



## PERIPARTUM HYSTERECTOMY – A RETROSPECTIVE ANALYSIS IN A TERTIARY CARE INSTITUTE

**Dr. Hema Relwani**

Assistant Professor, Department of Obstetrics and Gynecology, HBT & Dr R.N Cooper Hospital, Mumbai.

**Dr Reena Wani\***

Addl. Professor & Unit Chief, Department of Obstetrics and Gynecology, HBT & Dr R.N Cooper Hospital, Mumbai. \*Corresponding Author

### ABSTRACT

**Objectives :** We sought to determine the frequency, demographic characteristics, indications, and fetomaternal outcomes associated with peripartum hysterectomy in a tertiary care institute.

**Methods :** This was a retrospective, observational, analytical study of parturient women requiring peripartum hysterectomy over a six-year period, from August 2013 to October 2019 IN Department of Obstetrics and Gynecology, Dr. R.N Cooper Hospital, Mumbai.

**Results :** Out of 20,992 deliveries, the incidence of obstetric hysterectomy in our study was 0.038% following vaginal delivery, and 0.22% following caesarean section. The overall incidence was 0.1% .The most common indication was Atonic PPH corresponding to 47.84%. Maternal Mortality was noted in 39% of the cases.

**Conclusions :** A balanced approach to OH can prove to be lifesaving at times when conservative surgical modalities fail specially in modern obstetrics in the face of rising rates of caesarean section and multiple pregnancies.

**KEYWORDS :** Retrospective Studies, Postpartum Hemorrhage, Cesarean Section, Maternal Mortality, Hysterectomy

### INTRODUCTION

Emergency obstetric hysterectomy (EOH) is defined as extirpation of the uterus either at the time of caesarean section or following vaginal delivery, or within the puerperium period. It is usually performed in the face of unrelenting and life-threatening obstetric hemorrhage. EOH can be rightly classified as a near miss event.<sup>1</sup> It is important to study such events since they provide an insight into the standard of care provided and help to reduce maternal morbidity and mortality.

Conservative methods such as community-based use of misoprostol, oxytocin in the prefilled auto-disable drug delivery systems, condom catheter balloon, and non-inflatable anti-shock garments for the management of hypovolemic shock have all been advocated to effectively manage obstetric hemorrhage in low resource settings.<sup>2</sup> Advances in interventional radiology have also provided the option of uterine artery embolization.<sup>3,4</sup>

While this does seem encouraging, with regard to clinical implications, hemorrhage continues to be the leading individual cause of maternal death worldwide accounting for 27.1% of deaths as recently as 2014.<sup>5</sup> In this analysis, India and Nigeria together accounted for a third of global maternal deaths.<sup>5</sup> More alarming is the fact that some studies from developed nations are pointing towards an increase in the rate of postpartum hemorrhage.<sup>6</sup> One meta-analysis reported an annual increase of 8% in the incidence of EOH around the world.<sup>7</sup>

There were total 23 cases of Obstetric Hysterectomy done over last 6 years .We aimed to evaluate the incidence, indications, and fetomaternal complications associated with EOH in a tertiary care hospital in Mumbai.

### AIMS & OBJECTIVES

1. To evaluate the incidence of obstetric hysterectomy in our hospital
2. To correlate the demographic features associated with obstetric hysterectomy.
3. To study the antenatal risk factors, indications and complications associated.

### MATERIAL & METHODS

This was a retrospective, observational, analytical study of parturient women requiring OH/ peripartum hysterectomy (PH) over an six-year period, from August 2013 to October 2019 from the Department of Obstetrics and Gynecology, Dr. R.N Cooper Hospital, Mumbai.

**Inclusion criteria** included all women who delivered or were referred for obstetric complications in the hospital between August 2013 and October 2019, who underwent hysterectomy for obstetric indications at the time of delivery or subsequently within the defined

period of puerperium (42 days).

After collecting relevant data from the operation theatre records, each patients case record was scrutinized with regard to incidence, age, parity, antenatal high risk factors, indications, hysterectomy type, and complications, along with the ultimate fetomaternal outcome. Institutional ethical committee approval was obtained for the study.

### RESULTS

#### Incidence

Out of 20,992 deliveries, the incidence of obstetric hysterectomy in our study was 0.038% (38 hysterectomies per 100,000 deliveries) following vaginal delivery, and 0.22% (228 hysterectomies per 100,000 deliveries) following caesarean section. The overall incidence was 0.1% (109 hysterectomies per 100,000 deliveries). Table 1 shows the association of caesarean section with EOH. The caesarean section rate during the study period was 37.54%. Out of 23 patients, 14 were referred and 9 were registered at our institute.

**Table 1: Incidence of obstetric hysterectomies (OH) following vaginal delivery and caesarean section.**

	No. of Patients	Number of obstetric Hysterectomy	Incidence (%)
Normal vaginal deliveries	13110	5	0.038
Caesarian Section	7882	18	0.220
Total	20992	23	0.109

#### Demography: Age & Parity

The youngest woman to undergo hysterectomy was 21 years old and the oldest was aged 40 years. Women in the 20 to 30 year-old age group constituted over 60% of cases.

Most of the women who underwent Obstetric Hysterectomy were Multiparous (Para 3), corresponding to 43% of the total.

#### Indications of Obstetric Hysterectomy in Study Population

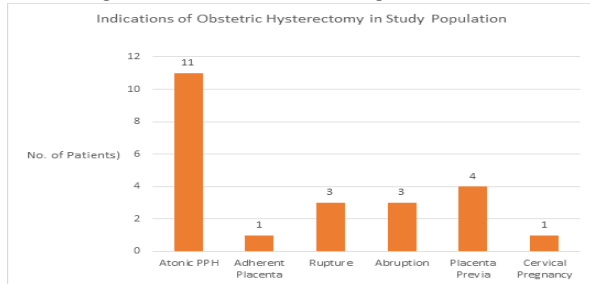
The most common indication of obstetric Hysterectomy in our study was Atonic PPH. There were 11 cases of atonic PPH corresponding to 47.84%. Bilateral uterines were taken in all 11cases , successive devascularisation by ligating bilateral uterine artery, ovarian vessels, internal iliac artery was done in 5 cases and bilateral uterine artery ligation followed by compression sutures taken in 6 cases, despite which the bleeding did not stop and decision of Obstetric Hysterectomy was taken.

There was one patient of adherent placenta in study population, where it was priory diagnosed on MRI. The patient had previous history of 2 LSCS and 1 MTP. Since the placenta did not separate spontaneously, decision of Obstetric Hysterectomy

was taken.

There were 3 cases of Rupture Uterus. One was following VBAC, one was Previous LSCS patient following history of Fall with bladder rupture and the third case was spontaneous rupture with IUFD (Intra Uterine Fetal Death).

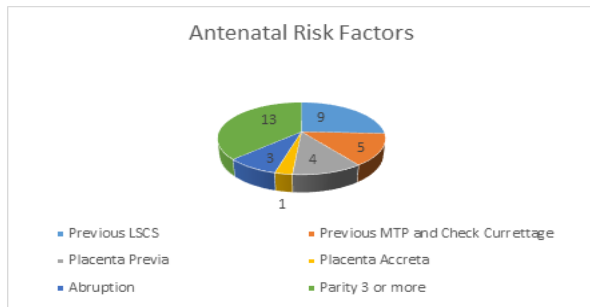
There was one case of cervical pregnancy with history of 2 MTPs and one Check curettage done. Bleeding was torrential, did not stop even after bakri balloon tamponade.



**Figure 1: Indications of Obstetric Hysterectomy in Study Population**

### Antenatal Risk Factors

Of all the risk factors present in antenatal period, the most common was multiparity (56%) followed by previous LSCS (39%)



**Figure 2: Analysis of Risk Factors present in antenatal period in study Population**

### Complications

Of the 23 cases, all required ICU care and blood and blood products. 16 out of 23 patients did not extubate spontaneously so were kept on ventilator support. Of the 16 patients on ventilator support 9 were extubated successively, but 2 were reintubated.

The maternal mortality were in 9 cases (39%) and the other complications were Bladder injury in 3, fever in 4, postoperative infection in 2 and depression in 2 cases.

### DISCUSSIONS

The incidence of obstetric hysterectomy in our study was 0.1% (109 hysterectomies per 100,000 deliveries). It is comparable to that reported in Nigeria<sup>8</sup> (0.51%), China<sup>9</sup> (0.22%), Pakistan<sup>10</sup> (0.27%), and another study from India<sup>11</sup> (0.52%).

The greater association of OH with cesarean delivery compared to normal vaginal delivery in our study (0.03% vs 0.22%) is similar to studies from New Delhi,<sup>8</sup> Chawla et al<sup>12</sup> (0.27% vs. 0.026%), Juneja et al<sup>11</sup> (0.79% vs. 0.24%) and is similar to other studies from China<sup>9</sup> (90.1% vs. 6.5%) and Turkey<sup>13</sup> (0.078% vs. 0.016%). Improving general awareness regarding the long-term morbidity associated with cesarean sections can help reduce requests of 'section on demand' and may prove lifesaving for many women in the long run.

The most common indication of obstetric Hysterectomy in our study was Atonic PPH. There were 11 cases of atonic PPH corresponding to 47.84% followed by 4 cases (17.40%) of Placenta Previa, following which is Previous Caesarian section with Rupture uterus (13.04%). The results were comparable to study by Chawla et al<sup>12</sup> where uterine atony (25%) was most common indication of OH. Bateman et al,<sup>14</sup> also found that the rate of OH for atony increased four-fold following repeat cesarean section, 2.5-fold following primary cesarean section, and 1.5-fold following primary vaginal delivery over a period of 14 years. There, in fact, seems much to be gained from reducing the primary cesarean rate in obstetric practice.

Studies from other tertiary care centers in India,<sup>11</sup> the UK,<sup>15</sup> and Turkey<sup>13</sup> also revealed atonic postpartum hemorrhage to be the most common indication for OH.

In our study, of all the risk factors present in antenatal period, the most common was multiparity (56%) followed by previous LSCS (39%). This was comparable to Chawla et al<sup>12</sup> where 8% of atony cases and 11% of uterine rupture cases were associated with multiple gestation. A study from the US concluded that higher-order births are associated with a 24-fold increase in the incidence of emergency hysterectomy. Uterine distension, use of tocolysis to avert preterm labor, and placental causes have been postulated to be responsible for this increase.<sup>17</sup>

Maternal mortality in our series is towards the higher end of the range when compared to other countries. The figures from different parts of the world range from 7% to 17%. We reported a slightly higher value of 39%. This could probably be explained by the fact that many other studies from single centers have less total deliveries per year.

### CONCLUSION

OH is a necessary evil in obstetrics. Although it curtails the future child bearing potential of the woman, in many cases it saves the life of the mother. Most of its morbidity is attributable to its indications and underlying disorders rather than to the procedure itself. Training postgraduate trainees in this rare skill can prove lifesaving in situations where expertise or facilities for newer modalities of management, such as uterine artery embolization, do not exist, or fail. Rising rates of cesarean section and multiple pregnancies are bound to increase the incidence of OH in the future.

### REFERENCES

- Say L, Souza JP, Pattinson RC, WHO working group on Maternal Mortality and Morbidity classifications. Maternal near miss—towards a standard tool for monitoring quality of maternal health care. *Best Pract Res Clin Obstet Gynaecol* 2009. Jun;23(3):287-296. 10.1016/j.bpobgyn.2009.01.007
- Miller S, Lester F, Hensleigh P. Prevention and treatment of postpartum hemorrhage: new advances for low-resource settings. *J Midwifery Womens Health* 2004. Jul-Aug;49(4):283-292. 10.1016/j.jmwh.2004.04.001
- Singhal S, Singh A, Raghunandan C, Gupta U, Dutt S. Uterine artery embolization: exploring new dimensions in obstetric emergencies. *Oman Med J* 2014. May;29(3):217-219. 10.5001/omj.2014.53
- Varghese S, Gokulam N, Al-Abri S. Uterine Artery Embolization in Postpartum Hemorrhage: A Case Report. *Oman Med J* 2012. Jul;27(2). 10.5001/omj.2012.41
- Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health* 2014. Jun;2(6):e323-e333. 10.1016/S2214-109X(14)70227-X
- Cameron CA, Roberts CL, Olive EC, Ford JB, Fischer WE. Trends in postpartum haemorrhage. *Aust N Z J Public Health* 2006. Apr;30(2):151-156. 10.1111/j.1467-842X.2006.tb00109.x
- Tunçalp O, Hindin MJ, Souza JP, Chou D, Say L. The prevalence of maternal near miss: a systematic review. *BJOG* 2012. May;119(6):653-661. 10.1111/j.1471-0528.2012.03294.x
- Nwobodo E, Nnadi D. Emergency obstetric hysterectomy in a tertiary hospital in sokoto, Nigeria. *Ann Med Health Sci Res* 2012. Jan;2(1):37-40. 10.4103/2141-9248.96935
- Pradhan M, Yong S. Emergency Peripartum Hysterectomy as Postpartum Hemorrhage Treatment: Incidence, Risk factors, and Complications. *JNMA J Nepal Med Assoc* 2014;52(193):668-676.
- Korejo R, Nasir A, Yasmin H, Bhutta S. Emergency obstetric hysterectomy. *J Pak Med Assoc* 2012. Dec;62(12):1322-1325.
- Juneja SK, Tandon P, Mohan B, Kaushal S. A change in the management of intractable obstetrical hemorrhage over 15 years in a tertiary care center. *Int J Appl Basic Med Res* 2014. Sep;4(Suppl 1):S17-S19. 10.4103/2229-516X.140710
- Emergency Obstetric Hysterectomy: A Retrospective Study from a Teaching Hospital in North India over Eight Years, Jaya Chawla, Col D. Arora, Mohini Paul, Sangita N. Ajmani *Oman Med J*. 2015 May; 30(3): 181–186. doi: 10.5001/omj.2015.39
- Tapisiz OL, Altinbas SK, Yirci B, Cenksoy P, Kaya AE, Dede S, et al. Emergency peripartum hysterectomy in a tertiary hospital in Ankara, Turkey: a 5-year review. *Arch Gynecol Obstet* 2012. Nov;286(5):1131-1134. 10.1007/s00404-012-2434-z
- Bateman BT, Mhyre JM, Callaghan WM, Kuklina EV. Peripartum hysterectomy in the United States: nationwide 14 year experience. *Am J Obstet Gynecol* 2012 Jan;206(1):63.e1-63.e8.
- Knight M, UKOSS. Peripartum hysterectomy in the UK: management and outcomes of the associated haemorrhage. *BJOG* 2007. Nov;114(11):1380-1387. 10.1111/j.1471-0528.2007.01507.x
- Abasiattai AM, Umoiyoho AJ, Utuk NM, Inyang-Etoh EC, Asuquo OP. Emergency peripartum hysterectomy in a tertiary hospital in southern Nigeria. *Pan Afr Med J* 2013;15:60. 10.11604/pamj.2013.15.60.1879
- Francois K, Ortiz J, Harris C, Foley MR, Elliott JP. Is peripartum hysterectomy more common in multiple gestations? *Obstet Gynecol* 2005. Jun;105(6):1369-1372. 10.1097/01.AOG.0000161311.31894.31