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ORIGINAL ARTICLE

Emergency Obstetric Hysterectomy: A Retrospective Study At A Tertiary Care Hospital

NAJAM R *, BANSAL P**, SHARMA R***, AGARWAL D ****

ABSTRACT

Objectives: To analyze the cases of emergency hysterectomy due to obstetrical causes with a view to know the incidence, indications, maternal profile and complications following this surgery.

Methods: Retrospective analysis of 24 obstetric hysterectomies which were performed during caesarean sections (n= 550) which were performed over a period of 32 months.

Results: The incidence of emergency hysterectomy in our study was 10.05/1000 deliveries, with a maximum numbers of patients (n= 11) in the age group of 26-30yrs. The parity was >5 in patients and ruptured uterus (n=11; 45.8%) was the commonest indication for which this life saving surgery was performed. There was only one case of morbidly adherent placenta. Out of the 24 hysterectomies performed, 19 were subtotal hysterectomy and 5 were total hysterectomy. Post-operatively, fever was commonest complication (n=12; 50%), followed by wound infection (n=4; 16%). There were three maternal deaths and only 4 live births.

Conclusion: Proper antenatal care and early referral are the only potential methods which can be used for preventing this catastrophic event. Moreover, timely decision, liberal blood transfusion and speedy surgery by an experienced clinician are the main pillars in the management of this life saving procedure.

Key Words: Emergency caesarean hysterectomy, ruptured uterus, post partum haemorrhage (PPH)

*Assistant professor, Department of Obstetrics and Gynecology, **Assistant professor, Department of Anesthesiology, ***Associate professor, Department of Obstetrics and Gynecology, ****Associate professor, Department of Pathology, Teerthanker Mahaveer Medical College, Moradabad ,U.P.(India)

Corresponding Author:

Dr. Rehana Najam

Assistant Professor, Department of Assistant professor, Department of Obstetrics and Gynecology, Teerthanker Mahaveer Medical College and University, Near Pakbara town, Moradabad, U.P.(India)

Email: najamnajam@rediffmail.com

Mobile no: 09837291920

Introduction

Emergency obstetric hysterectomy is usually the last resort in the obstetrician's armamentarium to save the life of the mother. In third world countries, obstetric haemorrhage and uterine

atony are the leading cause of maternal deaths, followed closely by ruptured uterus and uterine sepsis [1]. Prompt decision making and excellent surgical skills with a speedy intervention are the bedrock of this life saving procedure. Also, the rapidly deteriorating haemodynamic parameters warrant early transfusion and resuscitation to withstand the surgical procedure and anaesthesia.

Emergency hysterectomy during normal vaginal deliveries or caesarean deliveries is performed when all other measures to control maternal haemorrhage have become futile. The commonest indications for emergency hysterectomy which are cited in the literature are uterine rupture and atonic uterus [2]. However, due to the increase in the number of caesarean deliveries over the past two decades, placenta

accreta has emerged as the most common indication for this operation in developed countries [3]. Currently, poor antenatal care and patient ignorance are still the major hindrances in developing countries towards the control of these correctable causes of maternal morbidity. The advent of the uterotonic agents, along with alternative techniques such as the β -lynch suture and uterine artery and internal artery ligation, has further reduced the need for this radical surgery, which has a deep impact on maternal health and psychology, especially in women with low parity [4].

Though, the recent figures point towards an improving trend in maternal morbidity and mortality in our country in last two decades, they represent the larger frame which includes both urban and rural areas [5]. In rural parts of the country, the incidence of maternal anaemia and malnutrition is still deep-rooted, thus leading to increased peripartum complications. The purpose of our study was to know the incidence, indications and the maternal profile of the patients undergoing emergency hysterectomies at our tertiary level hospital which mainly caters to the rural population. Secondly, we aimed to identify the complications which are associated with this emergency surgery.

Methods

A retrospective analysis was performed to identify the number of cases who underwent emergency obstetric hysterectomy during immediate or post-caesarean sections which were performed over a period of 32 months from September 2007 to April 2010. The data were obtained by reviewing the obstetric admission register, operation register, mortality register and the case files. Each case file was analyzed in detail with special emphasis on the indications, maternal profile, type of the operation performed, associated surgeries, maternal morbidity and mortality and also the foetal outcome. Hysterectomies performed for any indication during pregnancy, labour and puerperium have been included in this study.

Results

During the study period of 32 months (September 2007- April 2010), a total number of 2388 deliveries were conducted at our institute, of which 1838 were normal vaginal deliveries and 550 were caesarean sections [Table/Fig 1]. During the caesarean section procedure, 24 patients had to undergo emergency hysterectomy owing to several reasons. The incidence of obstetric hysterectomy was recorded to be 10.05/1000 deliveries.

(Table/Fig 1) Data of obstetric intervention at our institute during the study period

Statistical data	Number
Total no. of deliveries	2388
Vaginal deliveries	1838
Caesarean section	550
Total deliveries	2388
Obstetric hysterectomy	24
Incidence of obstetric hysterectomy	10.05/1000

Maternal Characteristics

Among the patients who underwent emergency hysterectomy, 7 cases (29.1%) were of para 5 or above [Table/Fig 2]. Parity distribution shows that the incidence of this radical and life saving surgery was more in patients who were para 5 and above. A majority of cases (n=11, 45.8%) belonged to the age group of 26-30yrs, followed by 6 cases in the 21-25 yrs age group and only 1 (4.1%) patient in the less than 20yrs age group.

(Table/Fig 2) Age wise distribution of parity in patients with emergency hysterectomy

Age (in years)	Para 1 (%)	Para 2 (%)	Para 3 (%)	Para 4 (%)	Para >=5 (%)	Total (n)	Percentage (%)
20 or less		1				1	4.1
21-25		4			2	6	25
26-30	2		4	2	3	11	45.8
31-35			1		1	2	8.3
36-40			2	1	1	4	16.6
Total	2 (8.2)	5 (20.8)	6 (25)	3 (12.5)	7 (29.1)	24	100

Preoperatively, laboratory parameters revealed that the mean haemoglobin values in all the 24 cases which were undergoing hysterectomy was 5.6 gm/dl (range 3.8-7.2 gm/dl) and that haematocrit was 14.8% (range 11.4- 22%). All the patients were transfused liberally with blood,

with an average of 3-5 units in each case [mean: 3.8 unit/ case] intra and postoperatively.

Retrospective analysis of the records revealed that the most common indication for emergency hysterectomy was ruptured uterus (n= 11; 45.8%) and all the patients who underwent this procedure were referred from rural areas. The next common indications were PPH and septic abortion (4 cases each) [Table/Fig 3].

(Table/Fig 3) Indications of emergency obstetric hysterectomy in our setup

Indications	Number	Percentage
Rupture uterus	11	45.8%
Atonic PPH	4	16.6%
Septic abortion	4	16.6%
Ruptured cornual pregnancy	2	8.3%
Placenta accreta	1	4.1%
Broad ligament hematoma	1	4.1%

The commonest cause of ruptured uterus which was encountered in our study was scar rupture, either due to previous LSCS or due to the previous repair of ruptured uterus. The next commonest cause was obstructed labour with cephalopelvic disproportion [Table/Fig 4].

(Table/Fig 4) Causes of rupture uterus observed in our study

Causes	Number	Percentage
Spontaneous rupture	5	45.4%
• Obstructed labor	4	
• Traumatic	1	
Scar rupture	6	54.5%
• Previous LSCS	4	
• Previous repair of rupture uterus	2	

Type Of Hysterectomy And Associated Surgical Procedure

Out of the 24 hysterectomies performed, 19 were subtotal hysterectomy and 5 were total hysterectomy. 4 patients had associated bladder rupture as well and required bladder repair. 2 patients of septic abortion had bowel perforation as well and were treated by bowel repair.

Intraperitoneal drain was kept in all the cases.

Maternal Outcome

Obstetric hysterectomy, though it was performed to save the life of patients, is associated with innumerable complications as with any emergency surgery. Fever was commonest post operative complication (n=12), followed by wound infection (n=4) [Table/Fig 5]. There were three maternal deaths (12.5%), two patients died of endotoxic shock and one patient died of DIC. Perinatal mortality was 83.3% (n=20), with only 4 (16.6%) live births.

(Table/Fig 5) Incidence of maternal morbidity and mortality (n=24)

Causes	Number	Percentage (%)
Febrile morbidity	12	50
Wound infection	4	16.6
Paralytic ileus	2	8.3
Maternal Mortality	3	12.5

Discussion

Emergency obstetric hysterectomy is a radical, life saving operation that is mostly done for indications that are life-threatening for the patient. Quick decision making and performing the operation speedily are the two most important surgeon related factors that affect the maternal and foetal outcome [6]. The present study was undertaken to analyze maternal mortality, morbidity, aetiology and foetal outcome.

In developed countries, the reported incidence of emergency hysterectomy is below 0.1% of the total normal deliveries performed, while in developing countries, the incidence rates are as high as 1-5/ 1000 of all the deliveries performed [1],[5]. We observed an incidence of 10.05 obstetric hysterectomy/1000 deliveries in our set up, which was higher than the maximal incidence of 5.6/1000 obstetric cases as reported by Siddiq *et al* in this series [7]. The primary reason for this higher incidence is due to the fact that our centre is the only tertiary care centre in a 100 km radius and receives maximal referrals from rural areas. Owing to ignorance and illiteracy, coupled with poor socio-economical conditions, parturients with high risk pregnancies get only a formal treatment from traditional birth attendants (TBA), untrained

health workers or quacks. Thus, lack of proper medical attention and delayed referral results in higher foeto-maternal morbidity and mortality in parturients.

A high association of multiparity was also seen with emergency hysterectomy in our study. 7 (29%) cases with parity >5, followed closely by 6 (25%) cases with parity >3 underwent caesarean hysterectomy as compared to 3 (12.5%) cases with parity > 4. The reason for this non-uniform distribution of parity with caesarean hysterectomy could be other confounding factors such as poor general condition, massive haemorrhage and severe anaemia. In comparison to other studies, we additionally observed the preoperative haemoglobin and haematocrit levels and found them to be in a lower range of 3.8-7.2 gm/dl 11.4- 22%, respectively in our study. This warrants the need for liberal fresh blood transfusion to prevent further deterioration of the haemodynamic parameters and to achieve hemostasis by replenishing the coagulation factors.

The commonest indication of emergency hysterectomy in our study was ruptured uterus (45.8%, n=11). All these patients were unbooked cases that never underwent antenatal check ups and were referred from untrained birth attendants. Sahu *et al* [8] and Mukerjee *et al* [9], in their series reported an incidence of 38%, but a very high incidence of ruptured uterus was reported by Archana *et al* (75%) [10].

We observed atonic PPH as the second most common indication of obstetric hysterectomy (16.6%). Similar findings have been reported by Richa Singh *et al* and Allahabadia *et al* who observed an incidence of 15.6% and 16% of respectively in their studies [11],[12].

Morbidly adherent placenta was seen in only 1 case (4.1%), in our series. This is in contrast to a study by Praneswari Devi *et al*, where placenta accreta was seen in 26.9% of the patients undergoing emergency hysterectomy [13]. None of our cases required re-exploration for the control of haemorrhage as compared to the

previous case series which mentioned the incidence to be between 1-8.8% [5],[8],[13].

The maternal mortality rate in our study was 12.5% (n=3), with septicaemic shock, attributing to 2 cases and with DIC attributing to 1 case.. In a series of 41 cases, Kanwar *et al* [14] reported a maternal mortality rate of 12.2% and Siddiq *et al* of 9.7% in 61 cases [7]. Similar results have been reported in other studies with similar reasons for mortality, except Praneswari Devi *et al* who reported no mortality in their study [13].

Use of uterotonics and haemostatic agents like tranexamic acid can help to reduce blood loss, along with the use of certain surgical techniques. These techniques include applying tourniquet at the lower end of the uterine incision, clamping of the vascular pedicles supplying the uterus and delaying suture ligation until the vascular bundles are controlled, all of which have been described as novel methods for ensuring haemostasis in previous studies [7].

Emergency hysterectomy in young women not only leads to high morbidity, but also has serious psychological implications, especially when their parity is low. Decision-making on these issues in emergency is equally difficult for the obstetrician as it is for patients and their relatives.

In our country, improvements in the health care system have to go a long way, which can lead to a dramatic decline in the rates of emergency hysterectomy [15]. This requires a multidisciplinary approach including the introduction of refreshing courses for multipurpose workers in identifying high risk pregnancies and their timely referral, upgrading of peripheral health centers with ambulance facilities and posting of specialist doctors in rural areas. As our analysis was retrospective, future investigators can also include patient associated psychological problems which are associated with this surgery, in their studies.

Conclusion

We conclude that proper ante natal care and identification of the high risk groups can prevent

and decline the incidence of this catastrophic surgery. We suggest the upgrading of the peripheral health centers and the timely referral of high risk parturients to higher centers that can decline the rate of peripartum complications and improve maternal care and well-being.

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