RANZCOG Annual Scientific Meeting 2022
GOLD COAST
Transformation: Making Waves

Large Arteriovenous Malformation Following Miscarriage Managed by Uterine Artery Embolization

W. Buksh, A. Suker

NSW GOVERNMENT Health
Northern NSW Local Health District

Introduction

Uterine Arteriovenous Malformations (AVM) are a vascular structural anomaly, characterised by abnormal connection between arteries and veins in the uterus that bypass the capillary system.[1] They are a rare condition associated with abnormal profuse vaginal bleeding. Diagnosis is assisted by doppler ultrasound and MRI.[1]

Case

A 34-year-old female presented to Early Pregnancy Assessment Service with threatened miscarriage of an unplanned pregnancy at 6 weeks gestation. She was a G4P2 with two previous caesarean sections, followed by a surgical termination requiring 3 additional dilation and curettage's (D&C) for retained products of conception (RPOC).

History revealed 3 weeks of light vaginal bleeding, which was initially managed conservatively. Dating ultrasound showed an intra uterine gestation with foetal pole measuring 5.2mm and no foetal heartbeat. A repeat ultrasound 8 days later revealed an empty gestational sac measuring 20mm, confirming a missed miscarriage. The ultrasound also demonstrated multiple dilated tubular vascular spaces within the myometrium adjacent to gestation sac, with a high velocity flow pattern on colour doppler interrogation - measuring 9.7 x 3.3cm with surrounding increased echogenicity. Findings were concerning for uterine AVM. *Figure 1* An MRI pelvis was performed to further delineate this abnormality. *Figure 2*

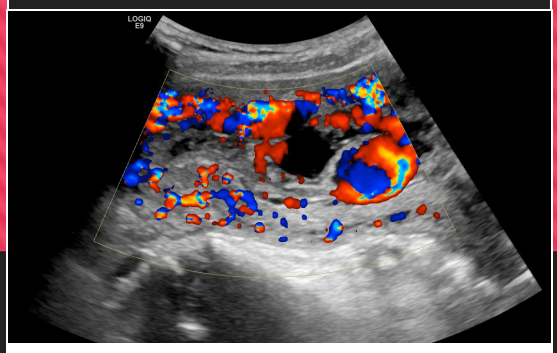

Figure 1: Pelvic Ultrasound suggestive of AVM

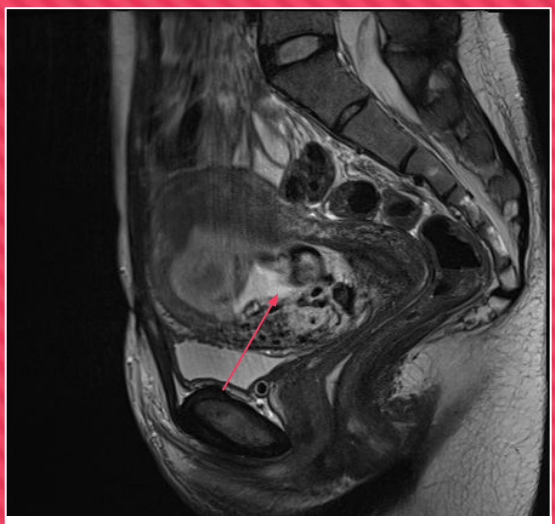

Figure 2: MRI suggestive of uterine AVM present above the Caesarean section scar

The case was discussed in a Multi Disciplinary Team setting involving Gynaecologists and Interventional Radiologists, with consensus to transfer the patient to tertiary centre for further management.

The patient opted for a fertility sparing treatment option, where she subsequently had uterine artery embolization (UAE) followed by hysteroscopy, D&C for RPOC. Five days later she had a pelvic ultrasound which confirmed resolution of the AVM, however, contents concerning for RPOC remained.

Two weeks following UAE, the patient had ongoing vaginal bleeding. Ultrasound imaging at this stage was suggestive of AVM recurrence. The patient subsequently underwent a second UAE procedure (21 days after the first UAE). No D&C of the uterus was performed at this time. Bleeding settled following the second UAE, and a Mirena was inserted for contraception.

A pelvic ultrasound two months following the second UAE showed no features of AVM recurrence.

Discussion

Acquired AVM often trail a history of uterine trauma such as caesarean section, curettage procedures, or pelvic surgery.[2] Overall there is limited research into the effectiveness of treatment modalities, with the mainstay of current literature including case reports. Traditionally the treatment of choice for uterine AVM was hysterectomy. Emerging evidence suggests conservative therapy as a safe option in stable patients.[3] Endovascular management with transcatheter embolization (TCE) obstructs blood flow to the AVM. TCE is a promising alternative for patients wanting to preserve fertility and avoid major surgery, with success rates following repeated embolization above 90%. [1] Further studies are required to compare hysterectomy vs medical vs embolization in the management of uterine AVM.

1. Yoon DJ, Jones M, Taani JA, Buhimschi C, Dowell JD. A Systematic Review of Acquired Uterine Arteriovenous Malformations: Pathophysiology, Diagnosis, and Transcatheter Treatment. AJP Rep. 2016 Mar;6(1):e6-e14. doi: 10.1055/s-0035-1563721. Epub 2015 Oct 12. PMID: 26929872; PMCID: PMC4737639.
2. Hashim H, Nawawi O. Uterine arteriovenous malformation. Malays J Med Sci. 2013 Mar;20(2):76-80. PMID: 23983582; PMCID: PMC3744004.
3. Ruth Habte, Ali Yosef, Mohamed Bedaiwy, Medical Management of Uterine Arteriovenous Malformation: A Case Series, European Journal of Obstetrics & Gynecology and Reproductive Biology, Volume 274, 2022, ISSN 0301-2115,