

A case of loin pain after cardiac catheterisation

CLINICAL INTRODUCTION

A 57-year-old woman with known moderate-to-severe mitral stenosis and atrial fibrillation (AF) presented to the emergency department with acute onset right loin pain after having a coronary angiogram and left and right heart catheterisation through the right femoral route about 28 h ago. The cardiac catheterisation was done after she presented with one episode of troponin-negative chest pain and progressive shortness of breath. She had anterior wall myocardial infarction (MI) 25 years ago, which was thought to be due to coronary artery embolism. Her mitral stenosis was diagnosed at that stage.

Her warfarin was stopped for 5 days before cardiac catheterisation and international normalised ratio (INR) on the day of

the procedure was 1.1. No bridging heparin/low molecular weight heparin (LMWH) was used and warfarin was restarted on the evening of the procedure at the usual dose. Clinical examination revealed some guarding in the right iliac fossa and some tenderness in the right loin. She was not feverish and there was no dysuria or frequency. There was no lump at the puncture site.

On presentation to the emergency department, a contrast-enhanced CT scan of the abdomen was performed (figures 1 and 2).

QUESTION

Which of the following is the aetiology of the pain?

- A. Abdominal aortic dissection
- B. Renal artery embolism
- C. Retroperitoneal haematoma
- D. Ureteric stone



Figure 1 Contrast enhanced CT scan of the abdomen on presentation.



Figure 2 Contrast enhanced CT scan of the abdomen on presentation.

Image challenge

ANSWER: B

Figure 1 showed non-enhancement of the right renal artery after the proximal part due to the thrombus in it. Figure 2 also showed non-enhancement of the right kidney. Her CT scan did not show any evidence of dissection in the abdominal aorta, ureteric stone or retroperitoneal haematoma, though these conditions cannot be excluded on the basis of those two figures.

She was treated with intravenous heparin and a repeat CT angiogram after 5 days showed a well-opacified right renal artery; no thrombus was seen (figure 3). Right kidney showed heterogeneous attenuation, likely sequelae to infarct (figure 4).

This is a case of renal artery embolism from mitral stenosis and AF and this happened because her INR was subtherapeutic for few days. This was unlikely to be related to the procedure of cardiac catheterisation because of the fact that the procedure went smoothly, there was no evidence of injury/dissection of the aorta/renal arteries on CT scan and this happened very acutely, almost 28 h after the procedure.

Several case reports of renal artery embolism have been described in mitral stenosis (MS) with AF.^{1 2} Renal artery embolism is an uncommon condition and needs high index of suspicion for diagnosis. In our case, a CT scan done to rule out retroperitoneal haematoma picked up this uncommon condition.

This case also highlights the high risk of thromboembolism in rheumatic valve disease with AF and the importance of risk stratification before stopping anticoagulation in any patient with AF before any procedure/surgery. In view of high risk of thromboembolism it is generally agreed that in all patients with MS with AF, any procedures/surgery should be bridged with LMWH if warfarin needs to be stopped. Recent evidence



Figure 3 CT angiogram after five days showing well-opacified right renal artery.

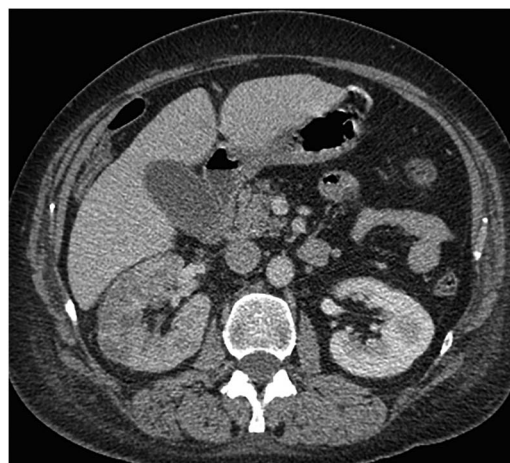


Figure 4 CT angiogram after five days showing heterogeneous attenuation of right kidney.

suggests that many cardiac procedures are better done with less bleeding complications on therapeutic INR rather than bridging with LMWH.³

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