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Acquired Uterine Arteriovenous Malformation Revealed by Postpartum Fever: A Case Report and Review of the Literature

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Abstract **Case Report**

Uterine arteriovenous malformations (AVMs) are rare. They most often occur after endo-uterine trauma or, more rarely, are congenital. When they are symptomatic, they can cause recurrent and massive uterine hemorrhage. Diagnosis is made based on pelvic doppler ultrasound, which enables the suspicion of a lesion. Angiography is the reference examination and allows concomitant embolization. We report a new case of acquired arteriovenous malformation revealed by postpartum fever. The diagnosis was suspected by pelvic ultrasound with Doppler. It was confirmed by angioscan in the absence of emergency arteriography. The outcome was favourable after treatment with arterial embolisation.

Keywords: fever, post partum, arteriovenous malformation, doppler ultrasound, angiography, embolisation, surgery, recurrence.

INTRODUCTION

Uterine arteriovenous malformations (AVMs) are rare. They are defined by the presence of arteriovenous fistulae in the uterus, which can be responsible for serious hemorrhage that can be life-threatening [1]

It is diagnosed by pelvic doppler ultrasound and abdominopelvic angioscanner.. Uterine artery angiography plays a decisive role, both diagnostic and therapeutic by arterial embolization [2]. We report the case of a patient with an intrauterine arteriovenous malformation acquired in the post-partum period.

CASE PRESENTATION

A 28 year old pauciparous was referred to the gynaeco-obstetric emergency department for the management of febrile pelvic pain on day 18 of an unscheduled delivery, the immediate after-effects of which were hemorrhagic. The initial clinical examination revealed a febrile patient at 38°C, pain on uterine mobilization associated with non-fetid yellowish leucorrhoea. Her laboratory work-up showed microcytic hypochromic anemia of 6.2, CRP 28, white blood cell count of 19,000, negative urine cytobacteriological examination, and negative vaginal swab.

Pelvic ultrasound revealed a heterogeneous intracavitary image measuring 22 mm/55 mm with an oblong anechogenic image showing arterial doppler waveform. The diagnosis of an arteriovenous malformation was suspected (Figure 1 A-B).

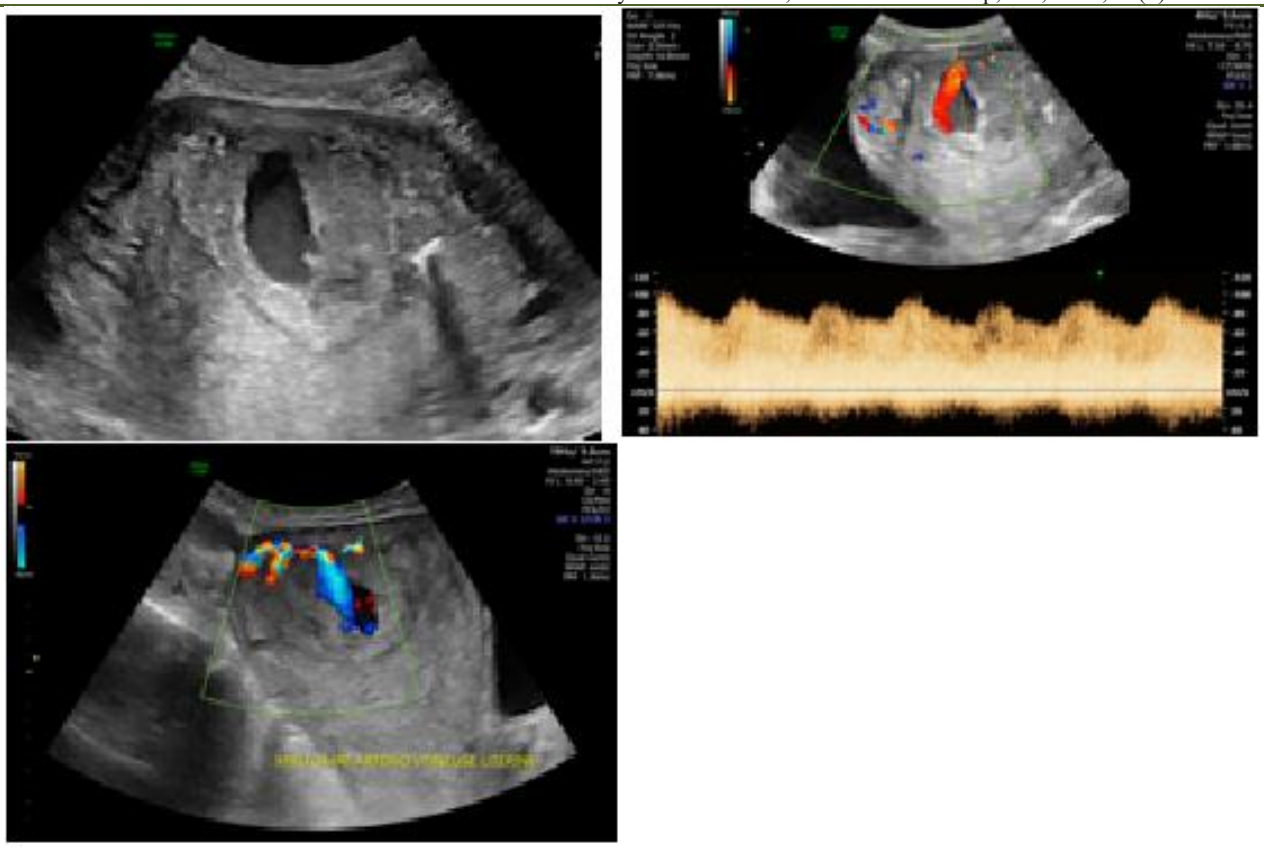

Figure 1: Ultrasound images showing the arteriovenous malformation in B mode (A), and in color mode with individualization of an arterial spectrum (B) within the hypoechoic structure, testifying to its vascular nature.

Given this unusual appearance, an abdomino-pelvic angioscan was performed, revealing (Figure 2).

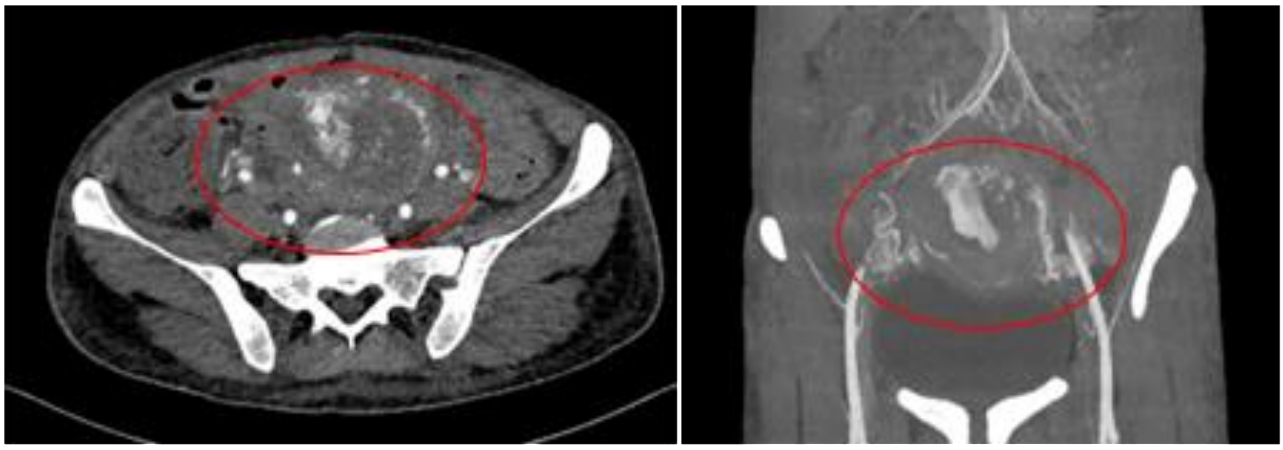

Figure 2: Pregnant uterus containing an arteriovenous vascular structure which appears to communicate with other parietal serpiginous arteriovenous vascular structures appearing to be supplied by a branch of the uterine artery without extravasation of PDC.

The diagnosis of arteriovenous malformation was confirmed, and the patient was put on antibiotic therapy and transfused with 2 units of packed red blood cells. Therapeutic arteriography was considered. The examination was carried out by puncture of the right femoral artery and catheterization.

Hyperselective embolization of the two uterine arteries followed by free-flow embolization using a dilution of glubran and Lipiodol

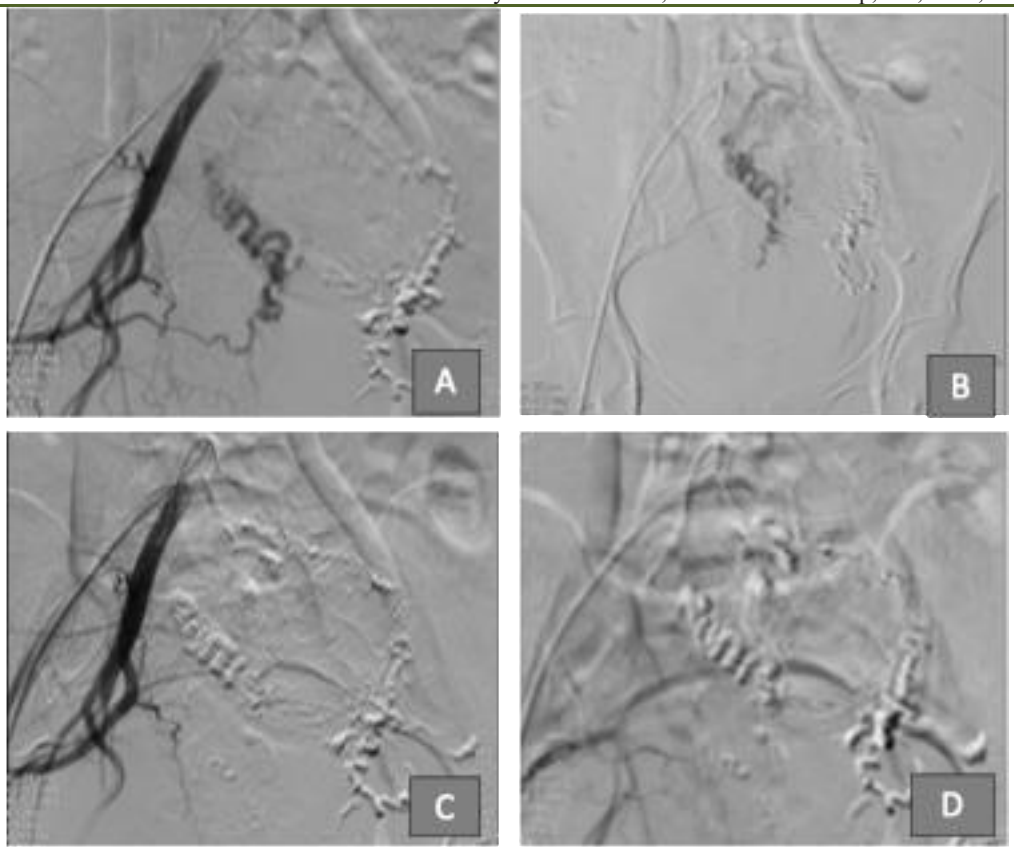

Figure 3: Selective catheterisation of the right hypogastric artery (A) then hyperselective catheterisation of the uterine arteries beyond the cervical branches with opacification of the feeder artery of the arteriovenous malformation (B) (CD): result after injection of lipiodole product

A follow-up CT scan showed: elimination of the vascular structure, with regression of the surrounding haematoma compared with the initial scan

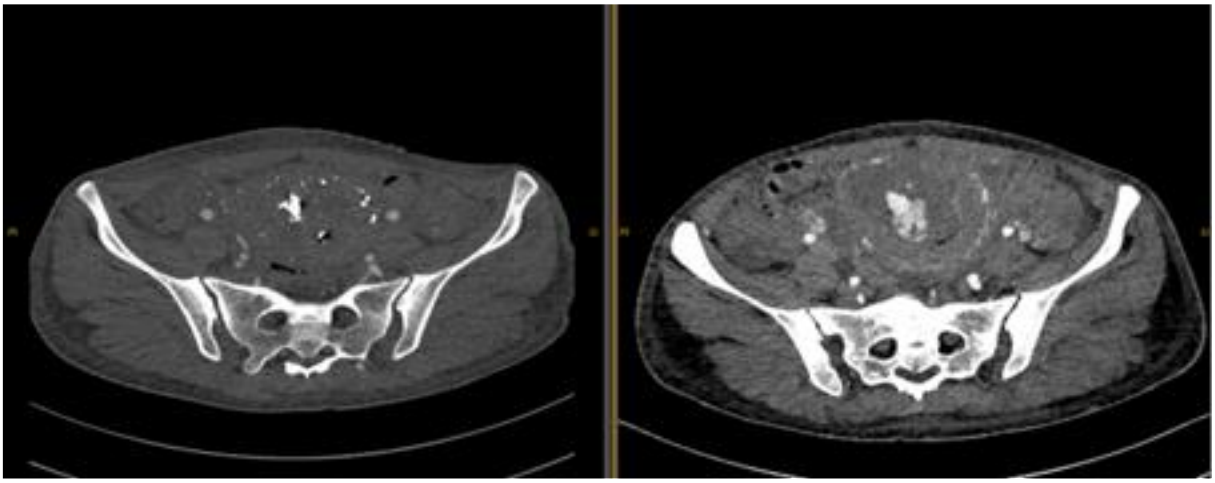

Figure 4: The patient was discharged after showing clinical and biological improvement. One month after embolization, she was reviewed, and she was doing well clinically. Her ultrasound during the review was normal

DISCUSSION

Uterine arteriovenous malformations are vascular malformations forming a mass characterized by the presence of arteries and veins resulting in abnormal communication between the venous and arterial network. The actual incidence of uterine arteriovenous malformations is not well known, but it is thought to be a very rare but serious condition [3] . The seriousness of this condition is linked to the risk of massive genital hemorrhage, which is difficult to control.

These lesions have been described under various names, including cavernous hemangioma, cirsoid aneurysm, racemose aneurysm, wine stains, pulsatile angioma, and arteriovenous fistulas. [4]

They may be congenital (due to an early cessation of vascular embryological development) or acquired following trauma to the uterine tissue (curettage, cesarean section, uterine revision, hysteroscopy, pelvic surgery, etc.), or due to trophoblastic retention, including retention following a spontaneous miscarriage, molar pregnancy, etc [1]. This explains why this condition most often occurs in young women of childbearing age. Our patient gave birth at home and did not benefit from an endo-uterine procedure, so the most likely hypothesis remains trophoblastic retention.

The symptoms of AVMs are most frequently recurrent menometrorrhagia, usually profuse and resistant to medical treatment in young women. However, the size and location of AVMs vary, so the clinical manifestations are diverse, ranging from symptomatic silence to cataclysmic, life-threatening genital hemorrhage [4]. sometimes they manifest as pelvic pain or even post-coital metrorrhagia or isolated anaemia [5]. two paraclinical examinations are useful in diagnosing AVMs: pelvic doppler ultrasound, MRI or arteriography[1].

Pelvic doppler ultrasound is the first-line examination to be carried out in the presence of such symptoms; the ultrasound appearance is fairly characteristic, showing a heterogeneous intramyometrial lesion with irregular contours, consisting of a juxtaposition of small anechogenic or hypoechoic islands, sometimes tubular, contiguous with small masses of intermediate echogenicity. The endometrium has a normal appearance, although in this context the presence of intracavitary clots is possible in the form of heterogeneous uterine endocavitary material which is avascular on Doppler ultrasound [6].

In color Doppler, these islets are the site of clear hypervascularisation, with turbulent arterial-type circulating flow, which can give a spectrum replica effect (or aliasing).

MRI remains crucial for the diagnosis of AVMs; on the one hand, it has the advantage of eliminating diagnoses such as uterine inflammatory and neoplastic lesions and, on the other hand, it allows precise geographical localization of the malformation by visualizing the feeder vessels [1].

Angiography or arteriography remains the reference examination for this type of vascular malformation. It has a dual role. It confirms the diagnosis and also plays a therapeutic role by allowing the vessels involved in the malformation to be precisely visualized, enabling simultaneous arterial embolization. [1], [6]. The main differential diagnoses are uterine artery pseudoaneurysm, gestational trophoblastic disease and trophoblastic retention. Trophoblastic retention is the main differential diagnosis of AVMs and is also a factor favoring the appearance of AVMs, and the two diagnoses may coexist in the same patient [6]. It is important to be wary of any post-abortal or post-partum metrorrhagia and not to mistake AVMs for trophoblastic retention, as the treatments differ, and a simple endo-uterine procedure (curettage or aspiration) can cause massive haemorrhage.

The therapeutic aspect can range from therapeutic abstention in the face of asymptomatic AVMs, to selective arterial embolization, which remains the method of choice in young women, enabling subsequent fertility to be preserved. It should not be forgotten that embolization is an invasive and irradiating examination, requiring experienced radiologists and a suitable technical platform. What's more, although its advantages over radical surgery are undeniable, serious complications, although extremely rare, have been reported, and are most often linked to embolization of the internal iliac artery, leading to skin necrosis, neurological deficits, and recto-vesico-vaginal fistulas [1], [6]. In our patient, the immediate post-embolization effects were favorable.

In the event of failure or hemodynamic instability in the patient, hysterectomy remains the treatment of course, but as it is often performed on young women, it should only be used as a last resort [7].

Clinical, ultrasound and MRI follow-up, the frequency of which has not yet been clearly defined, is necessary in order to check that the AVMs has resolved properly and has not recurred. In the literature, clinical, ultrasound and MRI monitoring is typically performed at 1, 3, 6 months and one year. [6]

CONCLUSION

Arteriovenous malformations are a rare but possible etiology of persistent metrorrhagia, particularly in the post-partum or post-abortal period. Diagnosis of such lesions requires Doppler ultrasound as the first line of defense, followed by arteriography to confirm the diagnosis. Treatment is based essentially on arterial embolization, which, although invasive, avoids the need for surgery. In our case, We draw the attention of practitioners to the significance of being acquainted with this entity and the diagnostic approach in case of post-partum or post-abortal bleeding.

REFERENCES

1. S. Sanguin *et al.*, « Diagnostic et traitement des malformations artério-veineuses utérines (MAVU) en 2011 », *Gynécologie Obstétrique Fertil.*, vol. 39,

nº 12, p. 722-727, déc. 2011, doi: 10.1016/j.gyobfe.2011.08.013.

2. N. Benslima, A. E. Khamlichi, M. Jiddane, M. R. E. Hassani, et R. Dafiri, « Pseudo-anévrisme de l'artère utérine : cause atypique de métrorragies », *Imag. Femme*, vol. 27, nº 1, p. 49-53, mars 2017, doi: 10.1016/j.femme.2016.10.002.
3. M. Chassang, G. Baudin, J. Delotte, C. Trastour, A. Bongain, et P. Chevallier, « Rôle de l'imagerie en cas de métrorragies après fausse couche spontanée ou interruption volontaire de grossesse », *J. Gynécologie Obstétrique Biol. Reprod.*, vol. 44, nº 5, p. 398-402, mai 2015, doi: 10.1016/j.jgyn.2014.10.013.
4. I. Geerinckx, W. Willemsen, et T. Hanselaar, « A syndromal and an isolated form of uterine arteriovenous malformations: two case-reports », *Eur. J. Obstet. Gynecol. Reprod. Biol.*, vol. 100, nº 1, p. 87-91, déc. 2001, doi: 10.1016/S0301-2115(01)00462-6.
5. M. Jalal, R. EL Qasseh, S. Majidi, M. Moutahir, A. Lamrissi, et S. Bouhya, « Acquired uterine arteriovenous malformations: A case report », *Int. J. Surg. Open*, vol. 48, p. 100555, nov. 2022, doi: 10.1016/j.ijso.2022.100555.
6. Y. Ardaens, J. Bigot, J.-M. Levaillant, Ch. Lions, et C.-A. Renan, « Chapitre13 - Pathologie du myomètre », in *Echographie et Imagerie Pelvienne en Pratique Gynecologique (Sixième Édition)*, Y. Ardaens, J.-M. Levaillant, P. Coquel, et T. Haag, Éd., Paris: Elsevier Masson, 2017, p. 413-465.
7. H. Yahi-Mountasser, P. Collinet, M. Nayama, M. Boukerrou, Y. Robert, et P. Deruelle, « Les malformations artério-veineuses intra-utérines: À propos de 4 cas », *J. Gynécologie Obstétrique Biol. Reprod.*, vol. 35, nº 6, p. 614-620, oct. 2006.