

Radial artery pseudoaneurysm following coronary angiogram

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DESCRIPTION

This case demonstrates the classic yin-yang radiological sign associated with pseudoaneurysm, a potential complication of an extremely common invasive procedure—coronary angiogram (CAG).

An 85-year-old woman presented to our hospital for an elective transcatheter aortic valve implantation (TAVI). Preprocedure, a palpable, pulsatile lump with an associated bruit was noted on the volar aspect of the patient's right wrist. The lump was not focally tender, and there were no signs of infection or erythema. A CAG had been performed 1 month prior to this as part of the workup for the TAVI. Access for the CAG had been gained via the right radial artery. An ultrasound of the area revealed a textbook appearance of an 18×13×15 mm pseudoaneurysm on Doppler ultrasound (figure 1). This is a great example of the 'yin-yang sign' which is associated with pseudoaneurysm formation.

Pseudoaneurysms are a rare but recognised complication of invasive procedures such as CAG or arterial line insertion.¹ A pseudoaneurysm is a collection of blood that has formed outside a vessel, within the surrounding soft tissues. It usually occurs after an injury or, as in this case, an invasive procedure. They are formed due to a connection or channel between the collection of blood and the damaged blood vessel. It differs from a true aneurysm where the collection of blood is contained within all three layers of the artery itself.

Treatment approaches include observation, percutaneous thrombin injection and therapeutic compression of the aneurysm.² Compression has been associated with pain during and post-treatment, whereas thrombin injection has in rare cases led to arterial occlusion requiring thrombectomy as well as pseudoaneurysm rupture. Currently, there is no consensus on the optimal choice between

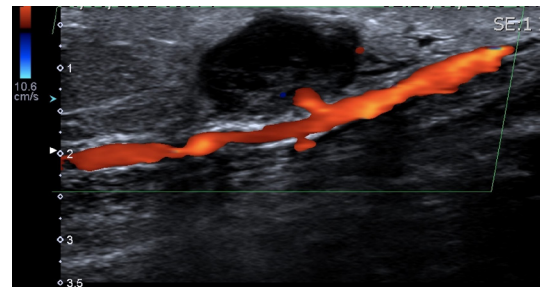


Figure 2 Persistent flow in neck of aneurysm day 2 postcompression.



Figure 3 Complete thrombosis and resolution day 3 postcompression.

thrombin injection and compression in the case of radial artery pseudoaneurysms.

In our patient's case, therapeutic compression was the chosen approach because there was no focal tenderness and because of the short neck of the pseudoaneurysm. Pressure was applied consistently for 30 min using the ultrasound probe. A radial artery compression device was used following the scan. Repeat ultrasounds postcompression treatment initially demonstrated persistent flow in the neck of the pseudoaneurysm on day 2 (figure 2), which was then followed by complete thrombosis and resolution (figure 3).

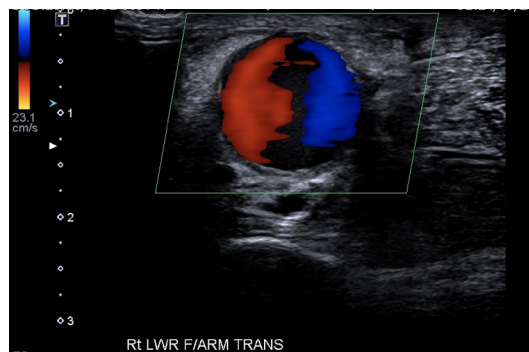


Figure 1 Textbook 'yin-yang' appearance of aneurysm.



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Learning points

- ▶ Awareness of risk of pseudoaneurysm complication following common invasive vascular procedures such as coronary angiogram.
- ▶ Characteristic yin-yang appearance of pseudoaneurysm on ultrasound.
- ▶ Approaches to treatment of pseudoaneurysm including compression and thrombin injection.

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