

## Emergency Obstetric Hysterectomy in Elywia Maternity Teaching Hospital Baghdad

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### **ABSTRACT:**

#### **BACKGROUND:**

Emergency obstetric hysterectomy is a life saving procedure in severe obstetrical hemorrhage.

#### **OBJECTIVE:**

To review frequency, indications, associated risk factors and maternal morbidity and mortality associated with emergency obstetric hysterectomy done in Al- Elwiya maternity teaching hospital-Baghdad

#### **PATIENTS AND METHODS:**

A prospective study carried out from January the 1<sup>st</sup> 2010, to December 31<sup>st</sup> 2010. Maternal parameters analyzed were age, parity, booking status, setting, anemia & pre existing diseases, history of traditional birth attendants interference, mode of delivery, history of caesarean section, time of arrival to hospital and postpartum state of on arrival, frequency, indications of emergency obstetric hysterectomy, associated maternal morbidity and mortality.

#### **RESULTS:**

During the study period ; 200 cases developed postpartum hemorrhage out of 17150 deliveries. Thirty-one cases ended by emergency obstetric hysterectomy and 169 cases were conservatively managed medically or surgically, giving an incidence of 1.8/1000 deliveries. Emergency obstetric hysterectomy following vaginal delivery was 0.11% and following cesarean section was 0.27%. Majority of patients were un booked 77.41% and their age group 25-42 years. Common parity was 3 and 4. Morbidly adherent placenta was commonest indication of emergency obstetric hysterectomy ; 51.61% , rupture uterus 22.60% , atony of uterus 12.90% , broad ligament hematoma 9.67% . Out of 31 cases; 15 cases had traditional birth attendant interference 48.38%. All cases required blood transfusion and admission to intensive care unit. Out of 31 cases; 2 maternal deaths 6.45% . Total hysterectomy performed in 20 patients, and subtotal in 11 .

#### **CONCLUSION:**

Emergency obstetric hysterectomy is a life saving, surgical procedure to arrest intractable obstetric hemorrhage. It brings down maternal mortality when performed in selected cases at appropriate time. Identification of risk group , planned delivery and timely referral of risk parturient; can minimize its performance .

**KEYWORDS:** emergency obstetric hysterectomy, abnormal placentaion, traditional birth attendance.

### **INTRODUCTION:**

Emergency obstetric hysterectomy is a radical life saving procedure was performed in severe obstetric hemorrhage which is serious hemorrhage may occur at any time throughout pregnancy and the puerperium.<sup>(1)</sup> The first caesarean hysterectomy was performed by Horatio Storer on 21<sup>st</sup> of July 1868 but his patient died 78 hours post operatively. On 1876

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Eduardo Porro; succeeded in performing elective CS hysterectomy after caesarean section to a 25 years old primiparous dwarf who succeeded to survive post operatively 40 days after the operation.<sup>(2)</sup> The decision for hysterectomy should be made by an experienced consultant clinician and the procedure should be carried out by a surgeon who is experienced in carrying out hysterectomy.<sup>(3)</sup> Early recourse to hysterectomy is recommended, especially where bleeding is associated with placenta accreta or uterine

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rupture & should not be delayed until the woman is in extremis or while less definitive procedures with which the surgeon has little experience are attempted. Subtotal hysterectomy is the operation of choice in many instances of PPH requiring hysterectomy, unless there is trauma to the cervix or lower segment.<sup>(4)</sup> When conditions are recognized in the antenatal period that lead to increased risk of severe obstetric hemorrhage, such as placenta previa and/or accreta, referral of these cases to hospitals with the equipment and personnel to provide the alternative techniques to hysterectomy should be undertaken where feasible.<sup>(5)</sup>

### AIM OF THE STUDY:

The aim of this study is to review the frequency, indications, associated risk factors, avoidable causes, maternal morbidity and mortality associated with emergency obstetric hysterectomy done in Al-Elwiya maternity teaching hospital-Baghdad.

### PATIENTS AND METHODS:

The present prospective study conducted at AL-Elwiya Maternity Teaching Hospital, Rasafa District – Baghdad. The hospital is the biggest maternity hospital in Iraq containing 332 beds.

Recording of all deliveries (caesarean section & vaginal deliveries) between 1st of January to 31st of December 2010. All primary post partum hemorrhage (PPH) cases were recorded whether delivered inside or outside our hospital in this period.

During the study period; 17150 women were delivered; the number of cesarean sections were 6788 cases (39.58%) while vaginal deliveries were 10362 (60.42%). During this period; 200 cases of PPH were managed; at a rate of 1.16% of total deliveries.

Analysis of patients data who had PPH regarding ; age, parity, setting, antenatal care, associated hypertension & anemia, PPH onset, previous scar, history of PPH or antepartum hemorrhage (APH), mode of delivery, time of arrival to hospital since delivery or referral, vital signs on admission, traditional birth attendant interference (TBA), abnormally adherent placenta, atony, rupture uterus, and broad ligament hematoma; Those who required emergency obstetric hysterectomy (EOH) were recorded & their results were analyzed; indications of caesarean section (CS) in caesarean hysterectomy cases, indications of EOH, time from delivery to emergency hysterectomy decision, maternal morbidity, maternal mortality.

Indications of EOH were due to failure of conservative treatment involving; fundal massage, administration of oxytocin (40 IU in 500 ml at a rate 125 ml per hour), ergometrine (Methergin) 0.5 mg intramuscular or intravenous, prostaglandin E1 (misoprostol 800 microgram rectally).

surgical interference which are done by the obstetrician on call: haemostatic sutures of the lower genital tract injuries, repair sites of rupture uterus, over sewing the placental bed during CS, intrauterine packing, bilateral uterine arteries ligation and EOH & internal iliac arteries ligation which is done by the senior of cardiovascular who was called from other hospital. All in conjunction with fluid, compatible blood, and blood products replacement. Post operatively, patients were followed up to 10 days. Women who had EOH were (25 - 42) years old. Twenty four cases were para 3 -5; 6 cases with parity more than 5 and the remaining 1 case was para two. Out of the 200 patients; 169 cases were conservatively managed, either pure medical (20 cases) or combined medical & surgical conservative management (149 cases) which classified as follow; examination under general anesthesia & removal of retained products by sponging and haemostatic sutures of lower genital tract trauma (84 cases) while failure of it in 5 cases, repair sites of rupture in 60 cases which were uncorrectable in 7 cases, over sewing placental bed in 20 cases and intrauterine pack in 5 cases while 31 cases had EOH as a last option (1.8/1000).

### Statistical analysis

Data collected by computer program software (MINI Tab version 13) and subjected to appropriate statistical analysis, chi square and fisher exact test when the first test is not applicable. P Values < 0.05 considered statistically significant.

### RESULTS:

Incidence of EOH was (1.8/1000 deliveries) which was higher after CS (0.27% n=19) than after vaginal delivery (0.11% n=12) due to increasing caesarean section rate & abnormal placenta as sequelae. During period of study 17150 women were delivered; the number of cesarean sections were 6788 cases (39.58%) while vaginal deliveries were 10362 (60.42%). Two hundred cases of PPH were managed; at a rate of 1.16% of total deliveries. Most of them conservatively managed (medically 20 cases

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& surgically 149 cases) while; twelve of them who delivered vaginally end by hysterectomy. Seventeen cases of EOH as well as additional two were performed out of 5770 emergency and 1018 elective CS respectively. While 14 cases of EOH

after vaginal deliveries.

Total hysterectomy was performed in 20 cases (64.51%) and subtotal in 11 cases (35.48%). These statistical data show in Table (1)

**Table 1: Numerical data and incidence**

Statistical data		Number	%
Total number of deliveries		17150	
Total number of vaginal deliveries.		10362	60.42%
Number of CS		6788	39.58%
Elective CS	Total No	1018	5.93%
Emergency CS.	Total No.	5770	33.64%
	Indicated on arrival to out patient department	5210	30.37%
	From labor ward	560	3.27%
PPH Cases	Pure medical management	20	1.16%
	Combined medical & conservative surgical management	149	
	Emergency obstetric hysterectomies	31	0.18 %
Obstetric hysterectomies	following Emergency CS	17	0.27 %
Type of hysterectomy	Total	20	64.51%
	Subtotal	11	35.49%

Indications of EOH were ; abnormal placentaion in 16 cases (51.58%) rupture uterus in 7 (22.58%), uterine atony in five (19.36%); one case as placental abruption and the other 4 due to hyper simulation of uterus. All cases of rupture uterus and atony were due to inappropriate TBA interference by either oxytocine injection or Misopristol . Out of the 31 cases; large broad ligament haematoma was recognized in three cases (9.67%). Indications of CS in 19 cases operated upon by CS hysterectomy .They were ; repeated CS in 9 cases, major placenta previa with previous scar in 7 , rupture uterus in 2 and

placental abruption in only one .Total number of EOH performed on those delivered by CS were 19 cases; 17 cases immediately performed EOH, one case within 1-2hrs postpartum and the last one , 4 hrs afterwards. Regarding the 12 cases vaginally delivered ; EOH was done to two of them within 1-2hrs and the other 10 cases within 4hrs postpartum and the last one , 4 hrs afterwards. Regarding the 12 cases vaginally delivered ; EOH was done to two of them within 1-2hrs and the other 10 cases within 4hrs postpartum as in table (2).

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**Table 2: Comparison between group (1) & (2) risk factor.**

Risk factor		Group(1)	Group(2)	P value
Age	≤35years	90	21	0.136
	>35years	79	10	
Parity	≤ P5	94	25	0.009
	> P5	75	6	
Setting	Urban	60	5	0.034
	Rural	109	26	
Antenatal booking	Yes	71	5	0.041
	No	98	26	
HT with pregnancy	Yes	50	4	0.061
	No	119	27	
TBA. Interference	Yes	144	15	0.000
	No	25	16	
PPH onset	Intra operative	62	17	0.020
	Within 1-2hours	55	9	
	>2hours	52	5	
State of patients on presentation	Severe shock	30	5	0.013
	Moderate	108	13	
	Mild	31	13	
Atony	Yes	84	5	0.001
	No	85	26	
Rupture uterus	Yes	60	7	0.161
	No	109	24	
Abnormal placentation	Yes	25	16	0.000
	No	144	15	
Broad ligament haematoma	Yes	-	3	0.003
	No	169	28	
Previous CS	One CS	75	17	0.002
	> 1 CS	25	9	
Type of gestation	Singleton	159	29	0.061
	Multiple	10	2	
Anemia	Mild 10-11mg/dl	40	3	0.000
	Moderate 9-10mg/dl	95	15	
	Severe < 9mg/dl	34	13	

Group1 (PPHcases169 managed conservatively) .

Group 2 (31 EOH cases).

Total hysterectomy was performed in 20 cases (64.51%) and subtotal in 11 cases (35.48%). All patients required blood transfusions of (5-15) compatible pints throughout the duration of stay in hospital. Two cases; had previous 3CS, developed persistent pelvic and vault bleeding that required internal iliac arteries ligation in addition to EOH; then a second laprotomy was done 48 hours later, for the packs to be removed. Bladder injury was recognized during operation in 5 cases; 3 during surgery while the other two by the time they presented; due to rupture uterus .The last case presented two weeks

post operatively with vesico vaginal fistula. Second laprotomy was required in two serious cases operated upon by EOH, to remove pelvic packs left in, for additional haemostatic reasons. Febrile illness (>38C) developed in 10 cases, two cases developed disseminated intravascular coagulopathy . All cases required admission to ICU (which is responsibility of anesthetist on call & one of assistant of anesthesia) .Unfortunately, two maternal deaths (6.45%) were recorded ,the first one para 4 38years old presented as cases of obstructed labour & hypovolemic shock & second case para 3

delivered at home presented to us as PPH after 6 hours & four with peri natal mortality.

### DISCUSSION:

Hemorrhage continues to be an important contributor to maternal morbidity and mortality.<sup>(6)</sup> According to the Primary Report of Maternal Death study in Iraq for the years 2007-2009; obstetric hemorrhage is the first direct cause for maternal death in Iraq, 36.3%.<sup>(7)</sup> Uterine rupture can proceed to death within 24 hrs., ante partum hemorrhage within half that time and PPH can be lethal within 2 hours.<sup>(8)</sup>

That is why time factor between delivery & EOH was precisely taken into consideration in our study.

Globally; about 11% of women have severe PPH amounting to 14 million women which threatens woman's life.<sup>(7,9)</sup> In our teaching hospital; incidence of PPH was 1.16% out of total deliveries in 2010; whether referred or home deliveries. Low incidence when compared with similar hospitals in developing countries could be due to; variations in application of guidelines for prevention & management of PPH, underestimation of blood loss, mostly measured by clinical visual estimation and the possibly poor statistical registration as added factor for low incidence.

Recent studies reported an incidence of an emergency hysterectomy to be less than 1/1000 of total deliveries in developed countries, while the incidence is as high as 1-5/1000 in developing countries.<sup>(10,11)</sup>

Comparing our study with others performed in Pakistan; (Nusrat study), for 16 retrospective years & Turkey (Ahmet study) for 5 retrospective years & Kwame-Aryee in one of west Africa countries which is Ghana covering the period January 1, 2000 to June 30, 2003.<sup>(12)</sup> Our incidence of EOH was 1.8/1000 deliveries, Ahmet study it was 5.38/1000 deliveries & 4.34/1000 in Kwame-Aryee study while lower incidence recorded by Nusrat's study; 0.42/1000.<sup>(9,11,12)</sup> World wise; one of serious indications for EOH is the morbidly adherent placenta. Marked increase in morbid adherent placenta (MAP). for the last 50 years, due to increasing caesarean section rate.<sup>(13)</sup> The overall incidence of placenta previa is; an 1 in 300 deliveries. A previous caesarean section, in association with placenta previa increases Caesarean hysterectomy to four-folds.<sup>(14,15,16)</sup>

Indications of EOH, compared with, Nusrat, Ahmet and Kwame-Aryee studies were; the

morbidly adherent placenta (51.61% n=16) an incidence higher than Nusrat and Ahmet studies; 23.8% and 16.42% & 11% respectively.<sup>(9,11,12)</sup>

There are considerable differences in incidence of caesarean section in the world depending on; modern obstetric services, awareness toward antenatal care and effectiveness of family planning activities.<sup>(9)</sup> The minimum threshold for CS is up to 5-10%.<sup>(17,18,19)</sup>

In our study; the second common indication for EOH was rupture uterus with variable extensions; an incidence of (16.60% n=7). Incidence of rupture uterus in Kwame-Aryee, Nusrat and Ahmet studies were; 48.9%, 33.30% and 30.71% respectively. Majority of rupture uterus caused by injudicious use of oxytocin or trial of labour on previous scar by unskilled birth attendants. Three cases of broad ligament haematoma recorded in our study; been associated with prior traditional birth attendants interference. The third indication of EOH was uterine atony (12.90% n=5); in contrast to Ahmet's study (34.28%), where uterine atony represented the commonest cause of EOH. Incidence of EOH due to atony is a regressing issue, by active management of third stage of labor, use of oxytocic drugs and prostaglandins and uterine massage. Subtotal hysterectomy cases were eleven cases, while total hysterectomy in 20 cases. All patients required blood transfusion and intensive care unit admission. Another two went into disseminated intravascular coagulopathy and needed replacement by Fresh blood.

The incidence of maternal mortality in present study was 1.5%, lower than that recorded by Nusrat's (19%), Kwame-Aryee (12.9%) and Ahmet's (9.28%) studies. Actually; the delay in arrival to hospital, because of the poor health care.

### CONCLUSION :

It is important to identify high risk group for proper antenatal care, planning their deliveries, upgrading peripheral health care centers and timely referral from primary health care centers; can decline the incidence of emergency obstetric hysterectomy. Performing emergency obstetric hysterectomy in selected cases at an appropriate time helps to bring down its maternal mortality.

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