EMERGENCY PERIPARTUM HYSTERECTOMY: A 4-YEAR REVIEW

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ABSTRACT

• ***Objective:*** *The objectives of this study were to evaluate the incidence, risk factors, indications, outcomes and complications of peripartum hysterectomy.*

• ***Material and Method:*** *This is a retrospective analysis of 62 cases of emergency peripartum hysterectomy performed between January 2001 and December 2004. Comparisons were made between cesarean and postpartum hysterectomies.*

• ***Results:*** *There were 62 cases of peripartum hysterectomy (38 cesarean hysterectomy and 24 postpartum hysterectomies) among 84215 deliveries for a rate of 0,73 per 1000 deliveries. The main indications for hysterectomy were placental pathology,uterine atony and uterine rupture. Placenta accreta was the most common indication (42%). Subtotal hysterectomy was performed in 42 (67.7%) cases and total hysterectomy in 20 (32.2%). There were six maternal deaths and seven neonatal deaths and stillbirths.*

• ***Conclusion:*** *Placental pathology is the leading cause of postpartum hemorrhage and the main indications of emergency peripartum hysterectomy. Timely operation minimizes the morbidity and mortality.*

• ***Key Words:*** *Periparum hysterectomy,abnormal placentation.* ***Nobel Med 2010; 6(3): 20-23***

ACİL PERİPARTUM HİSTEREKTOMİ: 4 YILLIK KRİTİK ANALİZ

ÖZET

• **Amaç:** Çalışmamızdaki amaç, peripartum histerektomi için risk faktörleri, endikasyonları, sonuçlar ve komplikasyonları ile sıklığının değerlendirilmesidir.

• **Materyal ve Metod:** Ocak 2001 ve Aralık 2004 tarihleri arasında acil peripartum histerektomi uygulanan 62 hastanın retrospektif analizi yapıldı. Çalışmadaki karşılaştırmalar sezaryen ve postpartum histerektomiler arasında yapılmıştır.

• **Bulgular:** Bu tarihler arasında gerçekleştirilen 84.215 doğumdan 62 vakada (%0,073) peripartum histerektomi uygulanmıştır (38 sezaryen histerektomi, 24 postpartum histerektomi). Histerektomi için emel endikasyonlar, plasental patoloji, uterin atoni ve uterus rüptürüdür. En sık endikasyon plasenta akkreata olarak bulunmuştur (%42). 42 vakada subtotal histerektomi uygulanırken (%67,7), 20 hastada total histerektomi uygulanmıştır (%32,2). Bu vakalardan 6 tanesinde maternal ölüm izlenirken 7'sinde ölü doğum ve yenidoğan ölüm olayı izlenmiştir.

• **Sonuç:** Doğum sonrası kanama ve acil postpartum histerektominin en sık nedeninin plasental patoloji olduğu düşünülmüştür. Zamanında yapılan müdahale ile morbidite ve mortalitenin azaldığı gözlenmiştir.

• **Anahtar Kelimeler:** Peripartum histerektomi, anormal plasentasyon.. **Nobel Med 2010; 6(3): 20-23**

INTRODUCTION

Emergency peripartum hysterectomy is reserved for life-treatening obstetric conditions where conservative measures do not control hemorrhage. It is defined as cesarean hysterectomy or hysterectomy performed within 24 hours of vaginal delivery.

The first obstetric hysterectomy was performed by Porro to prevent maternal mortality.[1] The indications are uterine atony, placental abnormalities,uterine rupture and vessel injury.[2] According to the last most current case series, the incidence varies from 0.1% to 0.3%.[3] In recent years abnormal placentation has assumed as the major risk factor for peripartum hysterectomy.[4]

We aimed to review emergency postpartum hysterectomies over a four year period and to state the differences in risk factors, indications and complications between hysterectomies performed after vaginal delivery and cesarean hysterectomies.

MATERIAL and METHOD

A total of 84215 deliveries were performed at Zekai Tahir Burak Women Health and Training Hospital from January 2001 to December 2004. Patients were identified from hospital annual audits and pathology reports. Emergency postpartum hysterectomy was defined as a hysterectomy performed for hemorrhage unresponsive to other treatment within 24 hours of a delivery. Sixty-two patients subjected to emergency hysterectomy in this period.

The study population had subdivided into cesarean hysterectomy and postpartum hysterectomy. Maternal characteristics such as age, parity, gestational age, previous cesarean delivery and birth weight were recorded. Elective hysterectomies performed for an associated gynecologic condition or for sterilization were excluded from the study.

Statistical analysis was performed with SPSS version 11,5. Wilcoxon rank sum tests were used to compare differences in categoric variables. The student-t test and Mann Whitney U test were used to analyze normally distributed continous variables. A p value <0.05 was considered significant.

RESULTS

Among the 84,215 deliveries from January 21,2001 to December 24,2004 62 patients underwent peripartum hysterectomies.The incidence of obstetric hysterectomy was 0.073%. All the hysterectomies were undertaken for uncontrollable postpartum hemorrhage: 38 followed cesarean section (0.045%), 24 were following vaginal delivery (0.028%). The average age of the patients was 31.4±5.38 (ranged between 19 and 43 years).The mean gestational age was 37.5 weeks (range 22-41 weeks) with a mean birth weight of 3024±850.3 (ranged between 400 and 4600 g).There were 14 primigravida (22%),while 78% were parous (Table 1).

Of the 62 postpartum hysterectomies,35 patients were performed because of placental pathology (56%) and 12 cases because of uterine atony and 13 cases were performed due to uterine rupture (21%). 3 of 62 women (5%) had had myomectomy at the time of cesarean section. Of the 35 patients, 26 had placenta accreta (42%), 6 had placental decolman (9%) and 3 had placenta previa (5%) (Table 2). There were no history of coagulopathy, detected with standart tests for coagulation.

There were 38 postpartum hysterectomies following cesarean section and 20 cases were peformed following emergency cesarean section (52.63%) and 18 cases were performed following elective cesarean section (47.27%). In the emergency cesarean section group 4 cases of intraoperative and postoperative complication occured. Ureteral injury occured in 1 case, bowel injury in one and disseminated intravascular coagulopathy in 2 cases. There were no complication in the elective cesarean section group.

Subtotal hysterectomy was performed in 42 (67.7%) cases and total hysterectomy in 20 (32.2%). The procedure performed to control hemorrhage before hysterectomy included manuel compression in all patients, ligation of the uterine artery in 26 (41.9%), hypogastric artery ligation in 12 (19.4%), Lynch procedure in 5 (8.1%),Olier procedure in 5 (8.1%) and others in 13 (21%) patients.

There were 4 cases of stillbirths, 3 cases of neonatal deaths and six cases of maternal deaths. Two of the maternal deaths were due to placenta accreta and four of them were because of uterine atony (Table 3).

DISCUSSION

Emergency peripartum hysterectomy was defined as one performed for hemorrhage unresponsive to other treatment less than 24 hours after delivery.[5] The first cesarean hysterectomy in which both mother and infant survived was reported by Eduardo Porro in 1876.[6] Obstetric hysterectomy is usually performed as a life-saving emergency procedure. Between 1950 and 1970's cesarean hysterectomy was most commonly used for→

Table 1: Maternal characteristics of the emergency peripartum hysterectomy according to the mode of delivery.

	Normal vaginal delivery (n=24)	Cesarean delivery (n=38)	Total (n=62)	p value
Age	31.7±5.09	31.2±5.60	31.4±5.38	0.74
Gestational age	38 (31-41)	37 (22-41)	37.5 (22-41)	0.07
Gravidity	4 (1-8)	4 (1-11)	4 (1-11)	0.81
Parity	1 (0-5)	1 (0-7)	1 (0-7)	0.74
Fetal weight	3415±801.5	2776±793.9	3024±850.3	0.003

Table 2: Indications for emergency peripartum hysterectomy

	Placental pathology	Rupture	Atony	Decolman	Previa	Myomectomy
Ceaserean delivery (n=38)	23 (60.5%)	4 (10.5%)	0 (0%)	6 (15.8%)	3 (7.9%)	2 (5.3%)
Normal vaginal delivery (n=24)	3 (12.5%)	9 (37.5%)	12 (50%)	0 (0%)	0 (0%)	0 (0%)

Table 3: Outcomes, parity and mortality status of women undergoing cesarean and postpartum hysterectomy

	The type of hysterectomy		Mortality status		Parity	
	Subtotal (67.7%)	Total (32.3%)	Neonatal	Maternal	Nullipar	Multipar
Ceaserean delivery (n=38)	27 (71.1%)	11 (28.9%)	5 (13.2%)	0 (0%)	9 (23.7%)	29 (76.3%)
Normal vaginal delivery (n=24)	15 (62.5%)	9 (37.5%)	2 (8.3)	6 (2.5%)	5 (20.8%)	19 (79.2%)
TOTAL (n=62)	42	20	7	6	14	48

sterilization,defective uterine scar,myoma and other gynecologic disorders.[7]

The results in this series occured in a tertiary hospital with 24-hour anaesthetists and obstetricians. The incidence of peripartum hysterectomy in total deliveries varies from 3/1000 to 0.20/1000.[8] Our rate of 0.073% is comparable with the range of 0.078% quoted in the study of Habek et al.[9] In contrast, Sakse reported an incidence of 0.24/1000 and stated that optimizing treatment of postpartum hemorrhage may decrease the incidence of peripartum hysterectomy in the future.[10] In our study the incidence of peripartum hysterectomy after a cesarean section was 0.045% and 0.028% after vaginal birth. In the other hand Sang et al. found 0.45% and 0.09% respectively. This relative risk is worth bearing in mind in the context of the rising cesarean section rate worlwide.[11]

We found placenta accreta to be the most common indication for an emergency peripartum hysterectomy. Kwee et al, reported that indication for peripartum hysterectomy were placenta accreta (50%) and uterine atony (20%) and determined that the number of previous cesarean was related to an increased risk of placenta accreta from 0.19% for one previous cesarean to 9.1% for four or more previous cesarean.[12] In the other hand Yucel et al. reported that the uterine rupture was the most common indication for peripartum hysterectomy.[5] Additionally the incidence of placenta placenta accreta seems to be rising possibly due to an increasing rate of cesarean section and curettage. Ultrasonography, color flow doppler and magnetic resonance imaging are useful in identifying placenta accreta. Rahman et al. stated that if the combination of risk factors and imaging findings suggest placenta accreta, than a cesarean hysterectomy should be planned so there is reduced maternal morbidity and mortality.[13]

Conservative measurements such as hemostatic sutures and uterine or internal iliac artery ligation with pharmacological drug is an option to achieve homeostasis. There is little in the literature to guide practice when pharmacological treatment fails. Bimanuel compression compresse the uterus between one hand in the vagina and another on the anterior abdominal wall, thus reducing the bleeding. In the past, uterine tamponade was achieved by packing the uterus with cotton gauze, a technique that had several disadvantages. Interest in the medical community in uterine tamponade has been revived by the appearance of balloon tamponade. Various devices have been used for uterine tamponade such as the Sengstaken-Blakemore balloon, Rusch balloon and the Foley balloon. Arterial ligation is a technically demanding procedure. It can reduce pelvic blood flow and pulse pressure but may be ineffective if there are extensive collaterals. Temporary clamping of the abdominal aorta may allow for restoration of the circulation and stabilization of the clinical situation. In our observation, uterine artery ligation was done in 26 and hypogastric artery ligation was performed in 12 patients before preceded to hysterectomy. B-Lynch et al. first described the compression suture in 1997 and others have since developed the technique using vertical, transverse or multiple square sutures to appose the anterior and posterior walls of the uterus. Habek et al. dedicated that a great proportion of peripartum hysterectomy can be prevented by the introduction of compressive operative method as such as B-Lynch suture.[9] Cho et al. also reported the significance of this suture as an alternative to hysterectomy.[14] In this context we performed B-Lynch sutures in order to control postpartum hemorrhage in three patients. Although transcatheter uterine artery embolization has been proved to be a life-saving technique in serious obstetrical hemorrhage, it does not always control bleeding. →

The causes of treatment failure may be multifactorial and vary in individual cases, but incomplete embolization of the blood supply from other sources may play an important role. It may be performed in patients desiring future fertility.[15] When all the conservative measures fail, timely hysterectomy should be the procedure of choice in refractory hemorrhage for preventing obstetric death.

There is always debate as to whether to perform total vs subtotal hysterectomy at the time of emergency peripartum hysterectomy. However there was a trend for more surgical intensive care unit admissions and postoperative comlications in the total abdominal hysterectomy group. Our study showed no differences with respect of hemoglobin levels on admission and postoperative, operating time and admission to intensive care between the two types of hysterectomies. Yucel et al. in their series report a subtotal: total hysterectomy ratio of 3.4/7.0.[5] In our study it was 6.7/3.2. The earlier literature supports the performance of a total hysterectomy for reduction in potential of a total hysterectomy for reduction in potential cervical stump malignancy. At the present time with the advent of cytologic screening the incidence of cervical cancer is reported as 0.1% to 0.15%. On the other hand subtotal hysterectomy preserves bladder and sexual function better than the total operation and is associated with reduced complications.[16]

In our series, the maternal mortality rate was six out of the 62 emergency procedures. There is no significant difference comparing these results with the literature,[13] but some studies reports maternal mortality to be as low as 0-4%.[9,12] We believe that improved antenatal care will make the excellent positive contribution to a reduced maternal mortality.

In conclusion, obstetric hysterectomy is usually performed as an emergency, life-saving operation. Every obstetric unit should have protocols available to deal with hemorrhage and other obstetric emergencies.

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