

**“PERIPARTUM HYSTERECTOMY - A LIMITING FACTOR FOR PROCREATIVE POTENTIAL & SAFE-MOTHERHOOD”; A 5 YEARS RETROSPECTIVE STUDY.**

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**ABSTRACT**

**Background:** The term hysterectomy means surgical removal of uterus it can be either along with cervix or adnexae through different routes. The most commonly performed major elective gynecological surgery. The term Peripartum hysterectomy is used when performed either mostly by emergency as a maternal life saving measure within 24 hours after vaginal or abdominal delivery or as electively when indicated. **OBJECTIVE:** To study the incidence of peripartum hysterectomy; to analyze its causes, risk factors, complications and foeto - maternal morbidity and mortality at newly established tertiary care teaching hospital. **PLACE OF STUDY:** Rajiv Gandhi Institute of Medical Sciences (RIMS), Kadapa, YSR district, Andhra Pradesh, South India. **DESIGN AND DURATION:** Retrospective study of 5 years period, Jan'2010 to Dec'2014. **MATERIALS AND METHODS:** 42 cases of peripartum hysterectomised patients medical

records reviewed for characteristics of current pregnancy and delivery, indications for peripartum hysterectomy, operative and postoperative complications, maternal and perinatal outcome evaluated. **RESULTS:** 42 cases of peripartum hysterectomy identified out of 32398

total deliveries (1.3 in 1000). Among them 23 cases was Laparotomy for rupture uterus, Caesarean hysterectomy in 12 cases, followed by vaginal delivery in 6 cases and for chronic ectopic pregnancy with bilateral T.O. mass in 1 case (P2 L2 + Bil. T. with chronic ectopic for failed tubectomy). **No Live Children in 9 cases & 1 Live Child in 19 cases were identified and 2 or more Live Children in 14 cases.** **CONCLUSIONS:** The incidence of peripartum hysterectomy is similar to the data found in studies of other Asian countries. Most frequent indication being rupture uterus leading to high perinatal, maternal mortality and morbidity limiting the child bearing capacity (Procreative Potential). To reduce this high incidence of peripartum hysterectomy effective MCH services to be exercised at all the levels of health care delivery system in developing countries like India to maintain safe-motherhood.

**KEYWORDS:** Peripartum hysterectomy, Rupture uterus, PPH, Abnormal placentation, Procreative potential, Maternal Mortality and Perinatal Mortality.

## INTRODUCTION

The term hysterectomy means surgical removal of uterus it can be either along with cervix or adnexae through different routes. The most commonly performed major elective gynecological surgery. The term Peripartum hysterectomy is used when performed either mostly by emergency as a maternal life saving measure within 24 hours after vaginal or abdominal delivery or as electively when indicated.<sup>[1]</sup> The moment of decision for peripartum hysterectomy **grieves** the woman and family members especially with **no live child** as permanently she lands up in **incapacitation** for child bearing and cyclical menstrual function. It alerts treating obstetrician and the entire surgical team at any hour of the day or night with the provision of adequate nursing support and lab facilities. Technique needs experience and skill of the surgeon. Procrastination (Concentrating on alternative methods) increases the risk of both morbidity and mortality.<sup>[2]</sup> Caesarean hysterectomy 1<sup>st</sup> proposed by Cavanelli in 1786 where mother and baby could not be survived. (East African medical journal). Horatio Storer 1<sup>st</sup> performed caesarean hysterectomy in 1869. (Te Lindes). In 1876 Edward Porro 1<sup>st</sup> published a case report of successful caesarean hysterectomy where mother and baby were survived. (Women's health journal Nigeria).<sup>[3]</sup> The mortality of peripartum hysterectomy is more than 25 times that of hysterectomy performed outside of pregnancy..<sup>[4]</sup> Recent advances in the medical and conservative management of postpartum hemorrhage have reduced the rate and indications for EPH, while sophistication in obstetric care and blood transfusion services have improved outcomes, especially in developed countries.<sup>[5,6]</sup> Advances in

interventional radiology have also provided the option of uterine artery embolization.<sup>[7, 8]</sup> 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 3<sup>rd</sup> 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 (Emergency Obstetric Hysterectomy) around the world.<sup>[7]</sup>

#### GLOBAL INCIDENCE.<sup>[9]</sup>

SL. NO.	COUNTRY	POPULATION	INCIDENCE
1.	Pakistan	1000	5.6
2.	Nigeria	1000	1.8 - 5.4
3.	US	1000	1.2 - 2.7
4.	INDIA	1000	2.6
5.	UK		
i.	Norway	1000	0.2
ii.	Ireland	1000	0.3

#### UNFAVOURABLE CONDITIONS FOR EPH (Emergency Peripartum Hysterectomy)<sup>[17]</sup>

In Developing countries like India have high rates of this procedure because of more deliveries (70%) take place outside the hospital, by unskilled birth attendants. Around 15-20% women deliver spontaneously without assistance from anyone (home delivery).

#### EMERGENCY CAUSES FOR EPH<sup>[18]</sup>

- Uterine rupture
- Uterine Atony
- Abnormal placentation (accreta, increta, percreta)
- Extension of uterine incision
- Leiomyoma precluding uterine closure

#### ELECTIVE INDICATED CAUSES.<sup>[19]</sup>

- Uterine leiomyomata
- CIN (H-SIL)
- Micro invasive ca. c<sub>x</sub>.
- Menstrual abnormalities
- Placenta previa (without accreta)

- Chronic pelvic pain
- Chorioamnionitis
- For sterilisation in olden days.

**OBJECTIVE: (RETROSPECTIVE ANALYTICAL):** This study was conducted to determine the Incidence, to analyze causes, risk factors, complications and fetomaternal morbidity and mortality at newly established tertiary care teaching hospital.

## MATERIALS AND METHODS

It's a retrospective study of 42 cases of women who underwent peripartum hysterectomy during the period of JAN'2010 – DEC'2014. Study variables are – age groups, incidence of procedure, socio-demographic characteristics of patients, indications, management options, fetomaternal outcomes (Morbidity & Mortality). Post-operative counseling was carried out for all the cases before they were discharged to help them to accept the loss of menstrual function and child bearing ability that inevitably accompany the procedure.

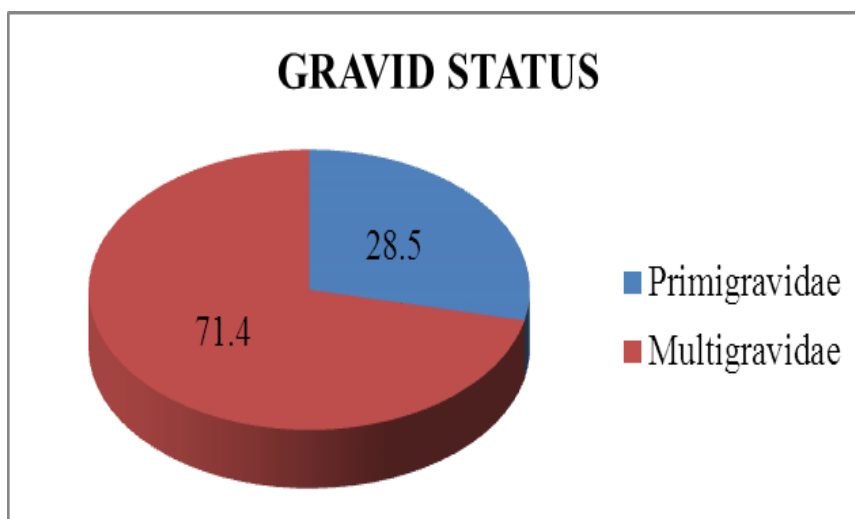
**RESULTS & ANALYSIS:** Among 32,398 deliveries during the period of 5 years i.e., from JAN'2010 – DEC'2014 at RIMS - Kadapa, YSR district, Andhra Pradesh, South India. 42 women underwent emergency peripartum hysterectomy (EPH). Present study incidence is **1.3 in 1000**. It is more than the incidence of developed countries & less than the incidence of underdeveloped countries. Among the 42 cases **25** were **unbooked** and **17** were **booked**.

**TABLE NO. 1: DISTRIBUTION OF CASES BASED ON AGE GROUPS:** Out of 42 cases 14 (33.33%) were in between 19 – 22 years, 21 (50%) were 23 – 29 years and only 7 (16.66%) cases were 30 – 35 years.

SL. NO.	AGE GROUPS	NO. OF CASES (n=42)	PERCENTAGE
1	19 – 22 years	14	33.33
2	23 – 29 years	21	50
3	30 – 35 years	07	16.66

**TABLE NO. 2: GRAVID STATUS WISE DISTRIBUTION OF CASES:** Out of 42 cases 30 (71.4%) were Multigravidae and 12 (28.5%) were Primigravidae.

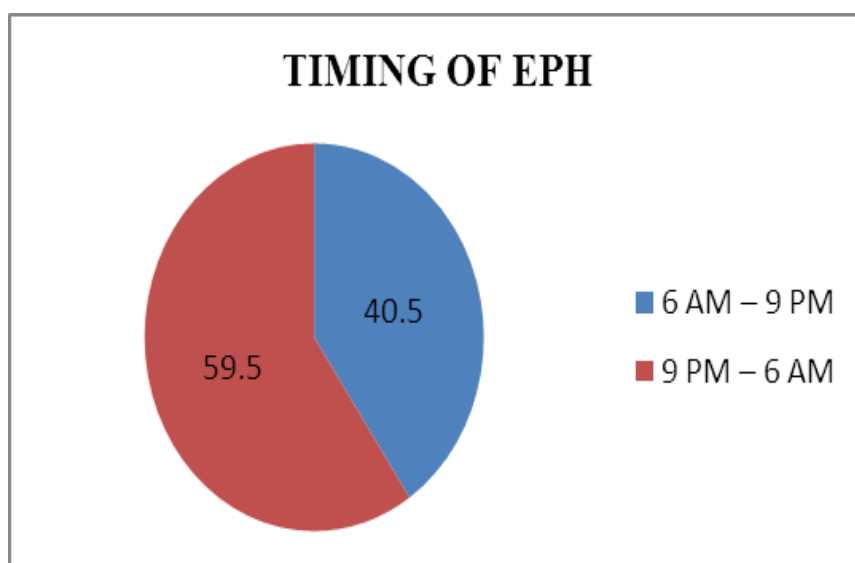
SL. NO.	GRAVID STATUS	NO. OF CASES (n=42)	PERCENTAGE
1	Primigravidae	12	28.5
2	Multigravidae	30	71.4



**FIGURE 1: GRAVID STATUS WISE DISTRIBUTION OF CASES**

**TABLE NO. 3: THE OBSERVED TIMING IMPACT ON EPH:** Most of the cases landed up for EPH during night (i.e., between 9 PM and 6 AM) 25 cases. Remaining cases landed up during day time (i.e., between 6 AM and 9 PM) 17 cases. The identification of timing impact reflects the multifactorial reasons & conditions leading for EPH.

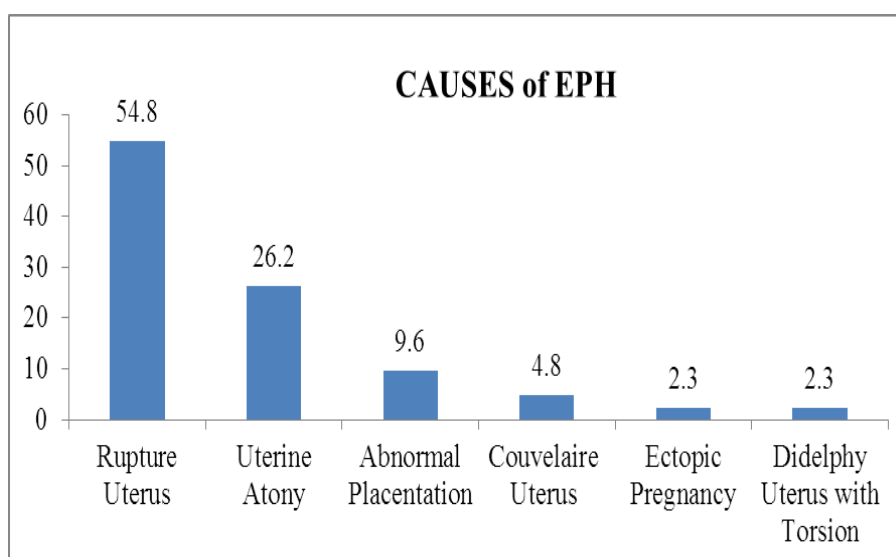
SL. NO.	TIMING OF EPH	NO. OF CASES (n=42)	PERCENTAGE
1	6 AM – 9 PM	17	40.5
2	9 PM – 6 AM	25	59.5



**FIGURE 2: TIMING OF EPH**

**TABLE NO. 4: DISTRIBUTION OF CASES BASED ON CAUSES:** Out of 42 cases 23 (54.8%) were having rupture uterus, 11 (26.2%) were uterine atony, 4 (9.6%) were Abnormal placentation, 2 (4.8%) were Couvelaire uterus and 1 (2.3%) was ectopic pregnancy and 1 (2.3%) was didelphy uterus with torsion.

SL. NO.	CAUSES	NO. OF CASES (n=42)	PERCENTAGE
1	Rupture Uterus	23	54.8
2	Uterine Atony	11	26.2
3	Abnormal Placentation	4	9.6
4	Couvelaire Uterus	2	4.8
5	Ectopic Pregnancy	1	2.3
6	Didelphy Uterus with Torsion	1	2.3



**FIGURE 3: DISTRIBUTION OF CASES BASED ON CAUSES**

**Table No. 5: Risk Factors Identified For Eph.**

SL. NO.	RISK FACTORS
1.	Socio - demographic factors
i	Low levels of literacy
ii	Marriage at an early age
iii	Socioeconomic deprivation
iv	Desire for large family
v	Low prevalence of contraceptive use
iv	Ineffective performance of MCH services
2.	Prior LSCS
3.	Multi gravida with prolonged (or) Obstructed labour
4.	Low lying (or) Abnormal placentation
5.	Failed conservative medical measures
6.	Failed interventions
7.	Inability to carry out the skilled procedures

**CONSERVATIVE MEASURES DONE**

1. Rent repair is done in favorable cases of Rupture uterus.

**2. For PPH - Medical management is done by using the following medications**

- i. Misoprostol, PGE<sub>1</sub> (oral, sublingual & per rectal),
- ii. Carboprost PGF<sub>2</sub>alpha (IM and intra myometrial),
- iii. Oxytocin (IM, IV infusion)
- iv. Ergometrine (IV or IM).

**3. INTERVENTIONS DONE ARE**

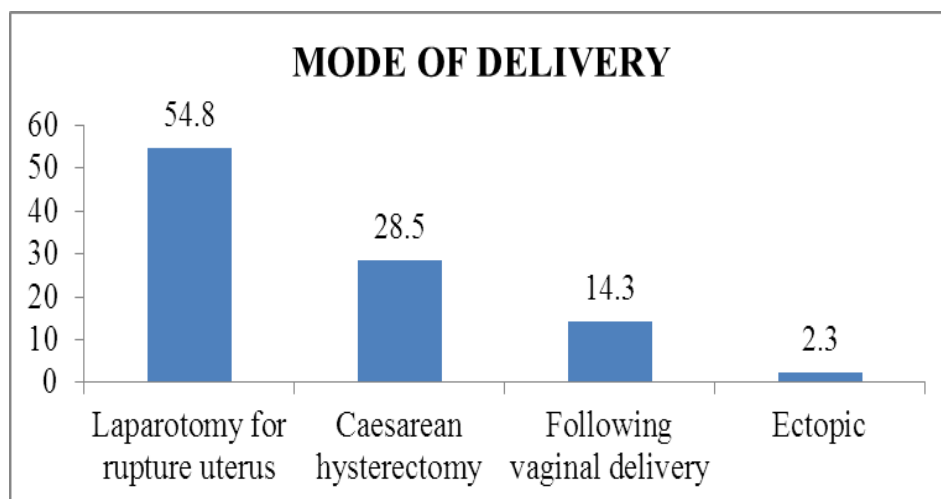
- Manual compression of uterus,
- Insertion of B –lynch sutures.
- Uterine packing with catheters & tamponade,

**Because of lack of experience we could not be able to do following conservative procedures**

- Uterine artery ligation
- Internal iliac ligation (hypogastric artery)
- Uterine artery embolisation.

**TABLE NO. 6: MODE OF DELIVERY: Out of 42 Laparotomy for rupture uterus was done in 23 (54.8%), Caesarean hysterectomy in 12 (28.5%), Vaginal deliveries 6 (14.3%) cases and 1 (2.3%) is chronic ectopic pregnancy with bilateral T.O. (Tubo ovarian) mass.**

SL. NO.	MODE OF DELIVERY	NO. OF CASES (n=42)	PERCENTAGE
1	Laparotomy for rupture uterus	23	54.8
2	Caesarean hysterectomy	12	28.5
3	Vaginal delivery	6	14.3
4	Chronic Ectopic pregnancy with bilateral T.O mass	1	2.3



**FIGURE 4: MODE OF DELIVERY IN 42 CASES OF EPH**

**TABLE NO. 7: PATIENTS UNDERWENT TYPE OF HYSTERECTOMY: Total hysterectomy was done in 30 (71.42%) cases and subtotal in 12 (28.57%) cases.**

SL. NO.	TYPE OF HYSTERECTOMY	NO. OF CASES (n=42)	PERCENTAGE
1	Subtotal	12	28.57
2	Total	30	71.42

#### **SUB-TOTAL EPH (Vs) TOTAL EPH**

- ❖ Women with subtotal hysterectomy (cervix is retained) are without cyclical menstruation & at risk for Ca Cx. (Cervical Stump-cancer).
- ❖ As the menstrual irregularities are the commonest complaints leads women to attend the gynecological clinic, it is an opportunity to screen the cervical cancer by subjecting them for pap - smear examination.
- ❖ In developing countries subtotal hysterectomised patients doesn't come for regular screening for Ca Cx.
- ❖ Where the conditions are favorable Total hysterectomy (uterus with cervix) is preferred, as the cervix is commonest site for gynecological cancer.

**TABLE NO. 8: STATUS OF LIVING CHILDREN: No Live Children in 9 cases & 1 Live Child in 19 cases were identified 2 or more in 14 cases.**

SL. NO.	STATUS OF LIVING CHILDREN	NO. OF CASES (n=42)	PERCENTAGE
1	NO LIVING CHILDREN	9	21.42
2	1 LIVE CHILD	19	45.23
3	2 OR MORE	14	33.33



**TABLE NO. 9: DISTRIBUTION OF CASES BASED ON PERINATAL OUTCOME:**

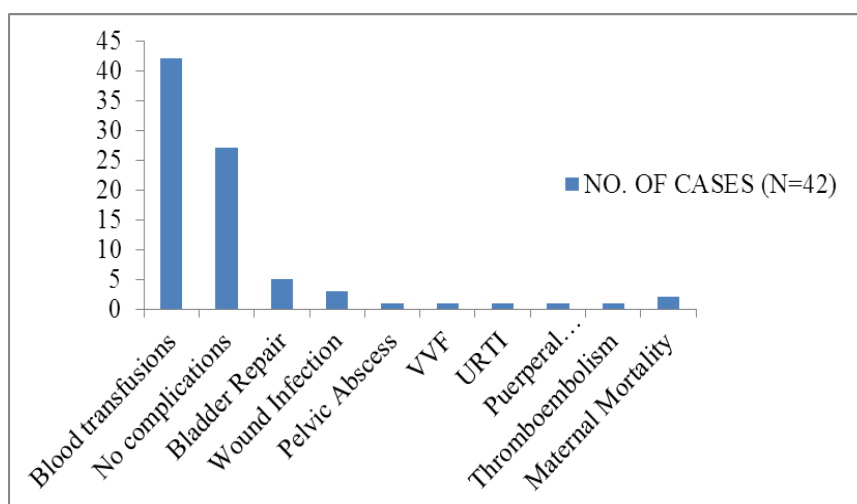
In 42 cases Perinatal Mortality were found in 16 (38%), IUD in 13 (30%) and Stillborn in 3 (7%).

SL. NO.	PERINATAL OUTCOME	NO. OF CASES (n=42)	PERCENTAGE
1	Live born	26	61.9
2	Perinatal Mortality	16	38
i.	IUD	13	81.25
ii.	Stillborn	3	18.75

**TABLE NO. 10: DISTRIBUTION OF CASES BASED ON MATERNAL OUTCOME:**

Out of 42, 5 (11.9%) were Bladder Repair, 3 (7.1%) were Wound Infection, 2 (4.8%) were Maternal Mortality, 1 (2.3%) were Pelvic Abscess, VVF, URTI, Puerperal Depression, Thromboembolism.

SL. NO.	MATERNAL OUTCOME	NO. OF CASES (N=42)	PERCENTAGE
1	Blood transfusions	42	100 %
2	No complications	27	64.3
3	Bladder Repair	5	11.9
4	Wound Infection	3	7.1
5	Pelvic Abscess	1	2.3
6	VVF	1	2.3
7	URTI	1	2.3
8	Puerperal Depression	1	2.3
9	Thromboembolism	1	2.3
10	Maternal Mortality	2	4.8

**FIGURE 5: CASES BASED ON MATERNAL OUTCOME**

## DISCUSSION

‘Storer’ performed the first cesarean hysterectomy in the United States in 1869.<sup>[8]</sup> Soon thereafter; **Porro of Milan** described the first cesarean hysterectomy in which the infant and

mother survived. As a mark of honor, the procedure is frequently referred to as the Porro operation.<sup>[8]</sup>

Peripartum hysterectomy is generally performed in life threatening situations and its incidence varies geographically. The incidence quoted in the literature varies between 1:303 to 1:5000 deliveries. Although the incidence of rupture uterus is high, this study does not include cases that had rupture uterus which were treated conservatively by rent repair.<sup>[10]</sup>

Obstetrical hysterectomy still remains a lifesaving operation. The most common indications for the obstetric hysterectomy are: rupture of the uterus, uterine atony and placenta's pathologies;. Obstetrical hysterectomy is connected with high risk of complications and maternal mortality.<sup>[11]</sup>

The risk factors were multiparity, previous cesarean delivery, current cesarean birth and abnormal placentation. Similar risk factors were observed in other studies.<sup>[13]</sup> Obstetric hysterectomy is a necessary life-saving procedure. Rupture uterus is the leading cause of emergency hysterectomy in our present study.

#### **Identified Triad of association for EPH**

- Grand multiparity
- Low socioeconomic class
- Unbooked cases

#### **This triad of conditions indicates risk factors<sup>[15]</sup>**

- The case fatality is due to severe blood loss anemia.
- Seriously complicated by coagulopathy, tissue hypoxia hypothermia and acidosis, which further compromise the patient's condition.
- Timing is critical to an optimal outcome.
- The Obstetrician will have to avoid spending time on alternative techniques that are proving ineffective and move judiciously to the **definitive and life saving** hysterectomy (EPH).

#### **CONCLUSION**

As the rupture uterus is the leading cause which in-turn due to obstructed labour or prolonged labour and previous c/s pregnancies without proper monitoring with partogram under the skilled observation.

- i. All efforts should be made to reduce the cesarean rates.
- ii. Prolonged labour should be avoided by proper diagnosis, clinical monitoring and appropriate timely interventions.
- iii. To avoid grand multiparity by practicing appropriate implementation of family welfare methods and advising suitable spacing in between pregnancies.

The incidence of peripartum hysterectomy is similar to the data found in studies of other Asian countries. EPH is associated with high perinatal, maternal mortality and morbidity limiting the child bearing capacity (procreative potential). The peripartum hysterectomised status **grieves** the woman and family members especially with **no live child** as permanently she lands up in **incapacitation** for child bearing and cyclical menstrual function.

To reduce this high incidence of peripartum hysterectomy effective MCH services to be exercised at all the levels of health care delivery system in developing countries like India to maintain safe-motherhood.

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