ORIGINAL RESEARCH PAPER

Volume-7 | Issue-12 | December-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

UTERINE ARTERIOVENOUS MALFORMATION: MANAGEMENT AND OUTCOME- AN OBSERVATIONAL STUDY

Gynaecology

Dr. Gouranga Sarkar Assistant Professor, Dept. Of Medicine I.P.G.M.E & R

Dr. Mousumi Dutta* Assistant Professor, Dept. Of Gynae And Obs C.N.M.C *Corresponding Author

Dr. Ibadahun Suchiang Post Graduate Trainee, C.N.M.C

ABSTRACT

Background: - Uterine arterio venous malformation (AVM) is a rare cause of abnormal uterine bleeding.AVMs can be defined as a vascular structural anomaly involving abnormal communication between arteries and veins that bypass the capillary system. Uterine arteiovenous malformation demands surgical management and hysterectomy due to its notorious presentation. Selective uterine artery embolisation is a modern manimal invasive technique to treat patient conservatively leading to a promising outcome.

Materials and methods: -All patients of congenital and acquired cases of uterine AV malformation were included in our study.Their demographic data,clinical presentation and treatment procedures were vividly recordedand followed up for two years.

Result: -From April2015 toMarch 2017 we included total seven patients. Theywere managed firstly by medical then surgical method, if necessary. Selective bilateral uterine artery embolisation showed good fertility preserving method.

Conclusion: -Selective uterine artery embolisation is a newer conservative approach towards challenging AVM as a preferable method in childbearing age group.

KEYWORDS

Arteriovenous malformation (AVM), uterine bleeding, embolisation

INTRODUCTION: -

Uterine arteriovenousmalformation (AVM) is a rare, potentially life-threatening complication and it's management is very challenging. Fewer than 100 cases reported in the literatures1. It may be congenital or acquired. Congenital are extremely rare and acquired AVM commonly developed after endometrial curettage, therapeutic abortion, gestationaltrophoblastic diseases, uterine trauma, normal delivery or caesarean section2. MR angiography, digital substaction angiography is the gold standard of diagnosis but transvaginal sonography and Doppler USG are preliminary non-invasive investigations.

Incidence rate of acquired AVM is currently increasing.2,3 Management depends upon age,future fertility, size of lesion and amount of bleeding. Though medical management and thereafter hysterectomy remain the main stay of management, modern uterine artery embolization technique is also gaining popularity as a fertility preserving, minimallyinvasive method.So, hysterectomy is no longer required to manage such a devastating condition in reproductive age group.

MATERIALS AND METHOD: -

From February 2015 to August 2017 total seven patients we recruited having uterine AVM. One patient had congenital anomaly presented in OPD. Among other six patients, two patients after molar pregnancy, one patient after caesarean section, three patients after dilatation and evaquation (D/E) operations. All data regarding investigations and management and followup were recorded meticulously. All patient suffered from common symptoms of severe menometrorrhagia and it's various complications like anemia and shock. Diagnosis done by TVS Doppler study and uterine artery angiography.Various embolic materials have been used, including polyvinyl alcohol (PVA), histoacryl (glue), stainless steel coils, detachable balloons, and haemostatic gelatine.We proceeded with embolisation of the AVM. Embolisations of both uterine arteries were performed with 200–300 μm and 300–500 polyvinyl alcohol particles.

RESULTS:-

Management and outcome of seven patients in our study group are shown in the table below-When a woman presents with heavy vaginal bleeding, the principles of resuscitation must be followed, and the aim should be to achieve and maintain hemodynamic stability and cessation of blood loss4. So, patients presented with severe bleeding per vagina initially managed by IV fluid, blood transfusion and tranexamic acid.

We did hysterectomy of three AVM patients with intractable hemorrhage where AVM occurred after D/E and H.mole. 4th case was congenital AVM who failed to respond to hormonal therapy underwent the uterine artery embolisation. We performed uterine artery embolisation in other three cases where patients wished to preserve fertility and menstrual function.

Age	Parity	Antecedent events prior due to AVM	Management	Outcome
18	nulliparous	Congenital AVM	Gnrh analogue and OCP Embolisation.	Bleeding stopped
25	P_{1+1}	D/E	Hysterectomy	
32	P_{2+1}	Molar pregnancy (H. mole)	Hysterectomy	
37	P_{2+2}	D/E	Hysterectomy	
26	P_{0+1}	D/E	Embolisation	conceived → preterm → delivery by caesarean section.
29	P_{1+0}	Molar pregnancy	Embolisation	conceived miscarriage.
30	P_{1+2}	Caesarean section	Embolisation	failed → hysterectomy.

All total four cases we did uterine artery angiogram and when AVM was confirmed then we proceeded to bilateral uterine artery endovascular embolisation with polyvinyl alcohol particles. We noted different grading of pelvic pain in the immediate post-operative period which was managed by analgesics and sedation. One patient had recurrent vaginal bleeding there after needed hysterectomy as permanent cure.

Other three patients including that congenital AVM responded satisfactorily with or without medication. They were symptomless during one-year follow-up period. Two patients showed positive result as they conceived during one-year follow-up. One patient had miscarriage and another developed preterm labour at eight months period of gestation. There was no serious post-operative complication noted among them as perianal skin sloughing, uterovaginal and rectovaginal fistulas.

IMAGES:-

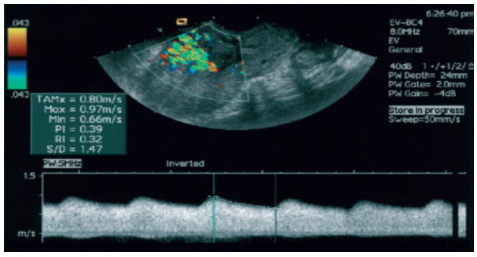

FIGURE 1: PRE-EMBOLISATION

Transvaginal ultrasound (TVS)shows uterine AV malformation with biphasic flow. Colour Doppler study reveals peak systolic velocity (PSV) of 0.97 m/sec and resistive index (RI) of 0.32.

FIGURE 2: PRE-EMBOLISATION

Angiogram shows right uterine artery AV malformationwith multiple feeding arteries and early draining vein.

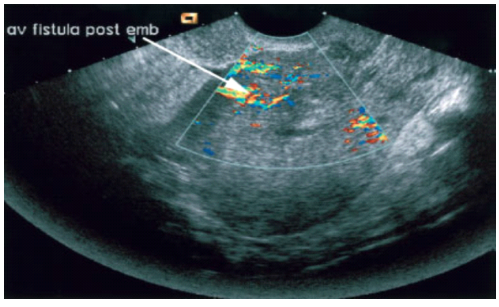

FIGURE 3: POST-EMBOLISATION

Transvaginal ultrasoundwith colour doppler reveals no blood flow.

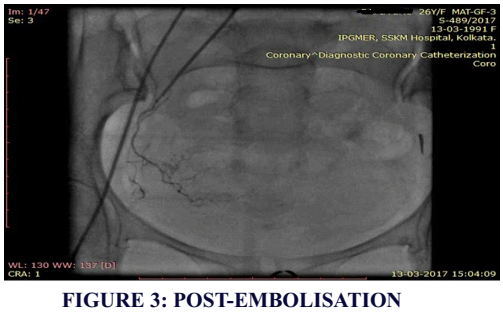

FIGURE 3: POST-EMBOLISATION

Angiogram reveals complete embolisation of uterine AV malformation with slow flow of contrast in right uterine artery.

DISCUSSION:

Uterine AVM mostly seems to be dreadful and challenging condition to the patients and Gynaecologist. It appears commonly in child bearing age group. Recurrent heavy bouts of vaginal bleeding occurs which is failed to resolve by the usual management strategy. Ultrasonography (USG) and color Doppler commonly demonstrate multidirectional, high velocity flow and color mosaic patterns5. The gold standard for diagnosis is digital subtraction pelvic angiography which not only confirms the lesion but allows identification of main feeding vessels if embolisation is being considered as a treatment6. We also used TVS and Doppler primarily to diagnose the lesion in all cases and especially uterine angiography in those cases who underwent embolisation.

Timmerma et al7 noted on USG, vascular malformation with a peak systolic velocity (PSV) value of atleast 83m/sec carrieda greater chance of requiring embolisation. Conversely, no vascular malformation with a PSV value below 39m/sec required embolisation.

In 3 cases patient agreed to sacrifice uterus as a permanent management.So, we did hysterectomy.Internal iliac artery or uterine artery ligation and hysterectomy were the traditional treatment for uterine AV malformation in the past.[8]

In nulliparous congenital AVM we managed medically but which failed to land upon uterine artery embolisation and thereafter we managed medically by OCP and medroxy-progesterone acetate. Takeveli et al9noted a complete resolution of uterine AVM following a 12 weeks course of danazol(400mg) once daily in a case of failed embolisation.

In another three cases we preferred embolisation.Among them one got failed and landed to hysterectomy.In another two cases we got success. By continuing follow up they were symptoms free and two of them conceived surprisingly. One had miscarriage at first trimester (9 weeks) and another had preterm labour but the baby survived after NICU admission.

Although lack of evidence,it is thought that pregnancies may be at risk of pre-maturity and IUGR10.

Stancato-pasik et al11 noted that of 17women who underwent uterine artery embolisation,threewomen who desired pregnancy successfully achieved full term pregnancies.Among all four patients ofembolisation we had success rate of three patient that means 75%. Young et al8 quoted long term success rate of embolisation of 79% and in a study by Kwon and Kim12 the success rate was 92% (22 out of 24 patients).Due to small sample sizewe couldn't place any statistical analysis.

CONCLUSION: - Uterine arterio venous malformation is a rare cause of life threatening uterine hemorrhage in reproductive age group.Mostly they are asymptomatic, but acquired AVM needs urgent intervention to arrest haemodynamic instability.Now modern technique of uterine artery embolisation is superior to avoid traditional hysterectomy. Patient who did not respond to medical management or embolization, are considered for hysterectomy. It has also positive reproductive outcome with minimum post-operative complications. So, angiographic embolisation is considered as gold standard for treatment of AVM.

REFERENCES:-

1. Hickey M, Fraser I. Clinical Implications of Disturbances of Uterine Vascular Morphology and Function. Baillieres Clin ObstetGynaecol. 2000;14(6):937–951.
2. R.Halperin, D. Schneider, R. Maymon, A. Peer, M. Pansky, and A. Herman, "Arteriovenous malformation after uterine curettage: a report of 3 cases," The Journal of Reproductive Medicine, vol. 52, no. 5, pp. 445–449, 2007.
3. M. Cura, N. Martinez, A. Cura, T. J. Dalsaso, and F. Elmerhi, "Arteriovenous malformations of the uterus," Acta Radiologica, vol. 50, no. 7, pp. 823–829, 2009.
4. Hickey M, Fraser IS. Clinical implications of disturbances of uterine vascularr morphology and function. Baillieres Best Pract Res Clin ObstetGynaeco2000;14:937-51
5. Kim TH, Lee HH: Presenting features of women with uterine arteriovenousmalformations. Fertil Steril2010;94:2330.e7.e10.
6. Forrsman L, Lundberg J, Schersten T. Co nservative treatment of uterine arteriovenous fistula. Acta ObstetGynecolScand1982;61:85–7.
7. Timmerman D, Wauters J, Van Calenbergh S, Van Schoubroeck D, MaleuxG, Van Den Bosch T, et al. Color Doppler imaging is a valuable tool for the diagnosis and management of uterine vascular malformations. Ultrasound diagnosis and management of uterine vascular malformations. Ultrasound ObstetGynecol2003;21:570-7.
8. Yang JJ, Xiang Y, Wan XR, Yang XY. Diagnosis and management of uterinearteriovenous fistulas with massive vaginal bleeding. Int J GynaecolObstet2005;89:114-9.
9. Takeuchi K, Yamada T, Iwasa M, Maruo T. Successful medical treatment with danazol after failed embolization of uterine arteriovenous malformation.ObstetGynecol 2003;102:843-4.
10. Brown RL, Van Moore A, Smythe AR. Arteriographic management of uterine arteriovenous fistula.Am J ObstetGynecol 1986 ;155:491-3 11. Stancato-Pasik A, Mitty HA, Richard HM 3rd, Eshkar N. Obstetric embolotherapy: effect on menses and pregnancy. Radiology 1997;204:791–3.
12. Kwon JH, Kim GS. Obstetric iatrogenic arterial injuries of the uterus: diagnosis with US and treatment with transcatheter arterial embolization. Radiographics2002;22:35–46.