

EMERGENCY PERIPARTUM HYSTERECTOMY WITH OR WITHOUT BILATERAL INTERNAL ILIAC ARTERY LIGATION FOR CONTROL OF MASSIVE PRIMARY POSTPARTUM HAEMORRHAGE: A COHORT STUDY

ABSTRACT:

OBJECTIVE: To see the outcome of patients undergoing Emergency hysterectomy alone for massive primary postpartum haemorrhage compared to a patient undergoing Emergency hysterectomy with bilateral internal iliac artery ligation.

METHODOLOGY:

This study started after ethical approval. It was a cross-sectional study for 1 year from April 2020 to March 2021 where all those patients were enrolled in this study who had undergone abdominal hysterectomy with or without internal iliac artery ligation for obstetrical indication like intractable postpartum haemorrhage secondary to rupture uterus, placenta Previa, morbidly adherent placenta, covelier, atonic uterus and DIC. Informed consent of the patient to be enrolled in the study was taken once the patient was stable. Data was taken regarding prenatal and postopHb to assess the amount of blood loss, coagulation profile, RFT, LFT and number of blood products transfused. The primary outcome will be the failure of procedure hysterectomy in terms of the cessation of blood loss alone and compare with a group of the patient in whom bilateral internal iliac artery ligation was also carried out at the time of Peripartum hysterectomy. ie relaparotomy required. Secondary outcomes are complications like damage to structure like ureters or sigmoid colon, internal iliac vein injury and haematoma formation in both procedures.

RESULTS:

All data will be entered in SPSS 20 and results will be obtained in percentages and mean.

CONCLUSION:

Bilateral internal iliac artery ligation is performed during any intractable pelvic haemorrhage after failed hysterectomy and is a life-saving procedure. It is a complex procedure requiring a consultant with proper training, skills and experience to perform it.

INTRODUCTION:

Peripartum haemorrhage remains one of the major causes of maternal death in both developed and developing countries and the third-highest direct cause of maternal death (6.6 deaths/million maternities) according to the UK seventh report of the Confidential Enquiries into Maternal Deaths (2003–2005). Besides mortality, it is also a major cause of maternal morbidity as seen in almost all 'near miss' audits in both developed and developing countries 1-4

In Scotland, the rate of life-threatening haemorrhage, defined as, "blood loss of 2.5 liters or more or women who receive more than 5 units of blood transfusion or women who receive treatment for coagulopathy after an acute event" is estimated to be 3.7/1000 maternities⁵. The basic treatment for major PPH is medical management, When first-line treatment fails, surgical therapies should be used for controlling bleeding and avoiding maternal death. The use and timing of second-line invasive therapies are less standardized and vary widely. ¹⁰. Thus recommendations on treatment strategies are based largely on observational data and consensus.

Surgical methods to control massive postpartum haemorrhage include hysterectomy and pelvic devascularization of complicated internal iliac artery ligation. Hysterectomy is the ultimate measure for controlling bleeding and preventing maternal deaths ⁵ while Bilateral internal iliac artery ligation procedures require a highly skilled obstetrician or vascular surgeon. The technique of internal iliac (hypogastric) arterial ligation to control pelvic haemorrhage is more than a century old.² Howard Kelly first pioneered ligation of the internal iliac (hypogastric) artery in 1893 in the treatment of intra-operative bleeding from cervical cancer and later in 1963 this procedure was greatly investigated by Burchell ^{RC.3,2}

The American College of Obstetricians and Gynaecologist continues to advocate the use of bilateral internal iliac artery ligation in the management of intra-operative intractable haemorrhage during pelvic surgery or cases of obstetric haemorrhage.⁴

During a massive pelvic hemorrhage or peripartum bleeding, bilateral ligation of the IIA reduces the pelvic arterial blood flow by 49% and pulse pressure by 85% (⁷). After bilateral ligation of IIA in the long term period, the collateral circulation will maintain the re-functioning of the IIA. The deep femoral artery is the principal vascular supply to provide re-vasculature to the IIA. Anastomosis between the medial femoral circumflex and obturator artery, and the lateral femoral circumflex and superior gluteal artery are the main connection areas (⁸). Additionally, the ovarian artery also provides blood flow to the uterus. Despite bilateral ligation of the IIA, future reproductive potential is not affected totally and term pregnancies have also been reported in the literature (^{9,10}).

METHODOLOGY:

This study started after ethical approval. It was a cross-sectional cohort study for 1 year from April 2020 to March 2021 where all those patients are enrolled in this study who had undergone abdominal hysterectomy with or without internal iliac artery ligation for obstetrical indication like intractable postpartum haemorrhage secondary to rupture uterus, placenta Previa, morbidly adherent placenta, covelier, atonic uterus and DIC . In group 1 all hysterectomy patients were included while in group 2 hysterectomy along with bilateral internal iliac artery ligation was done were included. Informed consent of the patient to be enrolled in the study was taken once the patient was stable. Data was taken regarding prenatal and postop Hb to assess the amount of blood loss, coagulation profile, RFT, LFT and number of blood products transfused. The primary outcome will be the success of the procedure in terms of the cessation of blood loss and outcome of the patient in terms of mortality, ICU admission was taken into account. Secondary outcomes are complications like damage to structure like ureters or sigmoid colon, internal iliac vein injury and haematoma formation. formation.

RESULTS:

Postpartum haemorrhage (PPH) was treated using the surgical procedure in 53 patients, in 2020 corresponding to 0.88% (95% CI) of 8155 deliveries in a year in the unit and 18.1%(95% CI) of 292 cases of PPH.

Total cases of PPH presenting were 292 which is 3.58% of total obstetrical patients. In these 292 patients, 228 were referred from the periphery contributing to the major chunk of primary PPH. About 53 patients underwent surgical second-line management procedure out of 292 patients of primary PPH.

A total of 36 patients who underwent a peripartum hysterectomy, were enrolled in the study. When all patients were analysed and parity was considered, 52.8 % were in between Parity1-to para P5 while 38.9% were between P6-P9. And >P9 were 8.3%. When age was considered, about 13 patients were in between 25-30 years while 19 patients were in group 31-35 years with 4 patients in 36-40 years. Mode of delivery showed 33.3% (12) NVD and 66.7% (24) C/section.

Among patients undergoing surgery ,most common cause of PPH was rupture uterus 36.1% (13 patients) followed by atonic uterus 27.8%(10 patients) , while 30.6% (11 patients)PPH were due to morbidly adherent placenta and previa previa were 5.6% (2 patients) .Figure 1 shows the relationship of cause of PPH ,age and type of surgery performed. When age group 25 -30 years were seen , STAH was done in 30 % of patients for atonic uterus while STAH with bilateral internal ligation was done in 30 % of patient presenting with PPH due to morbidly adherent placenta and followed by rupture uterus 20%.In age group 31-35 years ,50% patient had STAH due to placenta previa and STAH +BIIAL for rupture uterus . In grand multiparous woman STAH +BIIAL was done for placenta previa in 50% cases. Figure 1 Outcomes of surgery when followed showed 100% successful in cessation of massive PPH when STAH +BIIAL was done in 19 patients..In cases of STAH 16 patients (N=17) had no need of additional procedure to control PPH while 1 patient had re-laprotomy after STAH for placenta increta and Bilateral Internal Iliac Artery Ligation was done as second procedure.