

Emergency peripartum hysterectomy cases in Agri: a 6-year review

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Summary

Purpose of Investigation: The aim of this study was to detect the incidence, indications, maternal and perinatal outcomes, and complications of emergency peripartum hysterectomy (EPH) as a life-saving operation. **Methods:** Fifty-four cases of emergency peripartum hysterectomy between June 2003 and June 2009 at the Obstetrics and Gynecology Department of the Agri Maternity and Children's Hospital in Turkey, were analyzed retrospectively. **Results:** The incidence of EPH was found to be 1.87 per 1,000 deliveries. The most common indication for the procedure was uterine rupture (37.03%). There were three maternal deaths (5.56%). Wound dehiscence and wound infection were seen in eight (14.81%) and nine patients (16.67%), respectively. **Discussion:** EPH continues to be an important factor for maternal morbidity and mortality. In our study, we aimed to investigate the risk factors for peripartum hysterectomy. The most common three risk factors were uterine rupture, atony, and placenta accreta.

Key words: Peripartum hysterectomy; Incidence; Indication; Complication.

Introduction

Emergency peripartum hysterectomy (EPH) is a surgical procedure performed at the time of delivery or in the immediate postpartum period. Incidence is different in various parts of the world due to socioeconomic status, level of antenatal care, and family planning. Yucel *et al.* found an incidence of 0.29 per 1,000 births [1], Forna *et al.* reported the incidence in their study as 0.80 per 1,000 births [2]. Aryee *et al.* [3] found that the incidence of EPH was 4.34/1,000 deliveries. The indications of EPH have changed as time has passed. Previous studies have reported that the first two indications of EPH are uterine atony and rupture [4, 5], but in recent years placenta accreta and abnormal placentation have become the most common indications due to higher number of cesarean sections [6, 7]. EPH is associated with high maternal and fetal mortality and morbidity. In spite of the recent advances in modern obstetric practice, it remains a life-threatening complication of pregnancy [2].

This retrospective study was conducted to evaluate the incidence, indications and outcomes of emergency peripartum hysterectomy.

Material and Methods

The clinical records of emergency peripartum hysterectomy cases that were managed at the Obstetrics and Gynecology Department of the Agri Maternity and Children Hospital, Agri, Turkey, from June 2003 to June 2009 were analyzed retrospectively. EPH was defined as a hysterectomy for a lifesaving indication performed for hemorrhage within 24 hours of delivery. Subtotal and total hysterectomy operations were performed for the patients. Information was collected on patient characteristics, including age, socioeconomic status, parity, weeks of ges-

tation, prior cesarean sections and maternal and fetal mortality/morbidity.

Low socioeconomic status was defined as yearly income of US\$ \leq 1,000. SPSS 9.05 (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. The mean and standard deviation were calculated for continuous variables; $p < 0.05$ was considered significant.

Results

During the study period 28,776 deliveries occurred in our clinic and cesarean section was performed in 4,052 of them. The rate of cesarean section was 14.08%. EPH was performed in a series of 54 cases. The incidence was 1.87 per 1,000 deliveries. The main indications for emergency hysterectomy were uterine rupture in 20 cases (37.03%), uterine atony in 18 cases (33.34%), and placenta accreta in seven patients (12.97%), respectively. The indications for EPH are shown in Table 1. The mean maternal age was 26.31 ± 7.12 , gravida was 4.06 ± 2.14 , and parity was 2.92 ± 2.05 . Demographic and clinical characteristics of the patients are shown in Table 2. Interestingly, low socioeconomic status was a factor in 38 women (70.37%).

Table 3 details the comparison of demographic and clinical characteristics according to the operation type. Subtotal abdominal hysterectomy was performed in 31 cases (57.40%), and total abdominal hysterectomy was performed in 23 cases (42.60%). There were no statistically significant differences between these two groups in terms of maternal age, gravidity, parity, gestational age, previous cesarean section, low socioeconomic status, fetal and maternal mortality.

Subtotal and total hysterectomy were compared regarding operation time, blood loss, blood transfusion, hospital stay, wound dehiscence, and wound infection (Table 4). Although operation time in the subtotal hysterectomy

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Table 1. — Indications for emergency peripartum hysterectomy.

Indication	n	%
Uterine rupture	20	(37.03)
Uterine atony	18	(33.34)
Placenta accreta	7	(12.97)
Abruptio placenta	4	(7.40)
Obstetric hemorrhage due to other causes	4	(7.40)
Uterine inversion	1	(1.86)

n = number of patients; % = percentage.

Table 2. — Demographic and clinical characteristics of the patients (n = 54).

Characteristics	
Mean maternal age, year (SD)	26.31 ± 7.12
Gravidity (SD)	4.06 ± 2.14
Parity (SD)	2.92 ± 2.05
Gestational age, weeks (SD)	37.26 ± 3.91
Previous cesarean section (n, %)	17 (31.48)
Low socioeconomic status (n, %)	38 (70.37)
Fetal mortality (n, %)	18 (33.34)
Maternal mortality (n, %)	3 (5.56)
Number of referred patients (n, %)	16 (29.62)

SD = standard deviation.

Table 3. — Comparison of the demographic and clinical characteristics according to operation type.

	Subtotal hysterectomy (n = 31)	Total hysterectomy (n = 23)	p
Mean maternal age, year (SD)	27.32 ± 7.24	25.81 ± 6.62	0.39
Gravidity (SD)	4.24 ± 2.26	3.76 ± 1.88	0.76
Parity (SD)	3.18 ± 2.14	2.71 ± 2.01	0.61
Gestational age, week (SD)	37.64 ± 4.09	36.75 ± 4.56	0.18
Previous cesarean section (n, %)	10 (32.25)	7 (30.43)	0.33
Low socioeconomic status (n, %)	21 (67.74)	17 (73.91)	0.84
Fetal mortality (n, %)	10 (32.25)	8 (34.78)	0.45
Maternal mortality (n, %)	2 (6.45)	1 (4.34)	0.12
Number of referred patients (n, %)	8 (25.80)	8 (34.78)	0.27

n = number of patients, % = percentage, SD = standard deviation.

Table 4. — Comparison of the complications according to operation type.

	Subtotal hysterectomy (n = 31)	Total hysterectomy (n = 23)	p
Operation time, minute (SD)	99.46 ± 36.84	112.37 ± 42.28	0.960
Blood loss, ml (SD)	1243.28 ± 179.25	1437.63 ± 246.08	0.089
Blood transfusion, unit (SD)	3.82 ± 2.84	4.61 ± 3.52	0.110
Hospital staying, day (SD)	6.41 ± 3.72	7.56 ± 5.03	0.288
Wound dehiscence (n, %)	5 (16.12)	3 (13.04)	0.364
Wound infection (n, %)	4 (12.90)	5 (21.73)	0.061

n = number of patients, % = percentage, ml = milliliter, SD = standard deviation.

group was shorter than for the total hysterectomy group (99.46 ± 36.84 vs 112.37 ± 42.28) the difference was not statistically significant. There were no statistically significant differences between these two groups for any of these variables.

Discussion

Most studies report the rate of occurrence for peripartum hysterectomies as between 0.26 to 5.40 per 1,000 deliveries [8, 9]. This variation is due in part to the different definitions regarding the time period for peripartum hysterectomy used in different studies, either within 24 hours of a delivery or during the same hospitalization period [9]. The high incidence of EPH could be related to the increasing number of cesarean sections, which in turn gives rise to an increased number of abnormal placentation and placenta previa. Sakse *et al.* reported that uterine scarring, especially with increased number of previous cesarean deliveries, increases the risk of peripartum hysterectomy, even in the absence of placenta previa [10]. The incidence was 1.87 per 1,000 deliveries and the rate of cesarean section was 14.08% in our study. The number of previous cesarean sections was 17 (31.48%).

Emergency peripartum hysterectomy is an important cause of maternal mortality, morbidity and perinatal mortality. We found that uterine rupture, atony, placenta accreta, obstetric hemorrhage due to other causes, abruptio placenta, and uterine inversion were associated with peripartum hysterectomy, respectively. Our findings were consistent with a previous study by Aryee *et al.* [3]. The most common indication for EPH was uterine rupture with a rate of 37.03% in our study. Yalinkaya *et al.* found a uterine rupture rate of 30.71% in 2010 [11]. The most important predisposing factor for uterine rupture is previous cesarean section [12, 13]. Uterine atony, defined as the lack of efficient uterine contractility after placental separation, is the most common cause of EPH and complicates 1/20 deliveries. Atony was seen at the rate of 33.34% as a risk factor for EPH in our study.

Previous cesarean section is also a risk factor for abnormal placental adherence. Placenta accreta is a condition where conservative measures such as curettage or suturing are of very limited success [14]. Our placenta accreta rate for EPH was 12.97% and this low proportion could be explained by the low previous cesarean section rate.

Hysterectomy is accepted as a definitive treatment for EPH. Prompt control of uterine hemorrhage is vital to decrease morbidity and prevent death. The operative technique for hysterectomy depends on the timing and indication for the procedure. Total hysterectomy should be considered when active bleeding occurs from the lower segment or cervix. Kastner *et al.* reported that the subtotal hysterectomy rate was 80% [15]. Our subtotal hysterectomy rate was 57.40%. We found that operation time, length of hospital stay, blood loss, blood transfusion, and wound dehiscence rates were lower in the subtotal hysterectomy group than the total hysterectomy group. On the other hand, wound infection rate was slightly higher in the subtotal hysterectomy group than the total hysterectomy group. Both subtotal and total hysterectomy are associated with high maternal and fetal mortality [16]. When the groups were compared in relation to fetal and maternal mortality there were no statistically significant differences in our study. Our total maternal mortality rate of 5.56% was similar to previous studies [1, 17].

As a result, lack of antenatal care, normal vaginal deliveries which are performed by midwives, and especially low socioeconomic status might have been responsible for the increase of the incidence of EPH in our clinic. However, the low previous cesarean section rate may have contributed a positive effect to decrease EPH in our region. Ultimately, EPH rates are not decreasing because of these risk factors and it could be possible to prevent hysterectomy by closely monitoring the women at particularly high risk and with early recognition of their risk factors.

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