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AN AUDIT OF OBSTETRIC HYSTERECTOMIES AT TERTIARY CARE HOSPITAL

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Abstract:

Objective: *To assess the obstetric hysterectomies and their outcome at Sheikh Zaid Hospital, Rahim Yar Khan.*

Material and Methods: *This retrospective study was conducted at Department of Obstetrics & Gynecology, Sheikh Zaid Hospital, Rahim Yar Khan from August 2018 to February 2019 over the period of 6 months. Prospective analysis of hospital records of 50 cases of obstetric hysterectomy was done*

Results: *Mean age of patients was 29.9 years. Total 86% patients were multiparous. In 38% patients, morbidly adherent placenta was the most common indication. Most preferred type of hysterectomy was total hysterectomy performed in 74 patients. Maternal mortality rate was 4%. The maternal mortality rate in our study was 4%.*

Conclusions: *Obstetric hysterectomy is associated with increased risk of maternal and perinatal morbidity and mortality.*

Key Words: *Lifesaving, Morbidly adherent placenta, Maternal morbidity, Obstetric hysterectomy*

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INTRODUCTION:

Obstetric hysterectomy is the removal of uterus in the postpartum period immediately after vaginal delivery, at the time of caesarean section, or after it, or in the puerperal period.[1] It is mostly done to save maternal life.

The procedure is generally performed during life threatening obstetric haemorrhage when haemostasis cannot be achieved with conservative measures.[2] The decision to perform obstetric hysterectomy many times poses a dilemma for the obstetrician particularly in developing countries where high premium is placed on child bearing and large family size is the norm. However, taking timely decision for obstetric hysterectomy may be life saving for the mother and greatly improve outcome.[3]

Postpartum hemorrhage due to uterine atony was the most common indication for obstetric hysterectomy earlier.[4] However, this indication is less common nowadays due to availability of potent uterotonic agents along with the advent of less invasive surgical alternatives such as uterine tamponade, uterine compression sutures and stepwise devascularisation of uterus which includes uterine artery, ovarian artery and internal iliac artery ligation stepwise.[5] Abnormal placentation like placenta previa or adherent placenta is now emerging as the major indication for obstetric hysterectomy.[6] Due to increase in number of caesarean sections nowadays, the number of scarred uteri is also increasing. Thus, the gravid women are exposed to increasing morbidity from rupture uterus, placenta previa and adherent placenta, thus increasing the incidence of emergency peripartum hysterectomy.[2]

Obstetric hysterectomy can be associated with significant blood loss, intraoperative and postoperative complications, increased maternal mortality and morbidity. Thus, obstetric hysterectomy though life-saving requires proper judgment and skill.

The purpose of the present study is to determine the incidence, indications, maternal and perinatal morbidity and mortality associated with obstetric hysterectomy at a tertiary care hospital.

MATERIAL AND METHODS:

This retrospective study was conducted at Department of Obstetrics & Gynecology, Sheikh Zaid Hospital, Rahim Yar Khan from August 2018 to February 2019 over the period of 6 months. Prospective analysis of hospital records of 50 cases of obstetric hysterectomy was done.

Inclusion criteria included hysterectomy for any indication during pregnancy, labor and perpeurium. The study also included hysterectomies done for complications following pregnancy and sepsis. All cases of obstetric hysterectomy done elsewhere and referred to our hospital were excluded from our study.

In the retrospective arm, details were accessed from medical records and there was no patient interaction, consent taking or follow up. Cases were seen from hospital records and wavier of consent was taken. In the prospective arm, details were obtained during the stay of the patient in the hospital, and consent was obtained for inclusion of patient in the study. Data was collected from history and case records for these cases. Since it is a cross sectional study, no follow up of participants was taken. Demographic and clinical characteristics viz., maternal age, gestational age, parity, incidence, indications and maternal outcome of cases of obstetric hysterectomy were noted down. Type of hysterectomy, and other clinical details were noted in detail. Further analysis of obtained data was done using tabulation and simple statistical percentage analysis.

All the collected data was analyzed by using SPSS version 18.

RESULTS:

During the study period, a total of 43839 deliveries occurred at the hospital. Obstetric hysterectomy was required in 50 patients with an overall incidence of 1.14 per 1000 deliveries. As per Table 1, the mean age of women who underwent obstetric hysterectomy was 29.9 years. As shown in Table 2, 86% of those who underwent hysterectomy were multiparous out of which 44% were para 2, 36% were para 3 and 6% had parity >3 and only 14% were primiparous women. Hence, multiparity was an important risk factor for obstetric hysterectomy. Authors observed that the mean gestational age at which women underwent obstetric hysterectomy was 34.63 weeks but the maximum percentage of obstetric hysterectomies occurred between 37-40 weeks (40%). Authors observed that 38 cases had scarred uterus due to either previous LSCS or other causes accounting for 76%. The most common indication was morbidly adherent placenta accounting for 19 cases (38%). Out of 19 cases with morbidly adherent placenta, 18 were previous LSCS cases with placenta previa with morbidly adherent placenta in current pregnancy. Only one case had history of previous myomectomy done in view of primary infertility with morbidly adherent placenta in current pregnancy. In this group with morbidly adherent placenta, 14 cases developed

postpartum hemorrhage intra-operatively (73.68%). The second most common indication was rupture uterus accounting for 17 cases (34%). Out of these, 15 developed postpartum hemorrhage (88.24%). Uterine atony was the indication in 10 cases (20%). The other less common indications were puerperal sepsis and abruptio placentae accounting for 2 cases (4%) and 1 case (2%) respectively. One case had traumatic PPH due to forniceal tear following vaginal delivery which required obstetric hysterectomy. Postpartum hemorrhage was seen in 42 cases accounting for 84%.

Authors observed that 37 cases underwent Total hysterectomy accounting for 74% and 13 cases underwent subtotal hysterectomy. Hence in our study, it was observed that total hysterectomy was performed more commonly than subtotal hysterectomy.

Total 16% cases had intraoperative complications during obstetric hysterectomy. The various intraoperative complications seen were urinary tract injury in 5 cases, hypotension in 2 cases and bowel serosal tear in 1 case.
Total 14% patients had postoperative complications after obstetric hysterectomy.

All 50 cases needed blood transfusion either intra-operatively or postoperatively accounting for 100% need for blood transfusion in case of obstetric hysterectomy. 26 out of 50 cases needed intensive care unit admission in post-operative period accounting for 52%. There were 2 maternal mortalities out of 50 cases accounting for 4%. In the 1st case, cause of death was disseminated intravascular coagulation and shock. In the 2nd case, cause of death was terminal cardiorespiratory arrest with disseminated intravascular coagulation.

We observed 50 cases of obstetric hysterectomy. One case had twin gestation; therefore total number of births was 51. We had observed one minute Apgar score in our cases as a parameter of neonatal outcome.10 of the cases out of 51 total births were stillbirths accounting for 19.60%. 9/10 Apgar score was observed in only 36 cases out of total 41 live babies studied with a frequency of 87.80%, while 2/10, 3/10, 7/10 and 8/10 1 minute Apgar scores were seen in 1, 1, 2 and 1 case respectively, most of which required bag and mask or intubation after birth. Out of 41 live births, 18 required admission in Neonatal intensive care unit accounting for 43.9%. There were 4 neonatal deaths out of 41 live births accounting for 9.76% and all 4 were early neonatal deaths (i.e. within 7 days of life).

Table 1: Age groups of patients who underwent obstetric hysterectomy.

Age group (in years)	Number of cases of obstetric hysterectomy	Percentage
20 -25	8	16
25 -30	22	44
>35	20	40
Total	50	100

Table 2: Parity distribution of women who underwent obstetric hysterectomy.

Parity	Number of cases of obstetric hysterectomy	Percentage
1	7	14
2	22	44
3	18	36
>3	3	6
Total	50	100

Table 3: Gestational age in weeks at which obstetric hysterectomy was performed.

Gestational age (in weeks)	Number of cases of obstetric hysterectomy	Percentage
<28	6	12
28-34	11	22
34-37	12	24
37-40	20	40
>40	1	2
Total	50	100

Table 4: Women with previous caeserean sections and previous scarred uterus.

Variable	Number of cases obstetric hysterectomy	Percentage
Previous 1 LSCS	23	46
Previous 2 LSCS	13	26
Previous >2 LSCS	0	0
Previous scarred uterus due to other causes	2	4
Unscarred uterus	12	24
Total	50	100

Table 5: Postoperative complications.

Complications	Frequency	Percentage
Hypovolemic shock	4	8
Coagulopathy and DIC	1	2
Wound sepsis/dehiscence	2	4
Pulmonary thromboembolism	1	2
Cardiorespiratory arrest	1	2
Respiratory failure (Type 2)	1	2

DISCUSSION:

Historically, Caesarean hysterectomy was proposed originally by Joseph Cavallini in Florence in 1768, but it was Storer who performed the first cesarean hysterectomy in 1869.[3] The incidence of obstetric hysterectomy in developed countries varies from 0.2–1.6 per 1000 deliveries per year, with a higher incidence in developing countries.[4]

During the study period, a total of 43839 deliveries occurred at our Tertiary care hospital. Obstetric hysterectomy was done in 50 patients giving an overall incidence of 1.14 per 1000 deliveries. This incidence rate is comparable to the rates obtained in a study conducted by Owolabi et al in which incidence rate obtained was 0.85 per 1000 deliveries.[5] Another study with similar incidence rate of almost 1 per 1000 deliveries was the one conducted by Brobbel et al.[6] The relatively higher incidence in our environment and other developing countries may be due to lack of adequate facilities in rural areas, larger number of unbooked emergencies and antenatal clinic defaulters who are brought to the hospital only after obstetric complications have occurred.

The commonest age group of occurrence observed was 25-30 years accounting for 44% with mean age of women who underwent obstetric hysterectomy being 29.9 years. This was slightly lower as compared to a study conducted by Temizkan et al where the mean age ranged from 32.8 to 33.4 years during year 2000-20137. Another study conducted by Abasiattai et al in 2013 had similar results as the present study with 35.7% women belonging to the age group of 26-30 years.[8]

In the present study, 86% of those who underwent hysterectomy were multiparous out of which 44% were para 2, 36% were para 3 and 6% had parity >3 and only 14% were primiparous women. This is similar to the findings of a study by Lamba et al in which maximum number of cases was para 2-4.[9]

These findings are reinforced by the study conducted by Temizkan et al in which mean parity of women undergoing obstetric hysterectomy ranged from 1.9 to 2.1.7 Another study reported by Chawla et al showed that 82% of the cases of peripartum hysterectomy enrolled in their study were multiparous women.[3] Multiparity thus seems to be a significant risk factor for obstetric hysterectomy. The reason for this could be due to increase in number of women with previous caesarean section with increase in parity leading to more cases with morbidly adherent placenta and uterine rupture. Also multiparous women are generally more prone to develop atonic postpartum haemorrhage. This haemorrhage may sometimes be of such degree so as to need emergency hysterectomy if all conservative measures fail to control hemorrhage.

The mean gestational age in the present study at which women underwent obstetric hysterectomy was 34.63 weeks but the maximum percentage of obstetric hysterectomies occurred between 37-40 weeks (40%). The study conducted at Turkey by Temizkan et al showed mean gestational ranging from 33.9 to 35.3 weeks which is very much similar to our study.[7] A study published by Chester et al in 2016 concluded that the mean gestational age was 37.6 weeks which is a later presentation as compared to the present study.[10]

The percentage of patients with previous lower segment caesarean sections in the present study was 72%. Out of total 36 cases of previous LSCS, 23 had previous 1 LSCS accounting for 46%, 13 had previous 2 LSCS accounting for 26%. No cases had more than 2 previous LSCS. Chawla et al observed that there was a prominent association between prior cesarean delivery and emergency peripartum hysterectomy.3 Bateman et al also found that the rate of emergency hysterectomy done for atony increased 4 fold after repeat cesarean section, 2.5 fold after primary cesarean section, and 1.5 fold after primary vaginal delivery over a span of 14 years.[4] Therefore, reducing the primary caesarean rate can be of much gain in obstetric practice.

The most common indication found in our study was morbidly adherent placenta accounting for 38% cases. The second most common indication was Rupture uterus accounting for 34% cases. Uterine atony was the indication in 20% cases. The other less common indications were puerperal sepsis and abruptio placentae accounting for 4% and 2% cases respectively. Traumatic postpartum hemorrhage following vaginal delivery was the indication in 1 case accounting for 2%.

A prospective study conducted by Allam et al reported Placenta accreta to be the main indication in 39.6 % followed by uterine atony in 24.8%.[11] Temizkan et al's study had results similar to the present study with Placenta accreta as the most common indication (60.5%). The second and third most common indications in the above study were uterine atony (32.1%) and uterine rupture (6.2%).[7]

Studies conducted by Juneja et al and Tapisiz et al also revealed uterine atony as the most common indication followed by morbidly adherent placenta.[12,13] Thus recent studies including the present study are showing a trend towards abnormal placentation becoming a more common indication for peripartum hysterectomy than uterine atony due to availability of potent uterotonic agents and other surgical techniques for controlling life-threatening obstetrical haemorrhage. Literature also describes other rare indications of emergency peripartum hysterectomy like puerperal sepsis, injudicious use of oxytocin injections and septic abortion.[14]

In the present study, 37 cases underwent Total hysterectomy accounting for 74% whereas subtotal hysterectomy was done in 26 % cases. This is similar to a study conducted by Wani et al in which total hysterectomy was performed in 61% cases and subtotal in 39% cases. According to this study, total hysterectomy is beneficial when there is active bleeding from lower uterine segment and to reduce the risk of future cervical carcinoma.[15]

The findings of the present study are further reinforced by the study by Temizkan et al in which total hysterectomy was the most commonly performed procedure (70.4%).[7] Other studies conducted by Abasiattai et al and Chawla et al reported subtotal hysterectomy as the more commonly performed procedure.[3,8] Ultimate decision depends on the patient's general condition and the surgeon's expertise. Each technique has its own pros and cons. RCOG guidelines do not explicitly recommend any one particular method.[16]

Obstetric hysterectomy is associated with significant maternal morbidity and mortality. The intraoperative and postoperative complications encountered in our study were urinary tract injury, hypotension and hypovolemic shock, bowel injury, wound sepsis/dehiscence, DIC, pulmonary thromboembolism, respiratory failure and cardiorespiratory arrest. The most frequently seen complications were urinary tract injury accounting for 10 % cases and hypovolemic shock accounting for 8 % cases.

Chester et al in their study reported injury to ureter in 13.8 % cases. Sepsis and ileus were the commonest postoperative complications according to this study.10

MATERNAL OUTCOME PARAMETERS:

Blood transfusion was needed in all the 50 cases in our study (100%). The mean quantity of blood that was transfused in our study was 5.3 units of packed red cells.

This is similar to the study conducted by Chester et al in which 82.8% cases required blood transfusion and mean quantity of blood transfused was 5.6 units of packed red cells.10 Temizkan et al's study also reported that all women required blood transfusion with the median number of units of blood transfused being 6 (range 1-20). 12.3% patients needed more than or equal to 10 units of blood.7

In our study, ICU admission was required in 52% of the cases. This was comparable to a study conducted by Chawla et al in which 36% paturients required intensive care unit admission.3 Chester et al reported that 79.3 % patients required admission to high dependency obstetric units in postoperative period.10

There were 2 maternal deaths in our study accounting for a case fatality rate of 4%.The maternal mortality from different parts of the world ranges from 7 to 17%.11

The maternal mortality in our study was much lower which is an encouraging fact. This could be attributed to early presentation, availability of blood and blood products and round the clock services of competent anaesthetist, obstetricians, general surgeons and physicians and ICU services enabling prompt management.

We observed 50 cases of obstetric hysterectomy. One case had twin gestation, therefore total number of births was 51. 9/10 APGAR score was observed in 36 cases out of total 51 babies studied with a frequency of 70.58%. This indicates a favourable perinatal outcome in 71% of the cases.

In the present study, out of 41 live births, 18 required admission in neonatal intensive care unit accounting for 43.9%. The NICU requirement in the present study is quite high as compared to the study conducted by Chawla J et al in which 18% of the neonates required ICU admission.3 This difference could be possibly be because of other reasons like high incidence of preterm and low birth weight babies requiring NICU observation as the mean gestational age in the present study was 34.38 weeks. The observed frequency of still births in our study was 19.61%. There were 4 neonatal deaths out of 41 live births accounting for 9.76% and all 4 were early neonatal deaths (i.e. within 7 days of life).The total number of perinatal deaths which included stillbirths and neonatal deaths was 14. Thus, the total perinatal mortality rate was 27.5%.

A study conducted by Abasiattai et al reported a very high perinatal mortality rate of 64.3% following peripartum hysterectomy.8 Of maximum importance is the high risk of perinatal mortality associated with uterine rupture. Prompt delivery is of utmost importance in these cases. With rupture and expulsion of the fetus or placenta through the uterine wall, the chances for fetal survival are further reduced as irreversible fetal damage takes place by that time.17

CONCLUSION:

The most common indication in our study was morbidly adherent placenta in 38% cases followed by rupture uterus in 34% cases and uterine atony in 20% cases. The commonest age group was 25-30 years with 86% being multiparous women. 72% women had atleast one previous caesarean section. Total hysterectomy was done in 74% cases. The most frequently seen complications were urinary tract injury accounting for 10% cases and hypovolemic shock accounting for 8 % cases. The maternal mortality rate was 4% but morbidity was high with 100% requirement for blood transfusion and Intensive care unit admission was required in 52% cases. Favourable perinatal outcome with Apgar score 9/10 was seen in 71%.The total perinatal mortality rate was 27.5%. Thus, Obstetric hysterectomy is associated with increased risk of maternal and perinatal morbidity and mortality.

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