The incidence of peripartum hysterectomy in Tikrit city

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Abstract

The present prospective study conducted in Tikrit city. Recording of all deliveries (caesarean section & vaginal deliveries) in Salahaddin general hospital and private hospitals between 1st of January to 31st of August 2019. The aim of the study was to determine the incidence, causes and outcomes of peripartum hysterectomy. All primary post partum hemorrhage (PPH) cases were recorded whether delivered inside or outside our hospital in this period. In this period, 4776 women were delivered. 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). During the study period; 4776 women were delivered; the number of cesarean sections were 1729 cases (36.2%) while vaginal deliveries were 3047 (63.8%). During this period 15 emergency hysterectomies were done and incidence of cesarean hysterectomy of 3.14/1000 deliveries. In this study, majority of women underwent cesarean hysterectomy were belonged from rural area and with age 30-39 years and parity above 6. The study found that a significant high rate ($P<0.05$) of women underwent emergency hysterectomy were due to accrete syndrome (53.33%) followed by 26.67% due to uterine atony and the lowest indication was scar rupture (6.67%). The study demonstrated that 13 of 15 women underwent emergency hysterectomy were demanded blood pints, 10 of them were resulted with bladder injury, 8 out of 15 were with long hospital admission and pyrexia, 7 were suffered from wound infection, 5 with coagulopathy. There was also 60% of cases were with mild anemia. The study also showed that 605 of cases were with PPH onset in intra operation and 20% of cases were severe shock at presentation.

Conclusions: It was concluded that, the rate of EPH increased when compared with some Iraqi cities, although with different location and duration of studies.

Keywords: Peripartum hysterectomy, cesarean section, maternal mortality, Tikrit city

How to cite this article: Mosa RH, Jasim SS (2020): The incidence of peripartum hysterectomy in TIkrit, Ann Trop Med & Public Health; 23(S9): SP23936. DOI: http://doi.org/10.36295/ASRO.2020.23936

Introduction

Emergency peripartum hysterectomy (EPH) is a major surgery in which extirpation of uterus invariably performed in the setting of life threatening hemorrhage during or immediately after abdominal and vaginal deliveries (1). A near miss event is defined as a woman who nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days after termination of pregnancy (2). The incidence of peripartum hysterectomy varies worldwide with highest rates reported in developing countries. In United Kingdom it is 0.41/

1000 births [3], in Saudi Arabia it is 0.64/1000, in Korle Bu Ghana it is 4.34/1000, Nigeria 5.4/10001 and Durban in South Africa 5.1/1000[4]. Peripartum hysterectomies have been reported to be associated with intra operative and post operative complications such as haemorrhage and infection which lead to severe maternal morbidity and sometimes mortality and yet it is a life saving intervention[5]. In South Africa it's the second leading direct cause of maternal mortality[6]. Life threatening haemorrhage due to uterine rupture and atony of uterus continue to pose a major problem in obstetric care in developing countries and is a major cause of peripartum hysterectomies [7]. The other indications of peripartum hysterectomy are placenta accreta, increta, and percreta and, uterine infection[8]. The aim of the study was to determine the incidence, causes and outcome of peripartum hysterectomy.

Materials and Methods

A prospective study was conducted in Tikrit city from the period between 1st of January to 31st of August 2019. All deliveries recording (caesarean section & vaginal deliveries) in this study . All primary post partum hemorrhage (PPH) cases were recorded whether delivered in Salah Al-din general hospital and outside our private hospital in this period. In this period 4776 women were delivered.

Methods

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 EPH were due to failure of conservative treatment involving; fundal massage, administration of oxytocin (40 I U in 500 ml at a rate 125 ml per hour), ergometrine(Methergin) 0.5 mg intramuscular or intravenous, prostaglandin E1 (misopristol 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 EPH & 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 EPH were (25 - 42) years old.

Statistical analysis

Computerized statistically analysis was performed using Minitab version 17 statistic program. Comparison was carried out using Chi-square (X^2) for determination of probability value (P. value).

Results

During the study period; 4776 women were delivered; the number of cesarean sections were 1729 cases (36.2%) while vaginal deliveries were 3047 (63.8%). During this period 15 emergency hysterectomies were done and incidence of cesarean hysterectomy of 3.14/1000 deliveries (Table 1).

Table 4. 1: Incidence of cesarean hysterectomy

Total no. of delivery (4776)	No.	Rate
cesarean deliveries	1729	36.2%
vaginal sections	3047	63.8%
cesarean hysterectomy	15	0.314% from 3570 and 3.14/1000

In this study, majority of women underwent cesarean hysterectomy were belonged from rural area and with age 30-39 years and parity above 6, as shown in Table 2.

Table 2: General characteristics of women underwent cesarean hysterectomy

Parameters	**No.**	**Percentage**
Residence		
Rural	9	60
Urban	6	40
Age groups (years)		
20-29	4	26.67
30-39	9	60
40-49	2	13.33
Parity		
1-3	2	13.33
4-6	5	33.33
> 6	8	43.34

The study found that a significant high rate ($P<0.05$) of women underwent emergency hysterectomy were due to accrete syndrome (53.33%) followed by 26.67% due to uterine atony and the lowest indication was scar rupture (6.67%), Table 3

Table 3: Indication of emergency hysterectomy

Indications	No.	%
Accreta syndrome	8	53.33
Uterine atony	4	26.67
Uterine inertia	2	13.33
Scar rapture	1	6.67
X2: 9.8	P. value : 0.041	Significant

The study demonstrated that 13 of 15 women underwent emergency hysterectomy demanded blood pints, 10 resulted with bladder injury, 8 out of 15 were with long hospital admission and pyrexia, 7 suffered from wound infection and 5 with coagulopathy, Table 4.

Table 4: Complication of hysterectomy

Post-operative complications	No. of 15
Blood transfusion≥4 pints	13
Hospital re-admission within 6 weeks	8
pyrexia	8
Wound infection	7
Bladder injury	10
Coagulopathy	5
ICU admission for >24 hours	3
Intra-abdominal infection	3
Mean operative time(hour)	2
Ureteric injury	2
Vesico-vaginal fistula	2
Maternal mortality	1
X^2: 17.5 P. value : 0.001	highly Significant

The study indicated that abnormal placenta ion was found in 8 cases (53.33%), rupture uterus in 5 (33.33%) and uterine atony in 3 cases (20%). All cases of rupture uterus and atony were due to inappropriate TBA interference by either oxytocin injection or Misopristol. Out of the 15 cases, large broad ligament haematoma was recognized in 2 cases (13.33%). There was also 60% of cases were with mild anemia. The study also showed that 60% of cases were with PPH onset in intra operation and 20% of cases were severe shock at presentation as shown in Table 5.

Table 5: Risk factors of emergency of hysterectomy

Risk factor	No.	%	P. value
Antenatal booking			
Yes	3	20	0.02
No	12	80	S
Hypertension with pregnancy			
Yes	3	20	0.02
No	12	80	S
TBA Interference			
Yes	7	46.67	0.71
No	8	53.33	NS
PPH onset			
Intra operative	9	60	0.07
Within1-2hours	4	26.67	NS
>2hours	2	13.33	
State of patients on presentation			
Severe shock	3	20	0.54
Moderate	6	40	NS
Mild	6	40	
Atony			
Yes	3	20	0.02
No	12	80	S
Rupture uterus			
Yes	5	33.33	0.04
No	10	66.67	S
Abnormal placentation			
Yes	8	53.33	0.71
No	7	46.66	NS

Broad ligament haematoma			
Yes	2	13.33	0.004
No	13	86.67	HS
Previous CS			
None	3	20	0.03
One CS	1	73.33	HS
> 1 CS	11	6.67	
Anemia			
Mild 10-11mg/dl	1	6.67	0.04
Moderate 9-10mg/dl	9	60	S
Severe < 9mg/dl	5	33.33	

The study presented that majority of EPH women were done after internal artery ligation (93.33%), 73.33% were done after using oxytocic agents, 66.67% were done after using of bimanual compression and only 26.67% were after backing (Table 6).

Table 6: Rates of EPH women according to step taken before hysterectomy

Parameter	Present		Absent	
	No.	%	No.	%
Oxytocic agents	11	73.33	4	26.67
bimanual compression	10	66.67	5	33.33
backing	4	26.67	11	73.33
Internal artery ligation	14	93.33	1	6.67
X^2: 15.4 P. value : 0.001 highly Significant				

Discussion

Comparing our study Hassan [9] in Iraq, Amara hospital found that the over all incidence of EPH was 1.78/1000 birth. Some studies reported a rate of 0.2-1.5 [10,11] some studies reported an incidence as high as 2.25 or 2.7 per thousand deliveries. However these are published rate of institutions within the united state. AL-Hamadani *et al* [12] in prospective study carried out from January to December 2010 in Baghdad indicated that the incidence of EPH 1.8/1000 deliveries of total 17150 deliveries. Shellhaas *et al* [13] in a prospective, 2-year observational study at 13 academic medical centers reported frequency of cesarean hysterectomy (4.7 per 1,000 cesarean deliveries). The risk of peripartum hysterectomy associated with morbidly adherent placentation has also risen in recent decades, in association with the increasing caesarean section rate[9]. Al-Shaheen [14] indicated that, most frequent indications were placenta accrete (60%),9 with praevia and 3 with out praevia), followed by uterine atony in (20%), uterine rupture in (10%), extended cervical tear in (5%), and retroperitoneal haematoma in 5%. Placenta accreta was the most common indication in multiparous women (66.6%, 12 of 18) while uterine atony was the most common in primiparous. Intraopeartive complications were (15%) and Postoperative febrile morbidity was (60%). Other two studies done at community teaching hospital, department of obstetric gynecology at New York and the second was a prospective study in women undergoing peripartum hysterectomy in the UK also found that placenta accreta to be the most common indication for an emergency hysterectomy [15,16]. In another result done in Misan city, showed the most common cause of primary PPH in the study period was rupture uterus 30 (60%) cases, while the rest 20 (40%) were due to adherent placenta 14 (28%) & uterine atony in 6 (12%) [3]. This change in the trend of indication may be attributed to the increase in cesarean birth and uterine curettage over the past two decades; secondly it may be the result of better treatment with prostaglandin preparation decreasing the need for hysterectomy, this probably

attributed to increased number of grand multiparity, secondly due to increased number of referral from rural areas [12,14]. AL-Hamadani *et al* [12] in prospective study proposed that, all EPH cases required blood transfusion and admission to intensive care unit and out of 31 cases; 2 maternal deaths were occurred (6.45%). Our findings were similar to those reported by Ramos *et al*[17] who noted increased blood loss and need for transfusion of blood among women with accreta who had emergency. The leading cause of maternal death in Australia was cardiovascular disease, hemorrhage and thromboembolic disease[14]. Almost all maternal deaths (99%) occur in developing countries. One of the important causes of maternal death in developing countries is primary postpartum hemorrhage (PPH) [15]. In a study done earlier included the risk for cesarean hysterectomy, in women with multiple repeat cesarean deliveries in this cohort has been reported and the risks of accreta and hysterectomy all directly increased with the number of cesarean deliveries [15]. A systematic review conducted by the world health organization (WHO) found that PPH is the leading cause of maternal mortality in Africa and Asia [18]. Other studies were also indicated near to our findings regarding risk factors of EPH and also indicated a delay in the referral of cases from rural areas with the malpractice in the hospital and from the midwives during labour all these increased the risk for rupture uterus[19,20]. In agreement with these finding Al Heshemi[3] proposed that, all patients in his study were received conservative management to treat uterine atony, uterotonic agents, bimanual uterine massage, if failure then surgical management was initiated starting with bilateral uterine artery ligation, bilateral internal iliac artery ligation.

Conclusions: It was concluded that, the rate of EPH increased when compared with some Iraqi cities, although with different location and duration of studies.

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