

Post Partum Haemorrhage in a Teaching Hospital

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Abstract:

Objective: To review the incidence, demographic features, morbidity and mortality of post partum hemorrhage.

Study Design: A retrospective study of subjects with post partum hemorrhage managed at Nepal Medical College Teaching Hospital during the period Jan, 2003 – Dec, 2005.

Methods and Materials: The subjects with post partum hemorrhage were identified from hospital records. PPH cases were reviewed and analyzed using SPSS (version 10) software. **Outcome measures:** morbidity and mortality.

Results: The incidence of PPH was 5.54 cases per 1000 deliveries. The mean age of the study population was 24.6 yrs. Primiparity was at 54.5% while grand multiparity 2.9%. Among ethnic groups, Mongols were 48% and Aryan and others 52%. Most of the patients had antenatal checkup 89.6%. Deliveries were at full term in 83.0% while preterm and post term were 14.1% and 2.9% respectively. Spontaneous onset of labour was seen in 85.7% with augmentation in 31.4%. Induction of labour was required in 5.7% of cases. Vaginal deliveries were recorded in 88.6% including a breech delivery and delivery of a set of twin. The mean blood loss was 827.14 ml with maximum up to 2.5L. Traumatic PPH were found in 54.3%, atonic uterus in 37.1% and retained 23%. Traumatic cases (perineal, vaginal, cervical tear) were repaired. Uterine atony was managed by uterotonic drugs, uterine massage and uterine packing. Massive PPH in caesarean delivery needed internal iliac artery ligation in one and internal iliac artery ligation with hysterectomy in other case. Blood transfusion was required 48.6% of PPH. There was a case who was revived from PPH in a case of liver disease but died of hepatic encephalopathy.

Conclusion: As most of the PPH is unpredictable occurring without warning, one need to carry out appropriate measures swiftly, in a stepwise manner without wasting time.

Key words: Post partum hemorrhage, genital trauma, uterine atony, hysterectomy.

Introduction

The International Federation of Gynaecology and Obstetrics (FIGO) and the international confederation of midwives (ICM) have launched a major international initiative in Sept. 2003 to prevent post partum hemorrhage (PPH) as well as to propose new ideas in the treatment of PPH, where a joint statement on the active management of the third stage of labour was agreed upon by all organizations to prevent PPH. As it has been recognized that blood loss of 1000 ml occurs in 1% when active management of third stage of labor is undertaken compared to 3% in expectant management.¹⁻²

Post Partum Haemorrhage (PPH) is one of the major causes of maternal death worldwide with a reported incidence of 5 - 18% of all deliveries depending upon the use of prophylactic uterotonic drugs.³⁻⁶ And PPH accounts for 25 % of all maternal mortality and could be as high as 55% in underdeveloped countries.⁷

Globally when we look at PPH, two third of women with PPH have no identifiable risks factors and in vast majority of cases (90%) PPH is due to uterine atony brought about by grandmultiparity, prolonged 2nd stage of labour, precipitate labour and polyhydramnios. Adaptation of advanced technology/techniques from newer researches have helped us to reduce blood loss equal or more than 500ml which forms the quantitative definitions of PPH. Prostaglandins (carboprost and misoprostol) known to potentiate the action

of oxytocin do have important role.⁸⁻¹¹ Tamponade by mechanical measures like uterine packing with 4 inches gauge and inflating a Sangstaken- Blakemore tube inside the uterus have been successful in stopping PPH.¹² Uterine compression sutures (B-Lynch Brace or one of the modifications), stepwise devascularisation of uterine blood supply (uterine, branches of ovarian arteries and internal iliac artery ligation) are other techniques. With internal iliac artery ligation, extensive collateral circulation is established in pelvis and with such a procedure hysterectomy can be avoided in 50%.⁷ Such emergency hysterectomies (subtotal or total) that could be appropriately performed to arrest hemorrhage 25% cases. Angiographic arterial embolisation is also helpful in many instances.

Methods and Materials

This is a retrospective study of postpartum hemorrhage managed at Nepal Medical College Teaching Hospital during the period of three years (Jan, 2003 – Dec, 2005). The center is fully equipped with emergency operation facility which includes round the clock anesthetists, operation theatre facilities. A full laboratory with blood transfusion facilities is available at all the time. Information on the total number of maternities (live and stillborn) was obtained from the obstetric ward, operation theatre and intensive care unit records. The cases who had blood loss 500 ml or more during vaginal delivery and 1000ml or more during Lower segment caesarean section (LSCS) were identified and a detailed review of their

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medical record was carried out using a standard format. Data were recorded regarding patients' age, race, parity, gestational age, antenatal care, identifiable risk factors, and mode of delivery, amount of blood loss, attributable causes of PPH, resuscitation and treatment methods of PPH.

The obstetric service providers team; consisted of staff nurses, house officers, middle grade obstetricians (registrars, lecturers, assistant professors) and the senior consultants (Professors and Associate professors). The team also included intern doctors who acquire training under the supervision of seniors. Normal deliveries are conducted by house officers or intern doctors under direct supervision. Instrumental/operative deliveries are conducted by middle grade obstetricians and/or senior consultants. All complications are immediately attended and managed by the middle grade obstetrician and senior consultants.

The main outcome measures used for the analysis were amount of blood loss, causes of PPH, treatment methods, associated morbidities and mortality. The data collected were analyzed using data analysis computer software SPSS (version 10).

Results

In our study, we identified 35 cases of primary post partum hemorrhage among 2106 deliveries during the study period of 3 years which gives the incidence of PPH to be 5.54 cases per 1000 deliveries. The mean age of study population was 24.66 yrs (SD 4.51 yrs) with the range of 17 – 39 yrs (Table 1). Nineteen cases (54.5%) were primipara while only one case was grand multipara. Thirty one cases (89.6%) had antenatal checkup while four cases (11.4%) never attended antenatal clinic. Twenty nine cases (83.0%) were full term deliveries while

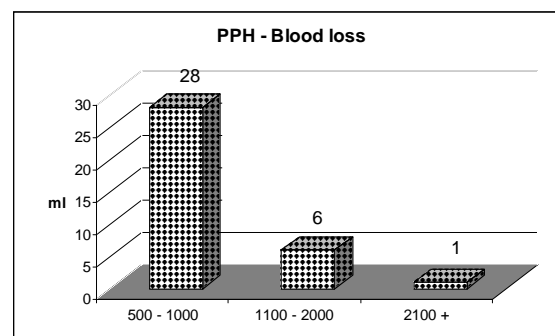


Figure 1: Amount of Blood loss

(Table 2), ten cases (37%) had cervical tear, 6 cases of PPH had retained placenta (Table 3).

The traumatic cases were dealt by repairing of the tear of genital tract. Most of the atonic causes responded to conventional method of uterotonic drugs (oxytocin and ergometrine) and uterine massage and/or bimanual compression of uterus.

In 2 cases of caesarean delivery internal iliac artery ligation alone or in combination with hysterectomy was needed in order to control the bleeding. Retained placenta were removed manually under anaesthesia in 5 cases (Table 4).

Blood transfusion was required in 23 (48.6%) cases. Mean blood volume transfused was 2.42 pints (SD 1.12) of whole blood. One case required 5 pints of whole blood transfusion.

There was one maternal death (2.9%) which was a consequence to hepatic encephalopathy and PPH.

Table 1. Mode of delivery

Vaginal		Instrumental		Caesarean Section		Total
ND	Abn vag del	Forceps	Vacuum	Emerg.	Elect.	
29	2	1 (2.9%)	1 (2.9%)	1 (2.9%)	1 (2.9%)	35 (100%)
	Twin (1)*			Prolonged	Previous cs,	
	Breech (1)†			second stage	now CPD	

NB: twin – (1) *); † Breech delivery (1) were among the 4 home delivery

preterm and post term were 14.1% and 2.9% respectively (Table 1). Nineteen (85.7%) cases of PPH had spontaneous onset of labour and 31.4% of the cases had augmentation of labour due to slow progress. Two were cases of induced labour. Four cases were brought after delivery at home. Majority had vaginal delivery (88%) including one breech delivery and a set of twin delivery. PPH occurred in 2 cases of instrumental and 2 cases of caesarean deliveries. The mean blood loss was 827.14 ml (SD 458.79) with the range of 500 – 2500 ml. One case of Emergency LSCS had blood loss of 2.5 L. (Fig 1).

Genital tract trauma was found in 28 (54.3%) cases, whereas atony of the uterus was the main cause in 12 (37.1%) and retained placenta or bits of placenta was found in nine (23%) cases of PPH. Most of the cases had more than one causes

Discussion

The incidence of PPH in this study is 5.54 cases per 1000 deliveries, which is similar to other studies²⁻⁴ The Mongol race (lama, Sherpa, Rai, Magar, Gurung, Tamang) are the common inhabitants around this institution and had high percent of PPH. Further study in this group would be interesting.

This agreeable incidence is so, because of the routine practice of active management of 3rd stage of labour in our hospital. It's also because of anticipation of PPH and quick action line taken as in cases of induction of labour, prolonged second stage, advanced maternal age, grand multiparity, operative deliveries etc. Counseling women with high risk for PPH (previous history of PPH or retained placenta and third stage

Table 2. PPH- Causes

Atonic (40.0%)		Traumatic (34.3%)		Retained placenta/ tissue (25.7%)		Total
Abruptio Placenta	1	Vaginal wall tear	2	Retained placenta	6	
C/S	2*	Cervical tear	10	Retained bits	3	
Bicornuate Uterus	1					
Unknown cause	10					
Total	14		12		9	35

Table 3. PPH - Management

Atonic		Traumatic		Retained placenta/bits	
Uterotonic + Uterine massage	14	Vaginal tear repair	2	Manual removal of Placenta	5
Uterine packing	6	Cervical tear repair	10	Uterine cavity exploration	3
Bimanual compression	4				
Internal Iliac artery ligation	2				
At CS	(1)				
Caesarean Hysterectomy	(1)				

complication), during their antenatal visit to be confined in our hospital setting where obstetric expertise, blood transfusion and anaesthetist are readily available.

The process also involved expeditious treatment of PPH directed towards the cause of hemorrhage by prompt vigorous crystalloids and blood transfusion ending in definitive therapy; proper physical examination undertaken with good light source, adequate exposure to identify the genital tract injury under general anesthesia if needed with adequate numbers of assistants.

Management of retained placenta was dealt by controlled cord traction for placenta already separated but lying within the vagina or manually in cases of morbid adhesion. There has been a clear tendency for both PPH and retained placenta to recur. For retained placental pieces exploration of uterine cavity was done, 3 in number.

Uterine atony was comparatively less in our study although they form the vast majority (85.55%) of PPH.^{3,5} These were initially treated by uterine massage, uterotonic agents like oxytocin in bolus and infusion, and prostaglandins Carboprost in doses of 250mcg I/M or intramyometrially with documented success rate of 80-90 % was found equally helpful in controlling PPH in cases refractory to oxytocin or ergometrine. Use of misoprostol, with its low cost and heat stability, a promising drug for developing world, used rectally in the dosage of 800mcg in 14 cases refractory to oxytocin or ergometrine is remarkable but we have no such experience to share.^{12,13}

There was no scar dehiscence or tear that needed repair or hysterectomy.

We encountered two difficult cases of PPH at caesarean delivery, both of which were managed with the ligation of internal iliac artery which works by 48% reduction in blood flow and 85% reduction in pulse pressure.⁷ In fact ligation of internal iliac artery was first performed by Kelly²⁶ to control hemorrhage in carcinoma uteri. Although more contemporary series report higher success rates for this procedure, the outcome remains poor in patient with uterine atony, so was in one of our cases. The reported success rate of this procedure is less than 50% and out of the two cases only one case responded, the other case needed hysterectomy to achieve hemostasis. Hysterectomy has a reported incidence between 0.02 to 0.3% and has been adapted over 100 years; Spencer Wells of United Kingdom, in 1881 being the first to perform total caesarean hysterectomy.⁵

Simpler procedures chosen are bilateral uterine artery ligation and lately recognized uterine compression hemostatic sutures B-Lynch compression suture with possibility for future fertility^{5,15} We never had to use these technique as they were not required.

In the management of PPH, selective arterial transcatheter embolization and stepwise devascularisation has offered an effective means of controlling PPH obviating means of morbidity and mortality of open surgical procedures.^{19,20}

Others that need mention is evacuation of the hematoma and tying of the bleeding vessels in cases of broad ligament /retroperitoneal hemorrhage after laparotomy or sometimes after vaginal delivery which are initially managed expectantly in stable patient if haematoma is not expanding which can be determined by USG, CT Scan and MRI.

Overall the women who suffered PPH improved dramatically with unfortunate death of a woman who died because of a complication of hepatic encephalopathy.

Conclusion

As PPH is unpredictable mostly occurring without warning, one need to carry out appropriate measures swiftly, in a stepwise manner to control obstetric hemorrhage without wasting time, aiming first for a conservative approach before emergency obstetric hysterectomy, a potentially life-saving procedure is considered at unavoidable catastrophe; leaving the type of surgical approaches best to obstetrician's experience.

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