

Ultrasound Appearance of Uterine Vascular Lesions : Pictorial Review

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Introduction

Uterine vascular lesions are rare but potentially life-threatening lesions. These lesions include arteriovenous malformations (AVM), pseudoaneurysms and direct arterial injuries. These diagnoses should be considered in patients with vaginal bleeding, especially if related to pregnancy and/or prior instrumentation. Ultrasound (US) is the initial imaging modality for the evaluation of these patients and angiography is performed in cases requiring therapeutic embolization. The objective of this poster is to familiarize the reader with the sonographic features of these lesions.

Case 1 : Pseudoaneurysm

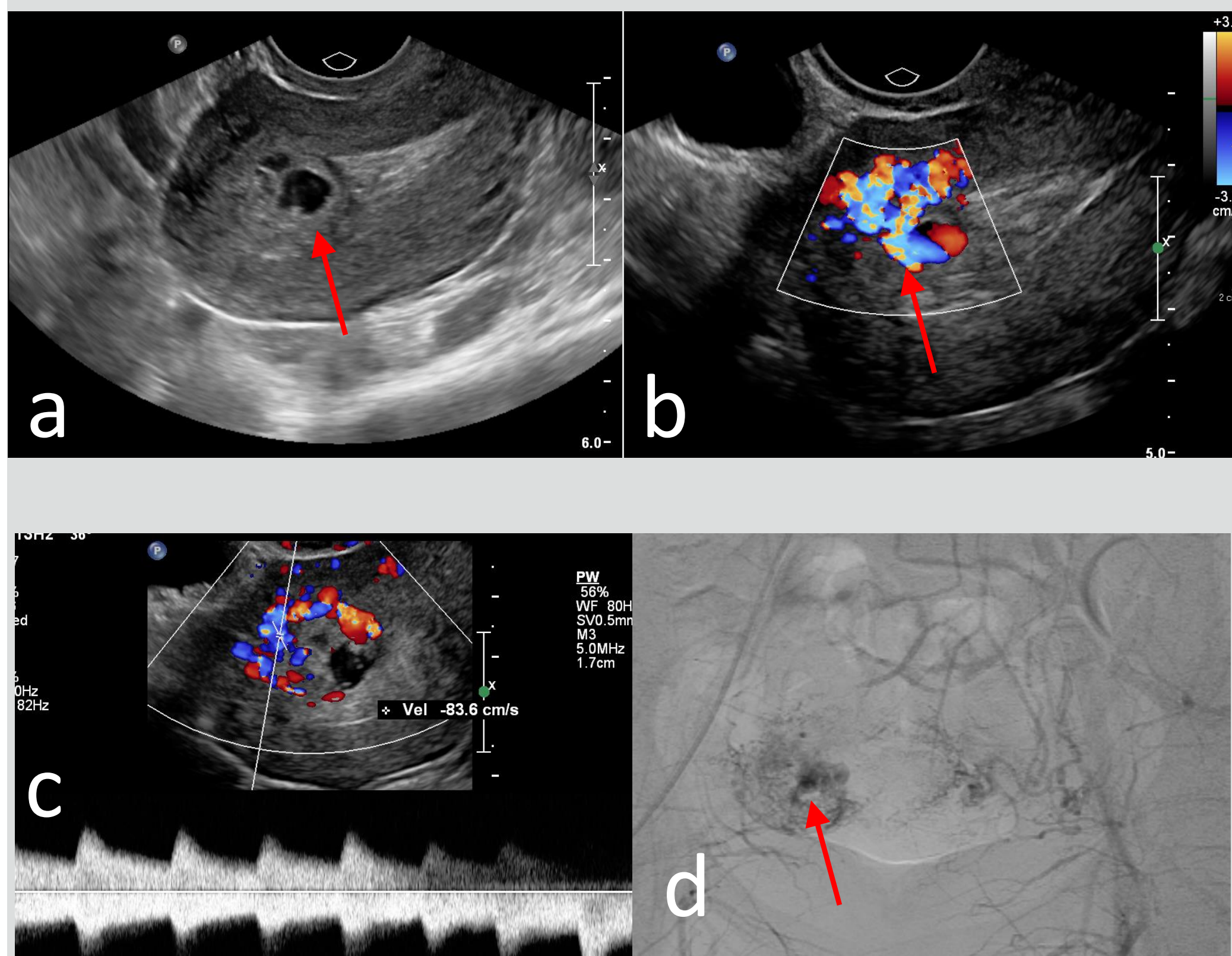


Figure 1: Pseudoaneurysm

A 27 year old woman presented with heavy persistent bleeding and lower abdominal pain after dilation and curettage for termination of pregnancy (TOP). (a) Gray scale US shows a mass with a cystic component within the endometrium (arrow). (b) Colour Doppler US shows turbulent flow within the mass (arrow) (c) Duplex US shows arterial flow with high peak systolic velocity of 83.6m/s. (d) Angiography shows pseudoaneurysm of right uterine artery (arrow). Embolization of the pseudoaneurysm was performed with satisfactory devascularization of the uterine arteries.

Case 2 : Arteriovenous Malformation

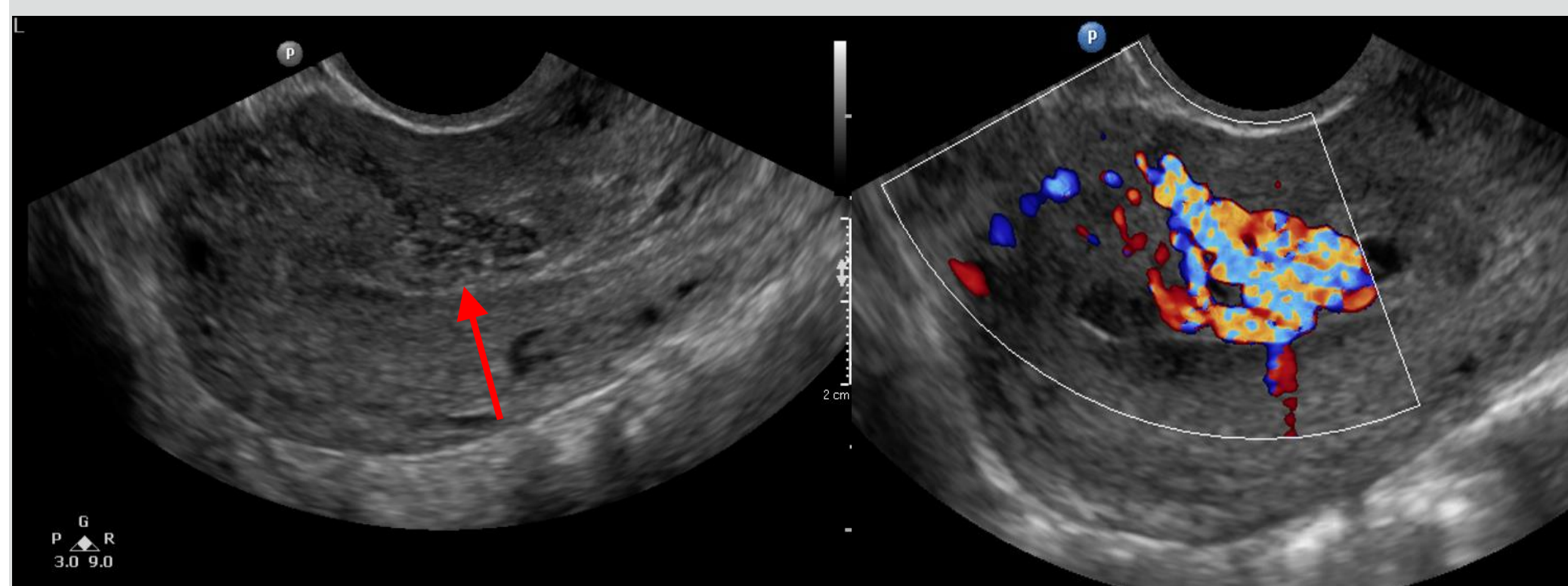
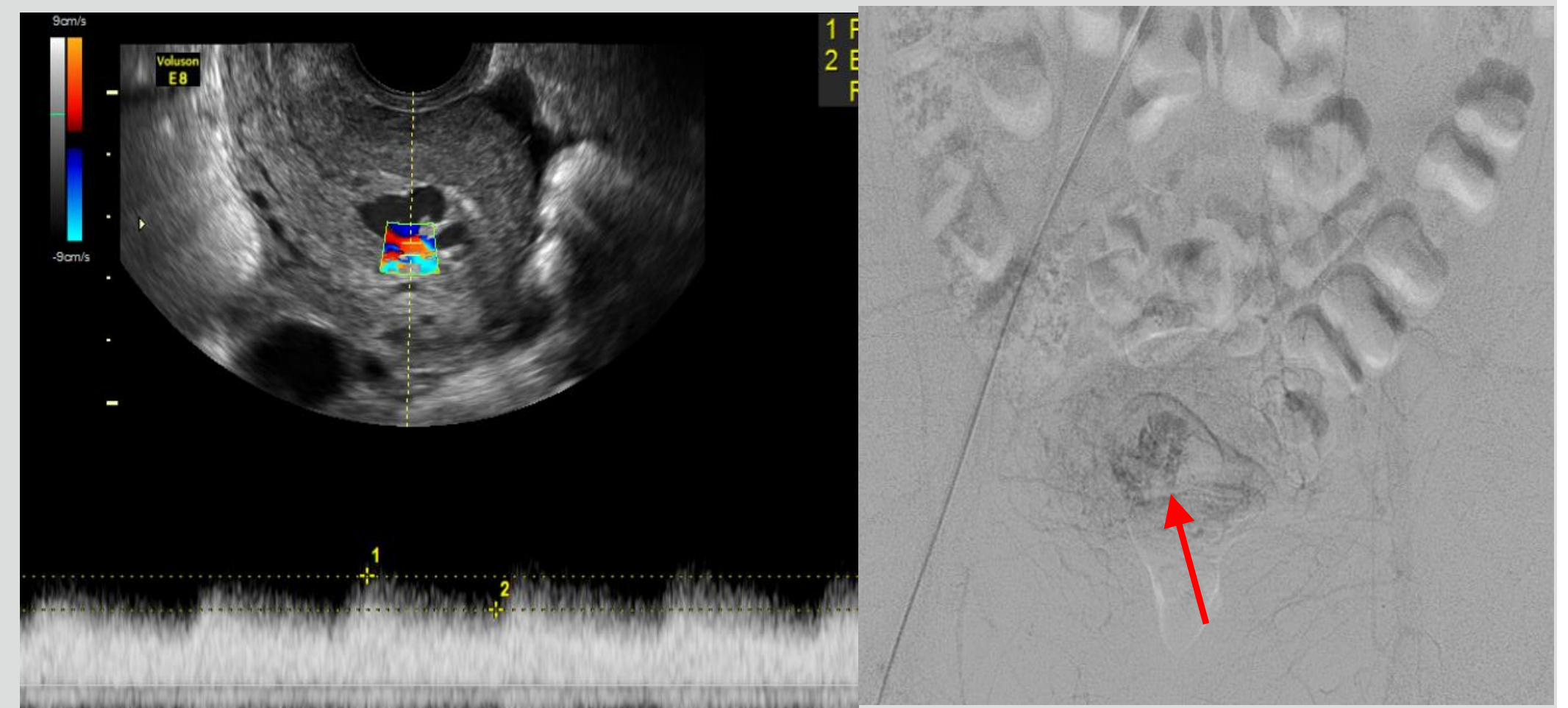


Figure 2: Arteriovenous Malformation

A 22 year old pregnant woman with no prior instrumentation presented with heavy bleeding. (a) Gray scale US shows a mass with multiple small anechoic spaces in the endometrium (arrow) (b) Colour Doppler shows a mosaic pattern of reds and blues indicating turbulent flow with both arterial and venous signals consistent with an AVM.



(c) Duplex US shows arterial flow within the lesion. (d) Angiography shows a tangle of vessels (arrow) supplied by the right uterine artery consistent with an AVM and the patient underwent successful therapeutic embolization.

Case 3 : AVM with Pseudoaneurysm

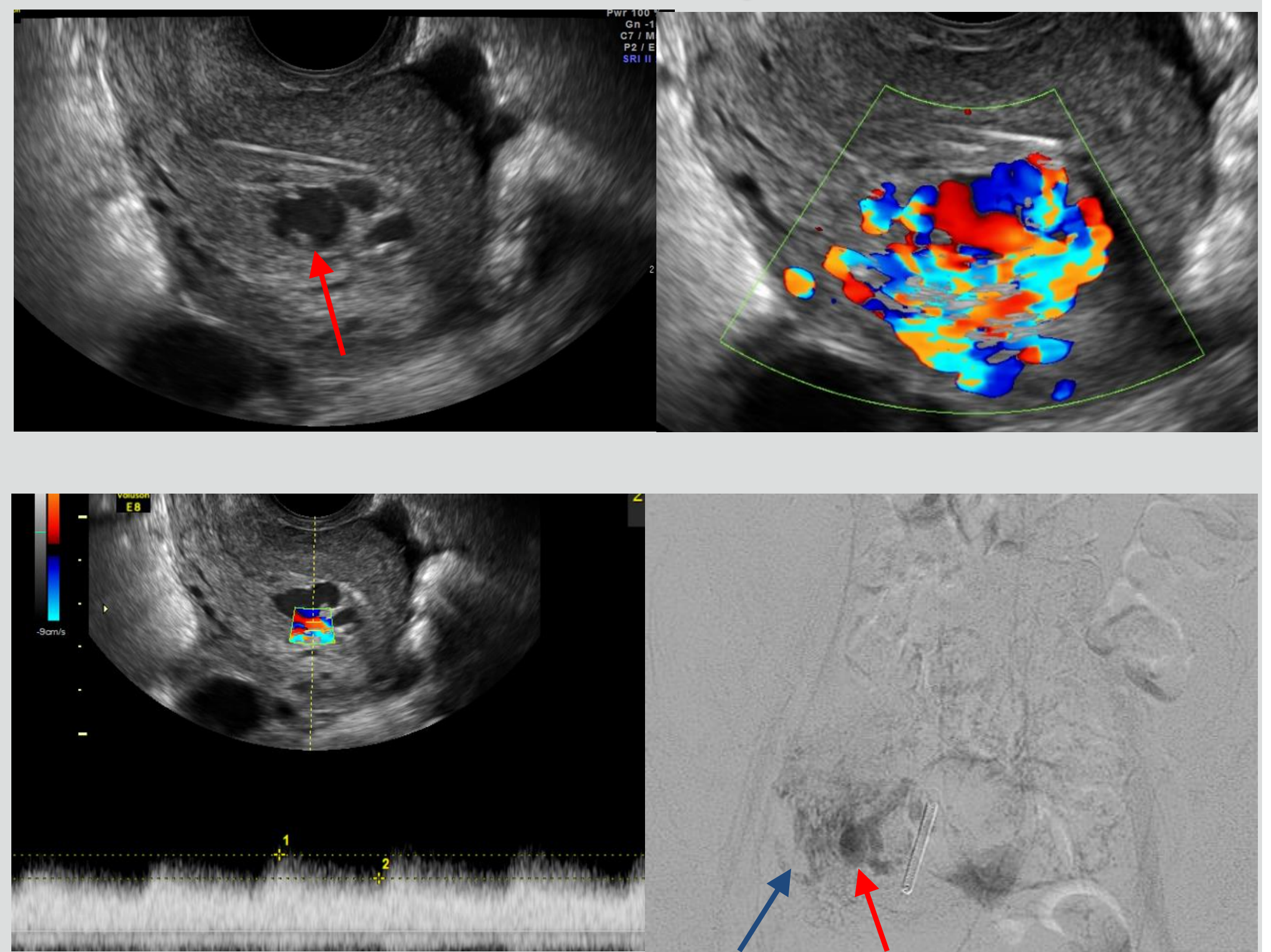


Figure 3: Pseudoaneurysm and AVM

A 17 year old woman with recent TOP presented with irregular bleeding (a) Gray scale US shows a mass with cystic spaces in the endometrium (arrow). (b) Colour Doppler shows blood-filled spaces with varying colors indicating turbulent flow with arterial and venous flow. (c) Duplex US shows arterial flow with a high diastolic component. (d) Angiography shows a pseudoaneurysm (red arrow) with an AVM from the right uterine artery (blue arrow).

Discussion and Learning points

The identification of a cystic/tubular on US within the myometrium and endometrium of a woman presenting with vaginal bleeding, together with high resistance arterial flow within the sac is suspicious of a pseudoaneurysm. If the duplex Doppler shows an arterial waveform with high PSV and high diastolic component, then an AVM should be suspected. A combination of these findings will be seen in pseudoaneurysm coexisting with AVM. Recognition of these findings is important as it often requires further management with angiography and embolization for cure.