

# Emergency Peripartum Hysterectomy in Qatar

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Peripartum hysterectomy, a major surgical procedure still faces obstetricians in modern practice. It is not without risk to the patient specially when performed as an emergency.

Peripartum hysterectomy includes elective caesarean hysterectomy, and emergency postpartum hysterectomy.

It appears that elective caesarean hysterectomy is now performed less frequently. In certain clinical situation specially in life threatening haemorrhage, however, there is no alternative to emergency peripartum hysterectomy. It is worth mentioning that such cases need attendance by trained senior staff.

## Materials and methods

This is a retrospective descriptive study. Patient's data were obtained from medical Records of Women's Hospital, Doha, Qatar between January 1st 1996 to December 31st 1998. A review of the labour, delivery and operation theatre records was conducted to tabulate the number of vaginal, caesarean and total deliveries during the study period.

Peripartum hysterectomy patients were identified by reviewing these records plus Patients' records. Patients' charts were reviewed manually for collection of maternal parameters including age, parity, gestational age, any previous caesarean, type of delivery and the indication if delivery was by caesarean section. Pre, intra and postoperative blood loss and replacement were reviewed and registered. Other surgical complications, morbidity and mortality and causes of hysterectomy were recorded. Rates per 1000 deliveries were calculated. It should be noted that all deliveries were conducted by the hospital staff and all hysterectomies were conducted by the most senior staff in the hospital.

## Results

Between January 1996 and December 31st 1998 a total of 31255 deliveries (26317 normal deliveries and 4938 caesarean sections), took place at the study venue with caesarean delivery rate of 15.8%. Fifteen emergency peripartum hysterectomies were performed during the study period with an annual incidence of 0.48/1000 total deliveries and 2.6/1000 caesarean deliveries.

Table 1 show the clinical data of the incident cases, including age, parity, and gestational age in weeks. Thirteen patients had caesarean deliveries and 2 had vaginal deliveries. The indications for caesarean sections were major placenta previa in 9 patients (60%), uterine rupture in 2, triplet pregnancy in one and previous three caesarean sections in another.

Table 2 shows the causes of peripartum hysterectomy and the complications encountered.

From the table we see that placenta previa put patients at high-risk for bleeding from the placental bed. Nine of the 13 who went for caesarean section had pla-

Case #	Age	Parity (years)	G.Age	Prev. (weeks)	Type of C.S	Indication for cesarean Delivery
1	34	8+0	34	0	C.S	APH/ MAJOR PP
2	35	5+0	38	0	C.S	I/P FETAL DISTRESS
3	31	10+5	30	1	C.S	APH/ MAJOR PP
4	34	3+2	36	3	C.S	PREV.3 C.S
5	30	3+0	41	0	C.S	RUPTURE UTERUS
6	31	1+0	36	1	C.S	MAJOR PP
7	35	1+1	30	0	C.S	TRIPLET PREGNANCY
8	26	1+0	37	0	C.S	MAJOR PP
9	39	5+0	37	5	C.S	MAJOR PP
10	33	9+0	32	0	C.S	MAJOR PP
11	37	7+1	26	5	C.S	MAJOR PP
12	26	4+0	37	1	C.S	MAJOR PP
13	37	5+0	38	4	C.S	MAJOR PP
14	40	6+0	40	0	N.D	-
15	32	2+0	42	0	N.D	-

(PP= placenta previa, G= gestational, Prev. C.S= previous cesarean section, N.D=normal delivery)

Table 1 - Patients' clinical data

Case #	Cause for hysterectomy	Surgical Complication	Blood loss DIC	Mortality
1	Placenta accrete	Nil	700cc	Nil
2	Rupture uterus	Nil	2L /DIC	Nil
3	Placental bed bleeding	Nil	2.5L/ DIC	Nil
4	Atonic PPH	Nil	4L/ DIC	Nil
5	Rupture uterus	Nil	Massive /DIC	Intraoperative
6	Placental bed bleeding	Nil	3l/ DIC	Nil
7	Atonic PPH	Nil	2L	Nil
8	Placental bed bleeding	Nil	2.5L/DIC	Nil
9	Placenta accrete	Nil	2.5L	Nil
10	Placental bed bleeding	Nil	2L/ DIC	Nil
11	Placenta percreta	Bladder injury	4.5L/ DIC	Nil
12	Placenta accreta	Nil	1L	Nil
13	Placental bed bleeding	Nil	1.5L	Nil
14	Secondary PPH	Nil	4L/ DIC	Nil
15	Rupture uterus	Ureteric Transaction	2.5L/ DIC	Nil

(DIC= disseminated intravascular coagulation)

Table 2 - Causes for peripartum hysterectomy plus complications.

centa previa. The combination of previous scar and placenta previa was in 6 patients of the 9 (40% of the total 13 caesarean deliveries). Four of these cases of placenta previa were complicated by abnormal placental adherence, i.e. accrete and percreta, at a rate of 44% of placenta previa cases. Abnormal placental adherence was the reason for hys-

terectomy in 4 of 15 patients (26%).

Uterine rupture was the reason in 3 of the 15 patients (20%), all without history of caesarean section, presenting as antepartum or postpartum haemorrhage. The complications encountered intra operatively other than haemorrhage were a total of 3. One intra opera-

tive maternal mortality due to uterine rupture with massive haemorrhage and clinically suspected amniotic fluid. One case of ureteric transaction. One case of bladder injury. Both the urinary injuries were recognized and repaired immediately. DIC as a result of haemorrhage has occurred in 10 of the cases (66%).

## Caesarean hysterectomy is a procedure that was reported long back by Horatio Storer in 1869

Table 3 shows the amount of blood loss and blood component that were replaced in each case. The transfusion therapy was massive specially in cases complicated by DIC.

Table 4 correlates between the surgical diagnosis and the histological diagnosis. Three cases of placenta accrete and 1 case of placenta percreta were confirmed histologically, all complicating major placenta previa. Uterine rupture diagnosis was confirmed in 3 cases, and in other cases of placenta previa there were no pathologic diagnosis other than placental implantation in the lower segment. The case of secondary postpartum haemorrhage showed necrobiotic leiomyoma of the uterus on histological study. Among the study population placenta previa was a major cause of uncontrolled bleeding necessitating caesarean hysterectomy as was seen in 9 of the 15 patients at a rate of (60%). Of the 9 patients with placenta previa, 6 (66%) had one or more prior caesarean section which puts patients at high risk for placenta previa. All the 4 cases of abnormal placental adherence were diagnosed antenatally as major placenta previa (type III to IV). We conclude that this is a factor for abnormal placental adherence.

**Comment**

Caesarean hysterectomy is a procedure that was reported long back by Horatio Storer in 1869<sup>1</sup>. The overall incidence of emergency peripartum hysterectomy at our hospital was 0.48/1000 births, in comparison to 0.50/1000 births<sup>7</sup>, 1 in 4228 births<sup>5</sup> and 1.3/1000 births<sup>2</sup> at different institutions.

Most obstetricians will be involved in this procedure during their practice for different reasons that do not occur infrequently to gravid women during their reproductive performance.

In this series the most common indication for emergency peripartum hysterectomy was major degree of placenta previa. Interestingly most of these cases had history of one or more prior caesarean birth. Several investigators have suggested the increase in the incidence of peripartum hysterectomy among women with prior caesarean section and women with placenta previa at 44% and 52% respectively<sup>3</sup>.

The association of placenta previa with abnormal adherence and prior caesarean section as risk factor for emer-

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gency peripartum hysterectomy is well documented in the literature<sup>3</sup> and is suggested by our review (3 of the patients with placenta accrete and percreta had both the risk factors of placenta

Case #	EBL	Replacement
1	700cc	2 PRBC
2	2.5L	5PRBC, 3FFP, 5gm Fib
3	2L	4PRBC, 2gm Fib
4	3L	6PRBC, 4FFP, 4Crypopt
5	Massive	25PRBC, 8FFP, 10Plt., 6pp, 8gm Fib.
6	4L	10PRBC, 10FFP, 10Plt., 5pp, 8gm Fib.
7	2L	4PRBC, 4FFP, 4pp
8	3.5L	9PRBC, 2Crypopt, 10Plt., 12FFP, 8pp, 7gm Fib.
9	2.5L	3PRBC, 2FFP, 3gm Fib.
10	2L	4PRBC, 2FFP, 2pp
11	4.5L	8PRBC, 4FFP, 2pp, 2gm Fib.
12	1.5L	4PRBC, 3FFP, pp
13	1L	2PRBC, 2FFP
14	3L	4PRBC, 4Crypopt, 10Plt, 4gm Fib.
15	2.5L	5PRBC, 4FFP, 10Plt., 4 Cryppt, 5pp, 5gm Fib.

(PRBC=packed red cells, FFP=fresh frozen plasma, Plt=platelet, Fib=fibrinogen, pp=plasma proteins, cryppt=cryoprecipitate)

**Table 3 - EBL and amount of blood and blood components replacement**

Case #	Clinical diagnosis	Histological diagnosis
1	Placenta accrete	Same
2	c.s wound extension	Same
3	PP bed bleeding	No pathologic diagnosis
4	PP bed bleeding	No pathologic diagnosis
5	Uterine rupture	Same
6	Placental bed bleeding	No pathologic diagnosis
7	Uterine atony	No pathologic diagnosis
8	Placental bed bleeding	Syncytial endometritis
9	Placenta accrete	Same
10	Placental bed bleeding	No pathologic diagnosis
11	Placenta previa percreta	Same
12	Placenta accrete	Same
13	Placental bed bleeding	No pathologic diagnosis
14	Secondary PPH	Necrobiotic leiomyoma
15	Uterine rupture	Same

(PP=placenta previa)

**Table 4 - Histological diagnosis of the removed uteri**

previa and previous uterine scar). One of the 4 cases of placenta accrete did not have previous uterine scar but had placenta previa. The major degrees of placenta previa with abnormal adherence are advised to have total hysterectomy as the cervical branch of the uterine artery will be intact if subtotal hysterectomy is performed<sup>3</sup>. In one published study, emergency peripartum hysterectomies were reviewed at two different time peri-

ods identifying the leading causes of performing the procedure. In the period between 1985 and 1989 the main indications were uterine atony 42%, placenta accreta 25.5%, and uterine rupture 21%. Between the years 1990 to 1994, the indications for the procedure were slightly different. They were placenta accrete 41.7%, followed by uterine atony 29.2%<sup>5</sup>. This difference is definitely contributed to by the advances in

pharmacologic modalities for treatment of uterine atony e.g. PGF<sub>2</sub> and PGE<sub>2</sub> analogue<sup>3</sup>. On the other hand the liberty in performing caesarean sections more frequently worldwide, predisposes to abnormal placentation and abnormal placental adherence.

Uterine rupture is a major cause of maternal and fetal mortality, and obstetric haemorrhage. In our series three patients with this complication ended by hysterectomy. Performance of the

incision damages the ureter directly<sup>9</sup>. The prognosis of these injuries is best when they are recognized and corrected immediately.

Obstetric haemorrhage is a complication that still accounts for maternal deaths. It has been responsible for 12 maternal deaths in the U.K and Ireland between 1994 and 1996, four of the deaths were due to placental abruption, 3 due to placenta previa and 5 due to post partum haemorrhage<sup>6</sup>.

The need for the availability of blood and blood components cannot be ignored to be having a major role in minimizing the maternal deaths related to bleeding. The reported transfusion rates in obstetrics vary from 0.16% to 2.6%, the higher rates are in women with abnormal labour and delivery<sup>4</sup>.

Different studies have identified risk factors which increase the likelihood for blood transfusion. Over 50% of women with placenta previa delivered by caesarean section needed transfusion<sup>4</sup>.

In our study 10 of 15 patients went into disseminated intravascular coagulation and need replacement of huge amounts of blood and blood components.

The loss was more than 2 liters of blood in 11 cases. It is advised that patients

who are likely to bleed be delivered in hospital with well equipped blood banks that are ready to avail blood and blood components on urgent basis .

From this review we have identified the following risk factors for emergency peripartum hysterectomy and they included placenta previa, abnormal placentation, uterine rupture and rarely uterine atony.

A key recommendation is that a very experienced operator should attend patients with placenta previa especially with previous scar and a consultant must be readily available as these patients may develop uncontrollable bleeding at delivery and may need caesarean hysterectomy. Obstetric units should organize "fire drills" so that when this emergency occurs all staff knows exactly what to do to ensure that large quantities of cross matched blood can be delivered without delay<sup>6</sup>

## Obstetric haemorrhage is a complication that still accounts for maternal deaths

procedure is decided by urgency of the situation, skills and experience of the surgeon and patient's desire for future fertility<sup>8</sup>.

Upper segment uterine ruptures are associated usually with easily controlled bleeding, while lower segment ruptures are associated with more severe haemorrhage because uterine vessels may transect especially when the rupture is lateral<sup>8</sup>. Because of the desire for larger families in our area, the practice is to perform bilateral internal iliac artery ligation or B-Lynch brace suture or uterine packing before proceeding to hysterectomy.

Injuries to the urinary tract are more frequent during this procedure than elective caesarean section and caesarean hysterectomy. The tow cases in our series were recognized and repaired at the same time and this results in better prognosis. Majority of ureteric injuries that occur, result from attempts to control bleeding that is due to extension of the uterine incision to the broad ligament (as in our case) and vagina. Less commonly the extension of the uterine

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