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ORIGINAL ARTICLE

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Emergency peripartum hysterectomy in Northern Jordan: indications and obstetric outcome (an 8-year review)

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Abstract *Objective:* To review cases of emergency peripartum hysterectomy regarding their incidence, risk factors, indications and complications and their results were carefully analysed. *Materials and methods:* A retrospective study of cases of emergency peripartum hysterectomy which were performed in the period between February 1994 and February 2002 at the Princess Badeea Teaching Hospital in Northern Jordan. Demographic and clinical data were extracted and closely interpreted *Results:* In the study period there were a 70,252 deliveries and 61 cases of emergency peripartum hysterectomies. The overall incidence was 0.87 peripartum hysterectomies per 1,000 deliveries. There were 50 cases (82%) delivered by caesarean section and 11 cases (18%) were delivered vaginally. Caesarean hysterectomy was performed in 50 cases and postpartum hysterectomy was performed in 11 cases. Total hysterectomy was performed in 39 cases (64%) and subtotal hysterectomy was performed in 22 cases (36%). The main indications for hysterectomy were morbidly adherent placenta (47.5%), ruptured uterus (27.9%) and uncontrollable haemorrhage from uterine atony (21.3%). There were two maternal deaths and 7 cases of stillbirths and 4 cases of early neonatal deaths. *Conclusion:* Peripartum hysterectomy is a dramatic with high risk but a life saving operation. It is usually associated with significant maternal and fetal morbidity and mortality. Obstetricians should identify patients at risk and anticipate the procedure and complications, as early intervention and proper management facilitate optimal outcome.

Keywords Peripartum · Caesarean · Hysterectomy · Jordan

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Introduction

Peripartum hysterectomy is a major operation and is almost always performed in the setting of life threatening haemorrhage during or immediately after abdominal or vaginal deliveries. It is considered one of the riskiest and dramatic operation in modern obstetrics, where the uterus is removed in an emergency arising during caesarean section or immediately following a vaginal delivery. Over the past decade, the number of caesarean deliveries has increased and also the number of pregnant women with scarred uterus from prior uterine incision. These patients with scarred uterus are susceptible to many serious complications, such as uterine rupture, placenta praevia and morbidly adherent placenta. The teaching hospitals ought to prepare their trainees to do such operations safely as hysterectomy in those circumstances are different in that performed in gynaecological surgery, to the extent that a good gynaecological surgeon may have difficulty in performing it unless he or she had some training in executing it [1, 6, 11]. With those consideration in mind we decided to evaluate the experience of this operation in Northern Jordan. So this review was aimed to study the incidence and characteristics of patients who had undergone emergency peripartum hysterectomy (EPH) and an attempt to identify the risk factors that might predict the patients likely to require this procedure.

Materials and methods

This is a retrospective review of medical records that was undertaken on all cases of EPH that were performed at Princess Badeea Teaching Hospital in Northern Jordan in the period between

February 1994 and February 2002. Patients' charts, pathology reports and departmental statistical reports were extracted, charted and reviewed in an attempt to obtain relevant demographic and clinical data (such as age, parity, type of labour, indication of caesarean, complication maternal and fetal) The operations included were performed at the time of caesarean section in 50 cases (82%) or immediately after vaginal delivery in 11 cases (18%). The surgeons attended the operations were senior staff of the department. Comparison was made of clinical results as they evolved through the 8 years covered in this review.

Statistical analysis was carried out using Student's *t*-test and the Mann-Whitney test when appropriate and on discrete results chi square (X^2) or Fisher's exact test when appropriate.

Results

During the study period there were 70,252 deliveries and out of those, only 61 cases of emergency peripartum hysterectomies were performed. The overall incidence was 0.87 peripartum hysterectomies per 1,000 deliveries. The mean age of patients was 33.8±3.4 years (range 29–44), the median parity was 6 (range 1–14) and the mean gestational age was 36.8±2.05 weeks (range 29–41). There were 50 cases (82%) delivered by caesarean section and 11 cases (18%) were delivered vaginally.

The leading indications for caesarean section were previous caesarean section and placenta praevia in 21 cases (34.4%), previous caesarean section alone in 17 cases (27.9%), and placenta praevia alone in 8 cases (13.1%).

Table 1 showed the time and the type of peripartum hysterectomies. Caesarean hysterectomy was performed in 50 cases (82%) and postpartum hysterectomy was performed in 11 cases (18%). Total hysterectomy was performed in 39 cases (64%) and subtotal hysterectomy in 22 cases (36%).

Table 2 showed the associated risk factors for peripartum hysterectomy. There were three major risk factors i.e. previous caesarean section, placenta praevia and uterine atony, wither occurred during the caesarean section or immediately after the vaginal delivery. Other risk factors include the ventouse and forceps deliveries.

Table 3 showed the main indications for hysterectomy. Morbidly adherent placenta was the most common indication in 29 cases (47.5%), followed by ruptured uterus in 17 cases (27.9%), uncontrollable haemorrhage from uterine atony in 13 cases (21.3%) and lacerated cervix after ventouse and forceps deliveries in 2 cases (3.3%).

Table 4 showed the maternal and perinatal complications. There were two maternal deaths, the first was due to severe preeclampsia and disseminated intravascular coagulopathy, and the second was due to severe postpartum haemorrhage. Postoperative maternal morbidity occurred in 27 cases (44.2%). Adverse fetal outcome occurred in 24 deliveries (39.4%). There were 7 cases of stillbirths and 4 cases of early neonatal deaths.

Table 1 Time and type of peripartum hysterectomy

Hysterectomy details	*n*	%
Time of hysterectomy		
Caesarean hysterectomy	50	82
Postpartum hysterectomy	11	18
Total	61	100
Type of hysterectomy		
Total hysterectomy	39	64
Subtotal hysterectomy	22	36
Total	61	100

Table 2 Risk factors for peripartum hysterectomy

Risk factors	*n*	%
Previous caesarean section and placenta praevia and accreta	21	34.4
Previous caesarean section without placenta praevia	17	27.9
Placenta praevia and accreta without previous caesarean section	8	13.1
Uterine atony during caesarean section	5	8.2
Atonic postpartum haemorrhage	8	13.1
Ventouse and forceps delivery	2	3.3
Total	61	100

Table 3 Indications for peripartum hysterectomy

Indication	*n*	%
Placenta praevia and accreta	29	47.5
Ruptured uterus	17	27.9
Uterine atony	13	21.3
Lacerated cervix after ventouse and forceps delivery	2	3.3
Total	61	100

Table 4 Maternal and perinatal complications

Complications	*n*	%
Maternal		
Maternal death	2	3.3
Bladder injury	2	3.3
Coagulopathy	2	3.3
Re-exploration due to haemorrhage	1	1.6
Wound infection	3	4.9
Urinary tract infection	6	9.8
Febrile morbidity	13	21.3
Total	29	47.5
Perinatal		
Stillbirth	7	11.5
Neonatal death	4	6.6
Prematurity	6	9.8
Severe asphyxia: 5-min Apgar score <5	7	11.5
Total	24	39.4

Discussion

Emergency peripartum hysterectomy is not commonly performed and is almost always done in the setting of life threatening haemorrhage during or immediately after

abdominal or vaginal deliveries. The incidence reported in the literature varies from 0.2 to 1.3 per 1,000 deliveries [2, 3, 5, 7, 12, 13], and it was 0.87 per 1,000 deliveries in our series. The incidence increased with maternal age and parity. The indications for EPH were mainly morbidly adherent placenta, ruptured uterus and uterine atony, which resemble other series [2, 3, 5, 7, 12, 13].

Reviewing the literature showed that there were an increasing proportion of hysterectomies being done for morbidly adherent placenta and a decreasing proportion for uterine atony compared for those performed in the past; this may be attributed to the better treatment of uterine atony, especially with prostaglandin [2, 5, 12, 13]. However another main reason may be due to an increase in the number of caesarean deliveries over the past decade [14]; as caesarean delivery is a well-established risk for the development of placenta praevia and accreta [4, 8, 10].

Some authorities reported that the risk of placenta praevia increase along with the number of prior caesarean sections, from 0.26% with an unscarred uterus to 10% in patients with 4 or more caesarean sections [4]. While others reported that patients with placenta praevia and scarred uterus had 16% risk of undergoing caesarean hysterectomy compared to 3.6% in patients with unscarred uterus [8]. Advancing age and parity were also important risk factors in developing placenta praevia and accreta [15, 16].

Emergency peripartum hysterectomy is usually associated with significant rate of maternal morbidity and mortality. The overall morbidity was reported in the range of 30–40% [9]. In our series, there were two maternal deaths and 44.2% morbidity rate and most of them were febrile morbidity.

Ideally a total abdominal hysterectomy is a more convenient operation for the patient, but subtotal hysterectomy may be a better choice in certain conditions when completion of the operation is needed in shortest time possible [1, 11].

In this series, two major risk factors were identified i.e. placenta praevia and previous caesarean section. Such risk is high and this should remind the obstetrician to be aware of unexpected complications during caesarean section and prepared to do hysterectomy when needed. Early intervention and proper technique facilitate good outcome.

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