ORIGINAL ARTICLE

Postpartum depression and associated factors after emergency peripartum hysterectomy

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Abstract

Objective: To investigate post-partum depression after emergency peripartum hysterectomy and associated factors.

Methods: This cross-sectional controlled study was conducted at Batman Gynaecology and Paediatric Diseases Hospital, Batman, Turkey, between June 15 and July 23, 2015, and comprised cases of patients with peripartum hysterectomy and of those who had experienced surgical procedures other than hysterectomy (hypogastric artery ligation and/or B-Lynch suture). Both the groups were compared using Edinburgh Post-natal Depression Scale. SPSS 11.5 was used for data analysis.

Results: Of the 41 patients, there were 17(41.5%) in the non-hysterectomy group and 24(58.5%) in the hysterectomy group. In the hysterectomy group, the rates of intensive care stay, infant death and complications were higher ($p<0.05$). The scores of the Edinburgh Post-natal Depression Scale were higher in the hysterectomy group ($p<0.05$). Organ loss was determined to increase depression 114-fold ($p=0.002$).

Conclusion: Peripartum hysterectomy caused post-partum depression.

Keywords: Depression, Hysterectomy, Long-term effect, Menstruation, Uterus. (JPMA 67: 49; 2017)

Introduction

Traumatic births, such as those leading to peripartum hysterectomy (PPH), can engender several negative consequences such as psychological distress or depression as the mother perceives that both she and the infant have been in danger.[1-3] Stress, anxiety, fear of death and post-traumatic stress disorder are seen in individuals who have had this experience.[1-5] For these women, the memories of the birth may continue for months or even years.[6]

PPH is the surgical procedure in which the uterus is removed when there is life-threatening peripartum haemorrhage. PPH is performed in circumstances with a severe risk of mortality or morbidity and mortality also associated with the procedure itself.[7]

In particular, factors such as loss of menstruation and loss of reproduction associated with the hysterectomy may have long-term negative psychological effects such us postpartum depression.[8-10] The current study was planned to examine the effect of PPH on maternal postpartum depression.

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Patients and Methods

This cross-sectional study was conducted at Batman Gynaecology and Paediatric Diseases Hospital, Batman, Turkey, between June 15 and July 23, 2015. After obtaining approval from the institutional ethics committee, the hospital database system was scanned for cases of patients who had undergone surgical intervention for peri-partum haemorrhage or placental invasion. These cases were separated into 2 groups according to whether or not hysterectomy was applied. The hysterectomy group comprised patients who underwent hysterectomy directly or following B-Lynch suture or hypogastric artery ligation. The non-hysterectomy group comprised patients who underwent B-Lynch suture or hypogastric artery ligation or both procedures. Patients were contacted by telephone and were invited to the clinic for examination. Those who did not attend the clinic were excluded. All the patients were examined in respect of demographic characteristics, time since the surgical intervention, reason for the surgical intervention, gravid, type of birth, type of operation (B-Lynch, hypogastric artery ligation, total or subtotal hysterectomy), complications, intensive care rates, infant mortality rates and blood product transfusion rates. It was also recorded whether or not anti-depressant therapy had been administered after surgery or the follow-up records from the psychiatry clinic were obtained. After the data had been determined, the patients were referred to the psychiatrist for evaluation with the Edinburgh Post-natal

Depression Scale (EPDS).[11,12] The scale was interpreted by a psychiatrist blinded to the patient groups. Depression was accepted as scoring 12 or more in the sections of the EPDS.[11,12] After completion of the psychiatric examination, the patients who had undergone hysterectomy were questioned by the psychiatrist in respect of emotional response immediately after the operation and in the long term. The 2 groups were compared in terms of age, time since the surgical intervention, gravid, diagnosis, type of birth, reason for haemorrhage, perinatal status (live, ex), blood product transfusion rates, surgical procedures applied, complications, intensive care rates, whether or not anti-depressant therapy had been taken and the results of the EPDS. The relationship was investigated between the EPDS scores and other factors (reasons for haemorrhage, intensive care, neonatal status, complications and organ loss).

SPSS 11.5 was used for data analysis. For comparison between the 2 groups, the Student's t-test, Mann-Whitney U-test, chi-square test and Fisher's exact test were used. Mann-Whitney U test and chi-square test were applied in the comparison of EPDS results and the presence of depression. Multiple regression analysis was applied for the evaluation of factors related to depression. P<0.05 was considered statistically significant.

In our study, when predicted difference between mean values was ±30% and calculated power was 80%, type I error was chosen at 0.05.

Results

Of the 45 cases, 41(91.1%) were selected as 1(2.2%) patient had been lost and 3(6.7%) patients accepted the clinic appointment but did not attend. There were 17(41.5%) patients in the non-hysterectomy group and 24(58.5%) in the hysterectomy group. The mean age was 33.54±5.82 years in the hysterectomy group and 32.65±6.04 years in the non-hysterectomy group (p=0.636). The mean time since the surgical intervention was 2.88±1.12 years in the hysterectomy group and 4.35±1.37 years in the non-hysterectomy group (p=0.001). When the diagnoses of the patients on the first presentation were examined, they were seen to be painful full-term pregnancy, painful previous caesarean delivery, home delivery, vaginal bleeding at 32 weeks gestation and intrauterine foetal mortality at 31 weeks. The diagnoses on presentation were similar in both groups (p=0.533). Vaginal delivery was achieved in 11(45.8%) of the hysterectomy group and 12(70.6%) of the non-hysterectomy group cases. Delivery was by caesarean section in 13(54.2%) cases of the hysterectomy group and

Table-1: Patients' character, first diagnosis, surgical intervention, outcomes, depression rate and Edinburg scale results between two groups.

	Non-hysterectomy group (n=17)	Hysterectomy group (n=24)	p
Time after procedure in years (Mean±SD)	4.35±1.37	2.88±1.12	0.001[a]
Age in years (Mean±SD)	32.65±6.04	33.54±5.82	0.636[a]
Gravid (Median (IQR))	3.0(2.5)	5.0(4.75)	0.001[b]
Diagnosis [n(%)]			0.533[c]
Painful full-term pregnancy	13(%76.5)	15(%62.5)	
Painful previous caesarean delivery	4(%23.5)	5(%20.8)	
Home delivery	0(%0.0)	2(%8.3)	
32 Week vaginal bleeding	0(%0.0)	1(%4.2)	
31 Week mort de foetus	0(%0.0)	1(%4.2)	
Delivery mode			
Vaginal delivery	12(%70.6)	11(%45.8)	0.104[c]
Caesarean section	5(%29.4)	13(%54.2)	
The causes of surgical intervention [n(%)]			0.066[c]
Uterine atonia	13(%76.5)	12(%50.0)	
Ablatio placenta+uterine atoni	2(%11.8)	3(%12.5)	
Uterine rupture	0(%0.0)	7(%29.2)	
Uterine rupture+ invertion	1(%5.9)	0(%0.0)	
Previa accreta	0(%0.0)	2(%8.3)	
Placenta Previa totalis	1(%5.9)	0(%0.0)	
Foetal and neonatal status [n(%)]			
Live	17(%100.0)	18(%75.0)	0.030[d]
Exitus	0(%0.0)	6(%25.0)	
Procedures [n(%)]			
TAH	0(%0.0)	16(%66.7)	0.001[c]
Subtotal TAH	0(%0.0)	4(%16.7)	
TAH+HGL	0(%0.0)	4(%16.7)	
HG+LS	8(%47.1)	0(%0.0)	
HG	5(%29.4)	0(%0.0)	
LS	4(%23.5)	0(%0.0)	
Admitted to the ICU [n(%)]			0.039[d]
No	16(%94.1)	16(%66.7)	
Yes	1(%5.9)	8(%33.3)	
Complication [n(%)]			
No	17(%100.0)	15(%62.5)	0.004[c]
Yes	0(%0.0)	9(%37.5)	
Depression [n(%)]	16(%94.1)	10(%41.7)	
No	1(%5.9)	14(%58.3)	0.001[c]
Yes			
Edinburg scale (Mean.±SD)	3.59±3.04	11.25±6.12	0.001[b]

a: Student's t test
b: Mann-Whitney U test
c: Chi-Square test
d: Fisher-Exact test
TAH: Total Abdominal Hysterectomi
HGL: Hypogastric artery ligation
LS: Lynch suture
ICU: Intensive care unit
SD: Standard deviation
IQR: Inter-quartile range
HG: Hypogastric.

Table-2: Multiple logistic regression analysis for post-partum depression.

	OR	P	CI 95% for OR
Age	0.955	0.675	0.769-1.185
Gravid	0.608	0.074	0.352-1.050
Peri-natal mortality	10.769	0.161	0.389-298.016
Duration of ICU	0.442	0.483	0.045-4.336
Complication	0.577	0.648	0.054-6.116
Hysterectomy	113.996	0.002	5.550-2341.463

ICU: Intensive care unit.
CI: Confidence interval.
OR: Odds ratio.

5(29.4%) of the non-hysterectomy group (p=0.104). The reasons for surgical intervention of atony, placental abruption, uterine rupture, uterine inversion, placenta previa totalis, and placenta accreta were similar in both groups (p=0.66). There were 2(8.3%) cases of placenta accreta in the hysterectomy group and no cases of insertion anomaly in the non-hysterectomy group. Neonatal or foetal mortality was determined in 6(25%) cases of the hysterectomy group and none of the non-hysterectomy group (p=0.030). The rates of complications and admission to intensive care unit (ICU) were greater in the hysterectomy group (p=0.039, p=0.004). Complications in the hysterectomy group were observed of disseminated intravascular coagulopathy in 5(20.8%) patients, bladder injury in 3(12.5%) patients, and abscess formation in 1(4.2%) patient. No major complications were observed in the non-hysterectomy group. Fresh frozen plasma and erythrocyte suspension were given to all of patients in hysterectomised group. Moreover, 3(12.5%) patients from the hysterectomy group presented at the psychiatry clinic and received anti-depressant therapy 1 and 2 years after PPH. The mean total score of the EPDS was 3.59±3.04 in the non-hysterectomy group and 11.25±6.12 in the hysterectomy group (p=0.008). According to the results of the scale, 14(58.3%) patients in the hysterectomy group had depression compared to 1(59%) patient in the non-hysterectomy group (p=0.001) (Table-1).

When the self-reported statements of the hysterectomy group patients were examined, 11(45.8%) stated that they were satisfied with their life and only 1(4.2%) scored over 12 on the EPDS due to complaints about lack of menstruation. Of all, 6(14.6%) patients experienced neonatal or foetal mortality; of them, 4(66.7%) scored over 12 on the EPDS, 1(16.7%) blamed the gynaecologist for the death of the infant and 1(16.7%) with intrauterine foetal death blamed herself. All the 7(17%) patients who stated that they thought they were going to die when they were admitted for surgery, scored over 12 on the EPDS. Besides, 20(48.8%) patients expressed sadness or complained about the loss of fertility from lack of menstruation associated with the organ loss of hysterectomy; of them, 14(70%) scored over 12 on the EPDS. When the factors associated with depression were examined using multiple regression analysis, perinatal mortality 10.77-fold (p=0.161), hysterectomy 114-fold (p=0.002), and each unit gravid 1.64-fold (p=0.074) increased the likelihood of depression. Age, ICU stay and complications were not determined to have any statistically significant effect on depression (Table-2).

Discussion

The results of this study have shown that PPH and related factors could cause post-partum depression, even in the long term. The most significant factor related to depression was seen to be the loss of an organ.

The memory of the trauma of PPH can continue for years for these patients, with vivid memories and flashbacks.[8] The affected people try to cope with these memories but it is difficult and sometimes in daily life, for example while watching television, there may be some mention of hysterectomy and the memories rapidly return.[8] Emotional reactions may occur immediately following the procedure or in the long term.[13] Depressive symptoms are demonstrated as somatic complaints such as agitation, tiredness, dizziness, headaches, frequent urination, dysuria, and numbness in the fingers or in the incision area.[14] Recent long-term studies have reported that these symptoms increase following PPH.[8,9]

There may be various factors affecting the emotional responses and psychological status of patients following peripartum hysterectomy. Factors such as anxiety due to rapidly developing haemorrhage and subsequent intervention, admittance to the ICU, fear of death and infant mortality, may affect the short-term emotional responses. Sudden onset of haemorrhage during delivery or afterwards and the rapid decision-making behaviour of the medical team after admitting the patient to the operating theatre can cause a fear in the patient. The individual may feel an uncertainty about their life and it may not be restricted to their life but they may also develop anxieties related to the future of their husband, children or close relatives.[8] The fear of death may become more evident, especially in patients admitted to the ICU.[13] In the current study, 3 of the 8 patients who were admitted to the ICU in hysterectomy group said they felt fear of death and all of these patients scored over 12 on the EPDS. However, in multiple logistic regression analysis, no relationship was determined between admittance to ICU and depression (p=0.701), which could have been related to the small size of the sample. In

addition, separation from the infant during the stay in ICU or for longer period has been reported to cause rejection, sadness and anger. Even if some mothers do not feel anxiety about the infant in the early days because of fatigue, responses can be detected later such us anger, fear and regret.[9]

In cases of infant mortality, especially if the patient has stayed in ICU and has not seen the infant until it died, anger or blame can be seen in the long term. In the current study, 1 patient who presented with a diagnosis of intra uterine foetal death at 31 weeks, blamed herself for the death and 1 patient who underwent hysterectomy for uterine rupture blamed the physician for the death of the her infant. Both patients experienced anger and blame. Another patient was unhappy because of the death of the newborn and wanted to have another baby but this was now impossible as the uterus had been removed. In the multi-logistic regression analysis, perinatal mortality was seen to increase depression 7.88-fold but was not statistically significant (p=0.161). This result also could have been related to the small case number. In addition, if it is considered that the patient's period of fertility has not been completed or there is a desire for more child, the long-term psychological effects of PPH may be more significant. In the current study, although there is no statistically significance, increased gravid was found to reduce depression 1.64-fold.

From the results of the current study, organ loss, as the loss of the uterus, can be considered to be the most significant factor related to depression. PPH was seen to increase the risk of depression 114-fold (p=0.002). Various consequences of organ loss can affect the psychiatric status of the patient. In the current study, of the 20 patients who complained of loss of menstruation and reproductive capability, 14 scored over 12 on the EPDS. Previous studies[8,9] have reported that patients experienced stress when they were given information preoperatively about the loss of reproduction of PPH. Patients also believed that a lack of menses accelerates aging and poor health.[14] In a rapidly multiplying society, this situation following emergency hysterectomy may cause greater stress and depression. In one study, the participants had the societal norms of rapid reproduction and the desire for many children.[15] In such societies, polygamy is widespread to produce more children and thus, fertility and menstruation are important attributes of females in this and similar societies.[16] A negative correlation was seen in the current study between increased gravid and depression. Although it was not statistically significant, for each increase of 1 gravid, the risk of depression decreased 1.64-fold. Therefore, as seen in this study, the most important factor related to depression can be accepted as organ loss. In addition, patients have reported that because there is a space inside the body after the removal of the uterus, when there is abdominal pain, they believe that the intestines have relocated downwards and linked together.[14]

Besides the negative emotional effects of PPH, some patients can cope with these negative emotional responses. This may be related to various factors. A study reported that personal factors such as personality traits, ethnicity, beliefs, religion and coping techniques may affect the positive emotional status in the long term.[13] However, in that study, a factor related to positive emotional response could have been that the period of fertility was completed. Because in these patients the number of gravid was minimum 4 and maximum 9. For such large families, the number of children can be significant factor to cope with negative emotional status. As stated above, the increased number of gravid was conversely related to depression.

One of the limitations of this study was its small sample size. However, it has value in respect of examining the long-term psychiatric evaluation and to the best of our knowledge, this was the first such report in literature.

Conclusion

PPH had negative effects on the patient's psychiatric health. The complications related to loss of organ, such us loss of menstruation and fertility, can be a major factor for post-partum depression, especially in rapidly multiplying society. Immediately after PPH and after discharge, multiple visits should be made throughout 6-8 weeks and in some patients it may be necessary to continue these visits for up to 2-3 years. Therefore, this issue should be considered as a public health problem because of maternal-perinatal morbidity, mortality and cost. Unfortunately, as there are no specialised professional care units in most countries, including Turkey, the number of studies on this subject has remained relatively low. Nevertheless, there is an increase in high level medical evaluation of patients' perceptions and recollections. Where possible, patients who are likely to undergo PPH should be given detailed information about causes and outcomes. After surgery, long-term psychiatric follow-up should be done when necessary.

Acknowledgements

We are grateful to the Batman Gynaecology and Paediatric Diseases Hospital's office workers for their assistance. Language has been edited by native English speaker Caroline J. Walker (carolinejwalker@yahoo.co.uk).

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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