

Ruptured pseudoaneurysm of the uterine artery treated leading to postpartum haemorrhage treated by embolisation : case report

M. Lamcharfi, M. Zemmari, M. Bendahou, N. Mamouni, S. Errarhay, C. Bouchikhi, A. Banani

(*) Service de Gynéco-obstétrique I, CHU Hassan II, Fès

Abstract : Uterine artery pseudoaneurysm is a rare cause of postpartum haemorrhage. We report the case of a 38-year-old patient 40 days postpartum after caesarean section, who presented with important genital bleeding requiring transfusion. Endovaginal ultrasound and pelvic angioscan diagnosed a UAP. Embolisation of a branch of the uterine artery was performed, stopping the bleeding.

Keywords : Embolisation; postpartum haemorrhage; pseudoaneurysm ; uterine artery

INTRODUCTION

Post-partum haemorrhage is the most frequent complication of childbirth. It most often occurs in the immediate post-partum period. Secondary post-partum haemorrhage (more than 24 hours after delivery) is not uncommon, and the most common causes are retained placenta and post-partum endometritis. False aneurysms or pseudoaneurysms of the uterine artery (UAP) are more unusual, and can lead to massive haemorrhage that can be life-threatening due to delays in diagnosis.

The pathophysiological mechanism of their occurrence is most often traumatic (a rare and poorly understood complication of caesarean section).

These vascular malformations are most frequently observed in the post-partum period, following caesarean section. Their exact incidence is unknown.

Usually, the clinical signs are metrorrhagia. Imaging diagnosis of uterine pseudoaneurysms is based on pelvic ultrasound data coupled with Doppler. This examination allows the lesion to be suspected. Uterine artery angiography is the gold standard for confirming the diagnosis. Embolisation is the treatment of choice, avoiding the need for surgery.

CLINICAL CASE: PATIENT AND OBSERVATION

We report the case of a 32-year-old patient, G1P1, who underwent a caesarean section for suspected acute fetal distress, forty days before her admission to our obstetrics and gynaecology department.

The patient was referred for management of heavy metrorrhagia. On clinical examination she was found to be obnoxious, BP: 80/40mmHg, HR: 110 bpm, with discoloured conjunctiva and significant bleeding from the endocervix.

Our course of action was to hospitalise the patient and admit her to the Operation room for haemodynamic stabilisation, where she underwent biological tests revealing :

- Microcytic hypochromic anaemia Hemoglobin : 8.2g/dl,
- Reactive thrombocytosis: 436 000 cell/mm³,
- Prothrombin time 80%,
- Blood Group O+,
- β HCG <1.2mUI/mL,
- Slightly elevated fibrinogen : 5.17g/l,

- Renal function : correct

We administered to the patient intravenous fluid and of blood products transfusion with three Bags of packed red blood cells and three bags of Fresh Frozen Plasma.

After stabilisation, the patient underwent :

Pelvic ultrasound with Doppler :

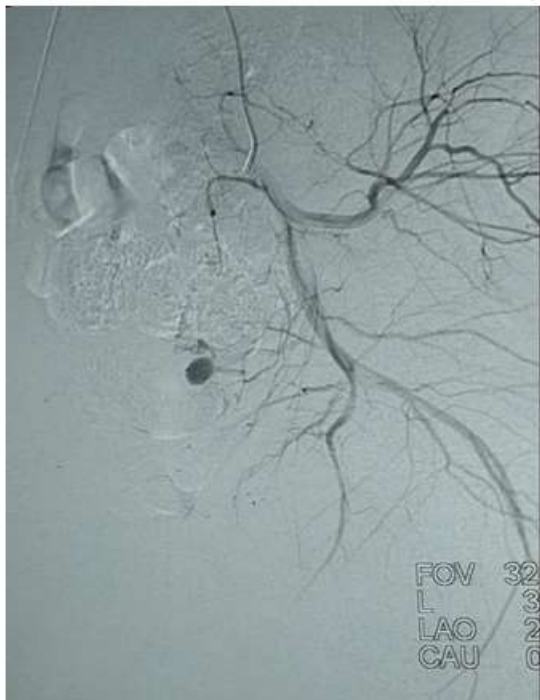
- Normal-sized uterus with thin endometrium
- Presence of a small image of hematometry at the isthmus level with a flow visible on the Doppler
- No effusion, no other abnormalities visible on examination

Abdominal angioscan:

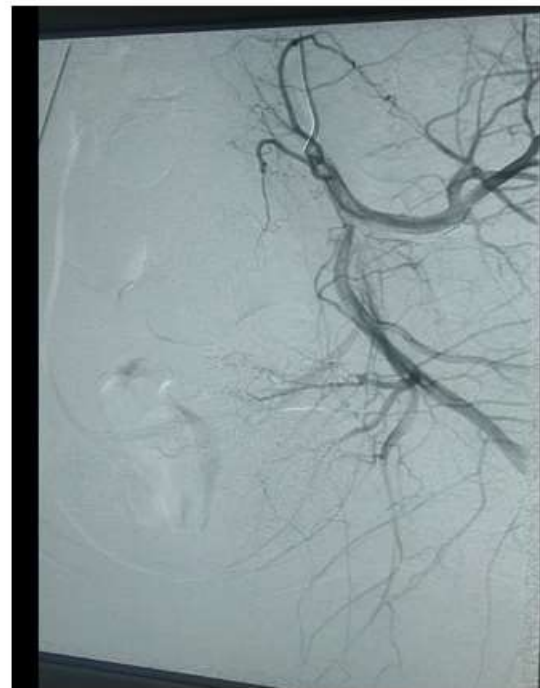
- Aneurysmal formation in a branch of the left uterine artery with no signs of active bleeding.
- Small pelvic intraperitoneal effusion with fluid density

The decision was then taken to admit the patient to CathLab for embolisation of a pseudoaneurysm of a branch of the uterine artery.

The outcome was favourable after treatment with arterial embolisation.



Angiographic image of PAU before embolisation



Angiographic image of PAU after embolisation

RESULTS AND DISCUSSION :

Pseudoaneurysms have been discovered after vaginal and caesarean deliveries, as well as after curettage, myomectomy and cervical conization (3)

They develop due to weakening of the arterial wall, potentially as a result of instrumentation or implantation of the placenta.

Unlike 'real' aneurysms, which are made up of three parietal layers (intima, media, adventitia), pseudoaneurysms are made up of a single fibrous layer forming a pocket in which turbulent flow circulates [6].

Because of the high pressure in the artery, blood can leak out through the connective tissue, causing bleeding. This connective tissue can easily rupture, causing significant haemorrhage into the uterine cavity. The pseudoaneurysm may also resolve, leading to recurrent episodes of metrorrhagia rather than an acute episode (3).

In the series by Pelage et al, involving 14 patients treated for post-partum haemorrhage [6], the authors noted two cases of UAP and one case of arteriovenous fistula. These two entities have the same pathophysiological explanation, the mechanism of which is linked to transfixion or laceration of the arterial walls during uterine trauma, most frequently surgical.

(1)

In their series of 100 post-partum haemorrhages, Sentilhes et al [4] noted ten observations of vascular anomalies (aneurysms, pseudoaneurysm and arteriovenous fistula). (1) Various etiologies for these uterine vascular anomalies have been described: dilatation and curettage, caesarean section [6] and uterine surgery (myomectomy) [8]. One case was described following conization for cervical intraepithelial lesion [9].

Several cases have been described following vaginal deliveries in patients with no known ob-gyn history [4,10], the suspected mechanism being laceration of the genital tract during labour.

The major complication of these vascular anomalies is rupture, which in the majority of reported cases takes the form of external haemorrhage [4], usually in the late post-partum period. To our knowledge, only one description has been published of a uterine artery PA revealed by a pelvic haematoma, without external haemorrhage [7].

CONCLUSION :

Pseudo aneurysm of the uterine artery is a rare but serious complication of uterine trauma and surgery by the obstetrician-gynaecologist, which must be suspected in the context of haemorrhage, whether external or not, particularly in the late post-partum period,

This diagnosis is detected by ultrasound in cases of secondary post-partum haemorrhage, especially if the delivery was by caesarean section. An abdominal-pelvic CT scan with injection can also help in the diagnosis.

However, diagnostic certainty is provided by arteriography of the uterine arteries prior to first-line treatment, which is selective embolisation of the pseudoaneurysm, the treatment of choice. Surgery is reserved for cases where embolisation fails.

REFERENCES

1. Pseudo-anévrisme rompu de l'artère utérine traité par embolisation pour hémorragie du post-partum : à propos de deux cas Ruptured uterine artery pseudo-aneurysm treated by embolization for post-partum bleeding: About 2 cases J. Goupil a,* , A. Fohlen a , M. Linarda , L. Vinatier b, F. Cuillier b, B. Collignon c , J. Storey
2. Uterine artery pseudoaneurysm: An unusual cause of postpartum hemorrhage C . Delesale, P . Dolley, G . Beucher, M. Dreyfus, G . Benoist
3. Diagnosing and treating postpartum uterine artery pseudoaneurysm Kathlyn Parr, MDa , Anisha Hadimohd, MSb , Adrienne Browning, MDa , and Jason Moss, MDc a Department of Obstetrics and Gynecology, Baylor University Medical Center, Dallas, Texas; b Texas A&M Health Sciences Center, Dallas, Texas; c Department of Radiology, Baylor University Medical Center, Dallas, Texas
4. Pelage JP, Laissy JP. Management of life-threatening postpartum hemorrhage: indications and technique of arterial embolization. J Gynecol Obstet Biol Reprod (Paris) 2004;33:4S93–14S.
5. Sentilhes L, Gromez A, Clavier E, Resch B, Verspyck E, Marpeau L. Predictors of failed pelvic arterial embolization for severe post-partum hemorrhage. Obstet Gynecol 2009;113:992–9.
6. Pelage JP, Soyer P, Repiquet D, Herbreteau D, Le Dref O, Houdart E, et al. Secondary postpartum hemorrhage: treatment with selective arterial embolization. Radiology 1999;212:385–9
7. Butori N, Coulange L, Filipuzzi L, Krause D, Loffroy R. Pseudoaneurysm of the uterine artery after cesarean delivery: management with superselective arterial embolization. Obstet Gynecol 2009;113:540–3
8. Asai S, Asada H, Furuya M, Ishimoto H, Tanaka M, Yoshimura Y. Pseudoaneurysm of the uterine artery after laparoscopic myomectomy. Fertil Steril 2008;4.
9. Zanati J, Sergent F, Clavier E, Marpeau L. Late post-conization hemorrhage and false aneurysm of the uterine pedicle. J Gynecol Obstet Biol Reprod (Paris) 2006;35:725–8