IMAGING CORNER

Incidental Renal Infarction on imaging for Abdominal Aortic Aneurysm

Cevdet Donmez[1], Asma Bitar De Zayas-Enriquez[2], Hosny Hamza[3], Humayun Bashir[4]
[1]Cardiology Department, East Kent University Hospitals NHS Foundation Trust, UK; [2,3]Radiology Department, East Kent University Hospitals NHS Foundation Trust, UK;
[4]Nuclear Medicine Department, East Kent University Hospitals NHS Foundation Trust, UK.
Correspondence: Aamna Hassan. e-mail: aamnah@skm.org.pk
ORCID ID. 0000-0003-0026-0729

Abstract
A 59-year-old man who under surveillance for abdominal aortic aneurysm and peripheral artery disease, was investigated with a CT Angiogram aorta. The CT scan showed an abdominal aortic aneurysm reaching 6.2cm with significant thrombus burden, occluded coeliac artery, occluded left iliac artery, calcified stenosis of the right renal artery and features of chronic renal infarct in the right upper pole. Technetium-99m dimercaptosuccinic acid (Tc-99m DMSA) renal scan was done to document the extent of the infarction and for differential function of the kidneys.

Keywords: Renal infarction, Abdominal Aortic Aneurysm, Contrast Enhanced CT, DMSA.

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Discussion
A 59-year-old male was referred with a 2-year history of back pain and claudication affecting his mobility. He was under abdominal aortic aneurysm (AAA) surveillance for 8 years, which increased to 3-monthly visits as the diameter became more than 5 cm in the last 9 months. Other past medical history included hypertension, smoking, chronic kidney disease (stage 3a) and coronary artery bypass grafting. A lack of pulse on the left lower extremity was observed on examination and CT angiogram of Aorta and lower extremity was ordered (Figure 1). CT angiogram delineated the extent of aneurysm a renal cortical infarct. To confirm and delineate the renal infarction, the patient was further investigated with a technetium-99m dimercaptosuccinic acid (Tc-99m DMSA) renal scan (Figure 2). Patient underwent AAA repair.

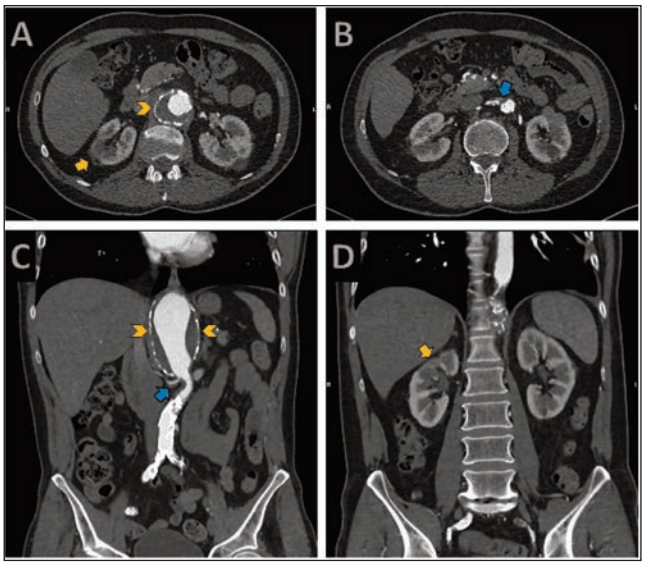

Figure-1: CT Angiogram: Axial (A and B) and coronal (C and D) CT images showed right upper renal pole hypodensity, lack of enhancement, and renal cortical loss in the right renal upper lobe keeping with an old infarction (yellow arrows in images A and D), as well as a suprarenal abdominal aortic aneurysm reaching 6.2cm with mural thrombus formation (yellow arrowheads in images A and C), occluded coeliac artery, occluded left iliac artery and severe calcified stenosis at the origin of the right renal artery (blue arrows in images B and C).

Renal infarction is a rare disease which can be caused by thromboemboli, hypercoagulable states, dissection and trauma of renal arteries.[1] Patients present with abdominal or flank pain, haematuria and fever which may mimic renal colic or pyelonephritis and differential diagnosis can be done by computed tomography (CT).[2]

Contrast-enhanced CT is the preferred test with 80% sensitivity which also provides anatomical information about renal, aorta

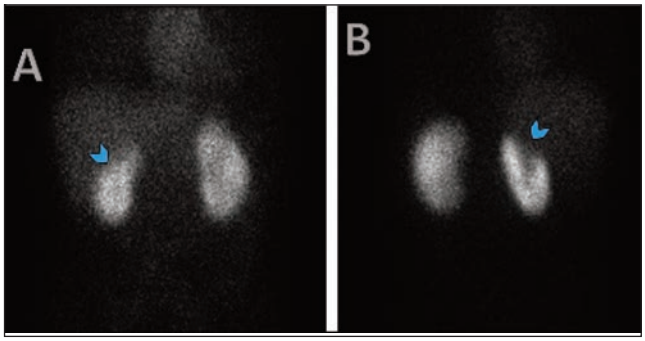

Figure-2: Tc-99m DMSA renal scan demonstrated absence of tracer uptake in the upper pole of the right kidney, in keeping with infarction (blue arrowheads in Anterior (A) and left anterior oblique (B) views). Tc-99m DMSA scan also showed the relative kidney function with a total relative uptake of 66% on left and 34% on the right kidney.

and other vasculature. In our case, CT revealed a hypodense non-enhancing area with loss of cortex anatomy suggesting incidentally diagnosed chronic renal infarct. Demonstration of typical lack of tracer uptake in technetium-99m dimercaptosuccinic acid (Tc-99m DMSA) renal scan has higher (97%) sensitivity in establishing renal infarct diagnosis with the advantage of the ability to assess differential renal function.[3] AAA repair has risk of collateral vascular damage and renal infarction, therefore identification and documentation of pre-existing infarctions at baseline can be important.[4,5]

References

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