



Royal College of
Obstetricians &
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LEFT UTERINE PSEUDO-ANEURYSM FOLLOWING POST-PARTUM HAEMORRHAGE: A CASE REPORT

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INTRODUCTION

This particular case is multidimensional as the patient was first identified and managed for elevated risk of spontaneous preterm birth.

Preterm birth (PTB) is defined as delivery before 37 weeks' gestation. PTB is multifactorial and short cervical length is one of the risk factors that requires management and proper planning for delivery (1).

Uterine artery pseudoaneurysm (UAP) is one of the rare causes of vaginal bleeding following delivery. By definition, a pseudoaneurysm means false aneurysm; there is an abnormal hematoma cavity with turbulent blood flow formed next to the parent vessel. Unlike true aneurysm, this blood-filled cavity is outstretched only by the outer most layer of the artery wall – tunica adventitia (2). Because of this poor support, pseudoaneurysm can be easily ruptured causing further hemorrhage if missed.

The course of events from before and after delivery following by prompt management require efficient and throughout antenatal care by multidisciplinary team.



CASE PRESENTATION

A 27 year old **primigravida** presented to the emergency at 33 weeks gestation with watery discharge accompanied with worsening regular pelvic cramps. She has no previous medical history or surgical history.

To get a proper evaluation picture, a re-visit of her **antenatal care** of the current pregnancy is necessary:

- A **shortened cervix** measured 0.97cm was found incidentally at 25 weeks' gestation.
- An Arabin pessary was fitted and Cyclogest pessary 200mg was started daily as management. The plan was to continue Cyclogest daily until week 34 and to remove Arabin at week 36.
- Because of the elevated risk for spontaneous preterm labour, she was also given two doses of Betamethasone at 29 weeks' gestation at outpatient clinic.



On vaginal examination, **spontaneous rupture membranes** with labour signs were confirmed at 33 gestation weeks.



Her blood results indicated a possible ongoing infection with high WBC of $19.2 \times 10^9/L$ and CRP of 96.6 mg/L. Her hemoglobin remained stable at 11.7 g/dL.



Immediately, she was started on **prophylactic Benzylpenicillin** together with **magnesium sulphate** for fetal neuroprotection in view of an anticipated premature vaginal delivery; all the relevant specialties such as anesthetist, pediatrician, midwife and obstetrician consultant were informed accordingly.



Unfortunately, her cervix remained dilated at 5cm for roughly 6 hours. **Failure to progress** adding on to query **chorioamnionitis** have led to a decision for emergency Caesarean section.



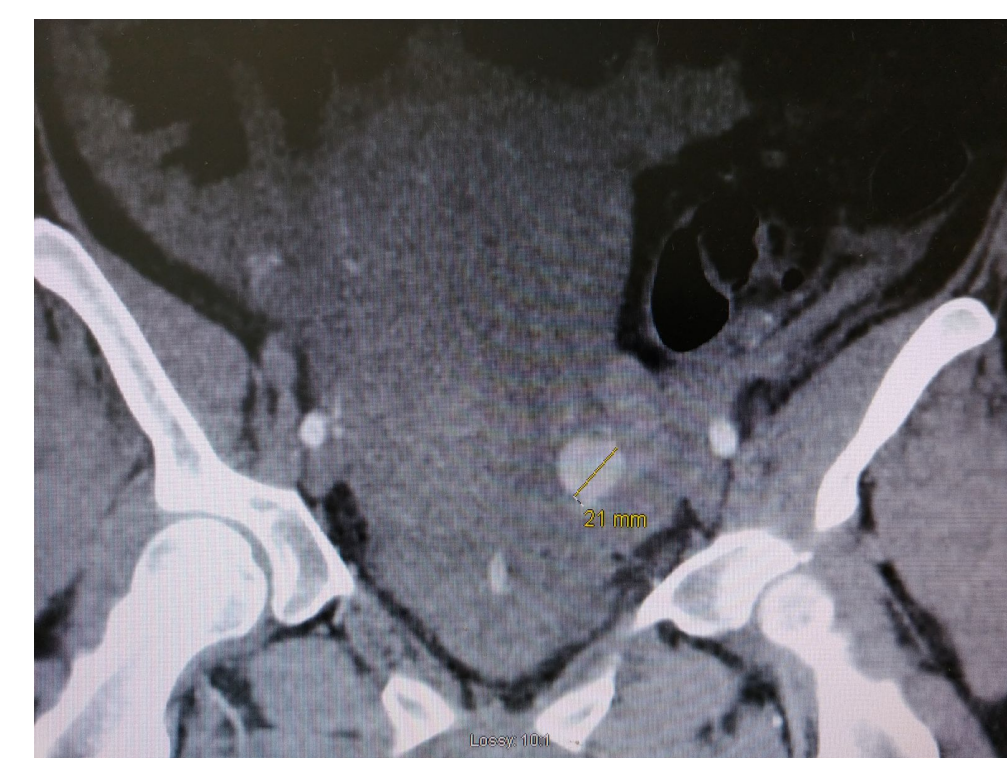
The **Caesarean section** was successful but not without difficulties and challenges. The patient has high BMI of 41 which would increase her risk for post-op complications. The fetal head was already deeply engaged in the pelvis requiring careful manual and forceps extraction with extended uterine incision. A live male infant was delivered and immediately incubated in SCBU.



Patient's estimated blood loss in theater was **2000mls**.

In less than 12 hours post-op, a gush of 500mls fresh vaginal bleeding was noted on changing pads. Patient remained alert but her blood pressure dropped to 60/53mmHg with tachycardia of 117 bpm. She was immediately resuscitated with intravenous Gelofusine, Tranexamic acid, Syntocin 40 units and 2 units of red blood cell

An urgent CT pelvis with contrast and angiogram was organized with the following report:



- High attenuation foci adjacent to the left side of uterus appears as a collection of haematoma.
- An enhancement of 2.1cm structure in arterial phase compatible with a **pseudoaneurysm** next to the left uterine vessel is identified.

The patient was subsequently transferred to interventional radiology where a decision was made to perform **uterine artery embolisation** (UAE).

Ultrasound was used to guide access from the right common femoral artery to the left internal iliac artery and finally to the left uterine artery. After identify the location of this pseudoaneurysm, coil and gelfoam were used to form a “**sandwich technique**” embolisation.

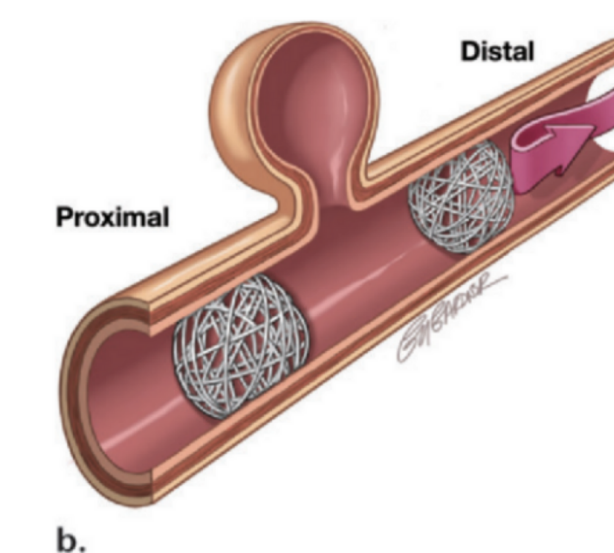


Photo reference: <https://pubs.rsna.org/doi/pdf/10.1148/rg.533115056>
Abdominal and Pelvic Aneurysms and Pseudoaneurysms:
Imaging Review with Clinical, Radiologic, and Treatment Correlation

By performing sandwich technique, we managed to block the blood flow to this abnormal pouch from both the front and the back therefore stopping the further expanding of the pseudoaneurysm.

The sandwich technique should only be used for organs that have collateral arterial supply such as in this case the uterus (3).

Patient recovered well afterwards and to this date no further complications are reported.



DISCUSSION

This particular case requires collaboration from multiple specialties throughout different phases: the midwife and obstetrician team during antenatal care, the anaesthetic team and obstetrician team during emergency and labour setting, the paediatrician, nurse, midwife and obstetrician during the delivery phase, the midwife and ward doctor during post-op phase and finally the interventional radiology team for the embolisation procedure.

All the events's managements are equally important aiding to a higher rate of a successful outcome for both mother and her baby. Routine screening of cervical length for primigravida mothers allow us to identify and manage the elevated risk factor for preterm birth. It is also important to give steroids early when these identified risks are known – we were able to prepare for a premature delivery in an emergency scenario. Following post-partum haemorrhage, strict monitoring allows us to recognise the red flags early and prompt investigations such as CT pelvis helps to evaluate possible causes for bleeding such as UAP. A retrospective study of 22 uterine artery pseudoaneurysm (UAP) cases concludes that the condition is not as rare as we thought and can occur in patients after non-traumatic deliveries, pregnancy termination and without postpartum or postabortal hemorrhage (4). Embolisation is a minimally invasive, safe and highly successful procedure to treat UAP. The “sandwich technique” is recommended for organs with extensive collateral circulation such as the uterus. In theory, by providing distal and proximal embolisation we can stop the continous pressurising of the injured vessels and thus minimised the bleeding and allowed injured vessel to heal (3).

Reference:

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