

# The ulnar artery pseudoaneurysm

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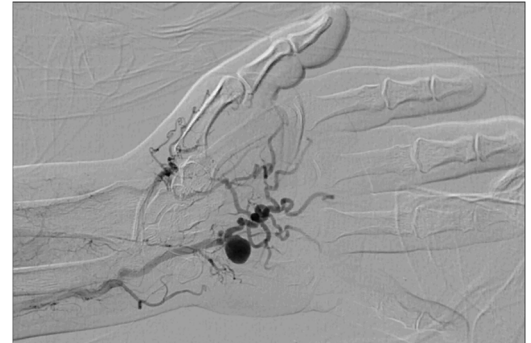
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## DESCRIPTION

Three years following a blunt injury to his hand, a 44-year-old man presented with a persistently painful focal area of his left palm at the base of his thumb. Physical examination revealed a small painful pulsatile mass at the base of his left hypothenar eminence. His radial pulse was normal and he had a normal capillary refill of his ulnar and radial-sided digits. There was no evidence of digital ischaemia.

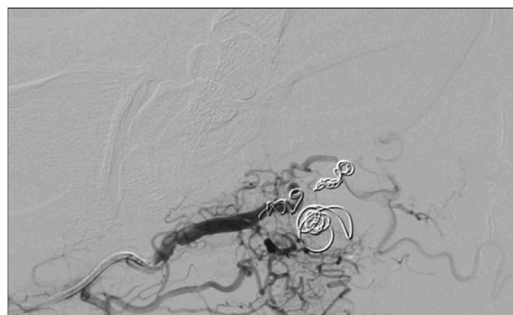
MRI demonstrated a saccular outpouching at his distal ulnar artery (figure 1A, arrow), which on Doppler ultrasound demonstrated the so-called 'yin-yang' sign (figure 1A). These imaging findings and history are classic for a traumatic arterial pseudoaneurysm. Diagnostic angiography confirmed the pseudoaneurysm (figure 1B, white arrow; and video 1) and also demonstrated a normally opacified radial artery (figure 1B, black arrow) and palmar arches (figure 1B, asterisks). The pseudoaneurysm was initially treated with a direct thrombin injection, which initially thrombosed the pseudoaneurysm, but this reopened within a week. The patient was re-treated using transarterial coil embolisation from a brachial artery approach. A postcoiling angiogram demonstrated cessation of the pseudoaneurysm filling (figure 1C, arrow, and video 2).



**Video 2** Digitally subtracted arteriogram showing the lack of pseudoaneurysm filling after coiling distal, proximal, and within the pseudoaneurysm sac.

Traumatic arterial pseudoaneurysms are uncommon lesions that usually result from a blunt or penetrating injury.<sup>1</sup> The thrombus that can develop within the pseudoaneurysm can be a source for embolisation, putting the distal tissue at risk for ischaemia/necrosis.

Following coiling, our patient's symptoms resolved immediately and arterial Doppler



**Video 1** Precoiling digitally subtracted arteriogram showing the filling of the ulnar artery pseudoaneurysm.

## Learning points

- ▶ Pseudoaneurysm is a term to describe either an outpouching of a blood vessel that involves the innermost layers of a blood vessel (intima and media) with an intact outer layer (adventitia) or damage to all three layers with bleeding being contained by a surrounding clot or structures.
- ▶ The 'yin-yang' sign on colour Doppler sonography is classic for a pseudoaneurysm.<sup>1</sup>
- ▶ Percutaneous thrombin injection or transarterial coil embolisation are two options to treat pseudoaneurysms.<sup>1 2</sup>



**Figure 1** (A) (upper): MR angiogram demonstrating a saccular outpouching of the distal ulnar artery (arrow) consistent with a pseudoaneurysm. (A) (lower): Classic 'yin-yang' sign flow of blood within the pseudoaneurysmal sac on colour Doppler sonography. (B) Arteriogram demonstrating the ulnar artery pseudoaneurysm (arrow). (C) Postcoiling arteriogram showing the lack of pseudoaneurysmal filling (arrow).



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ultrasound at 1 week postcoiling showed a lack of blood flow within the remnant pseudoaneurysmal sac and normal flow of all digital arteries.

**Contributors** JW-C wrote the paper and performed the procedure as the clinical fellow. MK assisted during the procedure and edited the paper. MS supervised the procedure and edited the paper.

**Competing interests** None declared.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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