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Original Article

PERIPARTUM HYSTERECTOMY FOR PRIMARY POSTPARTUM HAEMORRHAGE

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ABSTRACT:

Objective: The aim of this study was to find out the frequency, indications and the associated risk factors for peripartum hysterectomy in a tertiary care hospital.
Material and Methods: This retrospective study was carried out from January 2008 to December 2010 in civil hospital, Karachi. Demographic data including age, parity, booking status and gestational age were noted. Indication of hysterectomy, associated risk factors and number of blood transfusion recorded. Mean and standard deviation calculated for continuous variables and the categorical variables mentioned in frequency. Association of risk factors with booking status determined by logistic regression.
Results: A total of 38 emergency peripartum hysterectomy carried out and the the frequency was 4.58/1000 deliveries. The mean age and parity was 30.5±4.3 years and 3.0±1.7 respectively with a mean gestational age of 36.2±3.6 weeks. Majority of patients were unbooked and 60.5% women underwent hysterectomy following cesarean section. Uterine atony was the commonest indication (47.4%) followed by placenta praevia, ruptured uterus and morbidly adherent placenta. Previous cesarean section, placenta praevia, grand multiparity and prolonged or obstructed labour were major associated risk factors found in this study. Unbooked patients had significantly increased association of risk factors (P-value < 0.05). All the patients received massive blood transfusion and three maternal deaths occurred during this study.
Conclusion: Despite advances in the management of primary postpartum haemorrhage, frequency of postpartum hysterectomy is still high . Major identified risk factors are previous cesarean section, placenta praevia, ruptured uterus and morbidly adherent placenta.

Key word: Peripartum hysterectomy, uterine atony, cesarean section, placenta praevia, adherent placenta.

INTRODUCTION:

Primary postpartum haemorrhage (PPH) is still a major cause of maternal mortality across the world and is a leading cause of maternal death in Pakistan. Although advances have been made in the development of conservative medical and surgical treatment of major obstetric haemorrhage, emergency peripartum hysterectomy remains a life saving procedure in the management of intractable haemorrhage unresponsive to conservative treatment.[1] Peripartum hysterectomy consists of hysterectomy performed following ceasarean deliveries (ceasarean hysterectomy) and after vaginal deliveries (postpartum hysterectomy). Majority of studies quote an incidence rate of 1 per 1000 deliveries or less but much variation is reported in literature.[2] Some of the identified risk factors for peripartum hysterectomy are multiparity, increasing age, ceasarean delivery, prior ceasarean section and placenta previa.[3] Role of peripartum hysterectomy in modern obstetrics is evolving. Improving management of postpartum haemorrhage and newer surgical techniques should decrease peripartum hysterectomy for atony and rising levels of repeat elective cesarean deliveries should decrease hysterectomy following uterine scar rupture during

labor. But at the same time increasing cesarean rates have led to an increase in number of peripartum hysterectomy for morbidly adherent placenta.[4] Thus peripartum hysterectomy becoming more challenging for obstetricians in the future.

Peripartum hysterectomy is usually undertaken in cases of life threatening obstetric haemorrhage and may therefore be considered a 'near – miss' event.

The aim of this study was to determine the prevalence, indications and associated risk factors for emergency peripartum hysterectomy so that appropriate strategy could be employed to reduce the rate in future.

MATERIAL AND METHODS:

This retrospective study was carried out in the department of Obstetric and Gynaecology Unit-I, Civil Hospital, Karachi from January 2008 to December 2010. Civil Hospital is a tertiary care teaching hospital getting referrals from all over the city of Karachi and also adjoining areas of other cities.

All the patients who underwent emergency peripartum hysterectomy were included in this study and their medical records were reviewed. Emergency peripartum hysterectomy was defined as hysterectomy performed for haemorrhage unresponsive to other treatment within 24 hours of abdominal or vaginal delivery of more than 24 weeks of gestation. Maternal characteristics such as age, parity, gestational age, booking status were recorded. Associated risk factors such as mode of delivery, previous history of cesarean section, abruptio placenta, fibroids and placenta praevia in current pregnancy were identified. Indication of peripartum hysterectomy and need for blood transfusion were noted. All these cases were performed by either consultants or senior registrars.

All these data were analysed by SPSS version 15. Mean and SD was calculated for age, parity, gestational age and number of blood transfused, while the risk factors and indication of hysterectomy were described in numbers and percentages. Association of booking status with risk factors were also calculated by logistic regression and the significant P-value was taken as < 0.05.

RESULTS:

Over the study period total 38 emergency peripartum hysterectomy were performed among 8312 total deliveries, thus the frequency being 4.58/1000 deliveries.

The mean age was 30.5 ± 4.3 years with the highest frequency in 26 to 30 years group. The mean parity was 3.0 ± 1.7 and majority were between parity 2 to 4 while the mean gestational age was 36.2 ± 3.6 weeks and ranging between 28 to 41 weeks (Table-I).

Regarding booking status 20 (52.6%) patients were unbooked, 9 (23.7%) were referrals and only 9 (23.7%) patients were booked. Majority of women underwent hysterectomy following cesarean section (60.5%), while it followed vaginal delivery in 23.7% and laparotomy in 15.8% patients who presented with ruptured uterus. Emergency peripartum hysterectomy was performed within 24 hours in all except one referred case who presented after 24 hours with history of cesarean section and intraperitoneal haemorrhage and shock.

Indication of peripartum hysterectomy is presented in Table – II, which reveals severe haemorrhage due to uterine atony as the commonest indication (47.4%), followed by placenta praevia, ruptured uterus and morbidly adherent placenta. Estimated blood loss was 0.8 to 4.5 litre. Associated risk factors for peripartum hysterectomy found was previous cesarean section (23.7%), placenta praevia (13.2%), grand multiparity (10.5%) and prolonged or obstructed labour in (10.5%) patients(Table-II). These risk factors were found significantly higher (P-value – 0.013) in unbooked group as compared to booked patients. All the patients required blood transfusion and the mean number of blood transfused

TABLE – I

AGE, PARITY AND GESTATIONAL AGE DISTRIBUTION

N = 38

	No.	Percentage	Mean±SD
AGE (Years)			
20 – 25	5	13.2	
26 – 30	22	58.0	30.5 ± 4.3
31 – 35	8	21.1	
36 – 40	3	7.9	
PARITY (No.)			
0 -1	5	13.2	
2 – 4	26	68.4	3.08 ± 1.68
5 and more	7	18.4	
GESTATIONAL AGE (Weeks)			
28 – 36	13	34.2	
37 – 40	24	63.2	36.2 ± 3.6
41 and more	1	02.6	

TABLE – II

INDICATIONS OF HYSTERECTOMY AND ASSOCIATED RISK FACTORS

N= 38

Indication of peripartum hysterectomy	**No.**	**Percentage**
Uterine atony	18	47.4
Placenta previa	7	18.4
Ruptured uterus	7	18.4
Morbidly adherent placenta	5	13.2
Infections	1	2.6
Associated risk factors	**No.**	**Percentage**
None	13	34.2
Previous cesarean section	9	23.7
Placenta previa	5	13.2
Grand multiparity	4	10.5
Obstructed/prolonged labour	4	10.5
Abruptio placenta	2	5.3
Fibroids	1	2.6

was 5.32 ± 1.9 . Three maternal deaths occurred during this study, while others recovered.

DISCUSSION:

The frequency of peripartum hysterectomy in the present study is 4.58/1000 deliveries which is comparable to some studies but high as compared to other Reports. [2,5,6,7]This difference in the incidence may be explained by different level of sophistication in obstetric health care and wide variation in the practices and experiences of different obstetricians. There are no formal guidelines on the stepwise use of conservative measures prior to resorting to hysterectomy or on the absolute trigger of hysterectomy. Another contributing factor for higher incidence in developing countries like ours is majority of patients presenting are either unbooked or referrals with detrimental health conditions where delaying decision for hysterectomy while providing conservative treatment will not be appropriate as it increases the risk for further blood loss, coagulopathy and maternal mortality.[1] A decline in this high rate can be achieved by provision of good antenatal care, training of unskilled birth attendents, early referral for high risk cases especially with previous cesarean section, use of imaging techniques to diagnose placenta previa and morbidly adherent placenta, following proper guidelines for stepwise management for controlling peripartum hysterectomy and restricting hysterectomy for emergent situation only.

The mean age of 30.5 years is comparable to other studies.[6,7] The youngest patient was 20 years old who had uterine trauma and atony and presented with haemodynamic unstability which was unresponsive to conservative measures. Unfortunately majority of our women belonged to low parity group in contrast to other studies.[1,8] This is explained by either late presentation where conservative surgical treatment either failed or could not be performed as quick decision for hysterectomy taken to save the maternal life as majority of them were unbooked or referrals. A delay of between 2 and 6 hours from delivery to uterine compression suture is associated with fourfold increase in failure as evident from a population based study by UK Obstetric Surveillance System.[9]

Life threatening haemorrhage resulting from uterine rupture and atony has become rare events in the developed world but still posing a major threat for peripartum hysterectomy in developing countries as evident from this study. Uterine atony is still the major cause of severe haemorrhage and is interestingly who developed atony were significantly lower in gravidity thus highlighting the potential risk of atony in these women. Some of these uterine atonic group women had one or more of risk factors (prolonged or obstructed labors, grand multiparity and abruptio placenta). A study from London hospital reveals placenta praevia as the leading indication for peripartum hysterectomy in contrast to uterine atony which was leading indication in 1980's.[1] The reason presented for this shift are two fold. Firstly, the pharmacologic and conservative surgical management improved a lot eg. Prostaglandin analogues, uterine balloons and use of brace suture and the second reason is rising cesarean section rate which is thought to predispose to abnormal placentation in subsequent pregnancies. Ruptured uterus also

found as important indication in our study which is rarely seen in developed world. One study from Nigeria reveals ruptured uterus as the major (77.2%) indication for emergency peripartum hysterectomy. [10] It was mostly encountered in patients with grandmultiparity, scarred uterus, injudicious use of oxytocic agents and prolonged or obstructed labour, which reflects the lack of appropriate antenatal care and poor access to emergency obstetric health care services still prevailing in our society.

A systematic review of 24 articles concludes women at high risk of emergency hysterectomy are those who are multiparous, had a cesarean delivery in either a previous or present pregnancy or had abnormal placentation, which is also evident in current study.[11] Previous cesarean delivery is one of the important risk for peripartum hysterectomy as reported in literature documenting the risk of primary cesarean delivery being more than 4 times the risk of vaginal delivery and approximately 8 times for repeat cesarean.[12] Repeat cesarean delivery was the major risk factor in this study which correlates with US database study of inpatient care. Thus decreasing the cesarean delivery can reduce the peripartum hysterectomy.[13] A population based study using the UKOSS reports uterine atony and morbidly adherent placenta (placenta accreta, increta or percreta) as the major causes of haemorrhage requiring peripartum hysterectomy.[14] A significant number of morbidly adherent placenta were also associated with placenta praevia in our study. The morbidity associated with peripartum hysterectomy following morbidly adherent placenta can be minimized by timely diagnosis (by Doppler ultrasound or MRI in all cases of previous cesarean section with placenta praevia) and planned management by senior obstetrician and other multidisciplinary team electively. Unbooked patients presented with these risk factors significantly thus reflecting the quality of care provided in our community as early identification and timely referrals could have saved some of these hysterectomies. Seventy six percent of the patients in this study had emergency peripartum hysterectomy at the time of the cesarean section or laparotomy. This is similar to the findings of other investigators.[1] This is presumably

linked to the early identification of the severity of haemorrhage at the time of surgery. Although the lead surgeon at the cesarean section was a trainee, all the hysterectomies were performed by a consultant obstetrician.

All the patients required blood transfusion with a mean of 5.32 ± 1.9 red cell units and quite a number of fresh frozen plasma. Three maternal deaths occurred, one because of irreversible shock and two developed coagulopathy. It is therefore vital that attempts at fertility sparing conservative management should not be unduly prolonged as increasing time lapse increases the risk of further blood loss, coagulopathy and maternal mortality. Peripartum hysterectomy is accompanied by substantial morbidity and mortality and according to one report mortality is more than 25 times of that hysterectomy performed outside of pregnancy.[15] Therefore decision regarding conservative treatment and hysterectomy has to be individualized according to situations and facility.

CONCLUSION:

No matter how much training is undertaken to prepare for such cases, peripartum hysterectomy remains the most dramatic procedure in modern obstetrics, but one that can be ultimately lifesaving for mothers in appropriate clinical settings.

The prevalence of emergency peripartum hysterectomy is high in our institution and is performed for young multiparous women through to elderly grand multiparous women. The main indications are uterine atony, placenta previa, morbidly adherent placenta and ruptured uterus while previous cesarean section is the major risk

factor. Anticipation of haemorrhage is possible but uncontrollable haemorrhage can occur unexpectedly. Antenatal booking and early referrals in high risk cases can reduce the rate significantly.

All obstetricians should be adequately trained in fertility sparing surgeries and clear protocols and drills on the management of peripartum haemorrhage may help in reducing the peripartum hysterectomy rate which carries high morbidity and mortality itself.

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