Basrah Journal Of Surgery

Bas J Surg, September, 15, 2009

EMERGENCY PERIPARTUM HYSTERECTOMY: EXPERIENCE AT BASRAH MATERNITY AND CHILDREN HOSPITAL

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Abstract

To estimate the incidence, indications, risk factors and complications associated with emergency peripartum hysterectomy, we analyzed retrospectively all cases of emergency peripartum hysterectomy performed at Basrah Maternity and Children from 1st of January 2005 to 31st of December 2007. Emergency peripartum hysterectomy was defined as one performed for hemorrhage unresponsive to other treatment less than 24 hours after delivery. There were 20 emergency peripartum hysterectomy among 51,121 deliveries for a rate of 0.3/1000. Fifteen women (75%) were delivered by caesarean delivery. Eighteen women were multiparous and 2 were primiparous. 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.

Eleven out of 12 (91.7%) women with placenta accrete had a previous caesarean delivery. Three (25%) had a previous one caesarean section and 8 (66.6%) women had ≥2 previous caesarean section. Fourteen (70%) of hysterectomies were subtotal. Intraopeartive complications were (15%) and Postoperative febrile morbidity was (60%).We concluded that placenta accreta has become the most common indication for emergency peripartum hysterectomy. The number of caesarean deliveries increased the risk of placenta accreta proportionally.

Introduction

Emergency peripartum hysterectomy, that occurring after vaginal delivery or at the time of caesarean birth, is usually reserved for situations where conservative measures do not control sever hemorrhage[1].

Peripartum hysterectomy is one of the major obstetrical disasters that are encountered world wide in both developing and developed countries, although there is a considerable difference in its incidence in different parts of the world depending upon modern obstetrical services, awareness of antenatal care and effectiveness of family planning activities[2].

It 1s important to estimate national incidence rates and trends for peripartum hysterectomy to inform obstetric practice and to assess risks and complications of pregnancy[3-8]. Currently the incidence of peripartum hysterectomy in the united states is one to three per 1000 deliveries[4,5,9-11].

In the past, the most common indications for emergency peripartum hysterectomy were uterine atony and uterine rupture. More recent reports list placenta accreta as the most common indication and is most likely related to the increase in the number of caesarean deliveries observed over the past two decades[5,9,12-14].

The purpose of this study was to estimate the incidence,indications,risk factors, and complications associated with emergency peripartum hysterectomy performed at Basrah Maternity and Children Hospital.

Patients and Method

This study conduct a retrospective analysis of all cases of emergency peripartum hysterectomy performed at Basrah Maternity and Children Hospital between first of Jan. 2005 and 31st of Dec. 2007. Emergency peripartum hysterectomy was defined as a hysterectomy performed for hemorrhage unresponsive to other treatment within 24 hours of a delivery. Twenty hysterectomies were recorded during the study period.

Maternal characteristics such as age, parity, gestational age, mode of deliveries, previous caesarean delivery and birth weight were recorded. The indications of surgery, type of hysterectomy, need for blood transfusion, Intraopeartive and postoperative complications, hospitalization days were obtained. The study population was subdivided based on parity, comparing multiparous with nulliparous women, regarding maternal age, gestational age, indications of emergency peripartum hysterectomies and complications. In addition, the study group was subdivided and compared based on the type of hysterectomy. SPSS for windows (version 11) was used in data analysis. student (t test) for difference between two samples and Fisher exact test was used to examine between the groups. The differences was statistically considered significant when p value < 0.05.

Results

During the 3-year study period, there were 20 emergency peripartum hysterectomies identified among 51.121 deliveries (rate of 0.3/1000 deliveries).

The mean maternal age of study group was 32.7±5.5 years (range 20-45 years). The mean gestational age was 37.4±2.8 weeks (range 32-42 weeks), with a mean birth weight 3150 ± 749.2 g(range 1800-4200g). There were 2(10%) nulliparous women, the remaining 18(90%) were multiparous.

The most common indication for emergency peripartum hysterectomy were placenta accreta 12/20 (60%), 9/12 (45%) with praevia. Followed by uterine atony in 4/20(20%), uterine rupture in 2/20 (10%), extended cervical tear in 1/20(5%) and retro peritoneal haematoma in 1/20(5%). (Table I).

Fifteen women (75%) were delivered by caesarean section. All reported women with placenta accreta found to be associated with the caesarean deliveries except one woman (8.3%) with no history of previous caesarean section had placenta accrete, it was reported in a grandmultipara with a placenta previa. Whereas 3/12(25%) women with previous one caesarean section and 8/12(66.7%) with two or more previous caesarean section were found to have placenta accreta.(Table II).

The intraoperative and postoperative complications are listed in (Table III). Urinary bladder injury was reported among two women (10%) and adnexal bleeding was reported in only one patient (5%). Febrile morbidity was the most common postoperative complications, it was estimated in 12 (60%) women, followed by the urinary tract infection in 10(50%) women, wound infection in 2(10%) & coagulopathy in 1 (5%).

There were 14(70%) subtotal and 6(30%) total abdominal hysterectomies. A subtotal hysterectomy was performed for all women with uterine atony and uterine rupture. Eight women (57.1%) with placenta accreta had subtotal abdominal hysterectomy, whereas 4 (66.6%) with placenta accreta had total abdominal hysterectomy. women with extended cervical tear and retroperitoneal haematoma underwent total abdominal hysterectomy.

The comparison between total and subtotal abdominal hysterectomy are shown in (Table IV). There were no statistical differences in intra and post operative complications between the two groups.

Tow women (33.3%) with intra operative urinary bladder injury was reported among those with total abdominal hyster-

ectomy, while none of women underwent subtotal abdominal hysterectomy found to have urinary bladder injury. Only one (7.14%) with adnexal bleeding was reported among those who underwent subtotal abdominal hysterectomy, whereas none of women underwent subtotal abdominal hysterectomy found to have adnexal bleeding post operative febrile morbidity was recorded among 8(57.1%) women who had subtotal hysterectomy in comparison to 5(83.3%) patient who had total abdominal hysterectomy. Other postoperative complications were recorded among 9 (64.2%) women who underwent subtotal hysterectomy in comparison to 5(66.6%) women with total abdominal hysterectomy .

The mean number of postoperative hospitalization days was 9.5±2.3 days (range 7-15 days) (Table V).

All women required blood transfusion. The mean number of blood units transfusion was 4.2±2.3 unit (range 2-7units) (Table VI).

The comparison between multiparous and nulliparous women are shown in (Table VII). The multiparous women were significantly older and of lesser gestational age. Twelve multiparous women (66.7%) found to have placenta accreta, whereas none of nulliparous women found to have placenta accreta Uterine atony was reported in all nulliparous women 2(100%) compared with 2 (11.1%) multiparous women. The difference was statistically non significant. Three multiparous (16.6%) found to have Intraopeartive complication whereas none of nulliparous women found to have Intraopeartive complications, the difference was statistically non significant. Postoperative complications were reported in 11(61.1%) multiparous women in comparison to 2 (100%) nulliparous. The difference was statistically non significant. There were no statistical difference in the number of women receiving blood transfusion in both groups. There were no maternal death was reported among study groups.

Discussion

Early studies on peripartum hysterectomy included hysterectomies done for non ergent conditions, and between 1950 and the last 1970s caesarean hysterectomy was most commonly used for sterilization, defective uterine scar, myoma,and other gynecologic disorders[15-19]. Since the 1980s indications for peripartum hysterectomy have been restricted to ergent situations[5,9,20].

Over a three years study period,20 peripartum hysterectomy were identified in 51.121 deliveries for a rate of 0.3/1000 deliveries .This rate is lower than that of Stanco et al[9] & Zelop et al[5] who reported a rate of 1.3/1000 & 1.5/1000 respectively. This could be due to difference in population profiles.

It is found that placenta accrete (60%) to be the most common indication for peripartum hysterectomy. This finding is in contrast to that reported by Clark et al[20] who reported uterine atony (43%) to be the most common cause of emergency peripartum hysterectomies followed by placenta accrete (30%) from 1978 to 1982.However stanco et al[9] studied the same population from 1985 to 1990 and found that placenta accrete (50%) had become the most frequent cause with uterine atony accounting for (21%) of cases. Similarly Zelope et al[5] found placenta accrete (64%) and uterine atony (20%) the most common reasons for emergency peripartum hysterectomy.Why has placenta accrete become the most common cause for emergency peripartum hysterectomy? Firstly, it may be attributed to the increase in caesarean births over the past two decades[13] Secondly, it may be a result of better treatment of uterine atony with prostaglandine preparations decreasing the need for hysterectomy. Also we found that patients with placenta praevia underwent caesarean de-

livery are at increased risk for peripartum hysterectomy with highest risk being for those who had a repeated caesarean section. This finding is in agreement to that of Clark e[13] who identified 5% of women with placenta praevia and unscarred uterus had placenta accreta and, increased to 67% in women with praevia and four previous deliveries Recently, Miller et al[14] reported a general incidence of 10% of placenta previa. The incidence of placenta accrete was 2.1% in women with no previous cesarean delivery, whereas it was 38% in women with two or more caesarean deliveries and complete placenta praevia. This may be explained that uterine scarring prevent normal implantation of placenta and increase the incidence of placenta accreta. Sonography, color flow Doppler, and magnetic resonance imaging are useful in identifying placenta accrete/percreta. Women with placenta previa and previous caesarean section may benefit from sonographic and color Doppler evaluations. Magnetic resonance imaging is useful in assessing bladder involvement and posterior and lateral uterine wall involvement when the placenta is posterior. If the combination of risk factors and imaging findings is highly suggestive of placenta accreta, then, a caesarean hysterectomy should be planned, as there is reduced maternal morbidity and mortality when done electively[21].

Also it is found that uterine atony (20%) was the second causative factor for peripartum hysterectomy. Our finding are in contrast to Clark[20] who reported uterine atony (43%) to be the common cause of emergency peripartum hysterectomy. This may be explained by an active management of third stage of labour and improvement in the treatment of uterine atony with uterotonic agent in our center. In our study we reporter that rupture uterus account for(10%). This finding is in contrast to that of Chestnut[16] who found that the major indication for the procedure was uterine rupture followed by uterine atony and placenta accreta.

Peripartum hysterectomy considered a major cause of morbidity and mortality. Bladder injury were found in two cases (10%) were with previous caesarean section. This is in agreement with Zelop CM[5] who found that bladder injury were found in 3 cases (11%), two of whom were with previous caesarean section. Urological injuries may be related to scarring and secondary obliteration of vesico uterine space following previous caesarean. There were high incidence of infectious morbidity were (50%) due to urinary tract injury this may be explained by many factors (obstructed or prolonged labour, manipulation during surgery, urinary catheterization.

This study reported 70% of hysterectomies were subtotal. This finding is in agreement to Elana et al[1] who reported 80% of their hysterectomies were subtotal, and in contrast to Zelop et al[5] who reported 21% of their hysterectomies were subtotal.

Should a subtotal hysterectomy be performed for emergency peripartum hysterectomy? In our study we found no significant difference in the indications and number of blood transfusion when total and subtotal procedures were compared. However, there was a trend for more intra and postoperative complications in the total abdominal hysterectomy group. The earlier literatures support the performance of a total abdominal hysterectomy for reduction in potential cervical stump malignancy, need for regular cytology, and other problems such as bleeding or discharge[16,19]. Some authors have recommended a total abdominal hysterectomy to be certain of achieving homeostasis[23].

Recent studies and guidelines have suggested that subtotal abdominal hysterectomy is preferable operation because of lower degree of hemorrhage and speed of operation[22,24]. It should be a reasonable

alternative to total abdominal hysterectomy when an emergent peripartum hysterectomy is being performed.

Peripartum hysterectomy is associated with extensive blood loss and need for a high number of transfusions[5,15,20,25] we found that the incidence of blood transfusion was 100% in emergency caesarean hysterectomy. This is in agreement to that of Sherman et al[26]. It could be caused by spending too much time trying to avoid hysterectomy in using pharmacological and surgical modalities[27] or due to bad homodynamic status of the patients especially for ones referred from other hospitals.

This study showed that the chance of occurrence of emergency peripartum hysterectomy is higher in multiparous women (90%). This may be explained by that multiparous women are more liable for obstetric & medical complications which subsequently carry the risk of peripartum hysterectomy. Other finding in our study, all nulliparous women who underwent emergency peripartum hysterectomy were found to have uterine atony, while placenta accreta was found the common indication in multiparous women. This is in contrast to Babinszki et al[28] who found uterine atony more common in multiparous.

There was no maternal mortality in this study. This finding is in agreement to that of Faisal et al[29], Langdana et al[24] and in contrast to Zorlu et al[30] and Shava et al[31]who were reported mortality rates of 4.5% and 5.1% respectively. This result may explained by our patients had regular antenatal care with early identification of high risk women who are more liable for post partum hemorrhage, It is concluded that placenta accreta has become the most common indication for emergency peripartum hysterectomy and their incidence increase with increase number of caesarean section.

This study recommend early identification of patients at risk of peripartum hysterectomy. These patients should advised to deliver in a fully equipped hospital, with a well trained staff and experienced obstetricians in performing peripartum hysterectomy and in addition to the availability of blood bank services.

Table I: Indications for Emergency peripartum hysterectomy

Indications	No.	%
Placenta accreta	**12**	**60**
with praevia	**9**	**45**
without praevia	**3**	**15**
Uterine atony	**4**	**20**
Uterine atony only	**2**	**10**
Praevia without accreta	**2**	**10**
Rupture uterus	**2**	**10**
Extended cervical tear	**1**	**5**
Retroperitoneal haematoma	**1**	**5**
Total	**20**	**100%**

Data are expressed in numbers and percentages.

Table II: Route of delivery of women with Emergency peripartum hysterectomy

Route of delivery	No.	%	No. of patient with associated placenta accreta (%)
Normal vaginal delivery	5	25	-
With intact uterus.	2	10	-
With scared uterus.	3	15	-
Caesarean section:	15	75	
No history of caesarean delivery.	2	10	1(8.3%)
Previous one scar.	3	15	3(25%)
Previous ≥ 2 scars.	10	50	8(66.7%)
Total	20	100%	12(100%)

Data are expressed in numbers and percentages.

Table III: Intra operative and post operative complications in studied women underwent Emergency peripartum hysterectomy.

Complications	No.	%
Intra operative complications	3	15
Urinary tract injury		
Urinary bladder injury.	2	10
Ureteric injury.	0	0
Adenxal bleeding	1	5
Post operative compactions.	13	65
Febrile morbidity	12	60
Urinary tract infection	10	50
Wound infection	2	10
Coagulopathy	1	5

Data are expressed in numbers and percentages

Table IV: Comparison of total and subtotal Emergency peri partum hysterectomy

	Subtotal hyste-rectomy (%)	Total Hysterectomy (%)	P:Value
Number	14(70%)	6(30%)	
Indications			
Placenta accreta	8(57.1)	4(66.6)	
Rupture uterus	2(14.2)	0	
Uterine atony	4(28.5)	0	
Previa without accreta	2(14.2)	0	NS
Extended cervical tear			
Retro peritoneal haematoma	0	1(16.6)	
	0	1(16.6)	
Intraopeartive complications			
Urinary bladder injury	0	2(33.3)	
Adnexal bleeding	1(7.14%)	0	
Postoperative febrile morbidity	8(57.1%)	5(83.3%)	NS
Other complications	9(64.2%)	5(66.6%)	
Blood transfusion	14(100%)	6(100)%	

The difference was statistically not significant(NS)

Table V: Average stay in hospital (days)

Days	No of patients	%
7-9	12	60%
10-12	6	30%
13-15	2	10%
Total	20	100%

Data are expressed in numbers and percentages.

Table VI: Quantity of blood units transfused

No of blood units	No of patients	%
2	2	10%
3	9	45%
4	4	20%
5	3	15%
6	1	5%
7	1	5%
Total	20	100%

Data are expressed in numbers and percentages.

Table VII: Comparison of multiparous and nulliparous woman underwent Emergency peripartum hysterectomy

	Multipara	Primipara	P
Number	18	2	
Maternal age (year)	33.6 ± 4.9	24 ± 1.4	S
Gestotional age (week)	37.2 ± 2.9	39.5 ± 0.7	NS
Indication			
Placenta accreta.	12(66.6%)		
Uterine atony only.	2(11.1%)	0	NS
Preiva without accreta.	2(11.1%)	2(100%)	
Blood transfusion	17(94.4%)	2(100%)	
Intraoperative complications	3(16.6%)	0	NS
Postoperative complications	11(61.1%)	2(100%)	

Data are expressed in numbers, percentages and mean
S = significant NS = non significant

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