.

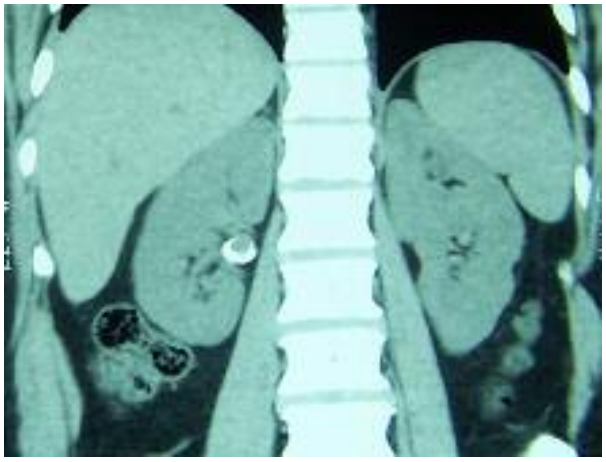
Case report

A 42-year-old woman presented to the urology outpatient department with vague right-sided lumbar pain but no associated bowel symptoms, lower urinary tract symptoms of fever.
She had a past history of right renal stones medically managed. On physical examination, the abdomen was unremarkable. A urinalysis was normal so was creatinin level.
An ultrasound examination revealed 11 mm calcific density, which was casting an acoustic shadow in the region of the right renal hilum consisting with a non-obstructing renal pelvic stone. She underwent an IVP with the same conclusion (Figure 1-2).

Figure 1-2: IVP: A calcific density at the level of the right renal pelvis.

The urologist opted to treat her with extracorporeal shock wave lithotripsy (ESWL). Her first ESWL session was unremarkable. The calculus was visible on fluoroscopy in the lithotripsy suite. A second session of ESWL was planned after 4 weeks. At this time, the IVP was examined by another urologist who suspected an extra-urinary calcification. Thus he demands a computed tomography scanning (CT Scan).
The CT Scan revealed no evidence of renal tract calculi but demonstrated a calcified ovoid mass at the right renal hilum (Figure 3-4). This finding prompted a CT angiogram, which concluded to a partially calcified right renal artery aneurysm (18x16 mm) (Figure 5-6).
The patient was referred to the vascular team for further management.

Figure 3-4: CT Scan: A calcified ovoid mass at the right renal hilum



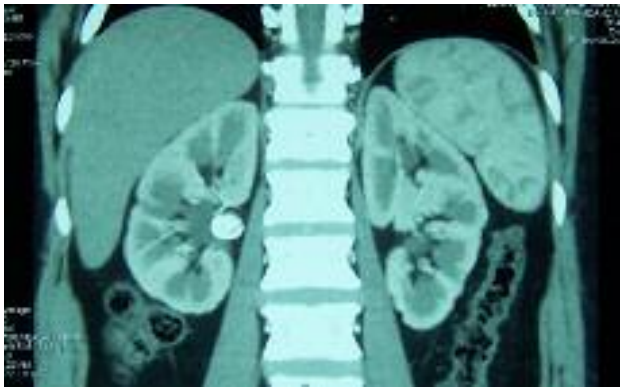
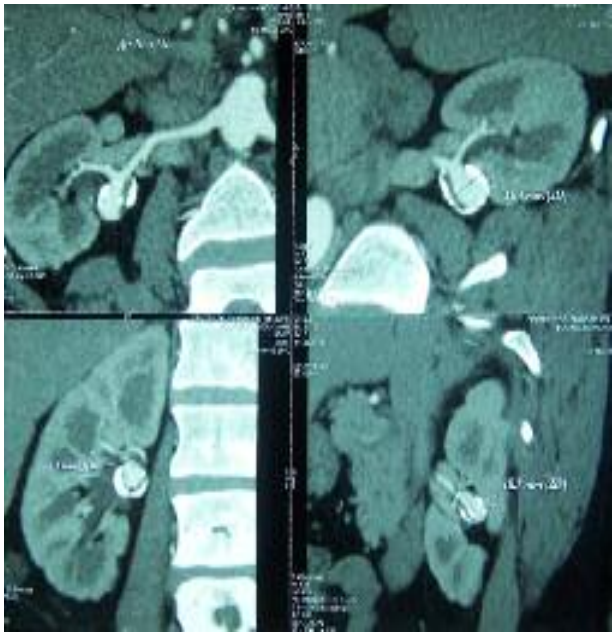
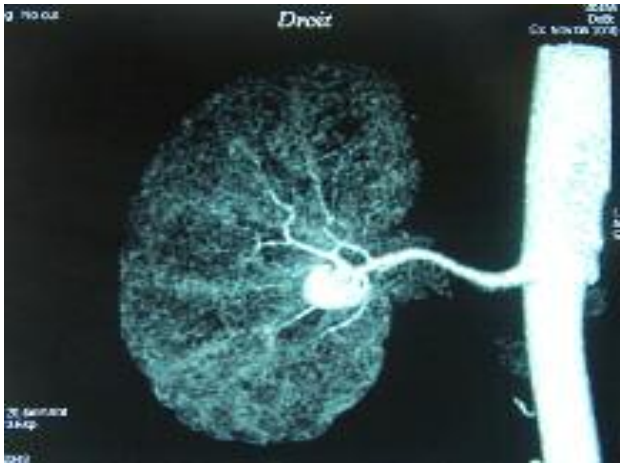


Figure 5-6: CT angiogram: A calcified aneurysmal dilation of the right renal artery





Conclusion

Renal artery aneurysm can mimic a renal calculus, leading to an inappropriate and dangerous management. This case illustrates that it may be prudent to perform this simple examination to help avoid diagnostic errors. Also, RAA should be suspected if calcification around the renal area is abnormal or has a convex pattern when seen on a radiograph.

With the availability of CT imaging in modern clinical practice, aneurysms of the arterial tree should be identified as part of the investigation of urinary tract calculi. In other cases, doppler examination of a calcific density in the region of the renal hilum on ultrasonography may avoid misdiagnosis of RAAs.

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