Emergency Obstetric Hysterectomy: 10-year Review at SKIMS Srinagar, Kashmir

Rita Thaker, M.D.,¹ Rabia Khurshid, M.D.,² Abida Ahmad, M.D.²

¹Department of Gynaecology & Obstetrics, LD Hospital, GMC, Srinagar, & ²Department of Obstetrics Gynaecology, Sher-i-Kashmir Institute of Medical Sciences, Soura Srinagar, Kashmir.

ABSTRACT

BACKGROUND: Obstetric hysterectomy is removal of uterus during pregnancy, labour and puerperium. It is life saving procedure done to save the mother's life when she is having severe post-partum haemorrhage (PPH), rupture uterus or morbid adherent placenta and trauma.

OBJECTIVES: To review the incidence, maternal profile, indication of emergency obstetric hysterectomy, the maternal morbidity and mortality and perinatal mortality following this procedure.

METHODS: A retrospective analysis of emergency obstetric hysterectomy performed over a period of 10 years from 1997 to 2006 in the Obstetric and Gynaecology Department of Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Srinagar was done.

RESULTS: During this period 22045 deliveries were conducted and amongst them 33 emergency hysterectomies were performed giving an incidence of 0.14%. It was most common in the age group of 30-35 years and in multiparous women (84.84%). The most common indication for obstetric hysterectomy was PPH (60.6%) followed by rupture uterus (24.24%). The maternal mortality was 12.1% and perinatal mortality was 20.60%.

CONCLUSION: Emergency obstetric hysterectomy is a life saving procedure in cases of intractable PPH and rupture uterus. Augmentation of healthcare facilities, the identification of high risk cases, early referral, timely performance of surgery and resort to procedures like internal artery ligation can reduce the incidence of obstetric hysterectomy. JMS 2012;15(2):149-52

Key words: Obstetric hysterectomy, PPH, uterine rupture, placenta previa.

Hysterectomy is a gynaecological operation done usually on a non gravid uterus. However, certain circumstances may lead to it being done during pregnancy. It is then called Obstetric Hysterectomy, meaning the one being performed on a gravid uterus.¹ Obstetric hysterectomy is the hysterectomy performed on gravid uterus during pregnancy, labour and

puerperium. It was first done by Horatio Storer in 1869, revolutionizing the management of obstetric emergency so as to decrease maternal mortality.²

Worldwide reports revealed striking difference among prevalence rate ranging from 1:361 to 1:3000 deliveries depending upon inherent characteristics of concerned obstetric population and standards of available maternal, family planning services and their utilization.^{3,4} Uterine rupture is a leading indication of emergency peripartum hysterectomy in third world countries accounting for 58% to 72% cases.^{5,6} For the developed nations, picture is quite opposite and main indication (50%) is abnormal placentation (praevia, accreta).^{7,8}

Correspondence:

Dr. Rita Thaker

Consultant

Department of Obstetrics & Gynaecology,

LD Hospital, Government Medical College, Srinagar.

E-mail: rita.dr00@gmail.com

Emergency hysterectomy is a catastrophic inevitable life saving procedure in cases of rupture uterus, uncontrollable post-partum haemorrhage, morbidly adherent placenta, cornual pregnancy and trauma. In no other gynaecological or obstetrical surgery is the surgeon in as much a dilemma as when deciding to resort to an emergency hysterectomy. On one hand it is the last resort to save mother's life, and on the other hand, the mother's reproductive capability is to be sacrificed. Many a times it is a very difficult decision and requires good clinical judgement. Most of the times the condition of the patient is too critical to withstand the risks of anaesthesia or surgery. The maternal outcome greatly depends on timely decision, the surgical skill and the speed of performing obstetric hysterectomy.⁹ Planned obstetric hysterectomy can be performed in conditions like pregnancy associated with Carcinoma Cervix and invasive molar pregnancy diagnosed ultrasonographically. As the number of caesarean deliveries continue to rise, the number of pregnant patients with prior uterine incision is also increasing. The scar formed by the uterine incision exposes the gravid woman to increased morbidity such as uterine rupture, placenta praevia, placenta accreta and other complications. In turn, these conditions increase the risk of hysterectomy, blood transfusion and prolonged hospital stay. The incidence of obstetric hysterectomy varies from center to center depending upon available obstetric facilities like antenatal care, intranatal meticulous monitoring, trained paramedical personnel and obstetric performance at peripheral medical centres.¹⁰

A retrospective review of 33 cases who underwent emergency hysterectomy over a ten year period at Sher-i-Kashmir Institute of Medical Sciences, Srinagar, was done to determine the incidence of obstetric hysterectomy, the etiological factors or indications resulting in obstetric hysterectomy and the maternal and fetal outcome.

Methods

This was a retrospective study of 33 cases of emergency hysterectomy performed over a period of 10 year from January 1997 to December 2006 at SKIMS, Srinagar among 22045 deliveries. The study population included all patients who underwent emergency hysterectomy during pregnancy, labour and puerperium. It also includes hysterectomies done for complications following pregnancy termination, such as perforation. Each case record was analyzed in detail with special emphasis on indications, maternal profile, type of operation performed, problems encountered during operation, maternal morbidity and mortality and also fetal outcome.

Results

1. Incidence of Obstetrical Hysterectomy

A total of 22,045 deliveries were conducted during the period of study, 7620 were caesarean section (C/S rate of 34.56%), and in 33 cases emergency obstetric hysterectomy was done giving an incidence of 0.14%. The incidence of

TABLE 1. Incidence of Obstetric Hysterectomy

Parameter	No.
Number of Deliveries	22,045
Number of Caesareans	7620
Number of vaginal deliveries	14425
Number of Obstetric Hysterectomies	33
Ratio of Obstetric Hysterectomy : total deliveries	33:22045
Ratio of Obstetric Hysterectomy : LSCS	33: 7620
Incidence of Obstetric Hysterectomy	0.14%
Incidence of Obstetric Hysterectomy in Caesareans	0.41%

emergency obstetrical hysterectomy in caesarean section was 0.41%. (Table 1)

2. Maternal Characteristics

The mean age of patients was 34.5 Years (25-47). The youngest woman was 25 years and the oldest was 47 years old. Most of the patients were in the age group of 30-35 years. Five patients were primiparous and rest were multiparous. Five patients were grand multiparas, which in itself is a high risk for postpartum hemorrhage and rupture uterus. Four patients who underwent obstetric hysterectomy in first half pregnancy were cases of perforation of uterus, invasive mole and ruptured cornual pregnancy. Two patients, who were in second half of pregnancy, had previous two caesareans with prolonged leaking not responding to induction of labour. Majority of patients were more than 36 weeks (term pregnancy). Twenty two cases were not booked (72.72%) and 9 (27.27%) booked for delivery

3. Indications for obstetric Hysterectomy

Postpartum hemorrhage (60.6%) and rupture uterus (24.24%) were the two major indications for obstetric hysterectomy in our study. (Table 2)

TABLE 2. Indications for obstetric hysterectomy

Indications	No. of patients	Percentage
Rupture uterus	8	24.24
Postpartum Haemorrhage (PPH)	20	60.6
Placenta accreta	6	
Placenta Praevia with PPH	4	
Atonic PPH	8	
Traumatic PPH	1	
Secondary PPH	1	
Extension of uterine incision during LSCS	2	6.06
Ectopic pregnancy	1	3.03
MTP perforation	1	3.03
Invasive Mole	1	3.03

4. High risk factors

Prior caesarean section (5/33), and placenta praevia (5/33), were the significant high risk factor for obstetric hysterectomy. (Table 3) In placenta praevia the placenta is attached to the lower uterine segment which does not retract well after placental separation leading to sinuses remaining open after delivery, causing PPH.

TABLE 3. High risk patients

Rupture uterus 8(24.24%)	PPH 13(39.39%)	Morbidly adherent placenta 7(21.21%)
Previous LSCS(5)	Placenta praevia (5)	Previous LSCS(1)
Grand multipara (1)	Prolonged labour (3)	Placenta praevia(4)
	Multiple pregnancy (1)	Retained
Obstetric Manipulation(2)	Atonic PPH (3)	Placenta(2)
	Traumatic (1)	

Figures in bracket indicate numbers.

5. Type of operation

In 30 (90.9%) patients subtotal hysterectomy was performed. It is not always possible to do a total abdominal hysterectomy as patient's general condition is often poor. Besides, leaving the cervix behind may have a positive influence on her future sexual life. However, in certain cases where the bleeding occurs from lower uterine segment or cervix, it becomes necessary to remove the cervix. In 7 cases additional surgical procedures were required. Hypogastric artery ligation was done in 4 (12.12%) cases. Adenectomy was required in 2 (6.06%) cases while in one case (3.03%) bladder injury needed repair. One patient required repeat exploration for achieving haemostasis followed by total hysterectomy.

TABLE 4. Comparison with other reported series

Authors	Incidence	Country
Sturdee and Rushton (1986) ¹¹	0.05%	UK
Ambiye <i>et al</i> (1988) ¹²	0.12%	India
Mantri <i>et al</i> (1993) ¹³	0.32%	India
Agashe <i>et al</i> (1995) ¹⁴	0.056%	India
Kore <i>et al</i> (2001) ¹⁵	0.18%	India
Praneshwari Devi <i>et al</i> (2004) ¹⁶	0.07%	India
Mrinalini S <i>et al</i> (2008) ¹⁰	0.35%	India
Mathe JK (2008) ¹⁷	0.28%	Congo
Archana K <i>et al</i> (2009) ⁹	0.73%	India
Shaikh NB <i>et al</i> (2010) ¹⁸	0.63%	Pakistan
Nwobodo EL <i>et al</i> (2012) ¹⁹	0.51%	Nigeria
Present series	0.14%	India

6. Perinatal outcome and maternal mortality

There were 24 (80%) live births, and 6(20%) perinatal deaths. There were 4 maternal deaths giving a maternal mortality rate of 12.12%. These were due to septicemia in two, hypovolemic shock in one and DIC following acute blood loss in one.

Discussion

This study reviewed 10 years experience of obstetrical hysterectomy at SKIMS, Srinagar. There were total 14,425 vaginal deliveries, 7,620 caesarean deliveries and 33 emergency obstetrical hysterectomies. The incidence of obstetric hysterectomy in present study is 0.14% which is similar to that of

Ambiye *et al* (0.12%)¹¹ and Kore *et al* (0.18%).¹⁵ But Sturdee and Rushton,¹¹ Agashe *et al*¹⁴ and Praneshwari Devi *et al*¹⁶ reported a very low incidence of 0.05%, 0.056% and 0.07% respectively. This may be due to availability of high standards of obstetric care. However many other studies have reported a higher incidence rate.^{9,10,18,19} In our study multiparae women in the age group of 25-29 years accounted for highest incidence which is quite comparable to the study done by Archana K *et al*,⁹ Mrinalini S *et al*¹⁰ and Shaikh NB *et al*.¹⁸

Postpartum hemorrhage was the commonest indication for obstetric hysterectomy in our series accounting for 60.6% of the cases. This is comparable to the incidence of obstetric hysterectomy for PPH reported by Agashe *et al*,¹⁴ Mrinalini S *et al*¹⁰ and Mathe JK.¹⁷ Rupture uterus (24.24%) was the second most common indication out. In other studies it was the commonest indication as shown by Mantri *et al*¹³ (67.28%), Kore *et al*¹⁵ (38.2%), Archana K *et al*⁹ (75%) and Pati *et al*²⁰ (64.4%). Prabhjot *et al*²¹ reported that a rapidly increasing incidence of caesarean section is a contributing high risk factor for rupture uterus and subsequently high risk factor for obstetric hysterectomy. In the present study the incidence of obstetric hysterectomy following caesarean section was 0.41%. A high trend of obstetric hysterectomy following caesarean delivery is seen in the study of Praneshwari Devi *et al*¹⁶ and of Pawar PA *et al*.²²

In our study one patient (3.03%) required reexploration for persisting hemorrhage. Kore *et al*¹⁵ and Lau *et al*²³ reported a reexploration rate of 8.8% and 12.5% respectively.

The maternal mortality rate in our study was 12.12%. This is comparable to 12.2% reported by Kanwar *et al*,²⁴ 12.19% by Shaikh NB *et al*¹⁸ and 9.3% reported by Ambiye VR *et al*.¹² Sturdee and Rushton¹¹ and Praneshwari Devi *et al*¹⁶ have reported no deaths in their series. Morbidity and mortality are mainly due to the conditions leading to emergency hysterectomy and not due to the procedure itself.^{25,26} In our study also, all maternal deaths occurred in un-booked patients and were due to postoperative shock and septicemia which was secondary to the moribund state of patients at presentation rather than the operative procedure.

Perinatal deaths in our study occurred in 20%. Mathe JK¹⁷ and Shaikh NB *et al*¹⁸ reported a perinatal rate of 35.5% and 63.41% respectively. Shubham G *et al*¹ in a study in Indore reported the highest rate of 70.5%. Most of the deaths were due to uterine rupture in un-booked patients who presented late in poor condition.

In our study 90.9% of the patients underwent subtotal hysterectomy. Subtotal hysterectomy is quicker and hence preferable in moribund patients. However, it still puts the women at a potential risk of carcinoma cervix. Mathe JK¹⁷ reported 80% subtotal hysterectomies, Kore *et al*¹⁵ reported 62% and Mrinalini S *et al*¹⁰ reported a rate 40% subtotal hysterectomies in their series.

In conclusion, emergency obstetric hysterectomy is a life saving procedure in most of the cases. A timely decision to

perform hysterectomy can be the difference between life and death of a woman. Judicious use of oxytocics and supervision of labour reduces the incidence of PPH and uterine rupture and indirectly reduces the incidence of obstetric hysterectomy. Resort to other management modalities for uncontrolled haemorrhage like ligation of uterine artery, internal iliac artery ligation, B-Lynch suture and radiological embolization of vessels also decreases the incidence of obstetric hysterectomy. Adequate antenatal health facilities, transport facilities and trained staff right upto the level of primary health centres, blood transfusion facilities, early identification of risk factors, early referral to a tertiary hospital and early identification and management of complications are important to reduce the incidence and morbidity and mortality associated with emergency obstetrical hysterectomy. At the same time attempts to reduce the rate of primary caesarean section should help to reduce the relative risk for hysterectomy. Adequate training of resident staff to perform emergency obstetric hysterectomy should be done. When hysterectomy is required, total hysterectomy is the procedure of choice, but a quick subtotal hysterectomy in a compromised patient can save lives in critical situations.

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