



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

ROLE OF BILATERAL INTERNAL ILIAC ARTERY LIGATION IN OBSTETRIC HAEMORRHAGE COULD NOT BE FORGOTTEN, A HOSPITAL BASED CROSS SECTIONAL STUDY.

KEY WORDS: Bilateral Internal Iliac Artery Ligation, PPH, Hysterectomy, Obstetric Haemorrhage

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ABSTRACT	BACKGROUND: Post partum haemorrhage (PPH) is one of the major causes of maternal death in our country. Hysterectomy operation is frequently done in the management of intractable PPH.
	OBJECTIVES : Study of the role of internal iliac artery ligation in intractable PPH with preservation of Reproductive function.
	METHODOLOGY: This observational cross sectional study was conducted in our institution for a period of three years with total 49991 delivery patients . Total patients underwent bilateral internal iliac artery ligation (BIAL) were 29. Obstetric haemorrhage after 28 weeks pregnancy and haemorrhage refractory to medical therapy were included and obstetric haemorrhage before 28 weeks and haemorrhage due to coagulopathy were excluded.
	RESULTS: Before operation all 29 BIALL patients were haemodynamically unstable. Out of 29 patients , four of them needed another operation, among four two needed hysterectomy, two needed bilateral ovarian artery ligation, success rate was 86.2%, one patient died of irreversible shock and ARF. Bleeding arrested by BIALL did not require later laparotomy in any woman.
	CONCLUSION: BIALL is a valuable procedure for the treatment of PPH. It is essential for the preservation and maintainance of fertility. It can be reliably used in all cases of intractable PPH. All obstetrician should familiar themselves with this procedure and lower their threshold for its use in emergency situations.

INTRODUCTION

Obstetric is a bloody business. The primary goal of obstetric care is to decrease maternal mortality. Obstetric haemorrhage is a major cause of maternal mortality in developing countries. 34% maternal deaths is due to PPH in developing countries and 13% maternal death is due to PPH in developed countries (1) . A large number of obstetric patients are referred in poor shape in Malda Medical College and incidence of PPH & neonatal death is high in our institution. As neonatal death is high uterus preservation surgery is often required . Although hysterectomy is a life saving procedure in catastrophic situations, it may not be appropriate for women who need to preserve their reproductive potential. BIALL is an alternative live saving procedure which preserves reproductive capacity where other uterus saving procedure like uterine cavity tamponade, uterine compression suture, quadruple ligation and uterine artery embolization fail (2) . The rational of BIALL is based on haemodynamic studies on Burchell which showed that BIALL reduce pelvic blood flow by 49% and pulse pressure by 85% resulting in venous pressure in the arterial circulation thus promoting haemostasis (3). Sagarra was the first to define BIALL in obstetric haemorrhage (4). Because of lack of knowledge and expertise, only a few obstetricians opt for this operation as opposed to emergency hysterectomy. We have performed BIALL in life threatening obstetric haemorrhage to see the role of BIALL in controlling obstetric haemorrhage with preservation of reproductive function.

MATERIAL & METHODS :

After ethical committee approval, this study was conducted in this department of gynaecology & obstetric, Malda Medical college for a period of three years from January 2014 to December 2016. Total deliveries during this period was 49991. Total patients underwent BIALL was 29. Obstetrics and demographic characteristic of the patients including

age, parity, post operative blood transfusion, complications and days of hospital stay were recorded.

INCLUSION CRITERIA :

1. Severe obstetric haemorrhage after 28 weeks pregnancy.
2. Haemorrhage refractory to medical therapy and or other surgical treatment like uterine artery ligation, quadruple ligation or B – Lynch sutures, primary sutures to the bleeding site.

EXCLUSION CRITERIA :

1. Haemorrhage before 28 weeks pregnancy.
2. Haemorrhage due to coagulopathy.

An identical surgical technique was used in all cases Of BIALL procedure. At the junction of lateral one third and middle third of round ligament, posterior pelvic peritoneum was opened by sharp dissection. Posterior pelvic peritoneum was opened for 3 centimeter and then with blunt dissection retroperitoneal space was opened and bifurcation of the common iliac artery at the lateral pelvic wall was revealed and ureter seen coursing anterior to the common iliac artery. Internal iliac artery dissection was done and right angle clamp was passed from outside –in under internal iliac artery 4 centimeter distal to the bifurcation of common iliac artery. Ureter was kept medial side of peritoneum, internal artery was ligated 4 cm distal to bifurcation with two No 2 silk sutures placed 1 centimeter apart. Pelvic peritoneum was repaired with 2-0 vicryl suture. The procedure was repeated at the contralateral side.

RESULTS :

Total no of deliveries during this study period was 49991. Table no 1 showing Total number of BIALL was done in 29 (.058%) cases, success rate was 86.206%. Additional operation required only in 4 cases.

NUMBER OF DELIVERIES, INCIDENCE OF BIALL AND SUCCESS RATE :

Total no of deliveries	Total no of BIALL done	Incidence	Cases controlled by BIALL	Success rate	Additional other operation needed
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49991	29	.580%	25	86.206%	4 (13.793%)
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Table 2 represents that commonest indication of BIALL was uterine atony 55.127%.

CAUSES RESPONSIBLE FOR BIALL :

Table no 2

Cause	Number	Percentage
Uterine atony	16	55.172
Rupture uterus	05	17.241
Placenta accreta	02	6.896
Broad ligament haematoma	01	3.448
Placenta previa	04	13.793
Vault injury following forceps delivery (colporrhexis)	01	3.448
Total	29	100

Table no 3 indicates additional operation required only in four cases. Subtotal hysterectomy for uterine atony was required in one case, total hysterectomy for colporrhexis in one, ovarian arteries ligation in one with placenta previa and it was done medial to the position of ovary, B –Lynch suture in one case for placenta- accreta.

ADDITIONAL OPERATION REQUIRED :

Table no 3

Name of operation	Causes	Numbers
Subtotal hysterectomy	Uterine atony	01
B-Lynch suture	Placenta accreta	01
Ovarian artery ligation	Placenta previa	01
Total hysterectomy	Colporrhexis	01

Table 4 shows common age group for BIALL was 20-30 years (55.17%).

AGE GROUP OF MOTHER UNDERWENT BIALL :

Table no 4

Age group (in years)	Number	Percentage (%)
<20	02	6.89
20-30	16	55.17
31-40	10	34.48
>40	01	3.44

Table no 5 indicates that among 29 patients who underwent BIALL, multiparity was more common(68.965%).

PARITY STATUS OF MOTHER UNDERGONE BIALL (N=29) :

Table no 5

Parity status	Number	Percentage (%)
Primipara	04	13.739
Multipara	20	68.965
Grand multipara	05	17.241

Table no 6 showing maternal characteristics like estimated blood loss , shock index, total blood transfusion, total hospital stay.

MATERNAL CHARACTERISTICS :

Table no 6

Maternal characteristics	Mean ± SD (minimum –maximum)
Estimated blood loss (in milliliter)	3000 ± 800 (1500-4200)
Shock index	1.17 ± .46 (1.54-3.75)
Blood transfusion (in units)	5.49 ± 3.04 (2-12)
Total hospital stay	10.09 ± (7-20)
SD = Standard Deviation	

One patient died of irreversible shock and acute renal failure. In none of the patients, procedural complications were seen during and after BIALL procedure.

DISCUSSION :

BIALL is an effective life saving method in intractable PPH, by this operation hysterectomy can be avoided. In our study BIALL was needed in .058% cases. Ledee et al reported an incidence of 0.18% of postpartum haemorrhage refractory to aggressive treatment (5). Most Common indication of BIALL in our study was uterine atony 55.172%.

One study shows 80% of BIALL was due to uterine atony (6). The success rate for BIALL is between 40% and 100% and prevents hysterectomy by 50%. BIALL is reported to be less successful in hysterectomy prevention in cases with uterine atony when compared with other causes of post partum haemorrhage (7). Chelli et al indicated a 82.45% success rate (8) . This study is similar to our study where success rate is 86.20%. Similar result is also found in Mukherjee et al study (9). Mukherjee et al performed 36 cases of BIALL with success rate at 83.30%.

As our hospital is a referral hospital of large areas of West Bengal, Bihar, Jharkhand and Bangladesh, there is highest patient circulation and increased BIALL associated with multiparity who have high risk of PPH (9,10).

In the literature serious intraoperative side effects have been reported such as injury to the internal iliac vein or ureter during ligation of internal iliac artery, inadvertent ligation of external iliac artery, post procedural vesical necrosis and development of perineal and gluteal necrosis (11). In our study, we did not encounter any serious complications cited in literature. This phenomenon might be related to higher frequency of surgical interventions for the management of post partum bleeding in our clinics and high surgical experience on this issue.

CONCLUSION :

Internal artery ligation is easily applicable, safe and effective method in experienced hands for the management of life threatening obstetrical bleeding. Before hysterectomy, in order to control life threatening intractable post partum bleeding especially in young women with lower parities, it should be tried because it is not costly and does not require complex equipments with superior advantages such as scarcity of complications, preservation and maintenance of fertility.

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