ORIGINAL ARTICLE

A Three Year Audit of Emergency Peri-Partum Hysterectomy at Lady Willingdon Hospital Lahore

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ABSTRACT

Objective: The objective was to know the incidence, indications and outcome of emergency peri-partum hysterectomy
Study design: This study was a descriptive case series study. The study period was three years with effect from 01-01-2008 to 31-12-2010. It was conducted in Lady Willingdon hospital Lahore.
Study design:-Descriptive case series.
Setting: Department of Obstetrics & Gynaecology, Lady Willingdon Hospital Lahore.
Duration of study: Three years with effect from 01-01-2008 to 31-12-2010
Sample size:-190 patients who underwent emergency peri partum hysterectomy out of 67368 total deliveries in the 3 year study period.
Sampling technique:-Non probability: Convenience sampling.
Results: 190 patients underwent emergency peri-partum hysterectomy out of 67368 deliveries in the study period. (Incidence 0.28 %) Caesarean hysterectomy was performed in 0.54% of patients (n 119) (total c sections 21889) and an emergency hysterectomy following a vaginal delivery was done in 0.15% cases (n 71) (total vaginal deliveries 45479). Uterine atony, placenta praevia and placenta accreta were the leading indications for peri-partum hysterectomy. A subtotal hysterectomy was performed in 30 cases. There were 20 maternal deaths.
Conclusion: Grand multi-parity leading to uterine atony and repeat caesarean section leading to abnormal placentation were found to be the major risk factors for emergency peri-partum hysterectomy. Although the procedure is associated with serious morbidity & mortality, but still it is life saving as we were able to avoid 154 potential maternal deaths with the procedure.
Keywords: peri-partum hysterectomy, post-partum haemorrhage (PPH), uterine atony, placenta praevia, placental abruption and placenta accrete, normal delivery, caesarean section.

INTRODUCTION

Postpartum Haemorrhage (PPH) remains a significant cause of maternal morbidity like hypovolemic shock, anaemia, multi organ failure, consumptive coagulopathy, disseminated intra vascular coagulation (DIC), blood transfusion related complications[1]. PPH is one of the leading causes of maternal morbidity and mortality[2]. An estimated 500,000 women die as a consequence of pregnancy each year, with up to an estimated quarter of these deaths occurring as a consequence of hemorrhage. [(3)] The management of PPH starts with the prevention. Understanding of the risk factors leading to PPH are the most important preliminaries and the active management of the third stage of labour (AMTSL) reduces the risk and should be offered and recommended to all women[4]. Uterine atony & abnormal placentation accounts for the majority of primary postpartum hemorrhage[5].

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Early recognition & prompt intervention in uterine atony is fundamental. Combinations of conservative manual and medical therapies are adequate and successful treatment options in most cases. However, when the hemorrhagic process continues and when either clotting abnormalities or hemodynamic instability develops, the next step must be an invasive intervention. Uterine compression sutures are especially highly effective and a straightforward and easy emergency procedure which conserves fertility. The next conservative surgical measures are ligation of uterine arteries & the internal iliac arteries. However if these conservative & uterus preserving measures fail, the ultimate step in the management of persistent PPH is the emergency peri-partum hysterectomy[6]. A timely decision saves maternal lives. So although the emergency peri-partum hysterectomy is undertaken as a last resort in the management of primary PPH, an early decision is essential before the patient's condition deteriorates, besides availability of an experienced obstetrician to undertake a technically demanding operation[7], though the procedure is life

saving, still there is lot of morbidity & mortality associated with it .so we decided to undertake this study.

The purpose of this study was to review all the caesarean and post-partum hysterectomies performed in Lady Willingdon Hospital Lahore between 01-01-2008 to 31-12-2010.

MATERIAL AND METHODS

Total number of patients delivered in our study period was recorded along with total peri-partum hysterectomies done within the first 24 hours post-partum. Maternal age, parity, weeks of gestation, indications for hysterectomy and the time interval between delivery and hysterectomy were noted. Measures like ligation of internal iliac vessels and administration of intramyometrial prostaglandins to control haemorrhage & to save the uterus were noted. Maternal outcome was noted.

All pregnant women with a gestation of 24 weeks or more delivered in our study period in Lady Willingdon hospital Lahore either vaginally or by caesarean section & underwent emergency peri-partum hysterectomy for life threatening post partum haemorrhage within 24 hours post-partum were included in the study. Those patients who had emergency peri-partum hysterectomy in some other Private or Government hospital & were then referred to Lady Willingdon Hospital for uncontrolled haemorrhage were not included in the study.

Data collection & analysis: An informed consent was taken from the patients and their families to use their data in research. A proforma was devised to collect data. Relevant information about each parturient such as maternal age, parity, weeks of gestation, indications for hysterectomy and the time interval between delivery and hysterectomy was noted. Total number of vaginal deliveries and caesarean sections carried out during the study period was also noted. Clinical examination and relevant investigations were done. Intra-operative blood loss estimates were noted. Administration of uterotonics & the use of conservative surgical measures like ligation of uterine/internal iliac vessels to control haemorrhage were also recorded. Total number of blood transfusions given to each patient was also noted. The operating time was noted. The principal surgeons performing the procedure were categorized into consultant level, senior registrar, and registrar level. The period of stay in the intensive care unit as well as the total hospital stay was noted. Intra-operative injuries as well as the occurrence of any post-operative morbidity were recorded. Total number of maternal deaths was noted

Collected data was entered and analyzed on SPSS version 15. The variables to be analyzed were maternal age, parity, weeks of gestation, indications for hysterectomy and the maternal outcome in terms of morbidity & mortality. They were analyzed using simple descriptive statistics. As this was a descriptive study so no test of significance was applied.

RESULTS

During the study period, 45479 patients delivered vaginally whereas 21889 patients were delivered by caesarean section. Thus the total number of deliveries in the study period was 67368 & the caesarean section rate was 32.49 %. 190 patients underwent an emergency peri-partum hysterectomy for life threatening post partum haemorrhage, (Incidence 0.28 %,). The mean maternal age of these 190 patients was 24 years (range 17-42 years). The mean gestational age at delivery was 256 days (range 184 to 282 days). The average gravidity was gravida 4, (Range primigravids to Gravida 12).Caesarean hysterectomy was performed in 0.54% of caesarean sections (119 out of 21889 total caesarean sections) and an emergency hysterectomy was done in 0.15% patients following a vaginal delivery (71out of 45479 total vaginal deliveries). So the incidences of 1 in 640.5of normal deliveries & an incidence of 1 in 183.9 of caesarean sections were found.

Grand multi-parity leading to uterine atony and repeat caesarean section leading to abnormal placentation were found to be the leading risk factors. All the 71 patients who needed an emergency hysterectomy after a vaginal delivery were multiparous and had uterine atony as the cause of PPH & thence and indication for hysterectomy. Whereas another 30 patients had uterine atony during caesarean section. Placenta praevia was noted in 51 out of 190 patients, while 20 out of 190 cases had placenta accreta. All these 71 patients with placenta praevia & placenta accreta had at least one previous caesaren sections.

Ten patients needed an emergency peri-partum hysterectomy for placental abruption (5.26%) whereas eight patients needed hysterectomy for ruptured uterus (4.21%). Four Primigravida patients had an emergency peri-partum hysterectomy. All these primigravid patients had been mismanaged and were referred to our hospital for obstructed labour. They needed hysterectomy for intractable haemorrhage due to atony.

Out of the total 190 emergency peri-partum hysterectomies, subtotal hysterectomy was performed in 30 cases. Re-laparotomy for continuing

vaginal bleeding after emergency peri-partum hysterectomy was required in 10 patients.

There were 36 maternal deaths in these patients. 26 out of these 36 patients died due to delayed resort to hysterectomy. They had already gone into irreversible haemorrhagic shock before hysterectomy. 4 patients out of those 10 re-openings had bled too much, never recovered & died after staying on ventilator for 24-48 hours. There were six table deaths. Two patients with abruption had table deaths as they went into DIC & haemostasis could not be secured in spite of multiple FFP infusions along with fresh blood. The remaining four table deaths occurred in patients with major placenta praevia. Bleeding was too heavy, they went into hypotension & cardiac arrest before completion of hysterectomy and died on operating table.

Urinary bladder injury was the only intra operative iatrogenic complication which occurred in 15 patients. Average blood loss was 2500 ml (Range 1500ml- 5000ml). Average blood transfusion requirement was four per patient, (Range 2-12 transfusions). Average operating time was one hour & thirty minutes, (Range 1 hour -6 hours). 148 hysterectomies were performed by senior registrars whereas 42 were performed by consultants. Chest infection, jaundice, urinary tract infection & wound infection were the commonest post operative morbidities. Average hospital stay was 9 days, (Range 7-30days).

Details of deliveries, caesarean sections & emergency peri-partum hysterectomies

Total number of deliveries	67368
Total number of normal deliveries	45479
Total number of Caesarean sections	21889
Total number of emergency Peri-partum Hysterectomies	190
Number of emergency Peri-partum Hysterectomies after normal delivery	71
Number of emergency Peri-partum Hysterectomies after Caesarean section	119
Caesarean sections rate.	32.49 %
Overall incidence of emergency Peri-partum Hysterectomy	(0.282%)
Incidence of emergency Peri-partum Hysterectomy after normal delivery	(0.156%) (1 in 640 normal deliveries)
Incidence of emergency Peri-partum Hysterectomy after Caesarean section	(0.543%) (1 in 184 caesarean sections)

Indications for emergency peri-partum hysterectomy after caesarean section

Indications	Number
Placenta praevia	51
Uterine atony during c section	30
Placenta accrete	20
Placental abruption	10
Ruptured uterus	8
Total	119
Indications for emergency peri-partum hysterectomy after normal delivery	
Uterine atony	71
Total	71

Maternal mortality reason for maternal death

	=n
Delayed resort to hysterectomy	26
Re-laparotomy for continuing vaginal bleeding after emergency peri-partum hysterectomy	4
Placenta praevia (table deaths)	4
Abruption (table deaths)	2
Total maternal deaths	36

Maternal morbidity

Morbidity	**=n**
Prolonged hospital stay (over 10 days)	100
Wound infection	50
Massive transfusions (Over 6 units)	40
Urinary tract infection	30
Chest infection	30
Bladder injury	15
Re-laparotomy for continuing bleeding after emergency peri-partum hysterectomy	10
Jaundice Prolonged hospital stay	5

DISCUSSION

The incidence of emergency peri-partum hysterectomy in our study after vaginal delivery was found to be 0.156% (1 in 640 normal deliveries)and after caesarean it was found to be 0.543% (1 in 184 caesarean sections) whereas in a national study conducted by Fatima M, Kasi PM et al at Department of Obstetrics and Gynecology, Bolan Medical College, Quetta, Balochistan, Pakistan, it is 4 per 1,000 births [8] & In another national study conducted by Nisar N, Sohoo NA. Et al at Department of Obstetrics & Gynaecology, Isra University Hospital, Hyderabad, Pakistan, it is 0.42%[9].. internationally quoted incidence is 1 in 2,526 vaginal deliveries and 1 in 267 cesarean sections[10,11].

The age of women requiring emergency hysterectomy varies according to different reports. In our series, the mean maternal age was 32 years (range 17-42 years).This probably reflects the differences in the mean age of the obstetric population in those countries[9].

Similar to the age, parity of women needing emergency hysterectomy also varies in underdeveloped & developed world due to different mean parity of obstetric population under study. In the underdeveloped world majority of the women are grandmultiparous whereas in the developed world 20-30% women are of low parity. In our series, majority of women were grandmultiparous, only 4 patients who had a peri-partum hysterectomy were primigravidas[12].

Grand multi-parity leading to uterine atony and repeat caesarean section leading to abnormal placentation were found to be the leading risk factors in our study. All the 71 patients who needed an emergency hysterectomy after a vaginal delivery were multiparous and had uterine atony as the cause of PPH & thence and indication for hysterectomy. Whereas another 30 had uterine atony during caesarean section. Placenta praevia was noted in 51 out of 190 patients, while 20 out of 190 cases had placenta accreta. All these 71 patients with placenta praevia & placenta accreta had at least one previous caesaren sections.

It has been observed that unbooked status & ruptured uterus is most striking risk factor in the most under developed areas of the world like in Quetta of Pakistan (8) & in Nigeria[13] while grandmultiparity leading to uterine atony & repeat caesaren sections leading to placenta Praevia & placenta accrete is the prevailing pattern in developing areas with relatively better antenatal care and better facilities (like Lahore as found in our study) & in Karachi [(14)] whereas in most of the developed world repeat caesaren section, placenta praevia and accrete is the leading risk factor[15]. That means obstetric profiles of the population in Lahore & the pattern of pregnancy care in our biggest maternity hospital is in between the two extremes.

The operative blood loss associated with emergency hysterectomy varies according to different reports ranging from 1500ml to 3500ml[16]. In our series, the average intra-operative blood loss was 2500ml. In our study, 30 patients had subtotal hysterectomies whereas 160 had total hysterectomy. There were no statistically significant differences in the operative blood loss, amount of blood transfused and hospital stay between the patients with total and subtotal hysterectomies. However, the patients with subtotal hysterectomies had significantly shorter operating times compared to the patients with total hysterectomies.

Although emergency peri-partum hysterectomy is life-saving surgery, the complications associated with the procedure should not be underestimated. In our series there were 36 maternal deaths. All these deaths were actually related to the obstetric catastrophic haemorrhage, rather than to the procedure itself. Actually we were able to avoid 154 potential maternal deaths with the procedure & we could not save these 36 patients. The most common intra operative complication is quoted to be the urological injuries. In our study 15 patients had bladder injury. Urinary tract infection & febrile morbidity has been reported as the most common post-operative complications by several authors. The incidence of re-laparotomy after emergency hysterectomy because of continued post-operative bleeding has been reported by Kwee A; Bots ML et al; as 25%[17] whereas in our study 10 patients (5.26%) required re-exploration after emergency hysterectomy to secure haemostasis. This underlies the need for meticulous haemostasis after emergency hysterectomy if re-laparotomies are to be avoided.

CONCLUSION

Grand multi-parity leading to uterine atony and repeat caesarean section leading to abnormal placentation were found to be the major risk factors for emergency peri-partum hysterectomy. Although the procedure is associated with serious morbidity & mortality, but still it is life saving as we were able to avoid 154 potential maternal deaths with the procedure.

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