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Emergency Peripartum Hysterectomy Among Sudanese Ladies

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Abstract

Background*: The loss of the uterus via hysterectomy encounters significant negative psychological repercussions especially, in developing countries. According to some authors, hysterectomy carries a high risk of adverse psychological impacts.*

Objective*: To assess the indications, complications, fetomaternal outcomes, and psychological effects of peripartum hysterectomy among ladies attending Omdurman Maternity and Al Saudi maternity Hospitals from March to December 2016.*

***Methods**: Prospective descriptive cross-sectional hospital-based study included a sample of 50 cases who underwent a peripartum hysterectomy. A detailed and structured questionnaire was filled out by direct interview with the ladies. All alive participants completed Davidson Trauma Scales (DSM-IV), Hospital Anxiety –depression scale (HADS), and Traumatic grief inventory (TGI).*

***Results**: Indications for hysterectomy were uterine atony 14 (28%), followed by rupture uterus 10(20%), morbidly adherent placenta 9 (18%), placenta previa 8(16%), abruptio placentae 5(10%), haemorrhage 3(6%), and infected uterus 1(2%). The reported intraoperative complications were haemorrhage 36(72%), DIC 2(4%), bladder injury 1(2%), bowel injury 1(2%), and cardiac arrest 1(2%). Reported postoperative complications among the studied ladies were repeated laparotomy 8(16%), ladies required mechanical ventilator 3(6%), paralytic ileus 2(4%), wound infection 2(4%), fever 1(2%), and acute renal failure 1(2%). Alive and well babies were 24(48%), dead babies were 20(40%), and four of the mothers died. Severe Post-traumatic stress disorder, depression, and anxiety were observed in 3(5.6%), 5(10.9%), and 3(5.6%) ladies respectively. Grief was noted in 5(10.9%) of the studied ladies.*

***Conclusion**: This study concluded that the most common indication of peripartum hysterectomy was uterine atony followed by rupture uterus. There were psychological problems (PTSD, anxiety, grief, and depression) among the studied ladies after peripartum hysterectomy, so a thorough psychological examination after hysterectomy should be done.*

Abbreviations and Symbols

DIC	Disseminated Intravascular Coagulopathy
DSM-IV	Davidson Trauma Scale
EPH	Emergency peripartum hysterectomy
HADS	Hospital Anxiety –depression scale
NICU	Nursery intensive care unit
OMH	Omdurman Maternity Hospital
PTSD	Post-traumatic stress disorder

SMH Al Saudi maternity hospital

TGI Traumatic grief inventory

Introduction

Peripartum or obstetric hysterectomy refers to the surgical removal of the uterus with or without the cervix during a caesarean section or shortly after vaginal delivery. It is a challenging but lifesaving obstetric procedure. (1,7)

It has been described as one of the hazardous and lifesaving operations in obstetrics. Furthermore, it is associated with significant morbidity and maternal mortality. (2,3)

Emergency peripartum hysterectomy is the last resort in the case of failure to respond to conservative interventions and was associated with significant morbidity. (4)

Globally, peripartum hysterectomy rates are varying. There is less than one case in 1,000 deliveries in high-income countries that required EPH, while the incidence of peripartum hysterectomy in Nigeria and Tanzania is (2.6- 4) and 3.5 per 1000 deliveries, respectively. (4,5,7)

In the previous study, the most frequent complication of peripartum hysterectomy was severe anaemia, wound sepsis, febrile morbidity, acute renal failure, and disseminated intravascular coagulopathy. (4)

Psychological effects of peripartum hysterectomy

There was little research on the psychological impact after peripartum hysterectomy. Traumatic birth leads to negative consequences such as psychological distress or depression, as the mother perceives that both she and the infant have been in danger. (8)

A peripartum hysterectomy negatively affected the patient's mental health. The complications resulting from organ loss include loss of menstruation and fertility, which can be a major reason for post-partum depression, particularly among communities of the multiplying mother. (8)

Sudan had a high maternal mortality rate, in 2017 estimated at 295 per 100000 deliveries. (9) There has been no study on a peripartum hysterectomy in Sudan, even though EPH is a nightmare for obstetricians worldwide. Now it's time to highlight this issue.

Materials and Methods

The study aims to determine risk factors and indications leading to peripartum hysterectomy and to evaluate its effects on women, according to morbidity, mortality, and psychological effects. This is a

prospective descriptive cross-sectional hospital-based study, was conducted from March to December 2016.

It was carried out at the Omdurman Maternity and Al Saudi Maternity Hospitals, Sudan. In the 2008 census, Omdurman city's population was 2395000. Omdurman Maternity Hospital is Sudan's largest tertiary maternity hospital. It was founded in 1957, and births were between 25 000 and 30000 annually. Al Saudi Maternity hospital is the second-largest tertiary Maternity Hospital in Omdurman. It was founded in 1986 with annual births of 13749. Our research involved recruiting patients coming into the emergency room or elective theaters of OMH and SMH hospitals and ended with EPH who were willing to participate. Women with mental disorders were excluded from the study.

Data collection and analysis:

One week following the operation, we interviewed the ladies directly and completed a detailed structured questionnaire. The questionnaire consisted of structured clinical interviews for the Davidson Trauma Scale which was used to assess PTSD, the Hospital Anxiety-Depression scale for anxiety and depression, and, therefore, the Traumatic grief inventory for grief. All those scales were used in the early screening of psychological disorders. Additionally, sociodemographic and obstetrical data were gathered (age, education, occupation, residency, parity, booking status, category of caesarean section, intraoperative, postoperative complication, neonatal outcome, and delay of operation).

Using the statistical package for social science (SPSS) software version 17th, the data were analysed, and the results were expressed in charts and tables. Descriptive analysis was used proportions were compared between women's age, parity, neonatal outcome intraoperative and postoperative complication, type of caesarean section, and psychological effects after peripartum hysterectomy. Independent variables included in the analysis of age, education, sociodemographic status, residence, and occupation.

Ethical clearance:

The study was approved by ethical committees of the Sudan medical specialization board and hospitals agreement (OMH and SMH). Informed verbal and written consent to participate in the study was obtained from each lady. Patient care was not impacted by the study. Confidentiality of data from the patients was assured.

Results

During the study period, there were 50 cases of peripartum hysterectomy were enrolled in this study. According to the demographic data of the population under study, the highest proportion of ladies who underwent EPH was in the age group 20-35 years 28(56%), the gestational age was 37-40 weeks 28(56%), Two-thirds of participants, para (2-5) 33 (66%), were reported. The incidence of peripartum hysterectomy in women with a previous caesarean section was noted in 37(74%) of the studied ladies. The highest frequency of EPH was in booked patients, 28(56%).

According to types of hysterectomy, about two-thirds of cases, 32(64%), performed a subtotal hysterectomy.

The most common indication recorded for emergency peripartum hysterectomy was uterine atony 14(28%), followed by rupture uterus 10(20%), morbid adherent placenta 9(18%), placenta previa 8(16%), abruptio placentae 5(10%), haemorrhage 3(6%), and infected uterus 1(2%) table (1).

The complications related to the surgery are represented in Table (2). The highest frequency of intraoperative complications was haemorrhage 36(72%), bladder injury 1(2%), bowel injury 1(2%), and cardiac arrest 1(2%). No intraoperative complications occurred in 11(22%) of the studied ladies and about two-third of ladies, 31(62%), had no postoperative complications were observed the most common complications were repeated laparotomy 8(16%).

There were 24(48%) live and well births, 6(12%) were babies admitted to NICU, and perinatal death 20(40%).

Figure (1) shows the distribution of the ladies according to psychological effect. Post-traumatic stress disorder levels among the studied ladies were mild in 6(13%), moderate 4(8.7%), and severe 3(5.6%). No PTSD was reported in 33(71.7%). Depression levels among the studied ladies were mild in 11(23.9%), moderate 7(15.2%), and severe 5(10.9%). No depression was reported in 23(50%). Anxiety levels among the studied ladies were mild in 6(13%), moderate 4(8.7%), and severe 3(5.6%). No anxiety was reported in 33(71.7%). Grief was reported in 5(10.9%) of the studied ladies, in contrast to 41(89.1%) of those without grief. 21(45.7%) had no one of psychological disturbance.

A significant association was found between psychological problems (PTSD, Depression, and Anxiety) on one hand and age, parity, operative complications (intraoperative and postoperative), type of hysterectomy, and newborn outcome on the other hand ($P < 0.05$).

A significant correlation was found between psychological problems (Grief) on the one hand and parity, postoperative complications, and newborn outcome on the other hand, but no correlation with age, intraoperative complications, and type of hysterectomy ($P < 0.05$).

Table (1) Distribution of the ladies according to indications for peripartum hysterectomy

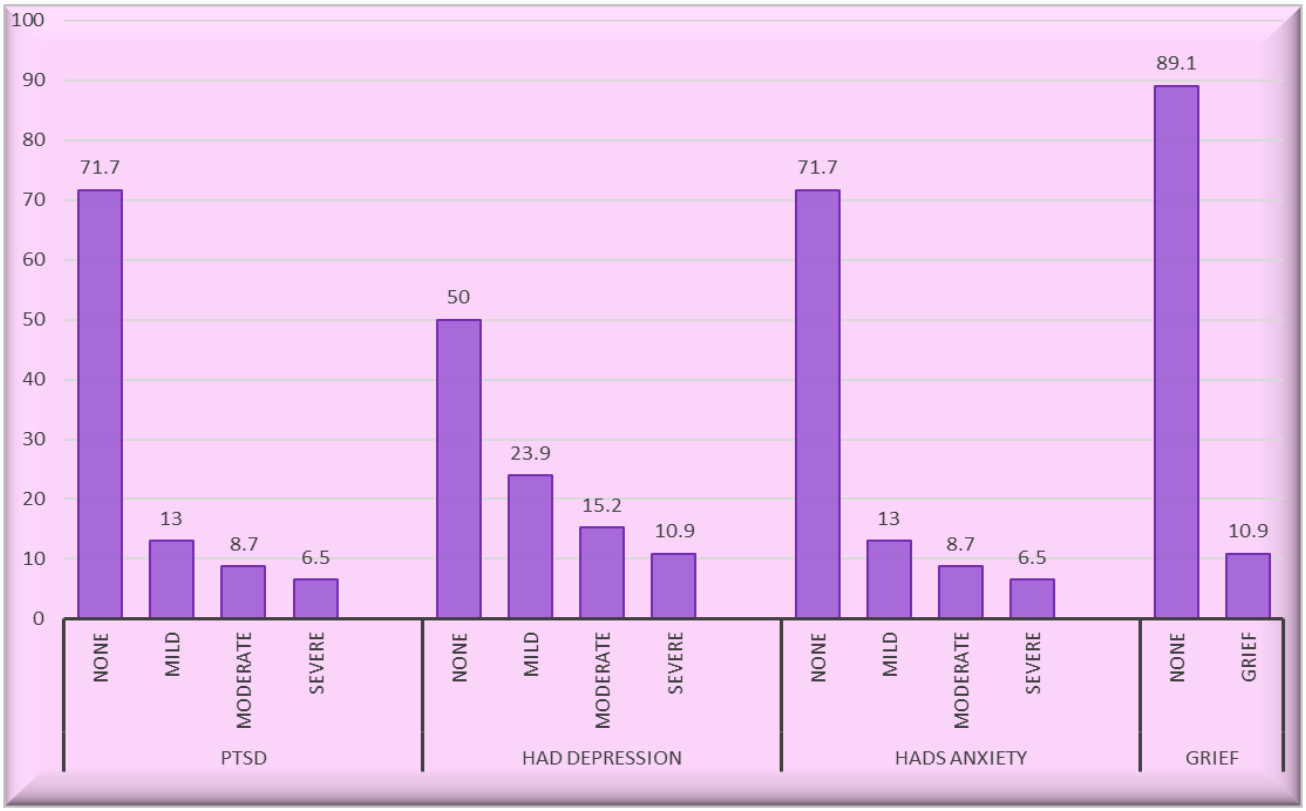
Indications	Frequency	Percentage
Atony	14	28%
Rupture uterus	10	20%
Morbid adherent placenta	9	18%
Placenta previa	8	16%
Abruptio placentae	5	10%
Haemorrhage	3	6%
Infected uterus	1	2%

Table (2) Distribution of the ladies according to operative complications

Intraoperative complications	frequency	Percentage
Haemorrhage	36	72.0
DIC	2	4.0
Bladder injury	1	2.0
Bowel injury	1	2.0
Cardiac arrest	1	2.0
None	9	18.0
Total	50	100.0
Postoperative complications	**frequency**	**Percent**
None	33	66.0
Repeated laparotomy	8	16.0
Required mechanical ventilator	3	6.0
Paralytic ileus	2	4.0
Wound infection	2	4.0

Fever	1	2.0
Acute Renal Failure	1	2.0
Total	50	100.0

Figures (1) Distribution of the ladies according to psychological impacts after peripartum hysterectomy



Discussion

This study enrolled fifty Sudanese women who underwent peripartum hysterectomy to assess the surgical procedure's indications, complications, fetomaternal outcome, and psychological effects. The findings of the current study showed that the majority of the ladies 28 (56%) were between the ages of 20 and 35 years. Based on the obstetric profile, Para 2-5 were 33(66%) ladies. Subtotal hysterectomy was done for 32(64%) of the ladies, in congruence with previous studies conducted in Nigeria and Egypt. (4,11), According to our investigations, previous cesarean sections were documented in three quarters

(74%) of the cases. A similar finding was made by others in Cameroon and Egypt. (1,11) as opposed to Nigeria and Tanzania. (4,7) Several studies have suggested an association between peripartum hysterectomy and previous caesarean delivery. (10,14)

The most common indication for hysterectomy in our study population was uterine atony 14(28%), followed by rupture uterus 10(20%), morbid adherent placenta 9(18%), placenta previa 8(16%), abruptio placentae 5(10%), haemorrhage 3(6%), and infected uterus 1(2%), as compared to South Africa which noted uterine atony 34% and abnormal placentation 28%. (10) A study in Egypt reported the main indications for EPH were abnormal placentation followed by uterine atony then uterine rupture and previa without accrete. (11) In contrary to Nigeria and Tanzania, the ruptured uterus is the foremost cause of EPH. (4,7) Between the several studies, there was a considerable variation in indications of EPH. There is no clear explanation for this discrepancy.

We found that 36(72%) of the patients had an intraoperative haemorrhage, DIC 2(4%),1(2%) for bladder injury and bowel injury as well as cardiac arrest. These results were higher than reports in Cameroon, Egypt, and South Africa. (1,11,13) Maternal mortality was 4(8%) which is slightly lower than in Nigeria and Tanzania. (4,12,7) A possible explanation for this finding, regional variations in obstetric practices and well resource settings availability.

The postoperative complications among the studied populations were repeated laparotomy 8(16%), need for mechanical ventilation in 3(6%) cases, paralytic ileus in 2(4%), wound infection in 2(4%), fever in 1(2%), and acute renal failure in 1(2%). Which is lower than studies conducted in Nigeria and Egypt. (4,11)

In the current study 20(40%) perinatal death was reported and this higher to the study in Egypt. (11) In contrast to Nigeria which showed a higher rate of perinatal death (64.3%), Perhaps the high rate of perinatal death in Nigeria was linked to rupture uterus as the leading cause of EPH. (12)

Among screened ladies, we found that post-traumatic stress disorder was reported in 13 (28.26%) of them. 6(13%) were mild, 4(8.7%) were moderate, and 3(5.6%) were severe. According to Cara Z et al., (2011) and (2016), (PTSD) was detected in (24.3%) which was similar to our study. (15,16) In a study conducted at Lariboisière Hospital, 64% of hysterectomized patients suffered from post-traumatic stress disorder, which was higher than our study. (17)

Based on our statistical analysis, depression was noted in 23(50%) of the cases, mild in 11(23.9%), moderate 7(15.2%), and severe 5(10. 9%).when compared to the Turkish study, depression was encountered in (58.3%). (8) Our study found that anxiety level was 13(28.26%) of ladies, mild in 6(13%), moderate in 4(8.7%), and severe in 3(5.6%).

The results of our study show that grief is prevalent in 5(10.9%) of the studied ladies. This agrees with the result of an old study, that found grief accompanied by loss of childbearing capacity (10.4%), no

longer feels like a woman without a uterus (9.6%), and no longer has menstrual periods (7.2%). Many of the participants (41.6%) were observed to having one to two psychological effects. (18)

The present study revealed a significant relationship between psychological problems (PTSD, Depression, and Anxiety) on one hand and age and parity on the other hand ($P < 0.05$). This finding corresponds with the research undertaken on psychological effects following gynaecological hysterectomy, which found a correlation between psychological impact and sociodemographic characteristics. (19)

A significant association was found between psychological problems (PTSD, Depression, and Anxiety) on one hand and operative complications (intra and postoperative), type of hysterectomy, and newborn outcome on the opposite hand ($P < 0.05$).

There is a lack of pre-existing literature on mental health in Africa, despite the high prevalence of peripartum hysterectomy in low and middle-income countries necessitated further research.

Limitations:

There are several limitations to this study, as its small sample size, inability for an adherent of ladies to be followed up, and repetition of psychological screening tests at 1, 3, 6, and 12 months. In particular, PTSD requires persistent symptoms after a trauma lasting longer than one month.

The data mainly concerning reproductive health and psychological effects of peripartum hysterectomy and are inconsistent to some extent with what is generally believed and written in the classic books.

Conclusion

Indications for hysterectomy were uterine atony, followed by rupture uterus, morbid adherent placenta, placenta previa, abruptio placentae, haemorrhage, and infected uterus.

Haemorrhage, DIC, bladder injury, bowel injury, and cardiac arrest were the reported intraoperative complications.

The reported postoperative complications among the studied ladies were repeated laparotomy, need for mechanical ventilation, paralytic ileus, wound infection, fever, and acute renal failure, Four ladies died.

Alive and well babies were more than dead babies, some babies were admitted to NICU.

Study participants experienced psychological problems such as (PTSD, anxiety, grief, and depression) following peripartum hysterectomy.

A significant association was found between psychological problems (Grief) on one hand and parity, postoperative complications, and newborn outcome on the other hand, but no significant correlation with age, intraoperative complications, and type of hysterectomy.

A significant association was found between psychological problems (PTSD, Depression, and Anxiety) on one hand and age, parity, operative complications (intraoperative and postoperative), type of hysterectomy, and newborn outcome on the other hand.

Recommendations

Women who underwent hysterectomy should undergo examination by a psychiatrist and receive the appropriate psychiatric treatment and support.

A thorough psychological examination after hysterectomy should be done during the whole period of admission.

A provision of a support network for women which should include the women's partner for the coping process is required to decrease the persistence of anxiety and depression.

Providing mental health training courses to all medical health workers, particularly nurses, to improve mental health among women undergoing hysterectomy.

Sex counselling should be a routine part of the care for a hysterectomy patient, which will impact on sexual concerns.

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Competing Interests

No competing interests of all authors.

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