

## Research Article

### Indications and Complications of Obstetric Hysterectomy in a Tertiary Care Hospital of Lahore

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#### Abstract

**Objectives:** To find out the frequency of obstetric hysterectomy, its indications and associated maternal complications in a tertiary care hospital of Lahore, Pakistan.

**Methods:** This is a retrospective observational descriptive study. It was done in Department of Obstetrics and Gynaecology of a Tertiary Care Hospital, Lahore from Feb 2015 to Jan 2016. All the records of patients, who had undergone hysterectomy, within 24 hours of normal delivery or cesarean section, were reviewed. The details of age, parity, booking status, indication and complications of operation were recorded on a predesigned proforma.

**Results:** The total deliveries during the period were 5, 754. Obstetric hysterectomy was performed in 26 patients. This gives frequency of the emergency obstetric hysterectomy in our unit to be 4.5/1000 births. The major indication was previous cesarean sections with placenta previa and/or accreta in 17 cases (65.38%), followed by massive postpartum haemorrhage due to uterine atony in 4 cases (15.38%), uterine rupture in 3(11.5%) and abruptio placenta in 2 (7.6%). Most common complication was haemorrhagic shock seen in 14 patients. There were 5 cases of bladder injury, 2 Ureteric injury and 2 vault hematomas. Maternal deaths occurred in 3 cases.

**Conclusion:** Emergency obstetric hysterectomy is increasing with increased frequency of cesarean sections and placenta previa and accreta. Antenatal booking of high risk patients, timely referral to tertiary care hospital with good surgical expertise and ICU care can reduce morbidity and mortality in such cases.

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#### Introduction

Obstetrical haemorrhage contributes to 80% of maternal mortality worldwide. Obstetric hysterectomy is removal of uterus during or immediately after abdominal or vaginal delivery to save maternal life.<sup>1</sup>

Obstetric hysterectomy is an emergency procedure,

generally performed when there is life threatening haemorrhage and all conservative measures have failed to achieve haemostasis. The unplanned nature of the surgery and the need for performing it expertly on a compromised patient makes it a surgery full of complications.

All the conservative measures to arrest bleeding should be tried before considering obstetric hyste-

rectomy. The measures include uterine massage, Oxytocin infusion, F2 alpha injections and misoprostol sublingual or per rectum, uterine artery ligation, B Lynch sutures and internal iliac artery ligation.<sup>2</sup> The choice between conservative management and obstetric hysterectomy should be individualized and depends upon age of the patient, parity and hemodynamic status. In situations where conservative treatment is likely to fail or has failed, there should be no further delay in performing hysterectomy as delay leads to increase in blood loss, disseminated intravascular coagulopathy and may cause life threatening maternal morbidities.

Obstetric hysterectomy was first performed by Porro in a patient with post partum haemorrhage. Its incident ranges from 0.24/1000 in developed countries to 8.9 per 1000 deliveries in developing countries Africa.<sup>3</sup> There is not much difference in incident of hysterectomy after vaginal delivery but there is wide difference in hysterectomy after cesarean section, this is due to presence of placenta previa and accreta.

Uterine atony was the most common cause of obstetric hysterectomy in the past but with the increase in cesarean section rate placenta previa and placenta accreta has become more common indications. The important risk factors which should be noted in history are high parity, number of previous cesarean section, previous abortions ending in curettage and previous myomectomy as these strongly increase the likelihood of placenta previa and abnormally adherent placenta. These predisposing risk factors can be determined to a certain extent by performing antenatal ultrasound with color Doppler and magnetic resonance imaging (MRI). Persistent blood flow after the latent phase is suspicious of placenta accreta.<sup>4</sup>

While uterine atony was traditionally the leading cause of obstetric hysterectomy, the incidence has reduced due to the use of newly developed pharmacologic treatment strategies including prostaglandins. Multi parity and oxytocin use for uterine stimulation were found to be the risk factors for uterine atony requiring obstetric hysterectomy.<sup>5</sup>

This uterine rupture a less common cause of obstetric hysterectomy. The risk factors for this would be

labour in a women with multiple previous cesarean sections and industrial use of with a scarred uterus and labour.<sup>5</sup>

Medical conditions like HELLP syndrome due to pre eclampsia, Idiopathic thrombo-cytopinea of pregnancy, septicemia and gestational trophoblastic diseases can lead to obstetric hysterectomy.

The complications of obstetric hysterectomy include massive blood transfusion (88%), febrile episodes (26.5%), bladder injuries (8.8%), ureteric injury (4.2%), wound infection, septicemia, pelvic hematoma, DIC, ileus, vaginal cu bleeding and adnexectomy. The maternal mortality range from 0 to 12.5% with a mean of 4.8%.<sup>5</sup> Obstetric hysterectomy being performed by an experienced surgeon is reported to significantly reduce the operating time, number of units of blood transfusion and operative complications.

The purpose of our study was to determine frequency, indication and maternal morbidity and mortality associated with obstetric hysterectomy at our tertiary care hospital.

## Methods

This retrospective study was conducted in Department of Obstetrics and Gynaecology of a Tertiary Care Hospital, Lahore from Feb 2015 to Jan 2016. The patients who had obstetric hysterectomy were identified from major operation theater registers and their case notes pulled out. The personal data of the patients, indication of obstetric hysterectomy and complications were recorded on predesigned proforma. SPSS version 20 was used for data analysis.

## Results

There were 26 cases of obstetric hysterectomy out of 5,754 deliveries over the study period, giving an incidence of 4.5/1000 births. Out of these 3,164 were normal vaginal deliveries and 2,590 were caesarean deliveries. The majority of the women having obstetric hysterectomy 13 (50%) were aged between 26-30 years, 9 (34.6%) of the women were aged 30-35 years. The mean age was  $28.1 \pm 1.78$  years. Most of the women were multipara 17 (65.3%) while 8 (30.7 %) were grand multipara. Rest of the demographic features is shown in Table 1. The most common indication was placenta previa with or without accreta. All other indications are given in Table 2. Among the risk factors previous cesarean was the commonest, seen in 18 (69%) patients, Table

3. In maternal complications haemorrhagic shock and bladder injury was seen in 18(69%) and 7 (26.9%) cases respectively, Fig 1.

There were three maternal deaths, giving a maternal mortality ratio of 115/100,000 deliveries, Fig 2.

**Table 1:** Social Demographic Characteristics of the Patients

Age (years)	N(26)	Percentage
<20	0	
21-25	4	15.38
26-30	13	50
31-35	9	34.61
>35	0	
<b>Parity</b>		
P1	2	7.69
P2-P4	17	65.38
>P4	8	30.76
<b>Gestational age at delivery</b>		
<34	8	30.76
>34	18	69.23
<b>Antenatal Booking status</b>		
Booked	9	34.61
Unbooked	17	65.38
<b>Mode of delivery</b>		
NVD	5	19.2
Cesarean section	21	80.7

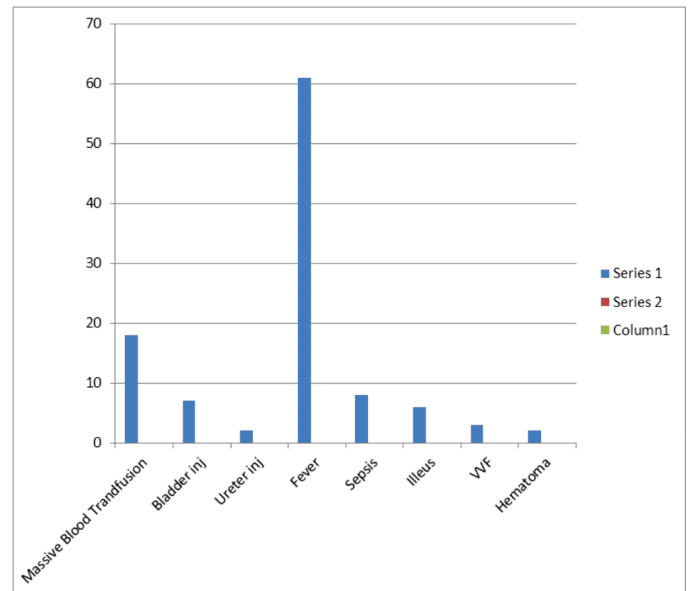
**Table 2:** Indication for Obstetric Hysterectomy

Indications	N (26)	Percentage
Placenta Previa with or without accreta	17	65.38
Uterine atony	4	15.38
Uterine rupture	3	11.5
Extension of cervical tears	1	3.84
Couvellaire uterus	1	3.84

**Table 3:** Risk Factors Predisposing to Obstetric Hysterectomy

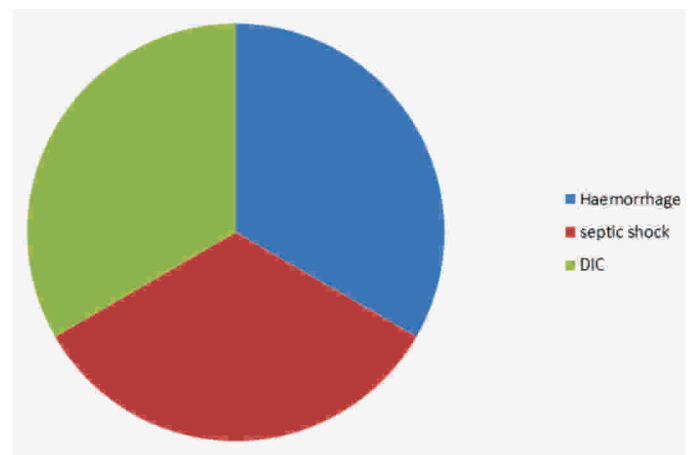
Risk Factors	N(26)	Percentage
Previous cesarean sections (c/s)	18	69
Previous 1 C/S	3	
Previous 2 C/S	9	
Previous 3 C/S	5	
Previous 4 C/S	1	
Placenta previa	18	69
Grand multiparity	8	30.7
Abuptio placentae	2	7.9
Obstructed labour	1	3.8
Instrumental delivery	1	3.8

\*some patients had more than one indication



**Fig 1:** Maternal Complications following Obstetric Hysterectomy

\*some patients had more than one complication



**Fig 2:** Maternal Mortality following Obstetric Hysterectomy

## Discussion

The frequency of obstetric hysterectomy was 4.5/1000 births in our study which is similar to the frequency reported from other local studies.<sup>7,8</sup> It is lower than reported from other developing countries like Nigeria (5.4/1000)<sup>9</sup> and India (5.2/1000)<sup>10</sup>. But it is higher than the incident reported from developed countries like China (0.24/1000)<sup>11</sup> and Italy (2.2/1000)<sup>12</sup>. The difference may be due to the reduced parity, increasing caesarean section rate, improved obstetric emergency care and effective family planning measures in the developed countries. The reverse is true in developing countries with illiteracy, poor obstetric care, lack of antenatal care and injudicious measures used by untrained birth attendants

contribute towards uterine rupture and uterine atony, which can lead to obstetric hysterectomy.

In the study majority of patients who underwent hysterectomy were in the 26-30 years of age group and were multipara. Similar trend was observed by Orazulike in Nigeria<sup>13</sup> and Baheti in India<sup>10</sup>. The loss of reproductive potential at a young age, before ones family is complete, can result in depression, marital disharmony and even psychological disorders. On the contrary a study by Javed<sup>14</sup> and another by Najmi<sup>15</sup> showed obstetric hysterectomy is more common in women 35 to 40 years of age and in grand multiparas. This difference may be due to the other confounding factors such as low socioeconomic status, poor general condition, massive hemorrhage and severe anemia due to grand multiparity.

In this study obstetric hysterectomy after normal delivery was in 5 (19.2%) women and after cesarean section was in 21 (80.7%) women. All women having cesarean section also had previous cesareans and placenta previa. The dangerous combination of cesarean hysterectomy, previous caesarean sections and placenta previa was also reported by other studies.<sup>14,15</sup> But a study by Ehtisham<sup>16</sup> showed much higher incidence of obstetric hysterectomy after vaginal delivery (27.7%) and lower after caesarean section (66.6%). This may be due to longer study period and type of patients catered by their hospital.

The most common indication for obstetric hysterectomy was morbidly adherent placenta and uncontrollable bleeding from the placental bed in this study 17 (65.38%) cases out of 26. The second common cause was postpartum haemorrhage due to uterine atony. Similar results have been reported by different studies from Pakistan<sup>17</sup> and other countries<sup>18</sup>. But a study from Nigeria<sup>19</sup> showed extensive uterine rupture to be the most common cause and in another study from India<sup>20</sup> most common indication for obstetrical hysterectomy was uterine atony causing massive postpartum haemorrhage (27.77%) followed by rupture uterus (22.22%). This is interesting as previously uterine atony was the most common cause globally due to injudicious use of oxytocin infusions and non-availability of effective uterotonics like misoprostol. In last two decades, due to increase in cesarean section rate, the indication has shifted towards placenta previa and accreta, but these studies

show uterine atony and rupture are still common in developing countries.

The present study confirms the previous observation that obstetrical hysterectomy is associated with high maternal morbidity and mortality. In current study all patients had one or more postop complications (100%). Incidence of complications of obstetric hysterectomy quoted in other Pakistani studies varies from 58 to 67%.<sup>21</sup>

In this study the most frequent complications were haemorrhagic shock and bladder injury. These complications probably reflect the state of the patients preoperatively with regard to previous surgeries, severity of anaemia and inadequate intrapartum supervision. In another study the majority of complications observed were sepsis, urinary tract injuries, and DIC.<sup>22</sup>

There were 3 (11.5%) maternal deaths in this study which is same as seen in other studies from Pakistan<sup>21</sup> but lower than seen in India<sup>23</sup> (16.6%) and Iran<sup>24</sup> and higher than developed countries (2.1%).<sup>25</sup> In our study the deaths were due to severity of the problem for which hysterectomy was indicated rather than the procedure itself. A survival of 90% is attributed to meticulous technique, good anaesthesia, and liberal blood transfusion despite the poor conditions of the patient necessitating hysterectomy.

## Conclusion

The frequency of obstetric hysterectomy is increasing with increasing cesarean section rate and increasing adherent placenta. Good antenatal screening of high risk patients, timely referral to tertiary care hospitals having skilled obstetrician, good blood bank and ICU services will reduce maternal mortality and morbidity associated with obstetric hysterectomy.

**Ethical Approval: Given**

**Conflict of Interest: None**

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