UTERINE ARTERIOVENOUS MALFORMATIONS – A CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Uterine arteriovenous malformations are usually diagnosed in women with unexplained vaginal bleeding and can result in a life threatening medical emergency. This case illustrates our experience with conservative surgical management of a young patient with uterine AVM.

INTRODUCTION

Uterine AVMs are a rare cause of uterine bleeding with fewer than 100 cases reported[2] and should be considered in patients who present with unexplained genital bleeding[4], which is intermittent, excessive and unexpected, particularly after delivery or surgical procedure performed on uterus.[5,10] They may occur as late postpartum haemmorage or postabortion haemmorage and the bleeding results from spontaneous vessel rupture or one triggered by dilatation and currettege.[4]

AVMs may be congenital or acquired,[7] developing as a result of abnormal connections between arteries and veins.[2,11] Acquired AVMs may be due to trauma, malignancy or infection, specific causes being miscarriage, termination of pregnancy, dilatation and curretege,caesarian section, carcinoma of cervix and endometrium, uterine infection, trophoblastic disease, fibromas, endometriosis and uterine surgery.[5,15] Uterine AVMs are often located to particular area of myometrium.[13]

Currently, sonography is an important non invasive modality for detection of AVMs.[1,7,13] Sonographic findings are myometrial inhomogeneity and tubular spaces[2]. CT and MRI can define feeder vessels and anatomy of AVMs.[3] Although angiography is the gold standard[7] but nowadays reserved for planned therapeutic embolization or prior to surgical intervention[2,9]

Treatment of AVMs remain controversial, often with great concern for fertility[2].In a young patient like ours, who was non responsive to medical treatment and had recurrent episodes of heavy vaginal bleeding making her hemodynamically unstable, the best management in our hospital setting was refreshening and curettage of the caesarian section scar area.

CASE REPORT

A 25 year old female,P_2,11 days post caesarian section and 1day post evacuation and curettage at a private clinic, presented to us with an episode of heavy vaginal bleeding. She noticed a sudden gush of blood on 10th postoperative day for which an evacuation and curettage one day before presenting to us. Her caesar-

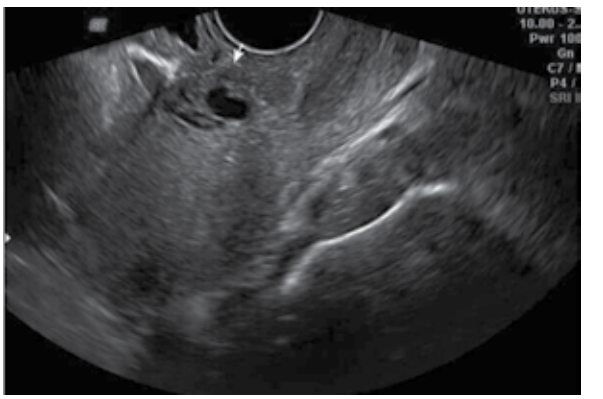

Figure1: Grey scale ultrasound image of lower segment caesarian section scar AVM.

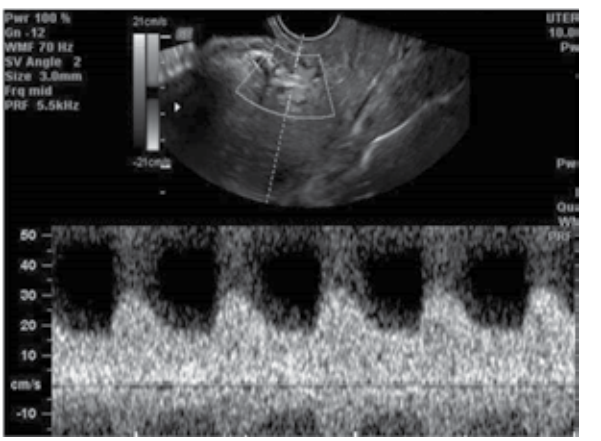

Figure 2: Doppler image of lower segment caesarian section scar AVM.

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ian section was done for the indication of fetal distress, delivering a healthy female baby. Previously she had a full term pregnancy ending in normal vaginal delivery.

Upon presentation to us, approximately 2 hours after the bleeding began, the patient's vital signs showed BP of 90/60 mm Hg, pulse 120/min, temperature of 102*F with cold peripheries. Upon evaluation, she was alert and conscious but extremely pale. She had soft abdomen with normal fundal height but was bleeding profusely through vagina. Active resuscitation was done and about 900ml clots removed from uterus. There was no evidence of retained products, uterine packing was done. Laboratory studies showed haemoglobin of 6 gm/dl and haematocrit of 25%.She was put on intravenous antibiotics and tablet misoprostol.

Uterine packing was removed after 48 hours and she remained stable for two days before developing another episode of moderate vaginal bleeding, for which pelvic ultrasound with color doppler was performed again revealing an area of AVM in caesarian scar location, with multiple vessels within myometrium showing low resistance arterial flow. She was managed conservatively and was given inj. zoladex (GnRH analogue)subcutaneously. She was stable, bleed free and was discharged on 12th oct.2015.

One month later, she again presented with an episode of heavy per vaginal bleeding .Interventional radiologist was consulted for uterine artery embolization but before she could visit the institute, she started profuse vaginal bleeding so laparotomy followed by refreshening and curettage of scar area, ligation of uterine and ovarian arteries was done. She was discharged on 5th postoperative day and was put on tablet danazol 400 mg daily for 3 months.

DISCUSSION

Uterine AVMs are a rare cause of uteri ne bleeding with very few cases reported and therefore exact incidence is unknown.[6]

Treatment of uterine AVM remain controversial, often with great concern for fertility[2] Literature has showed that in a haemodynamically stable patient, Combined oral contraceptive pills (norgestrel/ethinyl estradiol)[14], Intrauterine Contraceptive Device[2], Gonadotropin releasing hormone analogues[1], and even expectant management[8] are possible options. In an unstable deteriorating patient, surgical resection of the lesion, ligation of uterine arteries, bipolar coagulation of lesion in females who desire fertility and hysterectomy where fertility is not of concern[3]. Temporary occlusion of uterine arteries has been attempted to control bleeding during hystrectomy[11].

Degani et all in a case series of acquired asymptomatic uterine AVM concluded that expectant management is a possible option only in haemodynamically stable patients[8]

Oride et all used oral norgestel/ethinyl estradiol successfully to manage uterine AVM in a postabortion patient.[14] Narayan et all and Selby et all in two case reports conservatively managed a patient with uterine AVM with an IUCD to provide highest probability of preserved fertility[2,6], but this was not suitable for our patient as she had recurrent episodes of vaginal bleeding making her hemodynamically unstable. Noraka T in a case report treated a haemodynamically stable patient with uterine AVM with GnRHa for six months, which was followed by a spontaneous conception[1]

Aseeja V et all in a case report treated a patient with uterine AVM with inj. methotrexate and twice D&C which further deteriorated her condition leading to emergency hysterectomy[4] but there were no fertility issues. Naoko et all in a case report used temporary balloon occlusion of uterine arteries to control haemmorage during hysterectomy of a uterine AVM patient[11] .

Bilateral UAE is an effective option for bleeding AVMs. Kim et all and Hanna et all performed 20 bilateral UAEs, concluding that where the technique failed, the reason was extrauterine feeders to the AVM[5,9]

CONCLUSION

Uterine AVMs are rare lesions with considerable risk potential. When faced with a patient with sudden and heavy vaginal bleeding and a history of prior uterine instrumentation, the diagnosis of uterine AVMs should be considered. Color Doppler sonography should be used to confirm diagnosis and provide the most accurate knowledge to the consulting gynaecologist.

REFERENCES

1. Noraka T, Yhata T, Kashima K, Tanaka K. Resolution of uterine arteriovenous malformation and successful pregnancy after treatment with a gonadotropin releasing hormone analogue. J Obstet Gynaecol 2011; 117(2): 452-455.
2. Selby S, Haughey M. Uterine arterivenous malformation with sudden heavy vaginal haemmorage. West J Emerg Med 2013; 14(5): 411-414.
3. Garuti G, Sardo ADS, Mirra M, Calabrese S, Gonfiantini C, Di Mario M. Uterine arteriovenous malformation inadvertently treated by hysteroscopy resection. J Case Rep Images Gynaecol Obstet 2015; 1: 20-24.
4. Aseeja V, Kaur T, Taneja BK, Mittal A. Arteriovenous malformations and retained products of conception:A case report and brief review. WebmedCentral obstetrics and gynaecology 2011; 2(9): WMC002204
5. Kim T, Shin JH, Kim J, Yoon H, Ko GY, Gwon D, Yang H, Sung KB. Management of bleeding uterine arteriovenous malformation with bilateral uterine artery embolization. Yonsei Med J 2014; 55(2): 367-373.
6. Lalitha N, Seetha P, Shanmugasundaram R, Rajendiran G. Uterine arteriovenous malformation: Case series and literature review.J Obstet Gynaecol

India 2016; 66(4): 282-286.

7. Ram R, Hon L, Dhillon M, Nagaraja S, Izzat F. Congenital uterine arteriovenous malformation: A case report and literature review. J Ultrasound Obstet Gynaecol 2012; 40(1): 115.

8. Degani S, Leibovitz Z, Shapiro I, Ohel G. Expectant management of acquired postabortion high velocity uterine arteriovenous shunt. J Ultrasound Obstet Gynaecol 2011; 38(1): 258.

9. Hanna P, Sukyoung K, Jongmin P. Diagnosis and treatment of uterine arteiovenous malformation. J Ultrasound Obstet Gynaecol 2013; 42(1): 114.

10. Aslan H, Ismailzade R, Can M. Uterine arteriovenous malformation,ultrasonographic diagnosis and treatment: a case series. J Ultrasound Obstet Gynaecol 2012; 40(1): 122.

11. Yamamoto N, Koga K, Akahane M, Hiraike OW, Fujii T, Osuga Y. Temporary balloon occlusion of the uterine arteries to control haemmorhage during hysterectomy in a case of uterine arteriovenous fistula. J Obstet Gynaecol Res 2015; 41(2): 314-318.

12. Akashi K,Tanno K, Chikazawa K, Mikami Y, Netsu S. Expectant management of a case of uterine arteriovenous malformation with an ovarian artery aneurysm. J Ultrasound Obstet Gynaecol 2016; 42(5): 579-583.

13. Capmas P, Levaillant JM, Teig B, Fernandez H. Uterine arteriovenous malformation involving the whole myometrium. J Ultrasound Obstet Gynaecol 2013; 41(6): 715-717.

14. Oride A, Kanasaki H, Miyazaki K. Disappearance of a uterine arteriovenous malformation following long term administration of oral norgestrel/eyhinyl estradiol. J Obstet Gynaecol Res 2014; 40(6): 1807-1810.

15. Goyal S, Goyal A, Mahajan S, Sharma S,Dev G.Acquired uterine arteriovenous malformation developing in retained products of conception:A diagnostic dilemma.J Obstet Gynaecol Res 2014; 40(1): 271-274.