

ALTERNATIVE TO HYSTERECTOMY IN AUB-N: UTERINE ARTERY EMBOLIZATION

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ABSTRACT

Background and objectives: To research the causative factors for uterine AV malformations, uterus - operative procedures, post-procedure monitoring of uterine AVM patients, recovery of menstrual function, and future fertility. **Methods:** Department of Obstetrics and Gynaecology, Mallareddy Nrayana hospital, Hyderabad, Telangana, India, conducted prospective research examined women with excessive menstrual bleeding after abortion and LSCS from December 2014 to February 2020. All acute AUB patients from uterine curettage or C-section were recruited. Doppler USG, CT scan, MR angiography, and case history identified uterine artery AVMs. Uterine artery embolization or other treatments need informed consent. **Results:** Women of heavy bleeding after abortion and LSCS identified as arteriovenous malformations by pelvic ultrasonography (hypoechoic spaces in myometrium), Doppler Ultrasonography (Enhanced myometrial vascularity), Spectral Doppler (Low impedance and high velocity flow in lesions), and MR angiography. UAE was minimally invasive for all 10 AVM-afflicted women. One molar pregnancy patient survived suction and curettage. 5 individuals resumed menstruation within 2 months and other 5 between 2-5 months. All had brief initial cycles. **Conclusion:** With Doppler ultrasound, MR angiography, acquired AV uterine abnormalities are prevalent in early reproductive age. Most follow uterine cavity interventions. UAE is best for severe and acute AUB since it requires little hospital stay and local anaesthetic. Uterine artery embolization conserves the uterus and restores menstruation and reproductive functioning.

Keywords: Hysterectomy, Uterine artery embolization, Doppler ultrasound, MR angiography, AUB.

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INTRODUCTION

Uterine artery embolization is a non-surgical alternative to hysterectomy that maintains the women reproductive and menstrual function. Before the development of uterine artery embolization, hysterectomy was the only therapeutic option available for women who had uterine AV malformations [1,2,3].

In most cases, acquired arterio-venous malformations (also known as AVM) are the result of operative procedures such as abortion, caesarean section, myomectomy, repeated and aggressive curettage of molar pregnancy, or, in the case of RPOC, genital cancer. The most common cause of arteriovenous malformations (AVMs) and subinvolution of placental bed vessels is tissue injury, which is then followed by neo-angiogenesis. When a woman suffers from AUB-N and presents with heavy bleeding, an AVM may be the underlying reason [4,5].

Interventional radiologists have been using uterine artery embolization (UAE), a technique that is both safe and effective, for the treatment of a variety of gynaecologic and obstetric conditions for more than half a century now. These conditions are characterised by massive and uncontrollable bleeding [5,6].

MATERIAL AND METHODS

A prospective study was carried out at Department of Obstetrics and Gynaecology, Mallareddy Narayana Hospital, Hyderabad, Telangana, India, between December 2014 and February 2020 on women who presented with excessive menstrual bleeding after an abortion and LSCS. All women with acute uterine bleeding related to uterine curettage or caesarean surgery were enrolled for the study. AVMs of the uterine artery were detected by Doppler USG, CT scan and MR angiography in a few instances after reviewing the women past medical history and doing an exhaustive clinical examination. Consent was obtained from the patient prior to undergoing uterine artery embolization or any other kind of care.

Patients who want to maintain their fertility and menstrual function received uterine artery embolization (UAE) performed by an experienced interventional radiologist under fluoroscopic monitoring. Gel foam particles were injected into the femoral artery at the afflicted patient's inner groin under the influence of local anaesthetic in order to serve as embolic agents (total time 30-60 mts). All of the patients were monitored on a regular basis for a period of 12 months [6,7].

RESULTS:

Women who presented with heavy menstrual bleeding after having an abortion or LSCS and were diagnosed with arteriovenous malformations by pelvic ultrasonography (hypoechoic spaces in myometrium), Doppler Ultrasonography (Enhanced myometrial vascularity), Spectral Doppler (Low impedance and high velocity flow in lesions), CT scan and MR angiography and were treated and included in this study. As a kind of non-invasive, minimally invasive therapy, UAE was performed on all ten women diagnosed with AVM. But there was one woman who had a molar pregnancy after the suction and curettage. Menstruation was restored within two months in five of the instances, and between two months to five months in the other five cases. In first year few brief cycles they had.

Table 1. Summary of cases of the present study

S. N O.	Parity	Age in yrs	Complaints & Duration	Antecedent procedure	Doppler USG	Mode of management
1	P1L1, abortion at 2 months	22	Severe bleeding since 10 days	Curette for RPOC	Doppler-AVM Lt lateral wall	UAE (LT)
2	P2L2-LCB-1 month	30	Severe bleeding since 1 month	Emergency LSCS	Doppler USG-AVM Lt side	UAE (LT)
3	P2L1 DI, MTP at 2 months & DPL	24	Menorrhagia since 2 months	MTP at 2MA & double puncture lap sterilization	Doppler USG-AVM Lt side	UAE (Rt)
4	Recurrent spontaneous abortions at 2-3 months	22	Severe bleeding since curettage	Repeat curettage for RPOC	Doppler USG - bilateral AVM	UAE (both sides)
5	P1L1 with 2 months of molar pregnancy	28	Torrential Bleeding since 20 days	Suction and curettage for molar pregnancy	Doppler & CT scan - AVM Rt side	UAE (both sides)
6	P2I2 with 2 months abortion	25	HMB since 2 weeks	Curettage for RPOC	Doppler USG-AVM and RPOC	UAE Rt side followed by curettage
7	Para 2, LCB-24 days	22	HMB since 14 days	Elective LSCS	Doppler USG-AVM Both sides	UAE both sides, followed by OCP pills
8	Para 3L3LCB -40 days	26	HMB since 3 weeks	Elective C-section for the 3 rd time, pl. Previa	Doppler & MRI-AVM mainly on Lt side	UAE Lt side followed by high doses of progesterone
9	Primi with 2MA	28	HMB since 2 weeks	MTP done for unwanted pregnancy	Doppler USG-AVM both sides	Bilateral UAE
10	P2L2 LCB-38 days back	29	HMB since 10 days	Elective LSCS done	Doppler & MRI-AVM both side	Bilateral UAE

Discussion:

Rarely, significant menstrual bleeding may be caused by a condition known as arteriovenous malformation (AVM) of the uterus. AVMs of the uterine wall might be present at birth or develop later in life. The vast majority of instances that have been documented were developed as a result of dilatation and curettage. The acquired arteriovenous malformation (AVM) is characterised by the presence of arteriovenous connections between the branches of the uterine arteries and the myometrial venous plexus. These AVMs often manifest themselves after invasive uterine operations. The use of selective uterine artery embolization as a therapy for vaginal bleeding due to uterine arteriovenous malformation is an effective method. After an episode of UAE, involution of the hypervascular mass often occurs [7,8].

In the early stages of recovery after UAE, common side effects include pelvic discomfort and nausea, whereas serious problems are uncommon.

The Juneja SK et al investigation demonstrated that all of the study individuals had considerable clinical relief, and there was no recurrence of symptoms [8,9]. Yoon et al. state in their recently published research that there were 54 patients with acquired AVM who benefitted from UAE, and the procedure had a success rate of 91%. Badawy et al. reports a success rate of UAE in 96% of instances, whereas Ghai et al. discloses successful control of uterine excessive bleeding due to AVM in 93% of patients after UAE [9,10,11].

As a result of the fact that selective embolization prevents ovarian vascularization, the prognosis for the patient's future fertility is positive. As a result, patients have regular menstrual periods.

CONCLUSION:

AV malformations of the acquired variety of the uterus are relatively rare at the current time, observed in young women of reproductive age. This has been made possible by the development of Doppler ultra sound and CT scan, as well as MRangiography. The majority of them occur after interventional operations that are performed on the uterine cavity.

AUB that is both severe and acute is the most prevalent presenting symptom. Uterine artery embolization (UAE) is the therapy of choice since it requires a short stay in the hospital under local anaesthesia. Women are now able to resume normal menstrual and reproductive functions thanks to the development of uterine artery embolization. This procedure, which involves blocking the uterine artery in a specific manner, may preserve the uterus.

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Conflict of interest:

None

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