International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2014): 5.611

Hysterectomy for Uncontrolled Postpartum Bleeding: A Retrospective Review

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Abstract: ***Background:*** ***Postpartum hemorrhage is a major complication associated with pregnancy and delivery and is a leading cause of maternal morbidity and mortality. Emergency postpartum hysterectomy (EPH) is a surgical procedure usually performed as a life-saving measure to control massive hemorrhage. It includes both cesarean hysterectomies that are performed after cesarean delivery and postpartum hysterectomy performed after vaginal delivery. Despite the low frequency of EPH, the rising cesarean delivery rate in recent years and the increasing population with a scarred uterus may indirectly increase the incidence of EPH and its complications.[1-4] Objective: The purpose of this analysis is to determine the factors leading to and outcomes after EPH for uncontrolled postpartum hemorrhage in our hospital, in an era of increased cesarean deliveries. Methods and results: The study included cases of EPH performed at the time or within 48 hours of delivery, and described factors leading to uncontrolled postpartum hemorrhage, in women who delivered after 30 weeks of gestation. It was a retrospective analysis of 42 cases, in "Mbreteresha Geraldine" hospital, since 2008-2013. Demographic maternal characteristics, previous uterine surgery, conservative procedures to prevent emergency postpartum hysterectomy, type of hysterectomy (total or subtotal), factors leading to emergency postpartum hysterectomy, and maternal morbidity and mortality related to emergency postpartum hysterectomy were abstracted, presented as proportional rates (percentage). Results and comment: Maternal demographic characteristics showed that mean maternal age was 29,24 years old. Parity was reported in all 42 women, most of whom were multiparous (54 %). The type of hysterectomy was specified in 57,9% of cases of emergency postpartum hysterectomy (total hysterectomies 18,2%; subtotal hysterectomies, 81,8%). Additional surgery was required in 5,3% of cases. Of these cases, 63.0% had undergone uterine surgery in their obstetric history (≥1) and15,8% of these cases underwent gynecologic surgery other than cesarean delivery. The indication for EPH was listed: abnormal placental adhesion (38%), uterine atony (29%), placenta previa (12%), undefined bleeding (9%), abruptio placenta (7%), uterine rupture/dehiscence (2%) , myoma (1%), hematoma (1%), other (< 1%). In 90% of women, an attempt to stop bleeding was performed before hysterectomy with either administration of uterotonics, or surgical techniques (curetting of the placental in all dhe cases with cesarian delivery and only in 4 cases with vaginaly delivery . Maternal morbidity rate was 52,6% : fever (36%), KID(12%), infection (16%), genitourinary (11%), pulmonary (11%), gastrointestinal (5%), neurological (3%), renal (1%), cardiovascular (1%). 44,7% of women required blood transfusion. The maternal mortality rate was 2.6%, only one 42 cases. Conclusions or recommandations: Women at highest risk of emergency hysterectomy are those who are multiparous, had a cesarean delivery in either a previous or the present pregnancy, or had abnormal placentation.***

Keywords: "postpartum bleeding," "postpartum hysterectomy," "uterine atony," "cesarean hysterectomy," "placenta accreta," "increta," "percreta," and "placenta previa."

1. Introduction

There is evaluated to be approximately at 150.000 death toll annually, as a result of the uncontrolled postpartum hemorrhage. Postpartum bleeding is the common reason of death and it results to be ¼ of death in all the world (WHO 2005). In the developed countries it results to be approx 1/3 of death (Khan KS 2006). According to WHO 2004, there are at 14 million new cases per year of the postpartum bleeding having a percentage at about of 1% of the worst fatal cases.

Postpartum hyesterectomy (HPL) which is the uterine dissect in order to control the massive hemorrhage, during the cesarean section, which shall be performed immediately even after this sergery or/and natural labor induction as well as during the puerperium, in order to save the life. There is an indence of 0.8-1.2 for 1000 births based on our obstetrics practice. Therefore it is a small incidence it still brings out many remarkable surgeries in the terms of nowadays modern obstetrics practice, associated with a higher percentage of mother sickness and death toll.

During the last years it is shown to have an increase of the cesarean section as well as a population affected by a te cikatrizuar uterine which do affects indirectly to increase as well the HPL incidence and its complications.

HPL of emergency is performed in the 19th century in order to cut down the number of death and sickness asocciated with cesarean sections. Some years later such procedure was followed up by a bad reputation because of some less serious clinical indications as sterilization. In the two last decades one of the main factors of HPL remains the undetected bleeding. Some other reasons such as atony or uterine rupture and placenta previa diverge from one country to another, as well they do affect by the practice standards and quality of the antenatal service. Recent studies show that the ubnormal placent adherence – placent previa is pronounced as the main indicator in the obstetrics hysteroctomy and consiquently it has to do with the escalated numer of cesarean sections on these last decades, expanding so the number of the scared uterus. HPL of emergency is associated with serious loss of blood, introsergical complications and postpartum death and sickness[5-7].

2. Methodology

After a retrospective study performed at 42 HUP patients, at the University Hospital "Mbreteresha Geraldine", from 2008 – 2013, were taken into consideration cases with HPL

performed durind or/and within 48 hours after labor, where was described all factors bringing this postpartum bleeding out, respectively in women after week 30 of pregnancy. It was evaluated as following: the demographic characteristics of woman, previous uterine surgeries, conservative procedures to prevent HUP, class of hysterectomy, main factors of HUP, sickness and death associated with HPU. Such evaluation was expressed into percentage (%).

3. Results

The demographic characteristcs of the population included here were listed at **Table no.1** Such results showed that the average age was between 24.5 ± 6.6 up to 31.8 ± 5.9 years ol. It was noticed that 46% of the hysterectomies were performed in women with gestational age of less than 37%. Parity was shown in 42 (100%) women, mostly as multypare (23 out of 42 cases (77,9%)). We reviewed those caseswith women that have had previously a caesarean section. Out of 42 cases, 22 (52,4%) have had previously obstetrics uterine surgeries. Particularly, 5.3% of these cases have had additional surgeries, Out of these cases, only 63% have had previous obstetrics uterine surgeries and 15,8% of these cases, have had as well gynecologic surgeries besides obstetrics one. Out of 22 women having a cesareab section obstetric record, only 9 (41%) have had more than two caesarean section.

Table 1: Study Population Characteristics

	Cesarean Hysterectomy patiens (n=42)	Primary Cesarean Deliveries (n=20)	Repeat Cesarean Deliveries (n=22)
Maternal age-years (mean)	29.24 ± 6.3	24.5 ± 6.6	31.8 ± 5.9
Body Mass Index at Delivery ≥30	25 (58,8)	11 (55)	14 (63.4)
Gestacional age weeks ≥37 < 37	36.7 ± 3.4 23 (54,3) 19 (45,7)	37.1 ± 3.5 12 (61.3) 8 (38,7)	36.4 ± 3.3 11 (50) 11 (50)
Birth weight-grams	2950±847	3060 ± 842	2799 ± 838
Parity Nullipare Multipare	 8 (23) 23 (54)	 9 (45) 11 (55)	 22 (100)
Married	38 (92)	19 (95)	22 (100)
Smoker during pregnancy	4 (9.5)	2 (10)	0 (0)
Maternal Desease*	11(26,2)	5 (25)	9 (40.9)
Source of medical care non-private uninsured private	 35 (84) 7 (16)	 16 (80) 4 (20)	 21(95,45) 1 (4,54)
Prior C/S 0 1 2 ≥3	 20 (47,6) 13 (30,9) 6 (14,3) 3 (7.2)	 20 (100)	 0 (0) 13 (59,1) 6 (27,3) 3 (13,6)

Data is given in no (%) or average percentage ±SD

* as some the diseases is diabetes, thyroid, epilepsy, hypertension chronic cured before pregnancy, renal disease or and connective tissue disease.

Almost half of 49% of births ≤ 37 week of pregnancy, showed to have had tendency toward caesarean for placenta previa, 39% were primary caesarean sections and 50% repetitive caesarean sections. The mot typical primary indication for hysteroctemy in this group was placenta accreta 36% and uterine atony 26%. Category of hysteroctemy was specify into 57,9% of HPL cases (total hysterectomy 18,2% and subtotal 81.8%. Mostly of the cases underwent total anesthesia, even as some of them have strated to regional anesthesia,

Indications for HPL were listed: 1.abnormal placenta adhesion (36%), 2.atony uterine (26%), 3.placenta previa (12%), 4.undefined bleeding (9%), 5. Placenta abruptio (7%), 6.mioma (1%), 7.hematoma (1%), other (<1%).

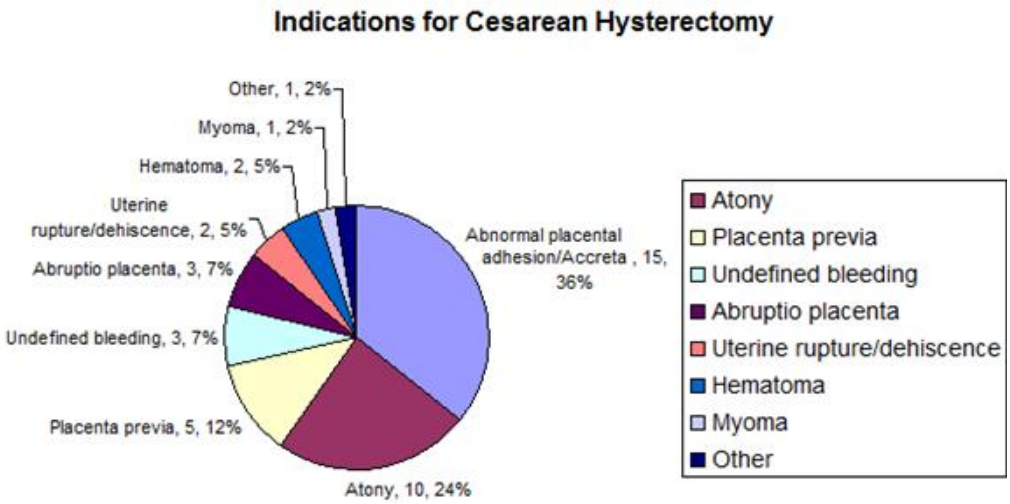
The main indications for hysterectomy are listed at **Table no.2**.

Most frequent were placenta akreta (36%) atonia uterine (26%). Out of all the women who underwent the caesarean section have had as well this diagnosis, only one of the groups needed hysterectomy. In total, approx 71% (n =15) of acreta cases and 4% (n=10) of atony, needed hysterectomy. On cases with hysterectomy of acreta plavents, 27% were associated with primary cesarean section and 73% were followed by a certain previous procedure in their obstetric anamnese ($p<0.001$).[9,10,11] On cases with hysterectomy of atony, 60% of them did implicate primary caesarean sections and 40% have had already a previous one ($p\leq 0.001$). At 12% of hysterectomy, were placenta previa and 10 women (23%) had placente previa and akreta as a risk factor.

Table 2: Indications of cesarean hysterectomy

Indikacations	Overall Number (N 42)	Primary Cesarean Deliveries (N 15)	Repeat Cesarean Deliveries (N 27)
Abnormal placental adhesion/Accreta	15 (36)	4 (26.7)	11 (40.7)
Atony	10 (26)	6 (40)	4 (14.8)
Placenta previa	5 (12)	1 (6.7)	4 (14.8)
Undefined bleeding	3 (9)	1 (6.7)	2 (7.4)
Abruptio placenta	3 (7)	1 (6.7)	2 (7.4)
Uterine Rupture/dehiscence	2 (4.8)	0 (0)	2 (7.4)
Hematoma	2 (4.8)	1 (6.7)	1 (3.7)
Mioma	1	1 (6.7)	0 (0)
Other*	<1		

Data presented as n (%)
* Extensive adhesions, patient desire, uterine artery laceration, inability to close uterus, diffuse uterine hemorrhage/uncontrolled bleeding.



4. Cesarean Sections with Hysterectomy

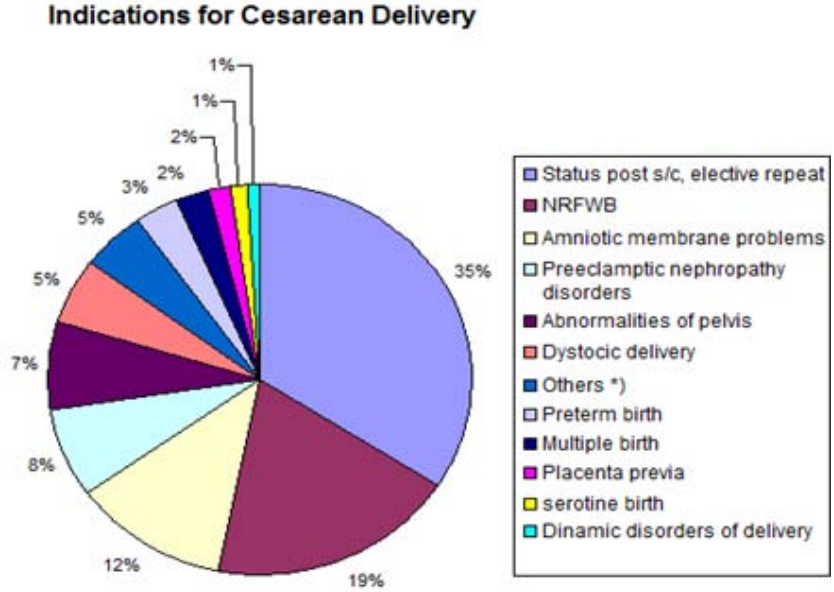
Number of births was at 43,375, during the period this study was performed, out of which 15,901 were cesarean sections and 42 women underwent cesarean hysterectomy.

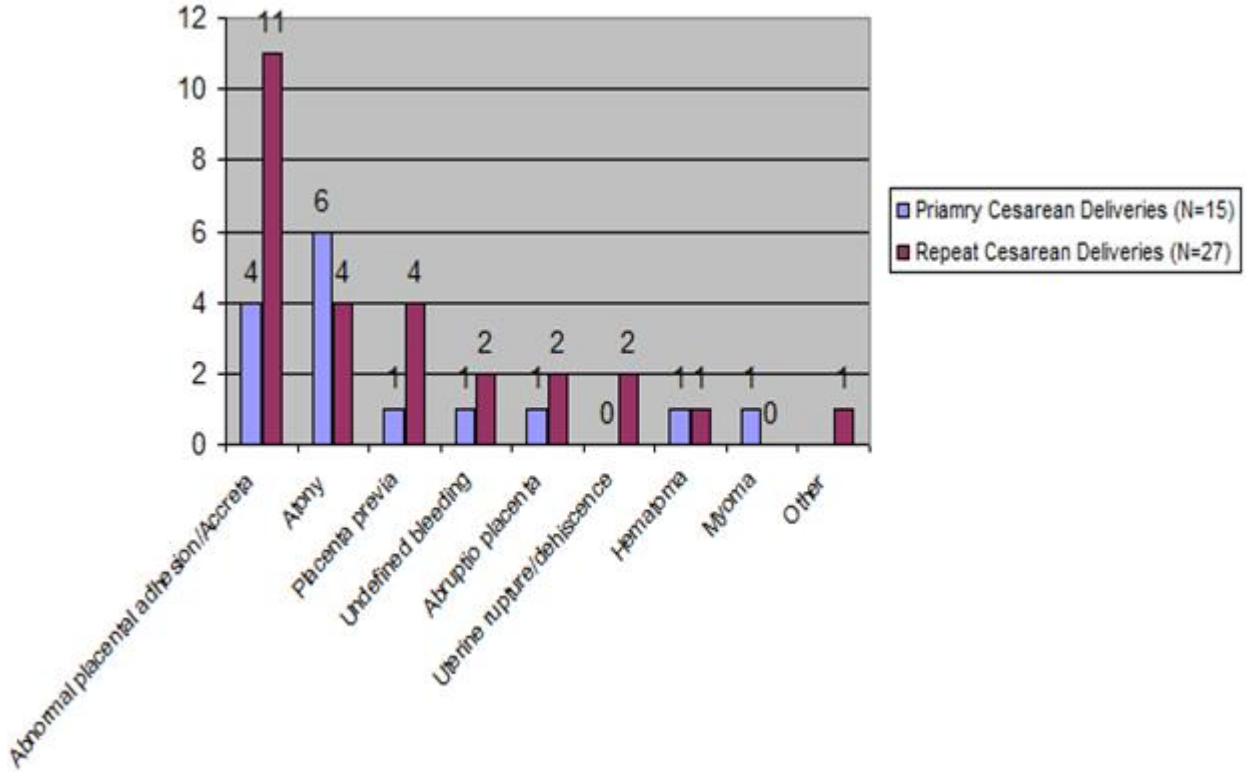
Percentage of births with S/C was at 35.4%. This resulted in 42 (0.27%) cesarean hysterectomy. Therefore out of 15,901 caserean sections, the frequency of hysterectomy is 1 to 378 S/C. Meanwhile based on statistical not significant data (p=0.12), was noticed a disparity of caserean hysterectomy incidence during 6 years of study, with a scale from 1 to 530 (0.2%) at 1 to 119 (0.8%) of caserean sections. The primary indications of caserean sections among those women who later performed hysterectomy, are listed at **Table no. 3.**

Table 3: The primary indications for cesarean delivery

Obstetritrics diagnosis	Cesarean Delivery (N= 15.901)
Status post s/c, elective repeat	4488
NRFWB	2504
Amniotic membrane problems	1543
Preeclamptic nephropathy disorders	1003
Abnormalities of pelvis	963
Dystocic delivery	716
Other *	649
Preterm birth	441
Multiple birth	326
Placenta previa	223
Serotine bith	194
Dinamic disorders of delivery	104
Morto in utero	73
Umbilical cord prolapse	50
Abort tardus	45
Gestacional diabetes	38
Endometritis ante/intra/post partum	13
Other postpartum complications	50

Based on previous cesarean sections done compose a scenario to higher risk of hysterectomy. The risk of hysterectomy had a growing trend based on the increase of the previous cesarean sections, starting from 0.3% of those who didn't have had previously cesarean section at 2.9% with three or more cesarean procedures (p<0.001 per trend)[8]





Complications of the cesarean hysterectomy. Complications of the hysterectomies are listed at **Table no. 4.** An acute loss of blood requested a transfusion izogrup e izorhezus, which is known as the most common complication.

- Overall 44.7% of hysterectomies need transfusion.
- As an average number of blood samples given intra-operatively was at 4.6 (SD +/- 5.4) and post-operatively was at 3.7 (SD +/- 4.0).
- An average difference of hematokritit (starting from preoperator values into the lowest postoperatore values) was 9.1% (4.8-13.9)
- Fresh frozen plasma was administered to 32% of patients; and platelets to 15%.

Table 4: Complications of Cesarean Hysterectomy

Complication	Number (%)
Transfusion (packed or whole red blood cells, fresh frozen plasm, platelets)	44.7
Post-operative fever	36
Infection	16
KID	12
Pulmonary	11
Genitourinary	11
Gastrointestinal	5
Neurological	3
Uretery injury	1
Cardiovascular	1
Maternal morbidity	52.6
Maternal mortality	2.6

Therefore the uterine damage occurred on 1% of the cases, shown here to verify the possibility of this complication into cesarean hysterectomy. At this patient was postitioned an uterine stent. Main reason of hysterectomy in this case was because of the placenta akreta. It was not recorded any colon damage referred for this case. There was only 1 death out of 42 cases (1.6%). The intervention was a cesarean Nderhyrja ishte ne nje lindje consecutive cezarian delivery and the indication for hysterectomy was atonia uterine.

5. Conclusions and Comments

- Women with high risk of hysterectomy of emergency were those multipare, who had done previously a cesarean section or/and abnormal placentia.
- Out of this study it was confermed that hysterectomy even an unusual one, was not rare on the implications deriving from the caserean section, an average occurence approx 0.27%.
- The risk of hysterectomy deriving from the placenta accreta is strongly and directly connected with the number of caserean sections.
- In our study, and in the statement of the obstetrics hysterectomy of emergency the accrete placenta was the main ordinary reason (36%) altogether with the uterine atony (26%).
- On the recent years, decrease of vaginal delivery after cesarean delivery, the placenta akreta may get bigger in frequency as an indicator of the future.
- Some contemporary reports do show higher percentage of accreta. i.e, Stanco (3) report that 50% of hysterectomy as a result of accreta, during a period where it was performed less successive and planned interventions. Akreta reason may be sub diagnosed in our retrospective study, as a result of a few factors, mainly is the the lack of a previously reported pathology confirmation.
- Some cases of atony may be complicated in situ from placenta accrete causing unchecked bleeding.
- Within the study were included women that underwent post cesarean hysterectomy, laparotomi performed after

the original procedure. Each one of them may have altered the real number of placenta accreta.

- Our study confirmed that the aggravation of the sickness may be present after a post cesarean hysterectomy as a result of an abnormal placentia (accreta) or/and uterine atonie.
- As the complication frequency presents to low after a non emergent hysterectomy that is associated with a cesarean section, in some defined cases some have approved what was reflected in a post cesarean unplanned hysterectomy.
- The comparison between the selected hysterectomy and an emergent hysterectomy shows that the selected hysterectomy may be accompanied with less bleeding, sickness and body temperature as well as a shorter operative period.
- There is a lack of data regarding the study of selective hysterectomy as the hysterectomy of emergency. Some of the interventions may have been performed in a controlled and planned situation, in a larger number than the selective hysterectomy.
- The most common illness after a hysterectomy of emergency were transfusion (44,7%). Transfusion percentage scale expressed in an average numer of unities taken out as intra-operatorly is comparable with what other studies refer.
- There was seen cases with temperature of (36%). This might reflect Kjo mund te reflektoje perdorimin profilaktik aktual te antibiotikeve ne praktike.
- Regardless of using the most effective therapies and procedures in order to control bleedings during the cesarean section, there is only a few patients that request for a hysterectomy to prevent bleeding out of uterine atoni or a abnormal placentia.
- The analysis of this study might act as a referee for the health service providers as well as awareness of women to define risks coming out of cesarean hysterectomy and its predictable complications
- Consequently, an obstetric doctor may as well face the dilemma of decision making among a conservative option or keep on the aggressive management. Such choice shall be well balanced between what a woman chooses in order to keep up her fertility compared with the risk coming with the delay of performing the postpartum emergency hysterectomy which might bring out a more serious condition and death.

Remember:

1. 90% of all postpartum bleeding are detectable
2. Hemorrhage has probably killed more women than any ather complication of pregnancy in the history of mankind.
3. Women do not die as a result of our incompetence to treat and cure their sickness. Women do die because the society needs to make its call for decision making considering the fact that their life does worth! (Mamoud Fathalla, Precident of FOGSI.1997)

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