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Original Research Article

Obstetric Hysterectomy: A Clinical Study in a Tertiary Care Unit in South India Over 2 Years

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Abstract

Background: Obstetric hysterectomy is an obstetric emergency. It is an indicator of severe acute maternal morbidity. It is a single criterion defining maternal near miss. Obstetric hysterectomy is the last resort opted to save the mother despite curtailing the reproductive potential of the women. This is often performed when medical and surgical measures have failed. It's performed in the phase of unrelenting and life-threatening obstetric haemorrhage.

Objective: We aimed to study the incidence, demographic factors, indications and maternal complications of obstetric hysterectomy.

Materials and Methods: This retrospective study was conducted for a period of 24 months on 80 women who underwent obstetric hysterectomy in Government Rajaji hospital, Madural, Tamilnadu from January 2021 to December 2022.

Results: Out of 31224 deliveries, hysterectomy was done for 80 women. Incidence is 2.56 per 1000 deliveries. Abnormal placentation was the leading cause followed by atonic PPH, traumatic PPH, sepsis and secondary PPH.

Conclusion: Obstetric hysterectomy is definitely a life-saving procedure. but its incidence can be reduced by reducing the incidence of lower segment caesarean section.

Keywords: Obstetric Hysterectomy, Postpartum Haemorrhage, Adherent Placenta.

Introduction

Obstetric hysterectomy is defined as extirpation of the uterus with or without cervix either at the time of caesarean section or following vaginal delivery or within the puerperium period. It's most commonly performed to arrest or prevent haemorrhage from intractable uterine atony or abnormal placentation. When hysterectomy is performed during C- section, it is called "caesarean hysterectomy" whereas if it's done post vaginal delivery or post C- section, it's called postpartum hysterectomy. Peripartum hysterectwords omy is the combination of the above two. Obstetric hysterectomy is done when complications arise during pregnancy, delivery or in the

postpartum period irrespective of the period of gestation. Over the years the indications for hysterectomy have taken a toss. Previously uterine atony was the leading cause of hysterectomy. Now with better uterotonics, prophylactic measures like SR cannula, bilateral uterine artery ligation and conservative surgical methods, atonicity as a cause of hysterectomy has been reduced but not eliminated. Other causes for obstetric hysterectomy are placenta accreta, traumatic PPH, uterine rupture, postpartum uterine sepsis and intractable uterine inversion. Emergency obstetric hysterectomy is a universal marker of severe acute maternal morbidity (SAMM) [1]. The incidence of obstetric hysterectomy is 1: 30,000 and 1: 1700 following vaginal and caesarean deliveries respectively [2]. Multiple pregnancy has a two to eight fold increased risk of hysterectomy compared to singletons. Our study is to evaluate the various causes, risk factors, outcomes, social demographic factors and changing indications leading to hysterectomy.

Aims and Objectives

To study the incidence, demographic factors, indications and maternal complications of obstetric hysterectomy

Materials and Methods

Place of study	This retrospective study included 80 women who underwent emergency obstetric hysterectomy in the department of obstetrics and gynaecology at Government Rajaji hospital, Madural. The data were obtained from the departmental medical records.
Period of study	From January 2021 to December 2022
Duration of study	24 months
Sample size	80 women
Inclusion criteria	Women who underwent obstetric hysterectomy post normal delivery, post caesarean section, post abortal and ruptured cornual ectopic cases were included in the study. Also, women who delivered outside the hospital but referred with obstetric complications warranting obstetric hysterectomy were also included

Results

Out of total 31224 deliveries during our study period there were a total 80 patients who underwent obstetric hysterectomy, incidence being 0.256%. During the study period, LSCS rate is 36.9% & vaginal delivery 63.1%.

Table 1: Age of Mothers

Age	Less than 20	21-25	26-30	31-35	36-40	>40
Frequency	2	28	33	8	7	2

Maximum patients' cohort, 33 out of 80 (41.25%), were between the age group 26 - 30 years. There were 2 patients (2.5%) below 20 years and above 40 years and 7 patients (8.7 5%) above 35 years of age (Table 1).

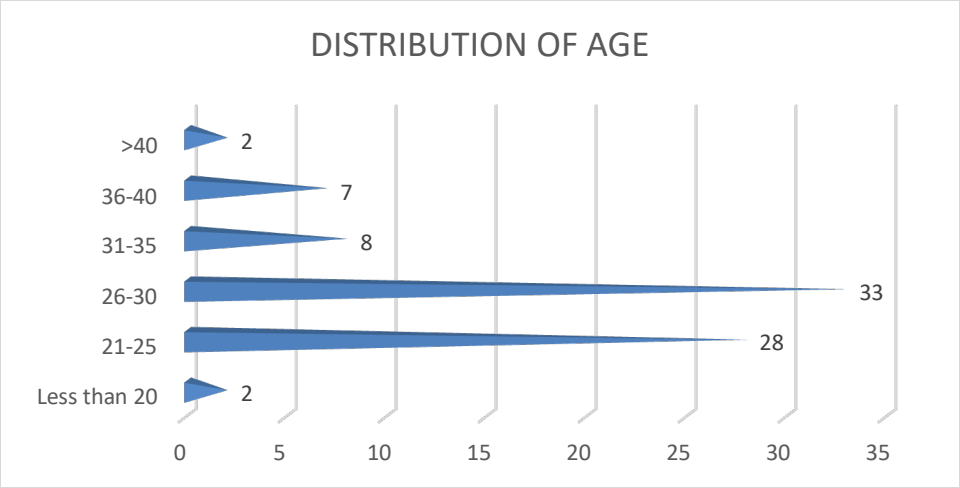

Figure 1: Distribution of Age

Table 2: Parity

Parity	Frequency	Percentage
Primigravida	12	15
Multipara P2 P3	68 45 23	85

Out of 80 women who underwent obstetric hysterectomy, 12 patients (15%) were primigravida. There were 68 (85%) multipara patients (Figure 1). Out of these multipara patients, 45 (70%) patients were second para and 23(30%) were third para (Table 2). Multiparous women had higher rate of hysterectomy. (85%) multiparous women with previous 1 LSCS (29), previous 2 LSCS (15) accounted for 65% of OH

Table 3: Previous Delivery

	Frequency	Percentage
previous LSCS	44	55
previous FTND	24	30
Primi	12	15

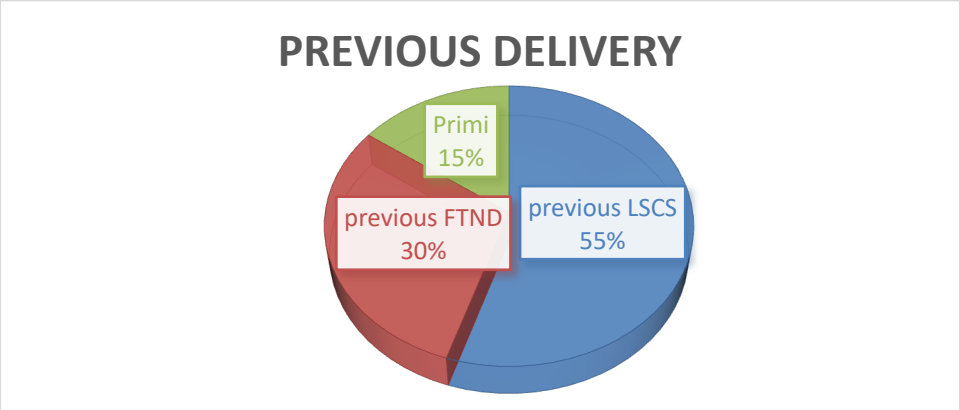

Figure 2: Pervious delivery

Table 4: Mode of delivery

Mode of delivery	Details
Normal labour	12
LSCS	56
Laparotomy	12
1. Ectopic • Cornual • Scar ectopic 2. Rupture uterus	4 1 3 8

12 cases out of 19701 vaginal deliveries(0.065%) and 56 cases out of 11523 caesarean deliveries (0.48%) required obstetric hysterectomy(Table 4). LSCS in the current pregnancy accounted for 70% of OB.

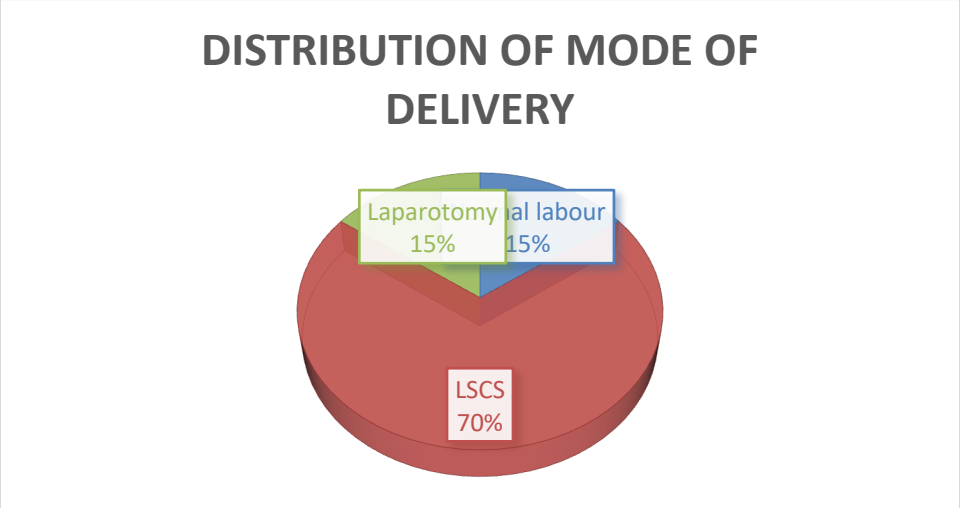

Figure 3: Distribution of mode of delivery

Table 4: Indication of Obstetric Hysterectomy

Indication	Frequency	Percentage
Atonic PPH • Normal Labour • LSCS	18 8 10	22.5
Traumatic PPH • Post LSCS extension • Post LN uterine pedicle injury (Broad ligament hematoma) • Uterine Rupture • Scarred Uterus • Unscarred Uterus	17 6 3 8 5 3	21.25
Abnormal Placentation • Placenta Previa a. With accreta b. Without accreta	23 22 19 3	28.75

• Accreta in right lateral wall	1	
Secondary PPH • AV Malformation • Pseudoaneurysm	5 3 2	6.25
Sepsis • Septic abortion • Post LSCS	12 3 9	15
Ectopic • Ruptured scar ectopic • Ruptured cornual ectopic	4 3 1	5
myoma uterus	1	1.25

The most common indication was abnormal placentation (28.75%), out of which placenta previa with accreta constituting 82.6%. Second most common cause was postpartum haemorrhage. There were 17 patients of traumatic PPH and 18 patients of atonic PPH which required obstetric hysterectomy, incidence being 22.5% and 21.25%. Other indications were sepsis (15%), secondary PPH (6.25%) and ectopic pregnancy (5%). There were 4 ectopic patients, out of which the incidence of ruptured scar ectopic and cornual ectopic being 3.75% and 1.25% respectively (Table 4).one had large myoma with previous 2 lscs(1.25%)

There were 8 patients with rupture uterus, 5(6.25%) in scarred uterus, 3 in unscarred uterus scarred uterus were one with previous Hysterotomy, presented at 35 weeks with IUD with rupture, previous 2 LSCS _3, Previous 1 LSCS-1. In the unscarred uterus, two primi delivered outside and referred as PPH, had rent in the lower uterine segment and another with posterior colporrhexis. Multipara 40week with polyhydramnios had rupture during labour, resuscitated and hysterectomy done.

3 patients had postpartum collapse and laprotomy revealed broad ligament hematoma, 2 in labour natural outside, one in post LSCS, hysterectomy done in these cases.

3 patients had scar ectopic, presented with ruptured Scar ectopic with hemoperitoneum, conservative measures couldn't stop bleeding at the Scar site, hence proceeded to hysterectomy. Of these 2 were previous 2 lscs, one with previous 1 lscs and abortion. One woman had cornual ruptured ectopic, cornual resection, stepwise devascularization tried but ended with hysterectomy.

One woman presented With previous 2 LSCS, 24 weeks gestation, IUD with intramural fibroid of 20x15cm myoma in the lower uterine segment, hysterectomy done after failed conservative measures.

5 women admitted with Secondary PPH, 3 had pseudoaneurysm, 2 had AV malformation. Uterine artery embolisation tried in one case of psedoaneurysm, but since it failed to control bleeding resulted in hysterectomy.

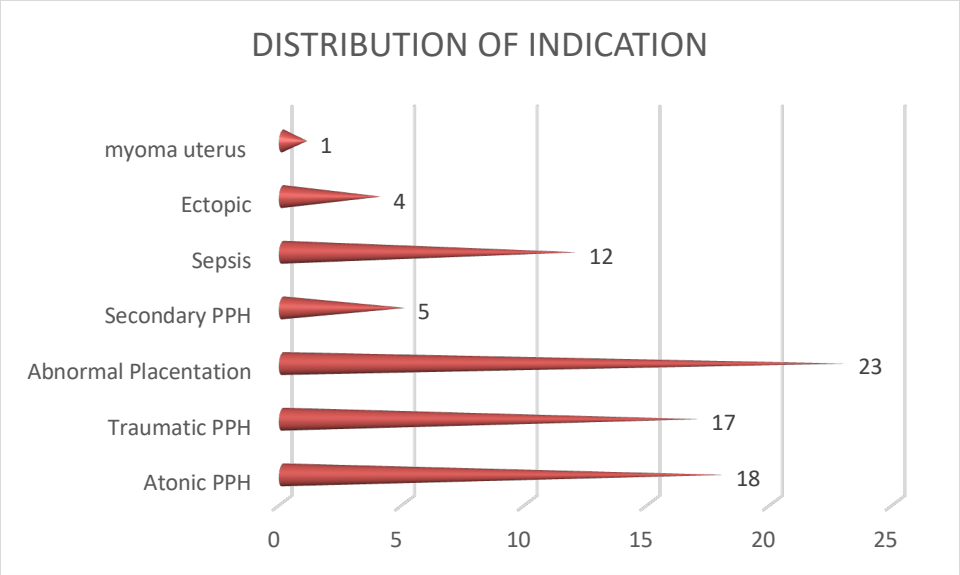

Figure 3

Table 5: Maternal complications

Complication	Frequency	Percentage
Fever	20	25
Paralytic ileus	15	18.75
SSI	18	22.5
Subacute obstruction	3	3.75
AKI and Haemodialysis	6	7.5
Bladder injury	8	10
LRI	4	5
Maternal death	4	5

Total of 70 out of 80 women recruited in the study had one or more post op maternal complications amounting to 87.5%. These complications were not directly because of hysterectomy, it's due its indications which caused hysterectomy. A total of 8 post op complications were observed in these 70 patients. Most common complications seen were fever (28.57%), and second being SSI, amounting to 25.71 % of the total complications. Least frequent complications were a subacute intestinal obstruction seen in only three patients. Most common intra operative complication is bladder injury. (10%). Bladder injury mostly (50%) occurred in placenta percreta as bladder is very close and invaded, resulting in injury. Unfortunately, 4 out of the 80 patients (5%) died. These were due to late referral, hemorrhagic shock, AKI, MODS.ARDS.

Discussion

Obstetric hysterectomy, which is a rarity these days, is a lifesaving procedure in the advent of massive postpartum haemorrhage. This retrospective analysis was carried out for a period of 24 months in our hospital in order to determine the risk factors, indications, and complications, as well as the mortality and morbidity related to the procedure. In the present study the incidence of obstetric hysterectomy is 0.25%. Priya *et al* in their retrospective audit for 5 years reported an incidence of 0.09%. [1] contrary higher incidence rates have been reported in northern parts of India, Nigeria and Pakistan

and lower incidence in developed countries such as UK [2-8]

Most of the mothers were of age 26 to 30 years. Only 2% were less than 20 years and 2% were elderly gravida. Mean age of the mothers was 27.5. Priya *et al* in their study reported the mean age as 25 years. [1] The majority of patients, according to Dogra *et al*. [26], were between the ages of 26 and 30. The average age was 29.4 years.

With respect to parity status, in the present study 15% were primigravida while most of them (85%) were multigravida. Priya *et al* [1] stated the majority (92%) were multiparous and 8% as primigravida. Similar observation was seen in study by Varalakshmi K *et al*. [28], where 18% were primipara, 68% were para 2 and para3 and 14% were grand multipara. Agarwal *et al*. [27] also reported similar results, 17.2% were primipara and 72.4% were multipara in their study.

Of the 80 study participants, 12 had normal vaginal delivery, 56% had LSCS, 12% underwent obstetric hysterectomy preceding laparotomy performed for various reasons such as ectopic pregnancy in 4 cases and ruptured uterus in 8 cases. Priya *et al* reported similar results, 82% of LSCS and only 18% vaginal delivery in their study. Many other studies reported that caesarean section as the most commonest mode of child delivery preceding obstetric hysterectomy [9-12] There has been an increase in peripartum hysterectomy in women with history of previous LSCS recently [13,14]. The likelihood of an hysterectomy increases with more prior caesarean procedures, according to the population-based United Kingdom Obstetric Surveillance Study (UKOSS).[5]

On studying various indications for obstetric hysterectomy the commonest was abnormal placentation accounting for 29% followed by atonic postpartum haemorrhage (23%). Traumatic PPH accounted for 22%, sepsis in 15%, secondary PPH in 6%, ectopic pregnancy in 5%. Priya *et al* [1] classified the indications as broadly into placental causes which included placenta previa [28%] and adherent placenta [5%] and other which included atonic PPH (33%), rupture uterus (23%), and others such as scar dehiscence post LSCS, abruption, broad ligament hematoma.

Over the past 50 years, the prevalence of placenta accreta has significantly increased, and recent studies have found that it is now the most common reason for peripartum hysterectomy, accounting for between 38 and 50 percent of all cases [15-18]. Due to their high rate of caesarean sections, Cho GJ *et al*. and Chen J *et al*. noticed a shift in the most common explanation from atony to aberrant placentation [19,20]. Contrarily, according to several research [6,7,12], uterine atonicity and placental reasons were the most frequent causes of uterine rupture and hysterectomy, respectively. Uterine rupture has become less common as a reason for peripartum hysterectomy in the developed world, where it only accounts for 4% of cases [5], but it continues to be a common reason in developing nations like ours because of grand multiparity, a lack of antenatal care, and unsupervised labour at home [22]. Due to improved surgical techniques, embolization, and uterotonic therapy success rates, atonic PPH incidence has essentially decreased over time. Nonetheless, due to inadequate facilities and delayed patient admission from far-off places, this usually avoidable rationale for peripartum hysterectomy still predominates in underdeveloped nations [23].

Maternal complications following surgery included post operative fever in 25%, surgical site infections in 23%, paralytic ileus in 19%, bladder injury in 10%, acute kidney injury in 7.5%. Other complications were subacute intestinal obstruction and pneumonia. Maternal mortality in this study is 5%. Priya *et al* [1] reported similar results

like post operative fever as the commonest complication accounting for 44% followed by higher incidence of paralytic ileus (26%). Wound infection accounted to 23%. In their study, maternal death accounted to 10%. Previous studies' findings on maternal mortality ranged from 1.1% to 16.7%. [24,25] The majority of research found that significant obstetric haemorrhage that was uncontrollable even after hysterectomy caused hemorrhagic shock or disseminated intravascular coagulation, responsible for maternal mortality [7-12]

Conclusions

Obstetric hysterectomy is most commonly following LSCS (index and previous pregnancy) compared to vaginal deliveries.

Due to the rising incidence of caesarean deliveries and morbidly adherent placenta, the need for obstetric hysterectomy is on the rise.

All PAS to be referred early to tertiary care centres and delivered only there with a multidisciplinary team and bundle approach.

All low risk to be monitored for PPH and referred early (avoid delay in referral)

All indicated obstetric hysterectomy to be done in FRU/ SRU to avoid delay in management.

With continuous departmental audit, by reducing Lscs rate ,we can decrease the risk of hysterectomy.

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