

PERIPARTUM HYSTERECTOMY; FREQUENCY, RISK FACTORS AND MATERNAL OUTCOME

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ABSTRACT

OBJECTIVE: To observe the frequency, indications and maternal outcome associated with peripartum obstetrical hysterectomy and to explore the preventable factors contributing towards the adverse outcome.

METHODOLOGY: This cross-sectional descriptive observational study was conducted at Women and Children Teaching Hospital, Bannu and included all the patients who underwent peripartum hysterectomy due to obstetrical complication from 1st Jan 2009 to 30th June 2010. Clinical and socio-demographic data was collected for analysis.

RESULTS: During the study period, 4583 deliveries were conducted and peripartum hysterectomies were performed in 34 (0.74%) patients. Uterine rupture was the commonest indication (62%) and there was no specific preference found for any type of hysterectomy. Most of the subjects were transfused more than three units of blood and 40% developed either acute potentially fatal or long term debilitating complications while the case fatality rate (CFR) was 2.9%. Grandmultiparity (n=24, 70.59%), previous or current cesarean section (n=22, 64.71%) and injudicious use of uterotonics during labour (n=21, 61.76%) were the common risk factors associated with peripartum hysterectomies and their morbidities. Shock (n=20, 58.82%), disseminated intravascular coagulation (n=5, 14.70%) and urinary tract injury (n=5, 14.70%) were the commonest complications.

CONCLUSION: Peripartum hysterectomies, performed in <1% deliveries in our set up, are commonly performed for uterine rupture, with CFR of 2.9%. Grandmultiparity and previous or current cesarean section are common risk factors and shock is the commonest complication of peripartum hysterectomy. Regular training and clinical audit of birth attendants to prevent prolonged obstructed labor or hyperstimulation of uterus may reduce this complication.

KEY WORDS: Peripartum hysterectomy, Uterine rupture, Postpartum haemorrhage, maternal morbidity, maternal mortality.

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The first caesarean hysterectomy (in 1876 by Eduardo Poro) was an elective procedure which combined caesarean section (c/s) with hysterectomy,¹ but now it is considered primarily an emergency procedure to save the life of a mother in case of massive hemorrhage or any other complication; thus playing a vital role in reduction of maternal mortality worldwide.

The introduction of potent utero tonics, broad spectrum antibiotics, conservative surgical and embolization techniques have markedly declined the need of peripartum hysterectomy, but still there is no reduction in the prevalence of POH, owing to the rising rates of c/section.^{2,3} Worldwide frequency of emergency hysterectomy has been reported as 0.039 %², but we noticed a higher rate of hysterectomy in our unit, hence a study was intended to evaluate the frequency, risk factors and various implications of the procedure.

The current study was conducted in a hospital having a widespread catchment area including various districts of Khyber Pakhtunkhwa (KPK), tribal areas of Pakistan and parts of Afghanistan; at the time when the major military operations were being conducted in the territory. So this study was also aimed to reveal the problems faced by the natives during these raids along with frequently imposed curfews.

METHODOLOGY

The cross sectional descriptive study was conducted at Gynaecology and Obstetrics unit of Women and Children

INTRODUCTION

Peripartum obstetrical hysterectomy (POH) is an intensive but highly effective procedure which is usually resorted as a last option in emergency to save the maternal life and is associated with sig-

nificant maternal morbidity and mortality. Every obstetrical service should have a referral protocol and immediate access to health care professionals and facilities capable of conducting such procedures without delay.

TABLE I: RISK FACTORS FOR PERIPARTUM OBSTETRICAL HYSTERECTOMY

Risk factors	Frequency (n-34)	Percentage
Grand multiparity	24	70.59
C/section in previous or index pregnancy	22	64.71
Injudicious use of Uterotonics	21	61.76
Obstructed labour	9	26.47
Abruptio placentae	4	11.76

TABLE II: MATERNAL MORBIDITIES ASSOCIATED WITH OBSTETRICAL HYSTERECTOMY

Risk factors	Frequency (n-34)	Percentage
Shock	20	58.82
Disseminated intravascular coagulation (DIC)	5	14.70
Urinary tract injury	5	14.70
Bowel injury	1	2.94
Primary haemorrhage (reopening needed)	1	2.94
Acute renal failure	1	2.94

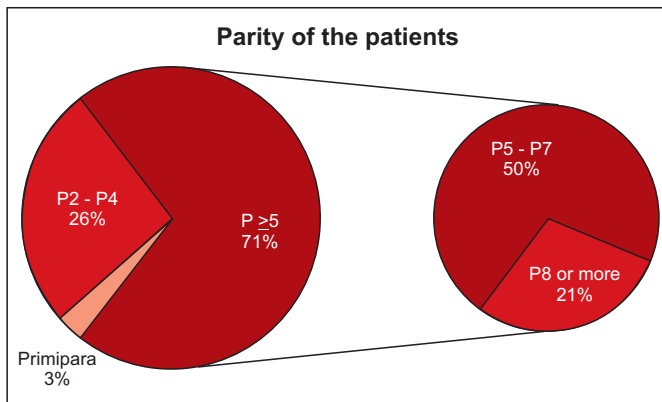


Fig 1: Parity of the patients

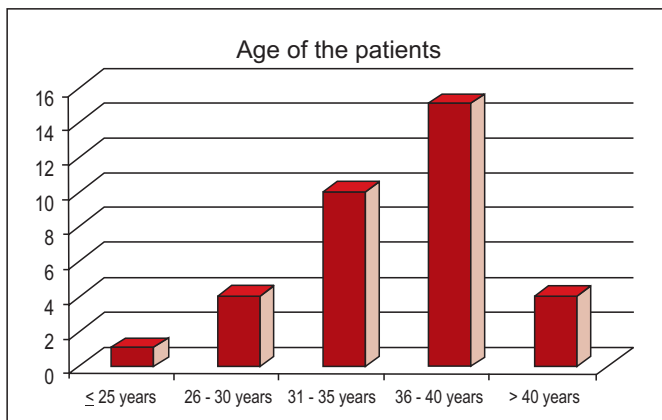


Fig 2: Age of the patients

Teaching Hospital, Bannu from January 2009 to June 2010. All the patients who underwent peripartum caesarean hys-

terectomy (either total or subtotal) due to obstetrical complications developed were included in the study, thus excluding

those women who had hysterectomy for non-obstetrical indications.

In this study, peripartum obstetrical hysterectomy was defined as “hysterectomy done just after delivery for any obstetrical reason or until 6 weeks after delivery for causes related to pregnancy”.⁴ Data was collected retrospectively through retrieval of case records and major surgical registers and information relating to age, parity, booking status, indications, type of hysterectomy, cadre of the surgeon, type of anesthesia, and complications of the procedure were extracted. The indications and outcome of peripartum hysterectomy (as established from the case records and after personal enquiry from the concerned doctor, the patient and her attendants), were reviewed to grasp the underlying core factors affecting the maternal outcome. Data was analyzed through SPSS. Results were presented as mean, for quantitative variables while number (percentage) and frequency were used for qualitative variables. Results were then compiled after keeping various parameters in observation to draw the conclusion regarding the objectives of the study.

RESULTS

During the study period 4583 deliveries were conducted. Peripartum hysterectomies during this period were performed in 34 patients giving the frequency of 1/135 maternities (0.74%). About 70% of the patients were grand multiparous (P5 or more) and nearly half of the subjects were more than 35 year old (Fig 1 and 2). Around two third of the cases (22/34) didn't have a single antenatal checkup and only about 24% of them (9/34) were educated (higher than primary level).

The most common indication for peripartum hysterectomy was ruptured uterus accounting for about 62% of cases (n=21/34), followed by uterine atony re-

sponsible for about 1/3rd of them whereas placenta accreta was the indication in only two cases.

There was no specific trend regarding types of hysterectomy as subtotal abdominal hysterectomies (STAH) were done in about 56% of the patients while in the rest (44%) total abdominal hysterectomies (TAH) were performed. Ruptured uterus (13/15) and abnormal placental adherence were the main indications for TAH whereas STAH was mainly performed for atonic uterus.

When risk factors were observed the most significant risk factor was grandmultiparity, as more than 2/3rd of the patients were para 5 or more (O.R: 6.369; C.I: 3.037- 13.36); followed by c/section in index or previous pregnancy. Other risk factors are tabulated in Table I.

Most of these patients (n=25/34, 73.6%) were referred to the study unit after development of complications like obstructed labour (n=6/25, 24%), uterine rupture (n=17/25, 68%) or postpartum haemorrhage due to uterine atony (n=2/25, 8%). The referrals were usually verbal, even if there had been any accompanying referral letter; those were of no help owing to the lack of details of labour and medications prescribed. Labour was induced in about half of the patients (18/34), mostly by misoprostol (13 patients) in dosage not recommended for induction of labour.

Maternal morbidities are given in Table II. Most (64%) of the women had been transfused more than three units of blood and more than 2/3rd of them developed shock usually before or during surgery. About 40% of these patients developed debilitating and life threatening anatomical or physiological derangements of other systems or organs. Death occurred in one patient, who came with ruptured uterus and was gasping at the time of arrival; giving case fatality rate of 2.9%. Mean hospital stay was six days.

Nearly half of those patients (12/25) who were referred from outside had severe morbidity or mortality as compared to about one fifth (2/9) of the women who developed the complication in the study unit.

The above data showed that this intensive procedure and its associated mortality and morbidity were avoidable in most of the cases as uterine rupture was the main indication. Injudicious use of uterotonics including misoprostol (for induction or augmentation of labour) was found to be the underlying cause in about 70% of the patients (24/34) while obstructed labour severe enough to end in hysterectomy complicated 9 cases. For uterine atony, conservative interventions other than uterotonics were tried in only two patients (uterine packing and uterine brace suture) and there was no practice of active management of third stage of labour, when various birth attendants who accompanied the postnatal patients, were inquired about. Furthermore, there was no trend of plotting partogram formally to monitor the progress of labour and various parameters like fetal heart rate and uterine contractions during active phase of labour.

DISCUSSION

The current study was conducted in a hospital with a vast catchment area and high referral load from vicinity areas during the time period when major army operations were being conducted in the territory of Bannu; so along with other problems faced by the community of these areas, serious emergency health adversities were not infrequent. This study represents a population known for illiteracy, poverty, strict social and religious beliefs along with lack of health facilities. The topographical and security issues along with frequently imposed curfews had also their impact on the outcome of labour, its complications and provision of timely treatment. More

over the growing rate of malpractices, medicalization of labour and conductance of labour by unskillful and untrained birth attendants had raised the need to find out the reasons for the very high rates of peripartum obstetrical hysterectomies (0.74%) in the study unit as compared to the other parts of the world especially developed countries,³⁻¹¹ but on the other hand marginally similar to the data from other underdeveloped nations^{12,13} and that from our own country.¹⁴

The higher rate of peripartum obstetrical hysterectomy was mainly attributable to ruptured uterus like that of the countries having higher frequency of peripartum hysterectomy,¹²⁻¹⁴ but contrary to the majority of studies^{4,15-18} worldwide where abnormal placental adherence was the leading indication for peripartum hysterectomy. This observation may be attributable to the fact that the majority of these women were referred by Dais, nurses, and TBAs who gave excessive doses of uterotonics without any monitoring. These birth attendants who typically provide labour care to most of the women in the area, are not trained, skillful, or educated enough either to be aware of the limitations, dosage and indications of oxytocic products, or to discern the danger signs and referral indication by anticipating emerging complications. This observation enlightens the importance of training, education, and skill development of TBAs, along with strict legislation and regular audit to reduce the widely over the counter availability and use of uterotonics. Presence of skilled attendance at birth is the most essential factor to reduce maternal mortality¹⁹ and the morbidities associated with childbirth as revealed in MOMA survey which identified that morbidity was found to be mainly associated with the training of the birth attendant in facility deliveries and antenatal care had no effect.²⁰ But unfortunately, according to Pakistan Demographic and Health Survey 2012-

13, in Khyber Pakhtunkhwa only 48% of births were conducted by skilled health workers whereas only 40.5% percent of births took place in health facilities.²¹ As skilled birth attendance is recognized as a global bench mark indicator to monitor progress towards goal of reduction in maternal mortality, any effort to reduce the health risks to mothers and children must be aimed to increase the proportion of babies delivered in a safe and clean environment under the supervision of trained health professional.

Most of the cases in this study were in shock showing the severity of the situation. Contrary to other studies worldwide^{9,12,22} there was no special preference regarding the type of hysterectomy (TAH or STAH) and the choice was usually dictated by the indication and expertise of the surgeon, as TAH were mainly done for uterine rupture and placenta increta (14/15), while STAH were mainly performed for uterine atony. About (40%) of patients who had peripartum hysterectomy developed life threatening or long term morbidity apart from being in shock or having sterility. This indicates the significance of addressing the issue and adopting the measures to prevent the complications leading to peripartum hysterectomy, in order to improve women's health status. Furthermore after development of any complication timely recognition and treatment may prevent or reduce severe maternal morbidity and mortality as it was observed in this study that women who were referred to the study unit with obstetrical complications were more likely to develop severe morbidity or mortality (48%) when compared to those who developed the complication in the unit (22%). Post op hospital stay was found to be long (about six days) that is comparable to other studies⁷.

As shown in other studies worldwide^{3,4,6,15} grand multiparity and previous or current caesarean section were the

main risk factors for the development of complication severe enough to be concluded in hysterectomy, the fact endorsing the need for family planning awareness and widespread availability of its services along with strict audit of c/section indications.

Finally when underlying potentially avoidable adverse practices were evaluated to reduce the frequency of peripartum hysterectomy and its complications, it was observed that lack of knowledge and adherence to family planning practices; nonexistent quality antenatal care with possible health education and motivation; malpractices with deficient training and skill development of the birth attendants along with sluggish health legislation and its implementation, are those debilitating dynamics of our health care system which need to be addressed if we have to achieve Millennium Development Goal 5 by year 2015.

CONCLUSION

Peripartum hysterectomies, performed in < 1% deliveries in our set up, are commonly performed for uterine rupture, with CFR of 2.9%. Grandmultiparity and previous or current cesarean section are common risk factors and shock is the commonest complication of peripartum hysterectomy. The higher rate of POH, which although is a lifesaving procedure but may have significant long and short term morbidities, needs to be addressed with swift actions on emergency basis first at institutional level, by arranging labour management workshops, devising labour protocols and regular audit of obstetrical complications. On higher level, our government should take active steps to devise strict legislations and their implementation to halt fatal practices, along with provision of acceptable care and a functional referral system closer to the community. Furthermore long term strategies are needed to raise public awareness regarding family

planning, antenatal care and skilled birth attendance during labour, by enhancing female's education and ensuring gender equality.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

BS: Study design, acquisition & analysis of data, drafting the manuscript, final approval of the version to be published

GS: Critical revision, drafting the manuscript final approval of the version to be published

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Authors declare no conflict of interest

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