

Changing Indications and Risk Factors for Peripartum Hysterectomy

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Abstract

Background: To determine the changing indications and risk factors for Peripartum Hysterectomy (PH), comparing the present times with the nineteen eighties.

Methods: This retrospective comparative study was conducted in the Department of Obstetrics and Gynaecology (Unit-II) at Holy Family Hospital, Rawalpindi. Data of patients undergoing PH over a five-year period in the nineteen eighties, extending from June 1984 to May 1989 was collected. All ladies delivered during this period constituted Group A. The clinical record of all patients undergoing peripartum hysterectomy in the recent five-year period from January 2010 to December 2014 was examined to determine the indications and risk factors which necessitated this surgery. All women delivered in this time period constituted Group B. Peripartum Hysterectomy was defined as hysterectomy performed at the time of delivery or within the immediate postpartum period of 48 hours. All women of more than 28 weeks of gestation undergoing peripartum hysterectomy were enrolled.

Results: The total number of deliveries conducted in Group A (1984-89) was 7843. Total vaginal deliveries were 6795(86.6%), while 1048(13.4%) were Caesarean sections(CS).

In Group B (2010-14) total deliveries were 45340. Vaginal births were 29948(66%) and Lower Segment Caesarean section was performed in 15392(34%).

In Group A, ten women required peripartum hysterectomy with a rate of 1.3/1000 deliveries. Five of these (50%) were done for uterine rupture. Four (40%) were done for postpartum haemorrhage. One was done for placenta previa without previous caesarean section.

One hundred and thirty six patients in Group B underwent peripartum hysterectomy with a rate of 2.9/1000 deliveries. In this group fifty-six (41%) were for postpartum haemorrhage, and forty-one (30.2%) for morbidly adherent placenta praevia on previous C-section scar (MAPCS). Uterine rupture led to peripartum hysterectomy in twenty (14.7%) cases.

Conclusions: Uterine rupture was previously the leading indication for peripartum hysterectomy, followed by postpartum haemorrhage. With a rise in caesarean section rate, placenta praevia on previous scar and postpartum haemorrhage are now the leading risk factors for peripartum hysterectomy.

Key Words: Peripartum hysterectomy, Caesarean section, Placenta praevia, Postpartum Haemorrhage

Introduction

Peripartum hysterectomy (PH) is an obstetrical emergency operation and is performed at the time of delivery, or in the immediate postpartum period, with the prime intention of saving the life of the patient. The usual indication is severe obstetric haemorrhage which fails to respond to conservative treatment. The major indications necessitating PH include placenta praevia/accreta, placental abruption, obstructed labour, uterine atony and ruptured uterus. The unplanned and emergency nature of PH and the urgent need to perform it quickly may further complicate matters and lead to significant maternal morbidity and mortality.¹

With an increasing number of Caesarean section (CS) deliveries being performed with the passage of time, the number of women requiring PH has also registered a rise². The rise in PH rate in cases of previous CS with major degree placenta praevia has also been observed³. Vaginal birth after previous Caesarean, primary and repeat caesarean deliveries and multiple births have been found to be independently associated with an increased risk of PH.⁴

A difference in the incidence of PH following vaginal delivery and Caesarean section has also been noted. Whereas PH after vaginal delivery varies from 0.1 to 0.3 per 1000 births, the incidence of PH following C-section ranges widely between 0.17 and 8.7 per 1000 deliveries.⁵ This has also been attributed to the proportion of women with a history of previous CS who have a higher risk of abnormal placentation, i.e. placenta praevia and accreta⁶.

The purpose of this study was to determine the changing indications and risk factors leading to

peripartum hysterectomy, especially in lieu of the rising trend of performing caesarean section in the present times.

Patients and Methods

This retrospective comparative study was conducted in the Department of Obstetrics and Gynaecology (Unit-II) at Holy Family Hospital, Rawalpindi. The clinical record of all women undergoing Peripartum Hysterectomy over a five-year period in the nineteen eighties, extending from June 1984 to May 1989 was examined to determine the indications and risk factors which necessitated this surgery. All women delivered during this period constituted Group A. This was compared with the clinical record of patients undergoing PH in a recent five-year period from January 2010 to December 2014. All ladies who delivered during this time period were labelled Group B. Data was obtained from the patient record maintained in the Labour Ward registers and Operation Theatre registers in Group A. In Group B it was taken from the Monthly Statistics record, Labour room record and Operation Theatre record registers. The total deliveries, with break-up into vaginal and Caesarean deliveries, as well as peripartum hysterectomies including their indications were noted. The demographic data specifically sought included the age of women, gestational age, previous obstetrical history with reference to the mode of delivery in previous pregnancies.

Inclusion criteria: All ladies of more than 28 weeks gestation, undergoing PH within 48 hours of delivery were enrolled. These included women initially undergoing vaginal delivery as well as caesarean section. Patients who delivered in the hospital, whether booked or referred from other hospitals, were included.

Exclusion criteria: Patients undergoing hysterectomy following miscarriage, ante-partum haemorrhage or uterine rupture before 28 weeks and patients who had hysterectomy following postpartum haemorrhage after 48 hours were excluded from study.

Peripartum hysterectomy: (PH) was defined as hysterectomy performed at the time of delivery or within the immediate postpartum period of 48 hours. Placenta praevia was defined as placenta inserted partially or wholly in the lower uterine segment. Morbidly adherent placenta praevia over caesarean scar (MAPCS) was defined clinically as a placenta adherent to the uterine wall that could not be easily separated. Cases of Accreta, percreta and increta were included.

In patients with previous scar, presenting with placenta praevia on ultrasound scan, where MRI was not possible in Group B due to financial constraints, Colour Doppler Ultrasonography was performed in admitted cases.

Both groups (A and B) were compared for any change in trend for performing PH, including any rise or decline in the indications and risk factors necessitating it. All data was collected and entered on a specifically designed proforma and analysed.

Results

The number of deliveries conducted in Group A (1984-89) totalled 7843. Of these 6795(86.6%) were vaginal deliveries while 1048(13.4%) were Lower Segment Caesarean section (Table 1).

In Group B (2010-14) the total women delivered were 45340. Of these, 29948 (66%) were vaginal deliveries while 15392(34%) were delivered by caesarean section.

In Group A, ten women required peripartum hysterectomy with a rate of 1.3/1000 deliveries. Five of them (50%) were delivered by unskilled birth attendants and presented with uterine rupture. Of the remaining five, four (40%) patients underwent PH for postpartum haemorrhage and one (10%) for placenta praevia (Table 2)

In Group B, 136 women required PH with a rate of 2.9/1000 deliveries. Of these, 56 (41%) had postpartum haemorrhage while placenta praevia/accreta with previous scar was the indication in 41 (30.2%) women. This was followed by uterine rupture, seen in 20 (14.7%) ladies (Table 3). Cases of ruptured uterus included both scarred and unscarred uterus in both groups.

Table 1: Number and Mode of Deliveries

Mode of Delivery	Group A	Group B
Vaginal Delivery	6795 (86.6%)	29948 (66%)
C-Section	1048 (13.4%)	15392(34%)
Total:	7843	45340

Table2: Indications for Peripartum Hysterectomy Group A

Indications	Number of Patients
Uterine Rupture	5 (50%)
Postpartum Haemorrhage	4(40%)
Placenta Praevia without scar	1(10%)
Total	10

Table3: Indications for Peripartum Hysterectomy Group B

Indications	Number of Patients
Postpartum Haemorrhage	56(41.0%)
MAPCS*	41(30.2%)
Uterine Rupture	20(14.7%)
Placenta Praevia without scar	11(8.10%)
Placenta Accreta without scar	3(2.2%)
Abruption (two scars)	2(1.5%)
Placental abruption without scar	2(1.5%)
C-Section (Second stage failure)	1(0.7%)
Total	136

*MACPS: Morbidly adherent placenta praevia over previous Caesarean scar

Discussion

Some important findings have emerged from this study. The marked rise in the number of deliveries over the past three decades show that the work-load has increased almost six times.

Hospital-based retrospective studies have reported the incidence rates for peripartum hysterectomy to vary from 0.6 to 2.28 per 1000 births². Our study shows the rate of 1.3/1000 births in Group A well within this range. The rate of 2.9/1000 births in Group B, though in close proximity to this range, indicates the rise in PH as well as a marked increase in number of previous C-section deliveries. Khan et al, in their recent series, had an emergency peripartum hysterectomy rate of 10.5/1000 deliveries⁷. A much higher figure.

Our Caesarean section rate also significantly rose from 13.4% of total deliveries in Group-A to 34% in Group B. Nowadays an increasing number of caesarean deliveries are being performed. Fear of litigation, insistence of the patient and pressure from the relatives is weighing much more in decision-making than in the past. The declining rate of instrumental delivery, misinterpretation of cardiotocography and a greater proportion of women undergoing elective LSCS due to previous caesarean sections are important contributory factors.

Many studies report a greater than ten-fold higher incidence of peripartum hysterectomy among women with a previous history of delivery by caesarean section compared to those who have not.⁸ The most likely explanation for this increased risk for PH is that caesarean delivery increases the risk for placenta praevia and placenta accreta in subsequent pregnancies. A risk which increases with the number of previous caesarean deliveries⁹. It is possible that

uterine scarring from previous caesarean deliveries prevents normal implantation of the placenta.

The increased risk for PH following C-section may not result from the procedure itself but from the complications of labour or other factors which necessitated caesarean delivery in the first place. However Kacmar et al⁸ found that caesarean delivery was associated with an increased risk for peripartum hysterectomy, even after women with absolute indications for C-section, such as placenta praevia, three or more previous caesarean sections or triplets were excluded.

In our study there was not a single case of peripartum hysterectomy for placenta praevia with previous uterine scar in group A. In group B there were forty one cases (30.2%) of PH for the above mentioned indication, which was a very significant finding.

Uterine rupture was found to be the indication for PH in 50% of our group A patients. A study by Shaheen et al showed uterine rupture to be the commonest indication in 62% of their patients.¹⁰

In group B, 14.7% hysterectomies were done for this indication. A five year cohort analysis by Stanco et al showed 11.4% of those requiring PH had uterine rupture¹¹.

The increasing risk of PH associated with vaginal birth after previous caesarean delivery (VBAC) is probably as a result of uterine rupture. This was confirmed by Macones et al in their series¹². Thus uterine rupture may result with the VBAC attempt and warrant emergency caesarean section.

Whiteman et al, in their meta-analysis observed that the rate of peripartum hysterectomy increased with advancing maternal age. In women aged 15 to 24 years it was 0.23 per 1000 deliveries, while in those aged 40 or older, it rose to 3.81 per 1000 deliveries⁴. They also found that the diagnosis of haemorrhage figured in 69.6% of peripartum hysterectomy discharge records. This was followed by placenta praevia with 25.2%.

In our study, postpartum haemorrhage was the second common cause in group A (40%) and leading cause in Group B (41%). There was no significant change in frequency of this indication in the two groups. Postpartum haemorrhage still remains a challenging situation for obstetricians in our setup. Despite the availability of better uterotonic agents and newer surgical techniques, the percentage is almost the same. A study conducted in 1984 reported uterine atony as the major indication for PH in 43.5%¹³. Another study reported it as the indication in 28.6%¹⁴.

However, a decade later, a series found placenta praevia as the major cause, being present in 45%

cases¹¹. This changing trend is also attributed to the rising proportion of women with previous caesarean sections predisposing to placenta praevia in a subsequent pregnancy⁷. Among our patients in Group A, who underwent PH in the eighties, not a single case had placenta praevia with previous scar and the majority presented with traditional birth attendant-induced uterine rupture.

Antepartum haemorrhage is also one of the risk factors for ending up in PH, as can be seen in both our groups. The cases of placenta praevia and abruptio placentae without previous caesarean section constitute a small percentage of indications in both our groups.

Conclusion

Uterine rupture was previously the leading indication for peripartum hysterectomy. With a rise in caesarean section rate, placenta praevia and postpartum haemorrhage are now the leading risk factors for peripartum hysterectomy.

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