

A Rare Case of Pseudoaneurysm of Uterine Artery Presenting as Secondary Post Partum Hemorrhage

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RANZCOG
Annual Scientific Meeting 2022
GOLD COAST

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Background

Postpartum hemorrhage (PPH) is a major cause of maternal morbidity and mortality¹. Secondary PPH is excessive bleeding 24hrs to 6 weeks post partum¹. Treatment includes resuscitative measures and interventions addressing the cause. When these are ineffective, unfortunately, hysterectomy may be required to control intractable bleeding^{1,4,5}.

Commonly caused by endometritis +/- retained products of conception. Rarer causes include Gestational Trophoblastic Neoplasia, Arterio-Venous Malformations and Uterine Artery Pseudoaneurysms (UAP)^{1,2}.

Pseudoaneurysms are hematomas communicating with the defect of an arterial wall caused by a deficiency in one or more layers of the arterial wall⁶; blood collects in the surrounding fibrous tissue.

- UAP incidence in Australia is unclear. Most common clinical manifestation is PV bleeding³. UAP is as a rare complication occurring after traumatic delivery; most commonly following LUSCS, but also seen after vaginal birth⁵

- Identified with color doppler studies showing the classic “yin yang” sign (Fig. 1). Confirmed with CT Angiography²

- Uterine Artery Embolization (UAE) is a minimally invasive, safe procedure for management of UAP. It facilitates retention of fertility and avoids a major surgical procedure⁶.

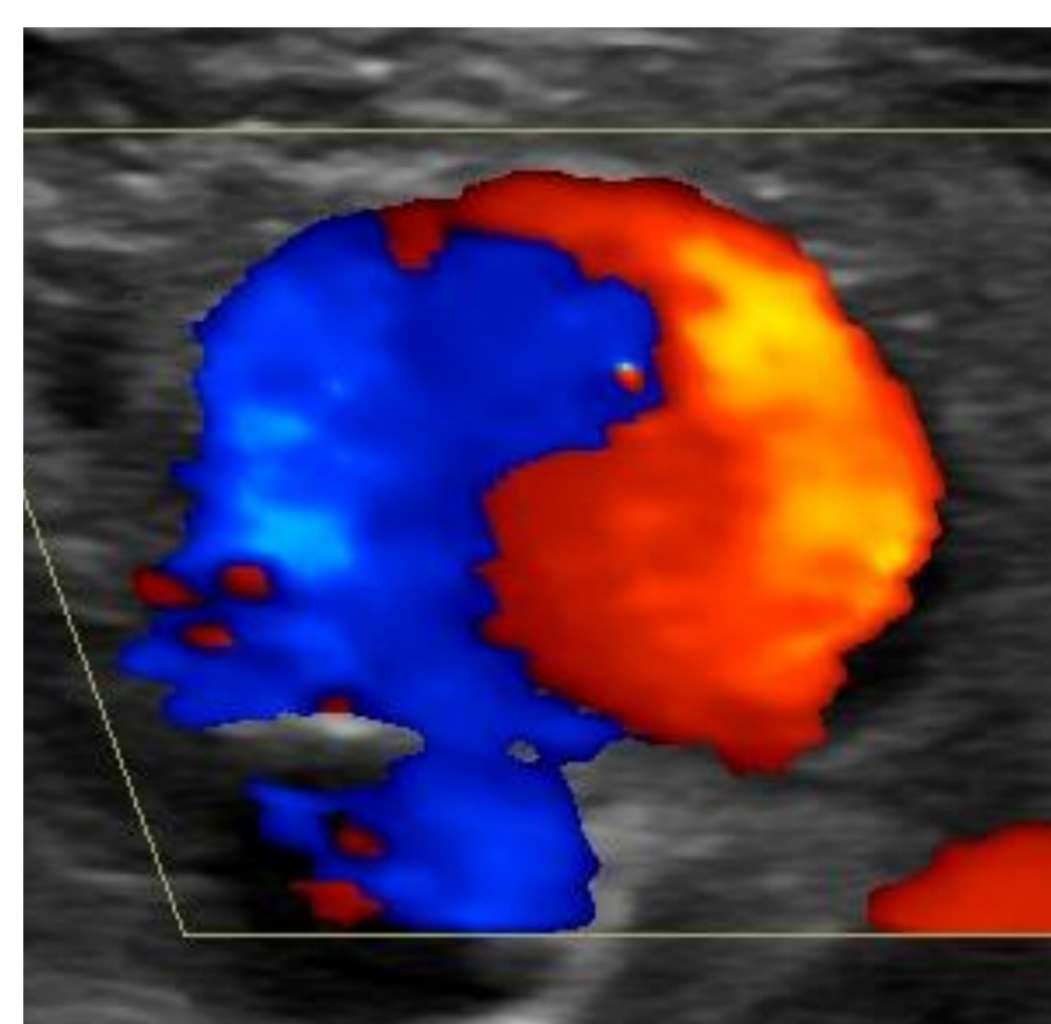


Fig. 1: Case courtesy of Dr Maciej Mazgaj, Radiopaedia.org, rID: 33283

Case

28yo G1P1, experienced secondary PPH post Em-LUSCS at full dilatation (failed Ventouse delivery) due to UAP treated with UAE.

Antenatally uncomplicated pregnancy other than diet controlled GDM. Nil significant medical history; BMI 20. Failed progression of second stage of labor; patient not providing consent initially, delaying Em-LUSCS. EBL 300ml. Post-op - uneventful; discharged from secondary level hospital.

Day 12 post partum: re-presented with secondary PPH.

- Patient deterioration before scheduled Pelvic USS
- Urgent EUA, removal of RPOC, Insertion of Bakri; EBL 3L.
- 4U PRBC 2U PRBC + 2G Fibrinogen + 2G TXA
- Post-operatively ICU transfer to tertiary hospital
- Hemodynamic and PV bleeding improvement

Day 13 post partum: extubated at GCUH ICU.

Day 14 post partum; Bakri balloon removed and stepped down to ward.

Day 15 2300 small amount of bright PV bleeding when mobilizing; bedside USS demonstrating small avascular clot. Day 16 at 0030 additional PV blood loss of 300 ml clots and significant on-going bleeding.

- Em-laparotomy; uterus re-opened via prev. hysterotomy. Small amount of tissue removed, and brace sutures placed.

Ongoing PV ooze noted in recovery. Bedside USS demonstrating well contracted uterus. Vagina packed.



Fig 3: Hb levels over course of clinical journey. Discharge following Em-LUSCS day 1 (left-most arrow). Clinical deterioration at day 12 (middle-left arrow). Clinical deterioration at day 16 (middle-right arrow). Hb level at discharge post stay (right-most arrow)

Discussion held with interventional radiologist to acquire CT angiogram of pelvis – demonstrating pseudoaneurysm in lateral vaginal wall.

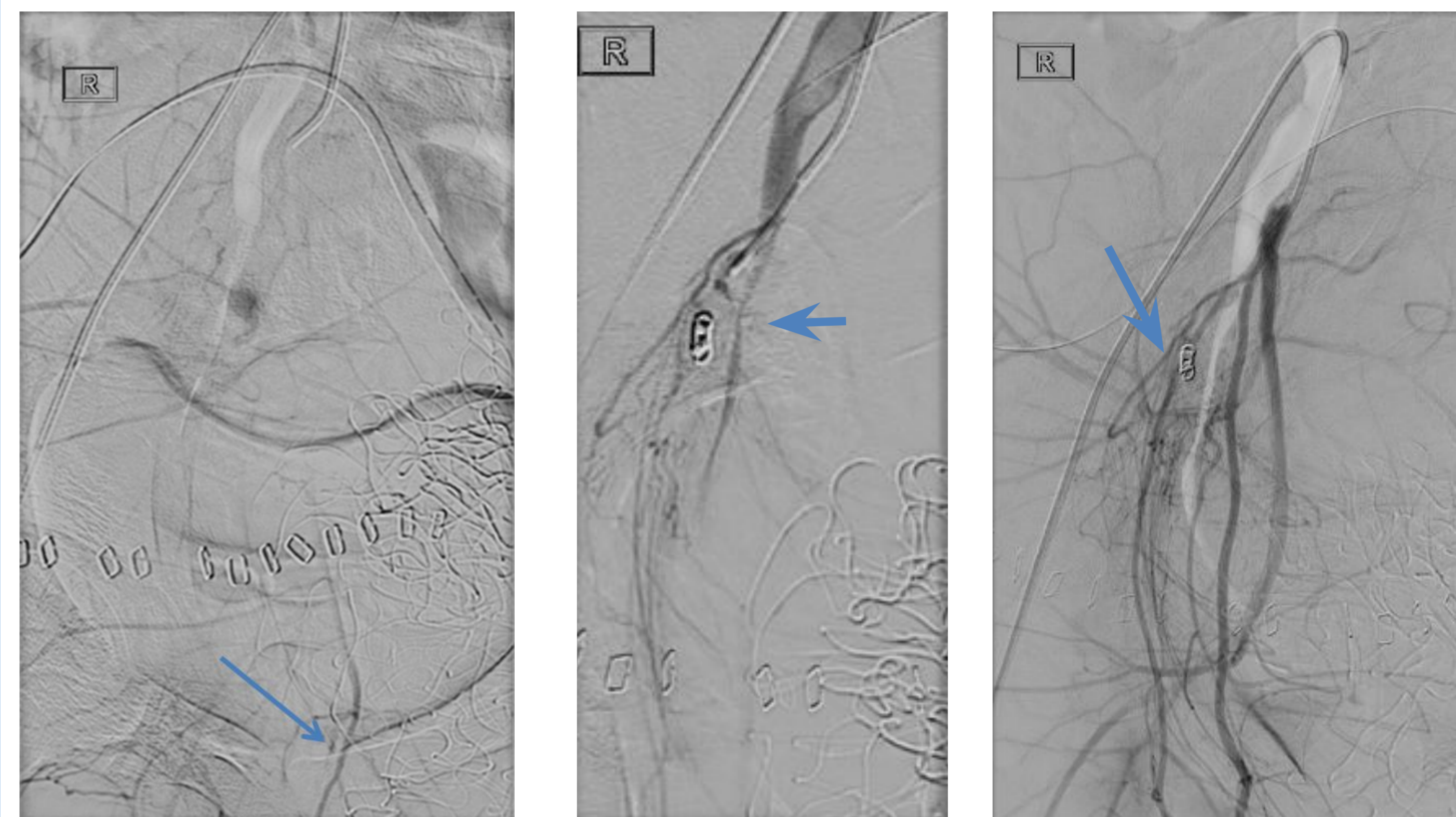


Fig 2: Series of images from UAE demonstrating pseudoaneurysm (left); Placement of coil in context of Pelvic vasculature (middle and right)

Informed decision making with patient regarding UAE in managing bleeding vs. hysterectomy – patient electing for UAE (Fig. 2)

- UAP identified and gel-foam injected to close back-door access
 - 3x2 and 4x2 tornado coils used for feeding vessels
 - Satisfactory haemostasis achieved; vaginal packs and foley removed
- Further 1U PRBC and subsequent post-op period uneventful. Discharged home on day 19 post partum.

OPD review 83 days post partum, 50 days post discharge. Doing well, PV bleeding resolved, yet to start menstruating, grateful for care as inpatient. Advised future deliveries for patient by El-LUSCS

Discussion & Conclusion

This case demonstrates Safe and effective UAP management with UAE. Literature suggests minimal complications and expected return of menstruation in this patient population⁴⁻⁶.

Due to rapid clinical deterioration, this patient forwent a color doppler USS, thus we are unable to comment on efficacy of this imaging modality in diagnosing UAP.

Literature suggests bleeding in UAPs is unpredictable, and thus difficulty in balancing risk of deterioration during delay in transfer to theatre².

Local guidelines recommend managing secondary PPH with antibiotics for the management of endometritis and evacuation of RPOC in the first instance regardless of USS¹.

There is a lack of guidance provided for further investigation in the event bleeding continues despite the interventions suggested¹.

In centers without local expertise or experience, this may create an environment where a fertility sparing option is forgone and definitive control is achieved with a hysterectomy.

UAP should be considered as one of the differentials when managing secondary PPH. A color doppler USS may demonstrate the “yin-yang” sign. However, consider a CT-Angiogram to confirm the diagnosis.

This case demonstrates that despite a paucity of local experience and literature, timely diagnosis of UAP allowed for safe, effective and fertility preserving option of utilizing UAE to spare the uterus.

References

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