

Causes of Primary Postpartum Haemorrhage after Vaginal Delivery

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ABSTRACT

Background: Obstetrical hemorrhage is the commonest cause of maternal death in developing countries. Traditionally it is defined as blood loss of more than 500 ml from genital tract after delivery of baby. The most common cause is uterine atony and rest of the causes includes retained product of conception (RPOC), genital tract trauma and coagulopathy.

Aim: To identify the cause of primary post-partum hemorrhage (PPH) following vaginal deliveries.

Methods: This cross-sectional study was carried out at Department of Obstetrics & Gynecology, Unit III, Civil Hospital Karachi from 1st January 2008 to 30th June 2008. Fifty patients were included, who went into PPH within 24 hours after vaginal delivery in the hospital. The cause of each case was identified including uterine atony, retained product of conception, genital tract trauma and coagulopathy.

Results: Sixty six percent of patients had uterine atony, thus found to be the commonest cause of primary PPH followed by RPOC including retained placenta (18%). Sixteen percent patients suffered genital tract trauma and none had coagulopathy.

Conclusion: Uterine atony found to be most common cause of primary PPH. For primary PPH it should be considered as provisional diagnosis, until unless other cause is diagnosed as definite diagnosis.

Key words: Postpartum hemorrhage, Uterine atony, Abnormal placentation

INTRODUCTION

Postpartum hemorrhage is a global issue and is important cause of maternal mortality and morbidity worldwide. World Health Organization (WHO) defines postpartum hemorrhage "as blood loss, exceeding 500 ml from genital tract, after delivery of baby"¹. According to American College of Obstetric & Gynecology (ACOG) "a hematocrit (Hct) fall of 10% or a hemorrhage that requires blood transfusion"^{2,3}. It is leading cause of death in Pakistan and over 25,000 women die to PPH each year.³ Postpartum haemorrhage is of two types, primary PPH occurs within 24 hours of delivery while secondary PPH occurs after 24 hours upto 6 weeks after delivery⁴.

Uterine atony is the commonest cause (>90%) and occurs due to failure of contraction or retraction of myometrium to occlude sinuses embedded in it.⁵ Retained placental tissue or membrane may prevent good placental site retraction, so is another cause of PPH⁶. Beside these two, genital tract lacerations and coagulopathy are also causal factors of PPH.⁷ Certain risk factors are also known to be associated with each cause specific cause, like over distension of uterus in case of multiple gestation,

polyhydromnios, macrosomia. Similarly exhausted uterus in case of augmentation or induction of labour and infection may be associated with uterine atony. Uterine anomalies, scaring of uterine wall or abnormally adherent placenta may lead to retained product of conception. Similarly for genital tract lacerations, instrumental delivery and macrosoma may be the associated factors. For coagulopathy abruptio placentae is a known association^{2,4}.

It is important to identify the cause of PPH to manage the condition appropriate and to prevent fatal consequences of PPH. Along with mortalities prevention of morbidities is equally important.⁷ Management of PPH comprises of general measures for any cause and specific management for particular cause including medical treatment or surgical intervention⁸. Complications of PPH include hypovolumic shock, which in turn leads to acute renal failure (ARF), adult respiratory distress syndrome (ARDS) and Sheehan's syndrome. Blood transfusion related complications like transfusion reaction or transmission of certain viral disease. Disseminated intravascular coagulopathy (DIC) is also a common complication^{8,9}. Maternal morbidity and mortality rises with delay in diagnosis and intervention, thus the cornerstone of effective management is rapid diagnosis and intervention¹⁰.

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PATIENTS AND METHODS

This cross-sectional study was carried out at Department of Obstetrics & Gynaecology, Unit III, Civil Hospital Karachi from 1st January 2008 to 30th June 2008. Fifty patients with age 20-30 years, primary PPH after vaginal delivery and gravidity between primigravida to six gravid at gestational ages between 37 to 42 weeks were included. Cases of intra-uterine foetal death (IUFD) or chronic medical illness were excluded. Causes of primary PPH were evaluating by examining the patient. All the causes like atonic uterus, retained placental tissue or membrane, genital tract laceration (extended episiotomy, perineal, vaginal, cervical or uterine tear) and coagulopathy were recorded. The data was entered in SPSS-18 and analyzed.

RESULTS

Table 1: Frequency of age and gestational age PPH (n = 50)

Variable	No.	%
Age (years)		
20 – 25	30	60
26 – 30	20	40
Gestational age (weeks)		
36 – 38	27	54
39 – 41	23	46

Table 2: Frequencies of parity, onset of labour and mode of deliveries

Variable	No.	%
Parity		
Primiparous (Po)	14	28
Multiparous (P1-4)	35	70
Grand multiparous (P≥5)	1	2
Onset of labour		
Spontaneous	49	98
Induced	1	2
Mode of delivery		
Spontaneous vaginal delivery	41	82
Vacuum vaginal delivery	6	12
Twin vaginal delivery	2	4
Breech vaginal delivery	1	2

Table 3: Frequency of causes of primary PPH (n=50)

Causes of primary PPH	No.	%
Uterine atony	33	66
Retained placental tissue or membrane	8	16
Vaginal wall laceration	3	6
Cervical tear	3	6
Retained placenta	1	2
Perineal tear	1	2
Extended episiotomy	1	2
Uterine tear	-	-
Coagulopathy	-	-

Thirty patients (60%) presented with primary PPH in 20-25 years and 20(40%) patients of primary PPH in 26-30 years with mean age of the patients was 24.82±3.35 years. Similarly the average gestational age was 39.0±1.09 weeks (Table 1). Out of 50 women, 14(28%) were primiparous, 35(70%) were multiparous (parity 1 to 4) and 1(2%) was grand multiparous (parity ≥5), Onset of labour of 49(98%) was spontaneous and only 1 woman induced labour. Augmentation of labour was observed in 7(14%) women. Regarding mode of delivery, spontaneous vaginal delivery was observed in 41(82%), 6(12%) were vacuum vaginal deliveries, 2(4%) were twin vaginal deliveries and only 1(2%) was breech vaginal delivery (Table 2). Uterine atony was the commonest cause of primary PPH that was observed in 33(66%) women followed by retained placental tissue or membrane, 8(16%) cases, vaginal wall laceration 3(6%), cervical tear 3(6%), retained placenta, perineal tear and extended episiotomy was observed in one case each (Table 3).

DISCUSSION

Primary postpartum haemorrhage is the blood loss of 500 ml or more in the 1st 24 hours of delivery of baby.¹¹ The prevalence varies from 4.5% to 19%. It is associated with significant maternal mortality and morbidity^{11,12}. In developing countries, 28% maternal deaths are caused by PPH¹³ prevalence in Pakistan is 34%¹⁰.

The largest incidence was seen in patients aged between 20-25 years (60%). Age influence the occurrence of PPH. Advancing age is associated with primary PPH. In some studies the highest incidence of PPH was found in women more than 30 years of age.^{1,11,13} Khanian et al¹¹ found decreases blood loss with increasing age and greatest blood loss found to occur in mothers aged 15-19 years. But in the present study age limit was between 20-30 years.

Only term patients were included in the study i.e., with gestational ages between 37-42 weeks with mean 39.0±1.09, so the occurrence in preterm or post-term is not considered in the study. Naz et al⁴ found 43.62±20.95 weeks as mean gestational age but she included patients between 25-45 weeks.

Gravidity was also limited from 1-6 beyond this limit all grand multiparous women were not included. PPH is found to be 41% in primiparous women according to one study⁹ while 29% according to other.¹⁴ The later is almost similar to that of the study (28%). In a study conducted by Khanum⁵ found 18% primiparous, 25% multiparous (i.e. parity 1-4) and 57% grand multiparous (i.e. parity 5 or more (which differ from this study, percentages are found to 28%, 70% and 2% respectively. The commonest cause of

primary PPH was found to be uterine atony (55%). It was similar to the other local and international studies^{1,4,5,8,13,16}.

Genital tract trauma is found to be 16%, which is comparable with the study conducted by Sheikh et al⁸ 25.7% cases of cervical and vaginal tear, while in another study it was found to be 30%⁵ Bibi et al¹⁰ found 29.4% of such cases which is higher in comparison with this study. Naz et al⁴ found 24% of genital tract lesion.

While retained product of conception (RPOC) was 18% (including retained placenta which was 2%). The result is comparable with another study which showed 16% cases of RPOC⁵. Retained placenta was found to be 3.1% in Sheikh⁸ study.

CONCLUSION

Uterine atony is found to most common causes so maximum efforts should be made to practice preventive measures, drilling and training of specific management for uterine atony, as maximum patients can be dealt on the same lines. Other causes are relatively less common but examination and evaluation to diagnose the rare but significant causes of PPH.

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