

Emergency imaging: ultrasound findings suggestive of uterine arteriovenous malformation in secondary postpartum haemorrhage after Caesarean section

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Introduction

Uterine arteriovenous malformations (AVM) are rare abnormal shunts between uterine arteries and veins that can cause life-threatening haemorrhage. They may be congenital (rare) or acquired, most commonly following uterine trauma, surgery or infection.

Case

- 33-year-old with gestational diabetes - emergency Caesarean for failure to progress at 9 cm
- Left uterine angle bleed controlled with haemostatic sutures (EBL 530 mL); discharged Day 1
- **Day 5** – secondary PPH (~450 mL). TVS: 6 cm collection with a well circumscribed high-flow vascular lesion at the CS scar (*Fig. 1*)
 - Managed medically (IV antibiotics, presumed endometritis); low suspicion of active bleeding
- **Day 8** – recurrent PPH, pyrexia, haemodynamic instability → re-laparotomy
 - Active bleeding identified only on reopening the uterotomy, severe (total loss 4.5 L), no hysterectomy, bleeding secured with sutures

- **Day 29** – third PPH (~2 L); CT angiography suggested a uterine AVM but later amended to no significant/low risk of AVM; uterine artery embolisation performed, with no further bleeding

Although neither the CT angiogram nor catheter angiography during embolisation identified an AVM, bleeding persisted despite extensive re-laparotomy and resolved only after embolisation together with ultrasound findings, this remained highly suggestive of an underlying uterine AVM, illustrating the diagnostic difficulty this condition poses even when imaging is negative.

Conclusion

This case highlights the diagnostic challenge of causality of recurrent secondary PPH, where ultrasound findings may raise the suspicion of a uterine vascular abnormality without definitive confirmation. Early recognition and MDT collaboration are critical in management of such patients, with a key role for interventional radiology in stabilising patients and potentially avoiding major surgery such as hysterectomy.

Clinical timeline

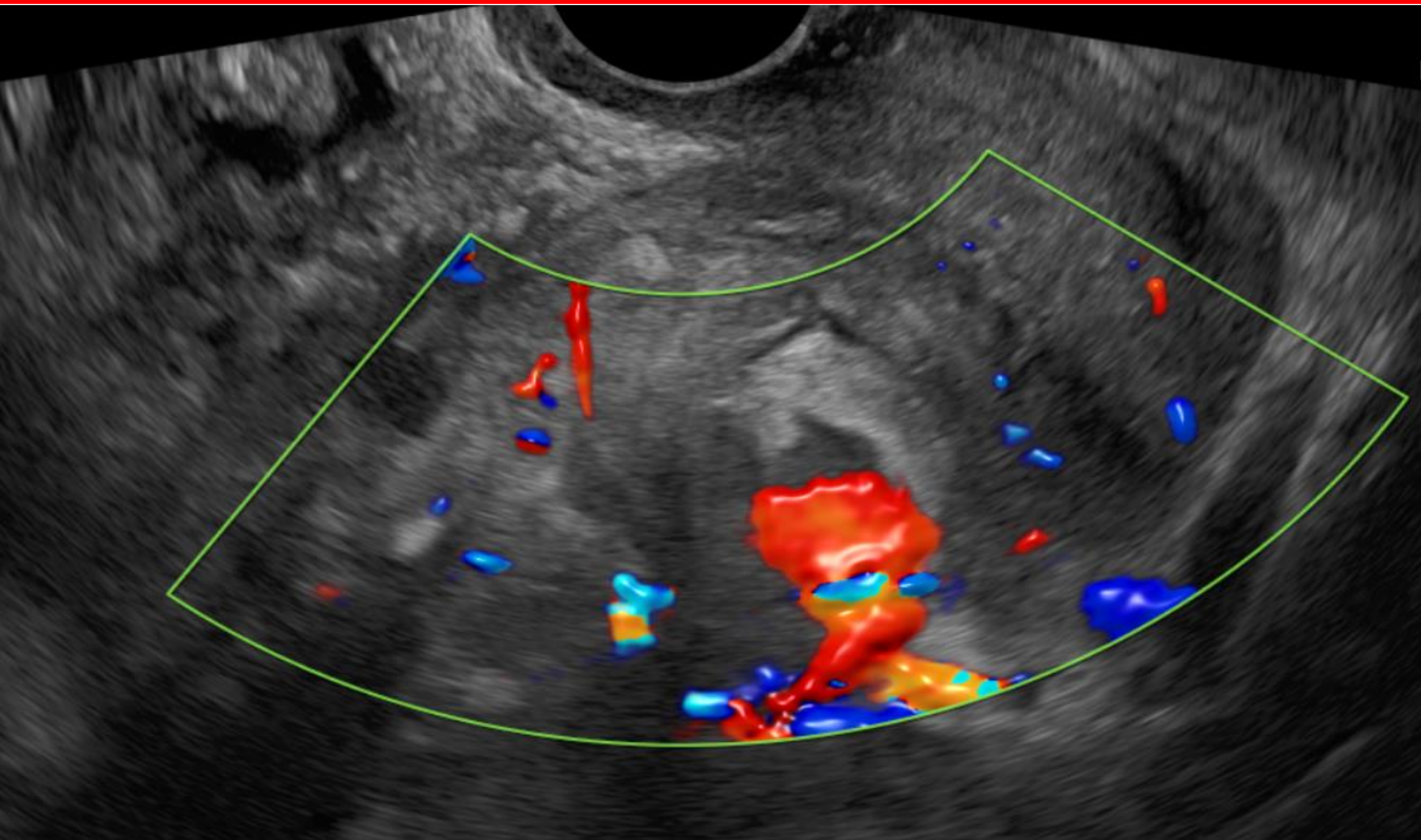
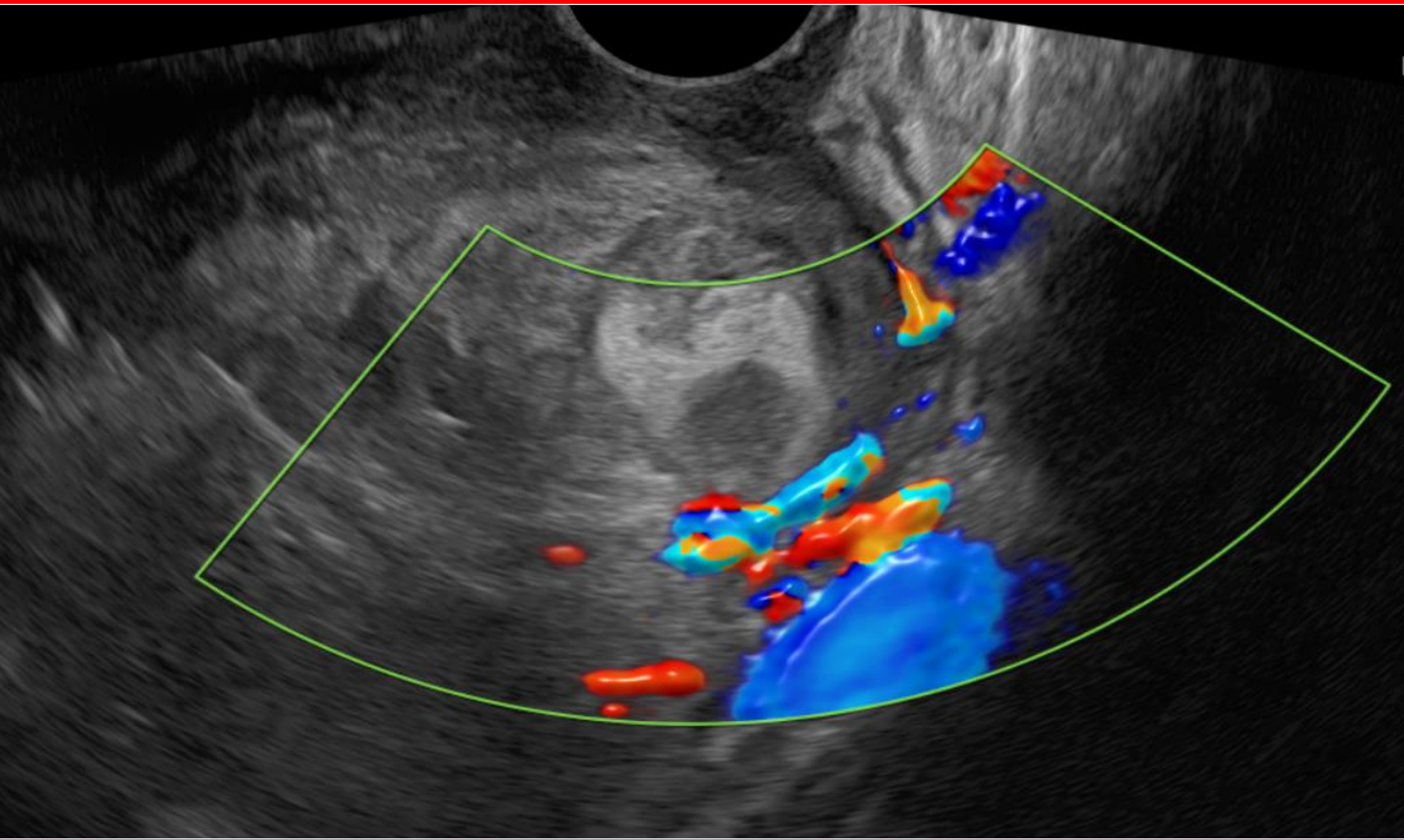


Figure 1&2. Transvaginal ultrasound with colour Doppler: hypervascular lesion at the caesarean section scar

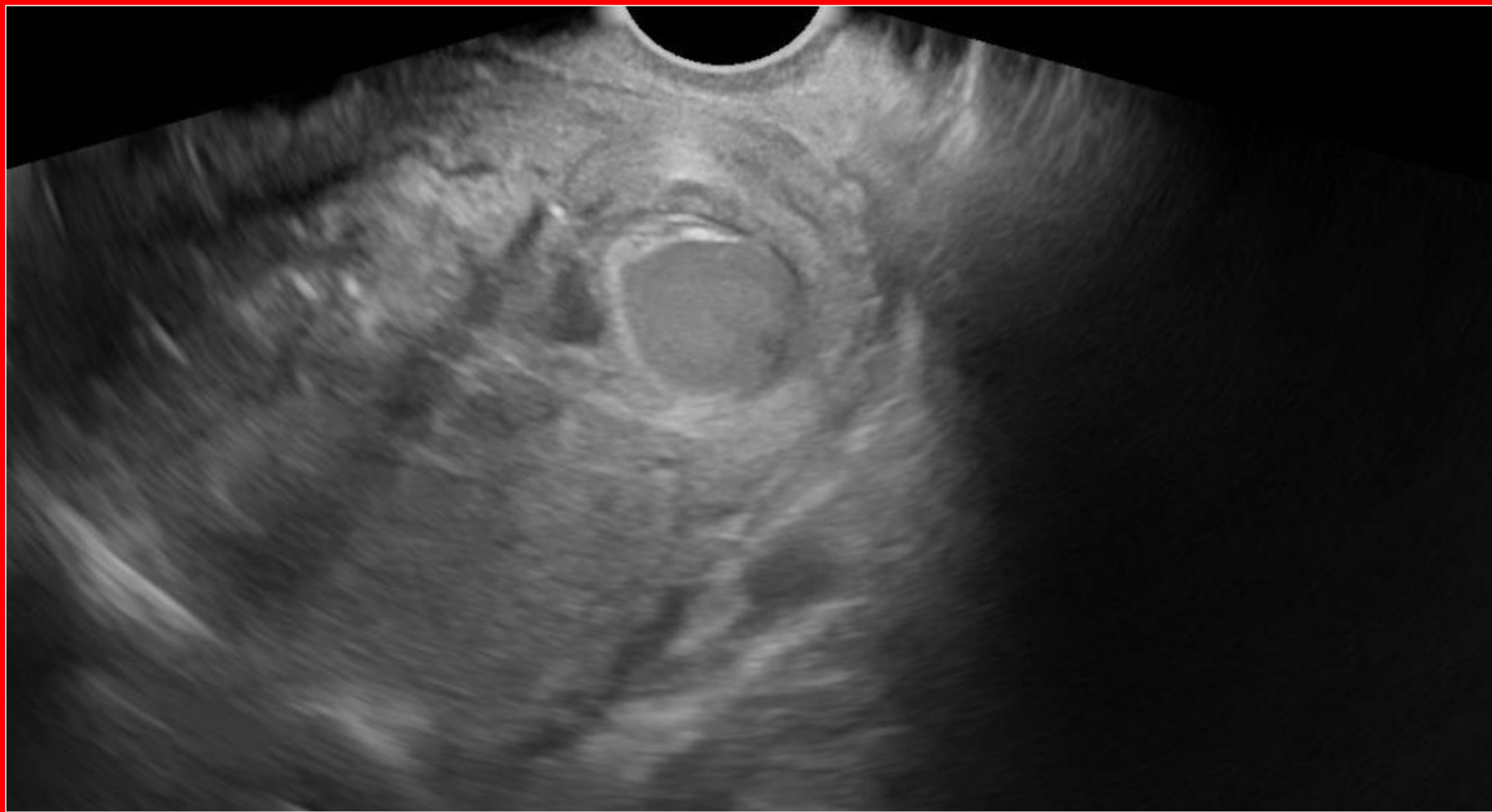


Figure 3. Transvaginal ultrasound with well circumscribed high flow vascular lesion (see additional video)