Uterine Arteriovenous Malformation—an Unusual Aetiology of a Common Symptom

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INTRODUCTION

- Uterine arteriovenous malformation(UAVM) is a rare gynaecological condition with very low incidence and potential risk of life-threatening bleeding[1]
- Presents with common gynaecological symptoms such as persistent menorrhagia, anaemia, dysmenorrhoea, dyspareunia, and abdominal pain, and is often misdiagnosed given its rarity[2].
- UAVM is an abnormal connection between the uterine arterial branches and the uterine venous plexus, which can be either congenital or acquired.
- Congenital UAVM is extremely rare, formed at embryonic stage as part of the normal differentiation of primitive vascular structures.
- Acquired UAVM is secondary to trauma, infection, or following uterine surgery, including curettage, caesarean section, and abortion[2].
- Diagnosis, although challenging, is crucial to avoid risk of torrential bleeding[3].

CASE DETAILS

- A 34-year-old nulliparous woman presented with heavy menstrual bleeding accompanied by severe dysmenorrhoea of long duration.
- Symptoms progressively worsened, especially over the past 5 years.
- Based on her clinical symptoms and radiological findings, a presumptive diagnosis of endometriosis was made.
- She underwent relevant investigations and received symptomatic treatment.
- Despite management, her symptoms did not improve.
- Underwent an elective hysterectomy with bilateral salpingo-oophorectomy at the patient's request
- Pre-operative MRI showed no significant findings apart from polycystic ovarian morphology of both ovaries.

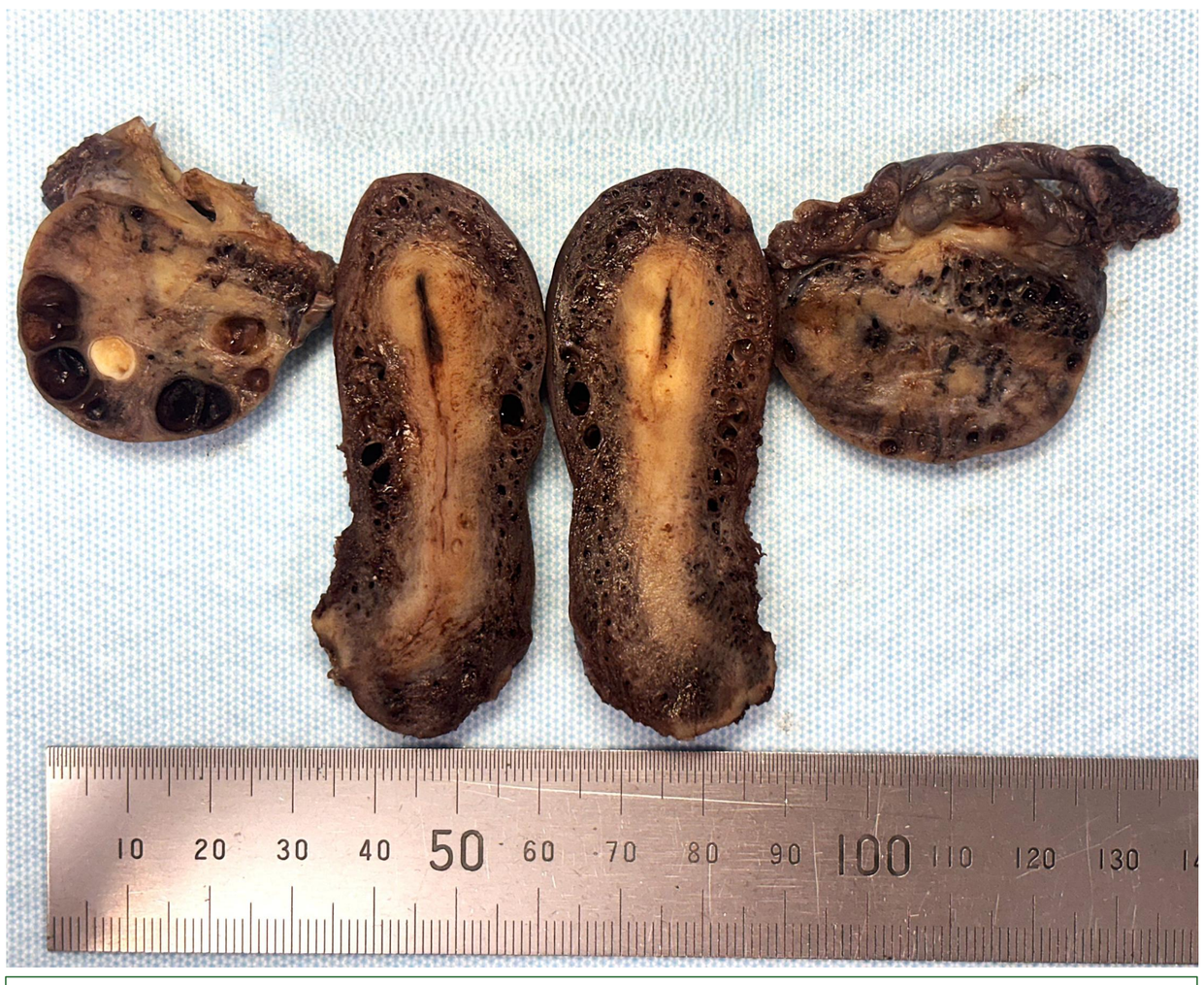
MICROSCOPY

- The uterus demonstrated prominent thick- and thin-walled arterial and venous vessels of varying calibers within the myometrium and cervical stroma.
- Histology was consistent with an arteriovenous malformation.
- Additionally, a minute benign endometrial polyp was identified.
- Multiple follicular cysts were present in both ovaries.
- Prominent vessels, as described in the uterus, were evident at the periphery of both ovaries and fallopian tubes.
- There was no evidence of malignancy.

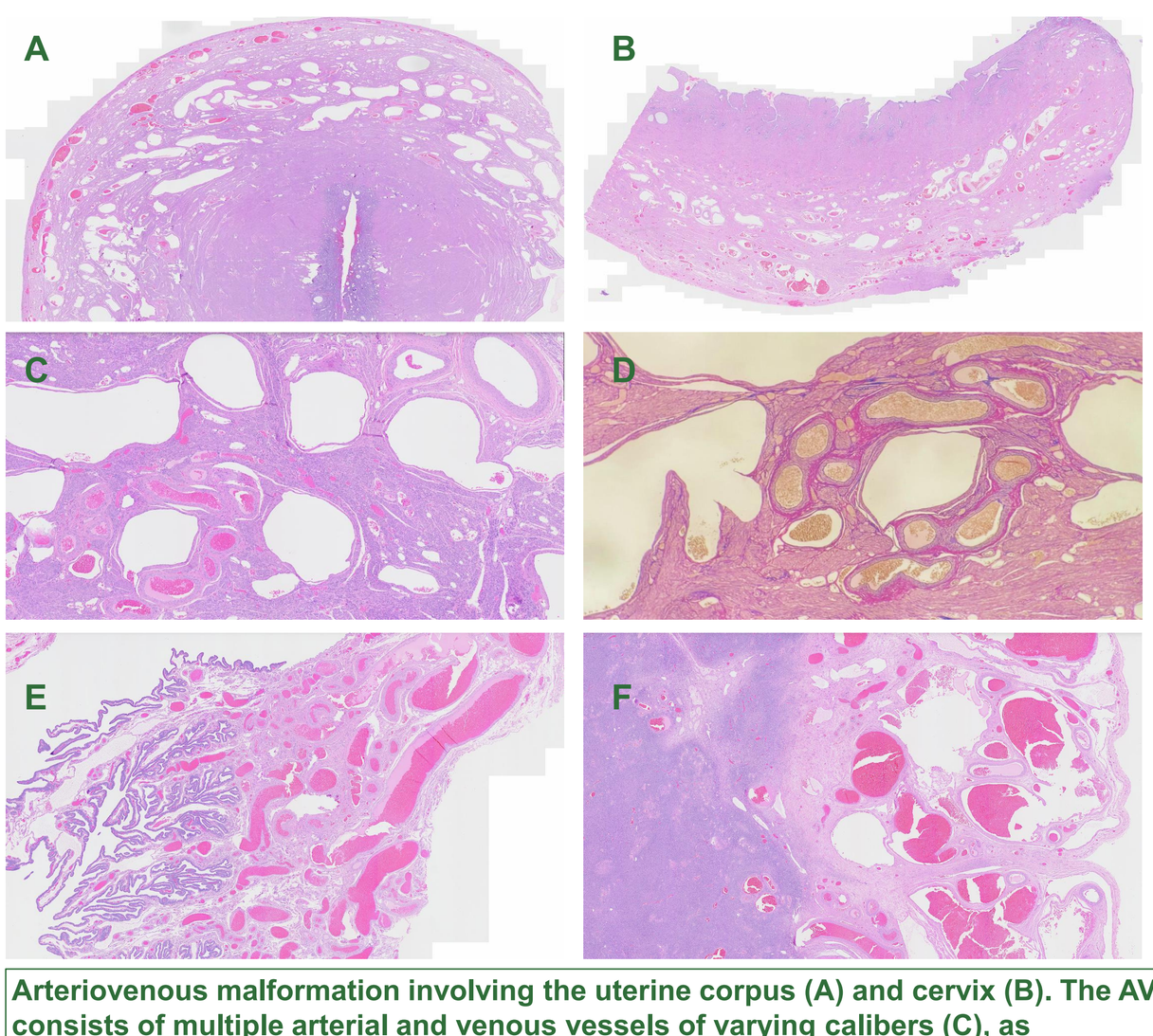
CONCLUSION

- UAVM was first reported by Dubreuil and Loubat in 1926 [4].
- O'Brien et al. reported that the incidence of uterine arteriovenous malformations is approximately 4.5% [5].
- Advancements in diagnostic technologies and sophisticated examination procedures, the incidence may be gradually increasing.[1]
- Accurate preoperative radiological and clinical diagnosis is crucial, as uterine instrumentation performed for abnormal uterine bleeding can inadvertently cause significant haemorrhage[2].
- On ultrasonography, UAVM appears as irregular, anechoic, tortuous tubular structures within the myometrium.
- Doppler studies are often diagnostic; spectral doppler demonstrates high-velocity, low-resistance blood flow.
- Traditionally, angiography has been employed for diagnosis of UAVM and remains gold standard, however it is an invasive procedure[2,3].
- As in our patient's case, many suspected instances are diagnosed during hysterectomy.
- Treatment options vary, with uterine artery embolisation being the most commonly utilised fertility-preserving intervention.
- Hysterectomy, although more invasive, provides definitive treatment by resolving symptoms and permitting histological examination[3].

Declaration of conflict of interest: All authors confirm that this work is not affiliated with any commercial sponsor or external organisation that could affect independence or objectivity.



Multiple small, blood-filled spaces involving the myometrium and cervix resulting in a spongy appearance.



Arteriovenous malformation involving the uterine corpus (A) and cervix (B). The AVM consists of multiple arterial and venous vessels of varying calibers (C), as highlighted by EVG staining (D). Similar vascular structures observed around the fallopian tubes(E) and ovaries (F).

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