MANAGEMENT OF POSTPARTUM HEMORRHAGE WITH UTERINE ARTERY EMBOLISATION

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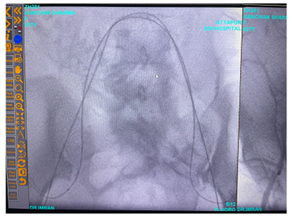
INTRODUCTION

Primary PPH is defined as blood loss of more than 500 mL in the first 24 hours following birth. Secondary PPH is defined as blood loss of more than 500 mL after the first day and up to six weeks after birth.Obstetric hemorrhage is one of the major causes of maternal mortality. Initial conservative treatment methods for postpartum hemorrhage (PPH) include administration of uterotonic agents, uterine massage, and vaginal packing. Recently, intrauterine balloon tamponade has been attempted. However, when the conservative treatments fail, surgery or transcatheter arterial embolization (TAE) should be considered as they have been accepted as one of the most effective treatments for intractable PPH, with high success rates.The most commonly used material in UAE for PPH is gelatin sponge particles, and these help in spontaneous resolution within three to six weeks preventing negative impact on fertility owing to permanent devascularization of the uterus.

CASE REPORT 1

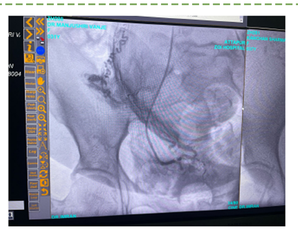
Case of 39 year old G2 P1 L1 37 weeks previous Caesarean with Central placenta previa with severe preeclampsia. In this case postpartum haemorrhage was anticipated.Preoperative Balloon stenting of bilateral uterine arteries were done. Immediately after delivery of baby, during Caesarean balloon catheters were inflated. Blood loss was minimal due to occlusion of both uterine arteries.Haemostasis was double checked after placenta delivery and slowly catheter balloon was deflated and checked again for haemostasis. Meanwhile, routine prophylactic drugs were given to control the atonic uterus. Uterus was conserved . Catheters were removed in the immediate post-operative period.



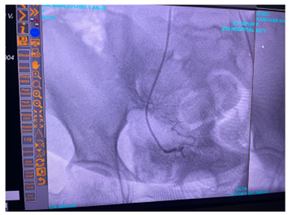
Placement of bilateral uterine artery balloon catheters placed before proceeding for cesarean in Placenta praevia

CASE REPORT 2

A 37 year old P2L2 POD-9 case of Caesarean operation.Indication for cesarean was - previous 2 Caesareans with GDM and preeclampsia. Patient came to emergency with severe secondary postpartum haemorrhage. Uterus was subinvoluted and palpable per abdomen at 20 weeks size.Patient was passing large clots per vaginum. Clinically patient was very pale, complaining of dizziness,hemodynamically stable and severe weakness with considerable drop in haemoglobin of about 5 gms from 12 gm/dl to 8gm post operatively.Did not respond to all the routine uterotonic agents. Ultrasound was done and found an intrauterine collection of blood about 900ml. Immediately blood work up was done, blood and blood product transfusion were arranged.Interventional radiologist was consulted, opinion taken and counselled the patient for uterine artery catheterization and embolisation.Patient was shifted to the in house cath lab and leakage found from tributaries of uterine arteries. Uterine arteries were catheterized and bilateral embolisation done. In the same sitting, gentle intrauterine suction evacuation was done to evacuate all the collected blood clots. Bleeding stopped instantly, and as the uterus was evacuated, the uterus contracted and retracted well. Prophylactic routine uterotonic given during evacuation.Patient was stable and discharged after 48 hours. Hb at discharge was 10 gm/dl.Followed up weekly until 2 months.



Blood leakage from the Uterine artery before embolisation in secondary PPH stopped.



After embolisation of uterines - leak totally

DISCUSSION

In selected high risk cases, preoperative planning of elective uterine artery catheterization, quick control of blood loss is possible through embolization or balloon inflation of the uterine arteries. We defined technical success as complete embolization of the target arteries, and clinical success as the cessation of bleeding on vaginal examination without need for additional surgical management during the patient's admission period.Related massive blood transfusions and associated surgical morbidity can be prevented. In some cases, severe blood loss can be anticipated prior either during delivery or during a procedure. Elective caesarean in Central placenta Previa is one of them; another emergency scenario is a secondary PPH due to uterine subinvolution.Postpartum hemorrhage in cases of termination of pregnancy with a pre-diagnosed arteriovenous malformations at previous cesarean scar site. Usually these cases require large doses of medication to control PPH and Massive blood transfusions to replace the blood loss in spite of diagnosing the risk factor well ahead. The related morbidity is unavoidable. Surgical morbidity can occur due to laparotomy and cesarean hysterectomy. Also, these are time taking procedures which involve huge blood loss. Though cesarean hysterectomy is life saving ,inevitable loss of fertility is another major concern associated with it. Hence selected high cases which are picked up well ahead can be shifted to higher centres with inhouse Gynae department and a cath lab for prophylactic uterine artery stenting and balloon placement.

CONCLUSION

Preoperative placement of uterine artery balloon catheter allows intraoperative inflation and reduces blood loss. Quick control over the emergency situation is possible. Blood transfusion is associated with morbidity and mortality especially when transfusions are multiple.Hysterectomy can be avoided as blood loss is quickly controlled. Catheter can be removed after deflating the balloons before or after embolisation., Antenatal identification and segregation of cases at risk of severe postpartum haemorrhage will allow us to transfer antenatal full term patients to a facility where multidisciplinary team and cath lab is available.Major advantages of this kind of planned emergency intervention helps in avoiding multiple blood transfusions and allows us to save the uterus.

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