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Case Report

Case report of massive haemorrhage following medical miscarriage requiring uterine artery embolization

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ABSTRACT

Uterine arteriovenous malformations (AVM) are an abnormal, nonfunctional connection between uterine arteries and veins. These occur mostly after damage to uterine tissue following uterine surgical procedures. They may occur following even spontaneous abortion and resolve with expectant management without requiring a medical/surgical intervention. We report an interesting case of a woman who presented after medical abortion with uterine AVM with heavy bleeding requiring radiological intervention. Mrs. K, multiparous woman was referred in hypovlomeic shock from a district hospital. She had a medical abortion with Misoprostol at 9 weeks of gestation 2 months ago. No history of any curettage. She was stabilized and received appropriate transfusions. Sonography revealed a normal size uterus, with retained products of conception adjacent to a focal echogenic mass of size 5.8×4.6 cm in the posterior myometrium, with vascularity into and outward from the lesion suggestive of an AVM. The same was confirmed by CT angiography and an urgent uterine artery embolization (UAE) was undertaken. She withstood the procedure and recovered well. Anticipating spontaneous resolution of the retained products of conception, she was discharged home after clinical improvement and advised permanent method of contraception. Uterine AVM should be suspected in a woman who presents in child bearing age with heavy bleeding per vaginum following childbirth/abortion. Attempts of curettage may prove to be fatal in such scenarios. A high index of suspicion can help in an early diagnosis and seeking appropriate interventional assistance.

Keywords: Medical miscarriage, AV malformations, Uterine artery embolization, Abortion

INTRODUCTION

Uterine aretrio-venous malformations (AVM) are rare condition and can be associated with life threatening haemorrhage in reproductive age group women. Generally it is seen following infection, uterine trauma in the form of surgeries like curettage, caesarean section, and malignancies like persistent trophoblastic disease, choriocarcinoma, endometrial/cervical carcinoma and sometimes following child birth.[1,2] It could be congenital rarely and management of congenital uterine AVM could be challenging.[2,3] It is not uncommon to find asymptomatic or self-limiting AVM following surgical management of miscarriages, life threatening haemorrhages may sometimes force us to proceed with interventions like uterine artery embolization (UAE) or hysterectomy. We are presenting a case of uterine AVM presenting as life threatening haemorrhage following medical management of miscarriage which was successfully tackled with timely UAE.

CASE REPORT

Mrs. K, 31 years old, P2L2A1, previous spontaneous vaginal deliveries, was referred with complaints of heavy menstrual bleeding with passage of clots for 1 week following a brief episode of spotting per vaginum. She had a medical abortion with vaginal misoprostol at 9 weeks of

gestation 2 months ago. There was no history of curettage following abortion. On examination, she was pale, with symptoms and signs of hypovolemic shock. Abdomen was soft and pelvic examination was unremarkable except for bulky uterus with ongoing bleeding per vaginum.

She was resuscitated and stabilized with two units of packed cell transfusion and crystalloids. Her haemoglobin was reported to be 5 g%, and bleeding time, clotting time were within normal limits. Serum β-hCG was less than 5 IU/ml. The sonography revealed a normal size anteverted uterus, with retained products of conception adjacent to a focal echogenic mass of size 5.8×4.6 cm in the posterior myometrium, with vascularity into and outward from the lesion suggestive of an AVM (Figure 1). The peak systolic velocity of flow within the mass was 42.3 cm/s with a resistance index (RI) of 0.39. There was absence of any adnexal mass. The same was confirmed by CT angiography showing dilated bilateral uterine arteries, tortuous vessels in posterior myometrium with arterial phase enhancement of the right uterine vein and she was planned for an UAE (Figure 2). Bilateral UAE was performed using 5-7 μ polyvinyl alcohol (PVA) particles till complete occlusion of bilateral feeding vessels (Figure 3). She withstood the procedure and recovered well.

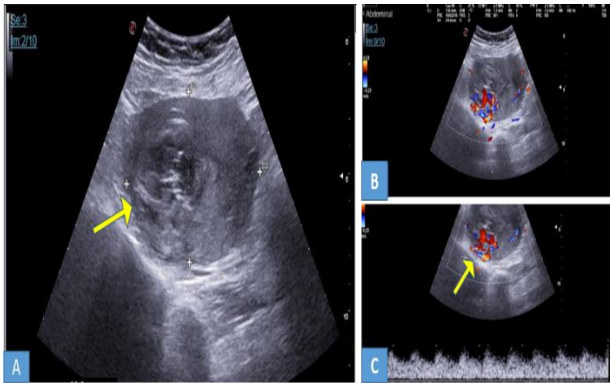

Figure 1: Ultra sound image of grey scale (A) mimicking retained products; and (B, C) colour Doppler shows AV malformation.

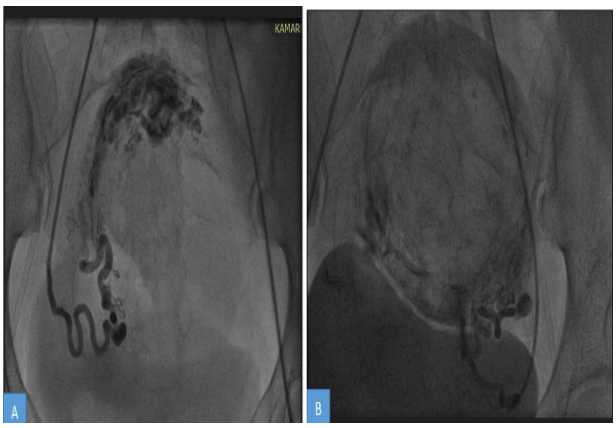

Figure 2: CT angiogram shows uterine AV malformation.

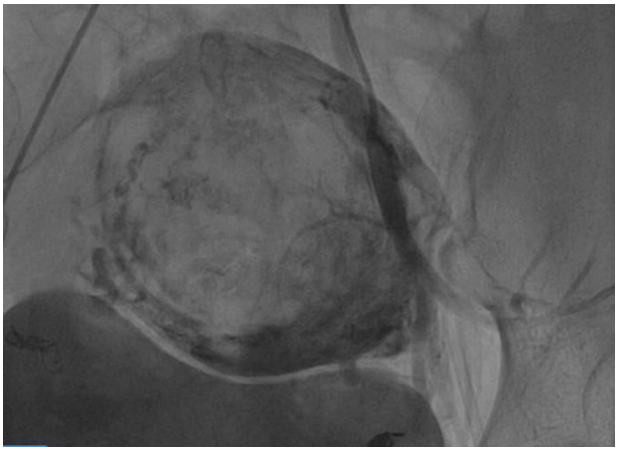

Figure 3: Post uterine artery embolization of CT angiogram.

DISCUSSION

The AVM include any abnormal vascular connection between arteries and veins which usually bypasses capillaries and the exact incidence of uterine AVM is unknown.[1] However, the incidence of acquired uterine AVM is on the rise. Whether congenital or acquired, the uterine AVM are extremely fragile and prone for bleeding.[3,4] In congenital uterine AVM, the abnormal communications due to the mal development of primitive vascular system which could be multi focal and may spread to adjacent organs; the management is quite challenging.[1,5] Self-regression of congenital uterine AVM are not expected in clinical practise as they are considered as errors in the morphological development. It is usually noticed following failure of medical management for abnormal uterine bleeding. The acquired uterine AVM are usually limited to vascular system of uterus and it may go unnoticed in asymptomatic cases however, it may cause life threatening haemorrhages in some situations.

Overall, there are less than 100 uterine AVM are reported in literature, usually following dilation and curettage, suction evacuation, and secondary postpartum haemorrhage and in women with previous caesarean section rarely associated with caesarean scar ectopic pregnancy.[6,7] History of antecedent pregnancy is always seen in acquired uterine AVM and congenital AVM are usually seen in nulliparous women. Uterine AVM can easily recognized on routine transvaginal ultrasound using grey scale, colour or spectral Doppler, however angiography is considered as gold standard for its diagnosis.[6] The presence of nidus always points towards congenital AVM on imaging.[5]

There are very few case reports on uterine AVM following medical management of miscarriage as it happened in our patient and after spontaneous miscarriage.[6,9] One mechanism is it could be associated with underlying uterine infections. The advances in biomolecular mechanics of trophoblastic invasion has helped us to understand the placental development better in the recent

days. The trophoblastic proliferation for angiogenesis should be under check to avoid uncontrolled trophoblastic proliferation into the maternal vascular system.[6] The aberrations can sometimes lead on to either extensive proliferation or persistent trophoblastic activity. The endomyometrial vascularity (EMV) which is seen following a recent intrauterine pregnancies often confused with uterine AVM in some situations. These EMV are usually characterized by, enhanced vascular network which are often tortuous and seen within the myometrium.[5] Unlike AVM, these EMV are not associated with life threatening haemorrhages. The management of uterine AVM could vary from expectant or medical management to surgical treatment.[2-4] In general, UAE is considered as effective way of managing AVM when there is life threatening bleeding however, rarely hysterectomy would be needed. In the presence of uterine AVM, surgical curettage for retained products can lead to life threatening haemorrhages. It is mandatory to have lower threshold to suspect uterine AVM whenever there is AUB with history of antecedent pregnancy using simple non-invasive ultrasound as it can save the life of a woman as well as uterus in majority of the situations like in our patient. Prompt diagnosis may help us to transfer the woman in a stable state to an appropriate hospital with facilities for UAE. The hemodynamic status of the woman determines the surgical management in addition of age and fertility preservation. In a low resource settings, hysterectomy may remain a sole choice if woman presents in shock with life threatening haemorrhage.

CONCLUSION

Uterine AVM are considered as rare yet life threatening clinical conditions. These AVM should be considered in the differential diagnosis whenever woman presents with irregular or heavy vaginal bleeding with history of antecedent pregnancy. Curettage in the presence of AVM may be life threatening and may force us to do hysterectomy. High index of suspicion can help in prompt diagnosis and early referral for appropriate interventional assistance.

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