Morbidity and Mortality of Emergency Peripartum Hysterectomy in Ain Shams Maternity Hospital

Thesis

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By

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Candidate

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List of Abbreviations

Abbr.	Title
ACOG	American College of Obstetricians & Gynaecologists
ALS	Advanced Life support
APH	Antepartum haemorrhage
ARF	Acute Renal Failure
CIN	Carcinoma in-situ
CPD	Cephalopelvic disproportion
CVT	Cortical vein thrombosis
DIC	Disseminated intravascular coagulation
DVT	Deep Vein Thrombosis
EPH	Emergency peripartum hysterectomy
FFP	Fresh Frozen Plasma
HB	Hemoglobin
HELLP	Hemolysis elevated liver enzymes low platelet count
ICU	Intensive Care Unit
IM	Intramuscular
IMM	Intra myometrial
IV	Intravenous
LSCS	Lower segment cesarean section
MAP	Morbidly Adherent Placenta
MCH	Maternal and child health
MMR	Maternal mortality rate
OR	Odds ratio

List of Abbreviations (Cont.)

Abbr.	Title
PCV	Packed cell volume
PE	Pre-eclampsia
PNMR	Perinatal mortality rate
POD	Pouch of douglas
PPH	Postpartum haemorrhage
PRBC	Packed Red Blood Cells
PT	Prothrombin time
PTT	Partial thromboplastin time
RCOG	Royal College of Obstetricians & Gynaecologists
TAS	Transabdominal scan
TVS	Transvaginal scan
VBAC	Vaginal birth after Cesarean section
WHO	World health organization

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Abstract

Purpose To identify the risk factors and to study the incidence, indications management and complications of peripartum hysterectomy in Ain Shams maternity hospital over the past 5 years. **Methods** A retrospective case series thorough examination of the entire inpatient files of all women who had EPH over past 5 years January 2011 - Jun 2016 in the department of Obstetrics and Gynecology, Ain shams university maternity tertiary hospital. **Results** The incidence of emergency peripartum hysterectomy per 1000 delivery from January 2011 to Jun 2016 was (3), it was higher in year 2015 (4.94/1000 delivery) followed by year (3.65/1000 delivery). Most common indication was atonic PPH; it was in 67 cases (31.3%). Second common indication Placenta previa 52 cases (24.3%) Intraoperative complications noted in 43 cases (20%). Bladder injury was the most intraoperative complications 31 cases (14.5%).Most common postoperative complication was wound sepsis 25 cases (11.6%) followed by UTI 17 cases (7.9%). Maternal mortality found to be 12 cases and 191 were admitted to ICU. **Conclusion** Frequency of emergency peripartum hysterectomy, maternal mortality, maternal morbidity and perinatal mortality were high in this study. The risk of peripartum hysterectomy seems to be significantly decreased by limiting the number of cesarean section deliveries. Improving the quality of health care, good antenatal care, identification and active management of high risk cases and timely interference prompt and early referral to tertiary centre, availability of blood and blood products, specialized intervention of dialysis in multi-disciplinary approach reduces the obstetric catastrophies leading from emergency peripartum hysterectomy.

Keywords Emergency peripartum hysterectomy, Postpartum hemorrhage, Uterine atony, Abnormal placentation, Uterine rupture, Previous cesarean section.

Introduction

Emergency peripartum hysterectomy is one of the life-saving procedures performed after vaginal delivery or cesarean birth or in the immediate postpartum period in cases of intractable hemorrhage and held in reserve for the situations where conventional measures fall short to control the condition ***(Plaucheet al., 1981).***

Rapid and equitable access to skilled birth attendance and basic comprehensive emergency obstetric care including blood transfusion and or emergency peripartum hysterectomy is a key principle underlying strategies to reduce maternal mortality and to achieve the Millennium Development Goal (MDG) which was agreed in 2000. The United Nations recognized the unique significance of maternal mortality as part of the Millennium Declaration issued by the UN General Assembly in September 2000 as a part of a broader set of Millennium Development Goals (MDGs). The UN Member states called for the reduction by three quarters, between 1990 and 2015, of maternal mortality ratio (the number of maternal deaths per live birth) in all countries and regions where the risk of maternal death remained unacceptably high in 1990.Such a target implies that the maternal mortality ratio should decline at an average rate of at least 5.5%per year over the 25 year interval ***(Mesbah et al., 2013).***

A recent review of maternal mortality concluded that Africa is very unlikely to achieve this MDG and that overall results for women have fallen badly short of what should have been achieved. Again this high incidence of morbidity and mortality is reported from the developing countries according to the most recent round of UN estimates of maternal mortality over the full interval from1990 to 2008, utilizing all available data over this period to analyze and create comparable estimates of the MMR and related indicators for 172 countries (or territories), with reference to 5-year time intervals centered on 1990, 1995, 2000, 2005and 2008 ***(Mesbah et al., 2013).***

In general, peripartum hysterectomy complicates 1 in 1000 deliveries. The incidence, however, can vary. For example, the incidence was 1 in 442 in a Nigerian series compared with 1 in 1243 in North American, and 1 in 6967 in an Asian study. In Canada, the peripartum hysterectomy rate for hemorrhage rose from 0.26 per 1000 deliveries in 1991-1993 to 0.46per 1000 in 1998-2000, whereas in an Irish study it fell from 0.85 per 1000 deliveries in 1966-1975 to 0.2per 1000 in 1996 – 2005 (pb0.001). The incidence varies over time, depending on healthcare setting, and is strongly influenced by cesarean delivery rate ***(Turner, 2010).***

In the past the most common indication of emergency peripartum hysterectomy was atony and uterine rupture. Recent reports shows that abnormal placental adherence / placenta previa is emerging as the major indication for emergency peripartum hysterectomy and is most likely related to increase in number of cesarean delivery observed over the past two decade ***(Nisar and Sohoo, 2009).***

Placenta accreta has become the most common indication for emergency peripartum hysterectomy ***(American College of Obstetricians and Gynecologists (ACOG, 2002).***

Why has placenta accrete become the most common cause for an emergency peripartum hysterectomy? Firstly, it may be attributed to the increase in cesarean births and uterine curettages over the past two decades. Secondly it may be aresult of better treatment of uterine atony with prostaglandin preparations decreasing the need for hysterectomy ***(Kastneret al., 2002).***

The risk of cesarean hysterectomy rises with the increasing number of prior cesareans. In one study the odds ratios of placenta accreta were 2.4 for a third cesarean and 9.0 for fourth cesarean compared with primary cesarean ***(Turner, 2010).***

Peripartum hysterectomy is accompanied by substantial morbidity and mortality. Compared with non obstetric hysterectomy, the procedure is associated with increased rates of both intraoperative and post-operative complications. The mortality of peripartum hysterectomy is more than 25 times of hysterectomy performed outsides of pregnancy ***(Wright et al., 2010).***

The patterns of complications for peripartum hysterectomy differ between women with placenta accreta and those with uterine atony. As would be expected, bladder and ureteral injuries were more frequent in women with placenta accreta. Somewhat surprisingly, we noted that reoperation, postoperative hemorrhage and wound complications were more common in women with uterine atony. Likewise, both cardiovascular and pulmonary complications were seen more often in cases of uterine atony. Why these complications are more common in women with uterine atony and without placenta accreta is not inituitively clear ***(Wright et al., 2010).***

In 2013, 289, 000 mothers worldwide lost their lives following pregnancy and childbirth, which equates to 800 women every day. Although 99% of those deaths occurred in developing countries, developed countries, including the United States, are not immune. According to the World

Health Organization, 1200 maternal deaths occurred in the United States in 2013 (28 per 100, 000 live births), representing a 6.1% annual increase in the maternal death rate over the past 13 years ***(Stevens et al., 2015).***

Although some maternal deaths are not easily preventable, a focus on intrapartum and immediate postpartum causes could result in substantial improvement of this rate. The challenge lies in identifying the preventable causes of maternal mortality so that processes may be implemented with the goal of preventing maternal deaths. The determination of the number of preventable maternal deaths is inexact and varies based on the definition of preventable. A previous study reviewed maternal outcomes after nearly 1.5 million deliveries at 124 US hospitals and concluded that 17 of the 95 maternal deaths (18%) could have been prevented with more appropriate medical care. Another 10 deaths (11%) were judged to be preventable but occurred as aresult of actions or inaction of nonmedical persons. In contrast, in another study, 108 pregnancy-related deaths, which considered the effect of health care system changes and public health infrastructure on the maternal mortality rate, determined that up to 40% of maternal deaths could have been prevented. Regardless of the methods used to define preventable maternal death, by shifting the focus to

identification of the most common causes of such deaths and the root cause of each individual occurrence, evidence-based care models can be developed and implemented with the ultimate goal of reducing maternal mortality ***(Stevens et al., 2015).***

Significant obstetric hemorrhage can have catastrophic consequences. Delayed recognition, indecisive management, and disorganized care are three common factors that increase the likelihood of severe maternal morbidity and mortality. However, with thorough preparation, rapid recognition, methodical treatment, and a coordinated multidisciplinary approach, many tragic outcomes can be avoided. On-site, experienced OB hospitalists are able to intervene and facilitate at each stage of patient care and can be an integral part of improving patient outcomes in cases of significant obstetric hemorrhage ***(Stevens et al., 2015).***