

MORBIDITY AND MORTALITY ASSOCIATED WITH OBSTETRIC HYSTERECTOMY

Najma Bano Shaikh, Shabnam Shaikh*, Jan Muhammad Shaikh**

Aga Khan Maternal and Child Care Centre, Hyderabad, *Department of Obstetric and Gynaecology, **Department of Anaesthesia, Liaquat University of Medical and Health Sciences Hospital, Hyderabad, Pakistan

Background: Obstetric hysterectomy still complicates a substantial number of pregnancies in third world countries and is a significant cause of obstetric morbidity and mortality. This study was carried out to evaluate in our setup the frequency of obstetric hysterectomy, its indication, risk factors, complication, morbidity, mortality and avoidable factors. **Methods:** A descriptive study of all patients who under went obstetric hysterectomy was conducted from 1st May, 2004 to 31st October, 2005 at Gynaecology and Obstetric Unit-II, III of Liaquat University of Medical and Health Science Hospital, Hyderabad. After collecting the data on pre-designed proforma the data was fed to SPSS in the form of frequency distribution tables and percentages were calculated. Statistical analysis of data was performed by using Chi-square test. The level of significance was taken as $p < 0.05$. **Results:** During the study time period there were total 6495 deliveries and 41 cases of obstetric hysterectomy were identified, giving a frequency of 0.63% or 1 in 158 deliveries. Most of patients were from rural areas (82.92%), un-booked 73.17%), uneducated (95%), lower socioeconomical class (92.69%), 25–29 years age (48.78%) multiparae (56.10%), have to travel a distance of <100 km to reach hospital and referred late (51%) by healthcare providers (doctors). Majority of hysterectomies were performed due to ruptured uteri (51.21%). There were 5 maternal and 26 perinatal deaths; all were due to severity of conditions necessitating hysterectomy. **Conclusion:** Incidence of obstetric hysterectomy in our woman is very high. The reason being many avoidable factors such as high parity, inadequate maternity and family planning services, lack of proper referral system, un-booked status, mismanaged labour, illiteracy on the part of woman herself, family and health care providers are not taken care of during pregnancy, labour and puerperium.

Keywords: Obstetric hysterectomy, multiparity, Injudicious use of oxytocics, uterine rupture, maternal morbidity and mortality

INTRODUCTION

Obstetric hysterectomy is one marker of obstetric morbidity. It is considered one of the riskiest and dramatic operations in modern obstetric, where the uterus is removed at the time of caesarean section, following caesarean section immediately after vaginal delivery or in the period of puerperium in order to reduce maternal mortality and morbidity.

Emergency obstetric hysterectomy is a life saving surgical procedure in life threatening catastrophes of uterine rupture, morbidly adherent placenta, coagulopathy or uncontrollable haemorrhage. Many times in attempts to control haemorrhage fails and women's life is saved by compromising her reproductive capability by obstetric hysterectomy.

World wide 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 maternity, family planning services and their utilization.^{1,2} Uterine rupture is a leading indication of emergency peripartum hysterectomy in third world countries accounting for 58 % to 72 % cases.^{3,4} For the developed nations,

picture is quite opposite and main indication (50%) is abnormal placentation (praevia, accreta).^{5,6}

Apart from non-availability of health care facilities, social, cultural and economic reasons contribute to high morbidity and mortality with this obstetric procedure. Most women in Pakistan start having children early, have too many, too close together, and continue to have them till late in their reproductive years. Pregnancy and child birth are regarded as normal physiological events in women life and most women as well as their families do not consider it essential for them to receive any antenatal care.

Eighty percent of our women deliver at home assisted by variety of health care workers, many of whom are untrained.⁷ Decision to deliver at home is made by woman herself or by her family. When women develop complications due to an obstetrical emergency, it may go unrecognised. This happens because the women herself and her family may not realise the seriousness of the problem.

Our unit being a part of tertiary care hospital mostly receives complicated cases in emergency. This study was undertaken to review and critically evaluate the frequency, indications, complications, morbidity and mortality associated

with obstetric hysterectomies.

This study helps us to formulate the strategies to reduce the maternal morbidity and mortality related to obstetrical hysterectomies.

MATERIAL AND METHODS

The study was conducted in Department of Obstetrics and Gynaecology Unit-II and III of Liaquat University of Medical and Health Sciences Hospital, Hyderabad, over a period of 18 months from 1st May 2004 to 31st October 2005. During the study period 41 cases underwent obstetric hysterectomy. The number of vaginal deliveries and caesarean section carried out during the study period were also obtained. A preformed proforma was used to collect the data.

Each case record is analysed in detail as regards to frequency, age, parity previous obstetric history, social and educational status, residence, gestational age at the time of presentation, booking status, transportation problem, distance to reach tertiary care hospital, reason for delayed referral, condition at the time of admission, associated high risk antenatal, intranatal, postnatal factors (i.e., history of previous caesarean section, antepartum haemorrhage, obstructed labour, placental problems, postpartum haemorrhage) predisposing to obstetric hysterectomy, mode of delivery, time interval between delivery and hysterectomy and indication for obstetric hysterectomy.

Diagnosis was established, whenever possible conservative methods were tried and emergency hysterectomy was carried out as life saving measure. Intraoperative as well as postoperative complications were recorded. The surgical procedures were performed by senior resident physicians and mostly supervised by consultants.

Efforts were made to locate the causes of maternal and perinatal morbidity and mortality. Data was fed to SPSS program. The data was presented in the form of frequency distribution tables and percentages were calculated for descriptive data. Statistical analysis of the data was performed by using Chi-square test. The level of significance was taken as $p < 0.05$.

RESULTS

During the study period there were 6,495 deliveries and out of these, 41 cases of emergency obstetric hysterectomies were performed, resulting in a frequency of 0.63% or 1 in 158 deliveries. Maternal age parity, gestational age, family income, residence, educational and booking status are shown in Table-1.

Majority of patients (20, 48.78%) were in age group 25–29 year, multiparae were 23 (56.10%),

delivered at term (gestational age 37–40) were 32 (78.04%). Thirty-eight (92.69%) were from low socioeconomic status having monthly income <5,000 Rupees, 39 (95.12%) were uneducated, 30 (73.17%) were un-booked, and 34 (82.92%) were from rural areas. Out of 41 patients, 35 (85.36%) were referred cases, majority 18 (51.42%) were referred by attending doctors, 7 patients (20%) were referred by Traditional Birth Attendants, 5 patients (14.29%) by Lady Health Visitors. In 5 patients (14.29%) delayed arrival to hospital was due to transport problems and reluctance of relatives to brought her to hospital.

Table-1: Socio-demographic characteristics of patients (n=41)

Characteristics	Number	Percentage
Age (year)		
20–24	1	2.44
25–29	20	48.78
30–34	12	29.27
35–39	8	19.51
Parity		
Nulliparae	2	4.88
Multiparae	23	56.10
Grand multiparae	16	39.02
Gestational age at delivery (weeks)		
<33	4	9.76
33–36	5	12.20
37–40	32	78.04
Family income (Rupees per month)		
<5,000	38	92.69
5,000–10,000	2	4.88
>10,000	1	2.43
Education		
No education	39	95.12
Primary	2	4.88
Booking status		
Booked	11	26.83
Un-booked	30	73.17
Residence/Locality		
Urban	7	17.08
Rural	34	82.92

More than one risk factors predisposing to obstetric hysterectomy were identified in most of patients. The commonest risk factor was injudicious use of oxytocics and previous caesarean section (Table-2).

Table-2: Risk factors predisposing to obstetric hysterectomy*

Risk factors	No. of patients
Injudicious use of oxytocics	24
Antepartum haemorrhage	14
Grand multiparity	16
Prolonged labour	16
Previous caesarean section	12
Postpartum haemorrhage	12
Obstructed labour	13
Morbidly adherent placenta	4
Mal-presentation	5
Instrumental delivery	1

*Many patients had more than one risk factors

Table-3 shows indications for and complications of obstetric hysterectomy. Uterine rupture was the leading indication in 21 (51.21%) cases followed by morbidly adherent placenta, uterine atony, cervical tear etc. Shock (22, 53.66%) and haemorrhage (19, 46.34%) were the most common intraoperative complications. Intraoperative bladder rupture was repaired in 2 patients during hysterectomy. Febrile morbidity was the most common postoperative complication (29, 70.73%) followed by paralytic ileus (16, 39.02%), urinary tract infection (12, 29.27%), shock (8, 19.51%), chest (5, 12.20%) and wound infection (5, 12.20%). Two patients developed vesicovaginal fistula. Many patients had more than one complications and were treated accordingly.

Fifteen (36.59%) patients had live foetal outcome. Statistically significant differences were observed when comparing foetal outcome with booking status. Out of 26 perinatal deaths, 4 (15.39%) were booked and 22 (84.61%) were un-booked ($p=0.029$, Chi-square value=4.742) as shown in Table-4. There were 5 maternal deaths, 2 patients died due to haemorrhage, 2 due to septicaemic shock, and 1 patient died due to disseminated intravascular coagulation (Table-5).

Table-3: Indication for obstetric hysterectomy (n=41)

Indication	No.	%
Ruptured uterus	21	51.22
Morbidly adherent placenta	4	9.76
Uterine Atony	4	9.76
Cervical tear	4	9.76
Extension of uterine incision	2	4.88
Couvelaire uterus	2	4.88
Secondary postpartum haemorrhage	2	4.88
Infected gangrenous uterus	2	4.88
Total	41	100
Complications*		
Intraoperative		
Shock	22	53.66
Haemorrhage	19	46.34
Bladder Injury	2	4.88
Cardiac arrest	1	2.44
Postoperative		
Fever	29	70.73
Paralytic ileus	16	39.02
Urinary Tract Infection	12	29.27
Shock	8	19.51
Chest Infection	5	12.20
Wound Infection	5	12.20
Vesicovaginal fistula	2	4.88
Disseminated Intravascular Coagulation	1	2.44

*Many patients had more than one complication

Table-4: Association of foetal outcome with booking status

Outcome	Booked	Un-booked	Total
Alive	7	8	15
Stillbirth	4	22	26
Total	11	30	41

Chi-square=4.742, $p=0.029$

Table-5: Maternal Mortality (n=5)

Cause of Maternal Death	No.	%
Haemorrhage	2	40
Septicaemic Shock	2	40
Disseminated Intravascular Coagulation	1	20
Total	5	100

DISCUSSION

Obstetrical hysterectomy has undergone tremendous change both in terms of indications and frequency of the procedure. It is mostly done for indications deemed to be serious and life threatening to the patient and not amenable to conservative management.

There were a total of 4,666 vaginal deliveries, 1,829 caesarean deliveries, and 41 emergency obstetric hysterectomies. The frequency of obstetric hysterectomy in our study was 1 in 158 deliveries (0.63%) which is comparable to figures reported in other local studies ranging from 1:139, 1:275, 1:331, 1:361, but differs greatly from prevalence rate quoted in developed countries where it ranged from 1:2224 to 1:4228.^{1,3,8-11} The high incidence in our study is due to the reason that majority of the complicated referral cases were received in moribund state. Poor socioeconomic status, illiteracy, lack of proper referral system, un-booked status, non-availability of transport facilities, and mismanaged labour were similar contributing factors reported in other Pakistani studies.^{1,3,12} The highest frequency of the procedure in our study was among multiparae in the 25–29 year age group, while it was highest in >30 year age group in other studies.^{4,6,12-15} This is because of social trends of early marriage and emerging number of young patients with scarred uteri (12 out of 23 had scarred uterus). Most patients belonged to low socioeconomic status having monthly income <5,000 rupees which is comparable with other local studies.^{1,3} Majority belonged to rural areas not having easy accessibility to a maternity and essential obstetric care. In urban setup, private clinics with inadequate and untrained staff were the main contributing factors causing grave morbidity as well as leading to maternal loss.

The education of girls has never been a priority in our culture and tradition. Majority of the patients and their husbands were illiterate. Female education is a primary priority in developed countries as it has reduced severe obstetric complications due to improved health education. Most of patients were un-booked. Our results are comparable to results reported by other Pakistani studies as well as from other developing countries where lack of antenatal care was identified as a major contributing factor for obstetric hysterectomy.^{3,4,8,9,16} Significant difference was observed when comparing booking status with

locality (Chi-square value=3.951, $p=0.047$).

Majority (27, 65.86%) had to travel a distance of <100 Km to reach the tertiary care hospital. Though they are living within the vicinity of tertiary care hospitals, their potential fear regarding operative delivery and financial constraints kept them away for seeking obstetric care at tertiary care. Most of these, however, did have the trial of labour or delivery at local clinics and hospitals, and were mismanaged even by trained health care providers. Poor selection of patients for low-risk status and non-identification of problem at these primary and secondary care centres were the main reasons for ending up in obstetric hysterectomy in majority of the cases.

Out of 41 patients 35 were referred cases, 23 patients were supervised during labour by trained medical staff: doctors 18 (51.42%), and lady health visitors 5 (14.29%). They failed to recognise abnormal labour and making early referral. This emphasises the need of the health monitoring system, refresher courses for medical staff including doctors with utilisation of antenatal risk scoring index and implementation of partograph as detective tool for deviation of labour from norm. Seven patients had their labour at home under supervision of traditional birth attendants who are usually untrained and their only tool to manage the abnormal labour is the use of oxytocics mostly by intramuscular route. Injudicious use of oxytocics was the major risk factor identified in our study. Our results correlate with those reported by others, where misuse of oxytocin was commonly associated factors for uterine rupture leading to obstetric hysterectomy.^{17,18}

Among those who had hysterectomy, 25.83% women had a normal vaginal delivery, one (2.44%) with instrumental help, and the remaining 70.73% delivered by caesarean section/laparotomy for ruptured uterus.

The commonest indication for obstetric hysterectomy in our study was uterine rupture, which is similar to findings of other authors from Pakistan and Nigeria.^{1,3,4,17,18} This was because of high incidence of un-booked patients, due to low literacy level of our women, socio-cultural and religious barriers, and late referral from rural areas. However, this is contrary to the indications reported in studies from developed countries where abnormal placentation is the primary indication.^{5,10,20-22} In 4 patients hysterectomy was performed due to placental problems (morbid placental adherence) which is comparable to other studies in Pakistan.^{3,9,17,19}

Intra- and post-operative complications were mainly continuation of sequel of poor preoperative status rather than due to operative intervention.

Incidence of complications of obstetric hysterectomy quoted in other Pakistani studies varies from 58 to 67%.^{8,17,19}

Perinatal deaths in our study occurred in 63.41%. In other studies it occurred in 42.8% to 78% cases.^{3,8,12} Most of the deaths were due to uterine rupture in un-booked patients who presented late in poor condition. Gould *et al* reported no perinatal deaths in patients with obstetric hysterectomy.¹⁰

In our study obstetric hysterectomy contributed to 5 maternal death with a case fatality rate of 12.19%, and is comparable to other studies in Pakistan.^{1,3,9} All maternal deaths occurred in un-booked patients and clinic defaulters and were due to postoperative shock and septicaemia which was secondary to the moribund state of patients at presentation rather than operative procedure. No maternal death due to peripartum hysterectomy was reported in developed countries.^{10,20-22} This is because of the fact that in those countries women were in good health prior to pregnancy, good antenatal care further improves that condition and quick and proper intervention was carried out before their condition deteriorated.

CONCLUSION

Provision of adequate antenatal health services, timely identification of high-risk cases, public awareness, interlinked close relationship between primary health services and tertiary hospitals, early referral with backup system, improvement in existing health facility in a teaching hospital with involvement of senior, skilled and experienced personnel in the management of obstetric emergencies are the measures to be adopted to reduce incidence of obstetric hysterectomy, maternal morbidity and mortality, and to improve the foetal outcome.

REFERENCES

1. Najmi RS. Caesarean and postpartum hysterectomy - a study from lahore. J Coll Physicians Surg Pak 1994;4:120-5.
2. Gupta S, Hooker J, Beynon JL, Gibson JRM. Obstetric Hysterectomy. J Obstet Gynaecol 1994;14:159-61.
3. Korejo R, Jafarey SN. Obstetric Hysterectomy: five years experience at Jinnah Postgraduate Medical Centre, Karachi. J Pak Med Assoc 1995;45:86-8.
4. Onwudiegwu U, Okonofua FE. Emergency obstetric hysterectomy in a Nigerian hospital. J Obstet Gynecol 1995;15:24-6.
5. Baskett TF. Emergency obstetric hysterectomy. J Obstet Gynecol 2003;23:353-5.
6. Stanco LM, Schrimmer DB, Paul RH, Mishell DR. Emergency Peripartum hysterectomy and associated risk factors. Am J Obstet Gynecol 1993;168:879-83.
7. Qureshi RN. Emergency obstetrical care. In: Farooque MS, Samad S, eds. A manual for Physicians, Reproductive Health. Karachi: College of Physicians and Surgeons Pakistan; 2002.p. 53-9.
8. Begum I, Khan A, Khan S, Begum S. Caesarean and Postpartum hysterectomy. Pak J Med Res 2004;43:134-7.
9. Ehsan N, Mehmood A. Emergency peripartum hysterectomy: a

- study of 96 cases. Pak J Surg 1998;14:45-9.
10. Gould DA, Butler-Manuel SA, Turner MJ, Carter PG. Emergency obstetric hysterectomy an increasing incidence. J Obstet Gynaecol 1999;19:580-3.
 11. Zorlu CG, Turan C, Isik AZ, Danisman N, Mungan T, Gokmen O. Emergenc hysterectomy in modern obstetric practice changing clinical perspective in time. Acta Obstet Gynaecol Scand 1998;77:186-90.
 12. Shoaib F. Emergency Obstetric hysterectomy. J Coll Physicians Surg Pak 1996;6:319-22.
 13. Sachdev PS, Munir A. Obstetric Hysterectomy. Pak J Obstet Gynaecol 1996;9:31-4.
 14. Roopnarineshing R, Fayl, Mckenna P. A 27 year review of Obstetric hysterectomy. J Obstet Gynaecol 2003;23:252-4.
 15. Rana T. Emergency obstetric hysterectomies indications and complications Pak J Obstet Gynaecol 1998;11:90-2.
 16. Parveen S. Emergency Caesarean hysterectomy. J Surg Pak 2005;10(3):27-30.
 17. Noor S, Majid S, Ruby N. An audit of Obstetric hysterectomy. J Coll Physicians Surg Pak 2001;11:642-5.
 18. Abbasi RM, Mumtaz F, Mughal R. An audit of indications and complications of Obstetric hysterectomy at a tertiary care hospital of Hyderabad. J Liqat Uni Med Helth Sci 2002;1(1):17.
 19. Tahir S, Aleem M, Akram S. Indication and maternal outcome of emergenc peripartum hysterectomy. Pak J Med Science 2003;19:182-6.
 20. Zelop CM, Harlow BL, Frigoletto FD, Safon LE, Saltzman DH. Emergency peripartum hysterectomy. Am J Obstet Gynecol 1993;168:1443-8.
 21. Tallab F, Helewa M. Peripartum hysterectomy: 10 year experience in two Manitoba tertiary centers. Annals Saudi Med 1998;18:398-400.
 22. Daskalakis G, Anastasakis E, Papantoniou N, Mesogitis S, Theodora M, Antsaklis A. Emergency obstetric hysterectomy. Acta Obstet Gynecol Scand 2007;86:223-7.

Address for Correspondence:

Dr. Najma Shaikh, House No. 12-B, Phase-1, Main Road, Qasimabad, Hyderabad, Pakistan. **Cell:** +92-333-2767074
Email: najma.shaikh@aku.edu