


Radial arteriovenous fistula post-cardiac catheterization: ultrasonographic and surgical findings

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Case presentation

A 56-year-old man presented to the clinic with new onset dyspnoea on exertion. On physical examination, he was noted to have a systolic ejection murmur. Echocardiography showed a bicuspid aortic valve with severe aortic stenosis. Pre-operative cardiac catheterization, done from the right radial artery using a 5 French sheath, showed normal coronary arteries. The patient underwent aortic valve replacement and was discharged home after 5 days with no complications. Six weeks later, he complained of a small pulsatile mass in his radial artery at the site of catheterization. Doppler ultrasound imaging showed an arteriovenous fistula at the site of radial artery puncture (*Figure 1A*) for which he underwent successful surgical treatment (*Figure 1B*).

Coronary angiography and interventions are being increasingly performed through the radial artery because of the lower risk of

complications, particularly bleeding.¹ The most common vascular complication through this access is asymptomatic radial artery occlusion. Other less common complications include vessel perforation, pseudoaneurysm formation and arteriovenous fistula formation.² Radial arteriovenous fistula formation is uncommon because the radial artery is superficial and is surrounded by rather small veins. It was reported to occur in 0.04% of patients in a large series of more than 10 000 patients undergoing trans-radial coronary procedures.² The standard treatment has been through surgery as in our patient. Recently, there are reports of successful closure of the fistula with prolonged compression.³ Although very rare, arteriovenous formation is an important potential complication of trans-radial cardiac catheterization that physicians need to be aware of in their management and follow-up of these patients.

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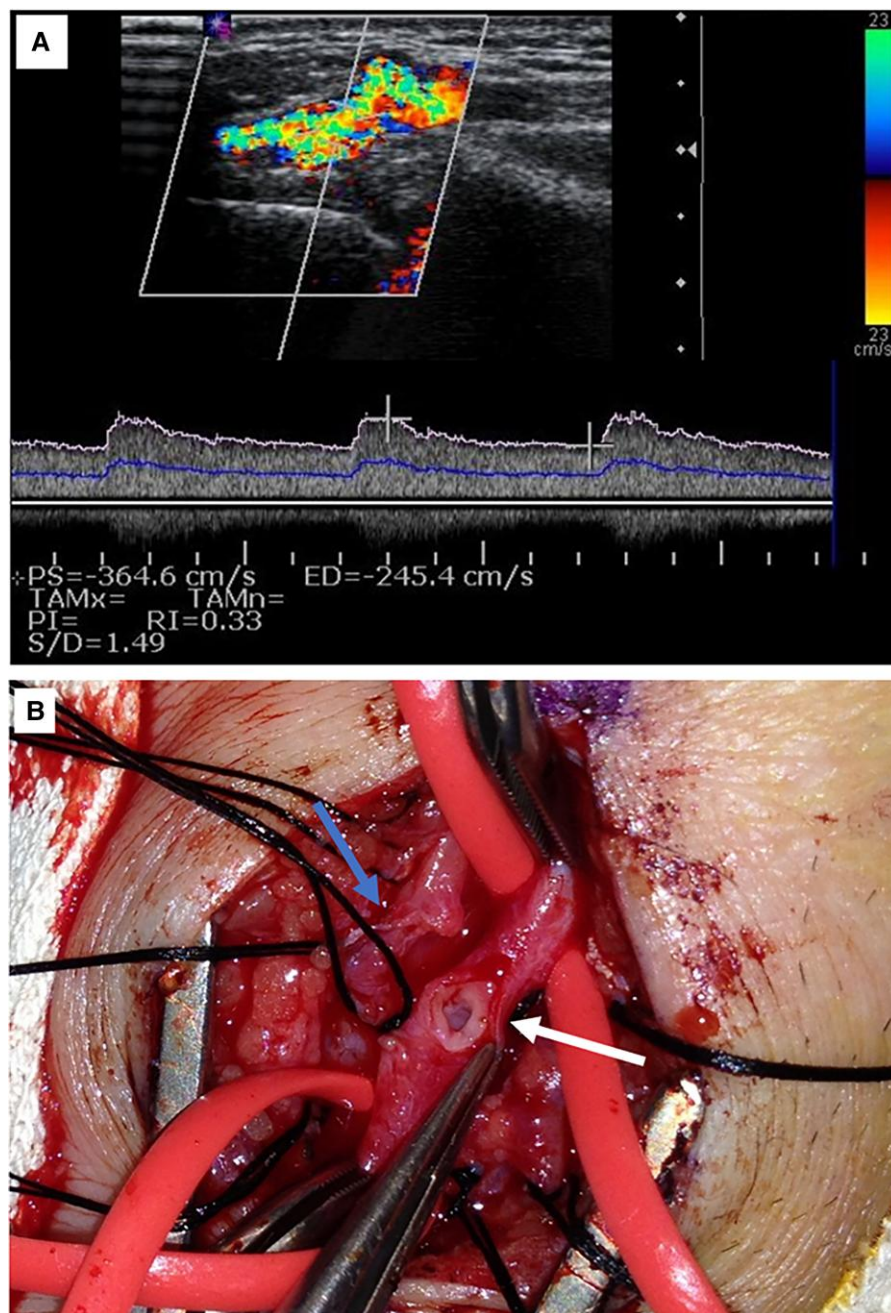


Figure 1 (A) Duplex ultrasonography of the radial artery confirming the presence of an arteriovenous fistula. (B) Operative images showing the arterial (white arrow) and venous (blue arrow) sites of the arteriovenous fistula after its surgical division.

Consent: The authors confirm that a written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

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Data availability

All data related to this case report is presented in the published manuscript.

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