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Original Research Article

## A prospective study of indications and maternal outcome in case of emergency obstetric hysterectomy in a tertiary care hospital of Gujarat, India

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### ABSTRACT

**Background:** Obstetric hysterectomy was developed as a heroic operation arising out of necessity to control postpartum haemorrhage thereby reducing maternal mortality. The objectives of this study are to examine the incidence, indications, outcomes and complications of obstetric hysterectomy in a tertiary care hospital. It also aims to study the changing trends in incidence and indications in present day obstetric practice.

**Methods:** This is a one-year study including 31 cases of obstetric hysterectomy performed in the Department of Obstetrics and Gynecology in a tertiary care hospital of Gujarat. Each case is analyzed, computed and tabulated as per standard proforma including clinical assessment, questionnaire, examination and investigations.

**Results:** In present study 68% cases were in 21-30 years which is peak reproductive age. 55% patients were from rural areas and 52% cases were having three or more parity. The incidence of obstetric hysterectomy is 0.432% in both vaginal and cesarean deliveries i.e. 1 in 231 deliveries. Major indication for obstetric hysterectomy is morbidly adherent placenta 32% followed by atonic PPH 25.8% and ante partum hemorrhage in 22.58% due to increase in rate of cesarean sections. Most common complication is DIC and maternal mortality in around 16.12%.

**Conclusions:** Obstetric hysterectomy is still a lifesaving surgery in modern day obstetrics. Quick decision for obstetric hysterectomy reduces maternal morbidity and mortality. Most of the morbidity is attributable to its indication and underlying disorder rather than the procedure itself.

**Keywords:** Emergency obstetric hysterectomy, Indications, Maternal outcome

### INTRODUCTION

Obstetric hysterectomy was developed as a heroic operation arising out of necessity to control postpartum hemorrhage thereby reducing maternal mortality. It is a last resort in management of life threatening obstetric hemorrhage when all conservative measures have failed to achieve hemostasis. In 1871 Eduardo Porro of Milan succeeded in performing elective hysterectomy after a cesarean section on a 25-year-old primigravid dwarf in which other and infant survived after a stormy 40 days

postoperative courses. He published this case in 1876 in great detail. This operation was then referred as Porro's operation.<sup>1,2</sup>

The commonest indication for emergency obstetric hysterectomy which is cited in literature is postpartum hemorrhage due to uterine rupture and uterine atony.<sup>3</sup> However due to increase in number of cesarean deliveries over the past two decades, placenta accreta has emerged as a common indication for this operation in developed countries.<sup>4</sup> Worldwide reports revealed striking

differences among prevalence rate of obstetric hysterectomy ranging from 1:361 to 1:3000 deliveries depending upon inherent characteristics of concerned obstetric population and standards of available maternity, family planning services and their utilizations.<sup>5,6</sup>

The objectives of this study are to examine the incidence, indications, outcomes and complications of obstetric hysterectomy in our tertiary care hospital and to compare our results with results in published literature.

This study aims to help highlight the lack of availability and utilization of antenatal services, identify avoidable factors and stress the need to organize healthcare services, which will help to improve maternal and the fetal outcome. The aims and objectives of the present study are to know the incidence, indications of obstetrics hysterectomy, to study maternal outcome in relation to morbidity and mortality, and to know the changing trends in incidence and indications of obstetric hysterectomy in present day obstetric practice.

## METHODS

This one-year study includes 31 cases of obstetric hysterectomy performed in the department of Obstetrics and Gynecology in a tertiary care hospital of Gujarat. All patients in this study were delivered inside or outside our hospital and referred for further management.

Each case was analyzed computed and tabulated as per standard proforma which included clinical assessment, questionnaire, examination and investigation. The study hypothesis included to assess indications and maternal outcome in all aspects including causes, mode of delivery in patient referred to or directly approaching hospital, presenting complaints and other high-risk factors.

### Inclusion criteria

- All patients who undergo obstetric hysterectomy within our institute or referred to our hospital after surgery for further management.

The methods and drugs used for the management is also studied. Microsoft excel work sheet and IBM software 22.0 is used for data analysis. P value <0.005 is considered statistically significant.

## RESULTS

In Table 1, 68% cases belong to 21-30 years age group, 55% patients are from rural area since ours is a referral centre and stresses the need for adequate health facilities in nearby areas. 52% cases underwent obstetric hysterectomy with >=3 parity.

With increasing parity there is increase in incidence of obstetric hysterectomy as the chances for atonic PPH, placenta previa and sometimes rupture uterus increase.

Surgeon prefer to go for obstetric hysterectomy in this group as child bearing is completed.

**Table 1: Distribution of cases as per age, residence, parity.**

Parameters	No. of cases, N=31	%
<b>Age (years)</b>		
<20	0	0
21-25	7	22
26-30	14	46
31-35	09	29
36-40	1	3
<b>Residence</b>		
Rural	17	55
Urban	14	45
<b>Parity</b>		
1	1	3
2	13	45
3	8	24
4	7	22
≥5	2	4

In Table 2, the study showed the incidence of 0.432% i.e. 1 in 231 total deliveries.

It also shows the increasing incidence since cases of morbidly adherent placenta has risen due to increase in cesarean deliveries.

**Table 2: Incidence of Obstetric hysterectomy in our institute (both vaginal and cesarean deliveries).**

Year	Total no. of deliveries	Total no. of obstetric hysterectomy	%
2016	8074	27	0.334
2017	7294	30	0.411
2018	7165	31	0.432

In Table 3, in present study major indication for obstetric hysterectomy is morbidly adherent placenta followed by atonic PPH and antepartum haemorrhage. Due to increase rate of cesarean sections this indication has evolved over years to be a major indication.

**Table 3: Indications of obstetric hysterectomy.**

Indication	No. of cases, N=31	%
Rupture uterus	05	16.12
Atonic PPH	08	25.8
Morbidly adherent placenta	10	32.2
Traumatic PPH	01	3.22
Antepartum Hemorrhage	07	22.5

In Table 4, various methods used to control hemorrhage failed in such cases hence decision for obstetric hysterectomy done to save the life of patient. Due to

increase rate of cesarean sections this indication has evolved over years to be a major indication.

**Table 4: Intervention done to arrest haemorrhage pre-hysterectomy.**

Intervention	No. of case, N=31	%
Uterine packing	15	48
Uterine artery ligation	14	46
Internal iliac artery ligation	01	3
Uterine artery embolization	1	3

In Table 5, the most common complication in DIC mainly due to PIH, haemorrhage and jaundice associated in such patients. Bladder injury is seen in 13% cases as majority cases are of previous cesarean section with adherent placenta at scar site.

Apart from the injuries other complications are not directly due to the surgery i.e. obstetric hysterectomy itself but due to co morbid conditions in the patients like pre-eclampsia, jaundice, haemorrhagic shock etc.

**Table 5: Morbidity and mortality associated with emergency obstetric hysterectomy.**

Complication	No. of cases, N=31	%
Bladder injury	4	13
DIC	9	29
Acute renal failure	3	10
Acute respiratory distress syndrome	3	10
Septicemia	3	10
Wound gap	2	6
Paralytic ileus	1	3
Burst abdomen	1	3
Maternal mortality	5	16

Maternal Mortality rate is 16.12% as our hospital is tertiary care hospital majority are referred from the hospitals in condition of shock, DIC, gross intraperitoneal haemorrhage and in critically ill condition requiring ICU facility.

So even after lifesaving surgery such as obstetric hysterectomy it was difficult to revert the patient as they are already in state of irreversible complications.

Cause of mortality was irreversible haemorrhagic shock in these cases, DIC with ARF in one and DIC with septicemia in one case. In Table 6, if the patient is operated after 4 hours there is increased chance of mortality which is statistically significant. Emergency obstetric hysterectomy is a necessary evil in obstetrics. This is a situation when surgery is in dilemma as in one hand it curtails the further child bearing potential of the women and on the other hand it saves mother in life threatening condition. But decision should be prompt as

the study shows that only one mortality recorded if delivery-hysterectomy interval is less than 4 hours as compared to late decision beyond 4 hours.

**Table 6: Relation between delivery hysterectomy interval and mortality.**

	Delivery-hysterectomy interval		No. of cases
	<4 hours	>4 hours	
Mortality	1	4	5
Survived	21	5	26
Total	22	9	31
Z score-1.34	P value <0.005 statistically significant		

In Table 7, 52% cases had still birth. Out of 8 babies admitted in NICU, 3 died hence perinatal mortality rate in present study is 37.5%.

**Table 7: Perinatal outcome in case of obstetric hysterectomy.**

Perinatal outcome	No. of case, N=31	%
Still birth	16	52
Preterm birth	7	22
Full term birth	8	26

## DISCUSSION

The present study found that 68% patients belong to age group of 21-30 years which is the peak reproductive age which is similar to that observed in Shirodkar D et al,(6) Sharma B et al, Ambika HE et al and RK Praneshwari Devi et al.<sup>6-9</sup> In Kant Anita et al, 52% case were in 31-35 years age as this study was done in Escort hospital where most patients belonged to upper middle and high socioeconomic class and preferred late marriage. In present study 52% case were third gravida and more which indicates that multiparity leads to complications like APH and PPH.<sup>10</sup> It shows that the incidence of obstetric hysterectomy increases with increase in parity. The incidence of emergency obstetric hysterectomy in the present study is 0.432% which is higher than that observed in other studies as ours is a tertiary care hospital high risk patient requiring blood products, intensive care facility are frequently referred here. Morbidly adherent placenta is the most common indication of obstetric hysterectomy followed by atonic PPH and rupture uterus which is as observed by Sharma B et al, and RK Praneshwari et al due to increased incidence of cesarean sections in modern day obstetrics. The maternal mortality rate is 16% in present study which is higher as compared to several studies.<sup>7,9</sup> This is due to the fact that our hospital is a tertiary care institute receiving referred cases from all over. By the time the patients arrive in our setup they are already in a deplorable condition. It can be concluded that obstetric hysterectomy is still lifesaving surgery in modern day obstetrics. Quick decision for obstetric hysterectomy reduces maternal mortality. In spite of this life saving surgery sometimes maternal

death can occur in few cases which can be prevented by good maternal care, active management of third stage of labor, early recognition of complications, timely referred and easy availability of transport and blood transfusion facility. Reduction in primary cesarean section rate will be helpful to reduce its devastating complication in future pregnancy like rupture uterus and morbidly adherent placenta and ultimately reduces the need of obstetric hysterectomy.

## CONCLUSION

Thus, this will be helpful to reduce maternal mortality and morbidity in long run. Most of the morbidities are attributable to its indications and underlying disorder rather than the procedure itself.

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