Original Article

Changing Trends in Peripartum Hysterectomy at Tertiary Institute in Nepal

Bista KDB

Department of Obstetrics & Gynecology, Tribhuvan University Teaching Hospital, Institute of Medicine, Kathmandu, Nepal.

Correspondence to: Dr Kesang D B Bista , Department of Obstetrics & Gynecology, Tribhuvan University Teaching Hospital, Kathmandu, Nepal

E Mail: kesangdikibista@hotmail.com

Abstract

Introduction: Peripartum hysterectomy refers to hysterectomy done during or immediately after delivery for obstetrical reason .The decision of hysterectomy is not an easy one as not doing it could lead to death where as the surgery results in permanent loss of ability to bear a child and this too in a young woman.

Methods: This was a prospective study done over a period of 16 years from 1997 to 2013 by following all cases that underwent hysterectomy for obstetric causes during or after delivery and upto 6 weeks after delivery, in Department of Obstetrics and Gynecology,Tribhuvan Univercity Teaching Hospital, Nepal .The various factors were analyzed and data presented in percentages, means and odds ratio was calculated as necessary. P value less than 0.05 was taken as significant.

Results: The emergency peripartum hysterectomy rate was 0.05% .Placental abnormality was the most common indication(42.6%) followed by uterine atony (35.7%)and uterine trauma(17.9%). Cesarean Hysterectomy accounted for 50% of the cases. In the last 16 years there was an increased trend of Cesarean section from 18.6% to 30.7% which coincided with an increased Cesarean Hysterectomy from 36.4% in the initial 8 years to 58.8% in the last 8 years. Placental abnormalities as an indication increased over uterine atony in the last 8 years. The most common risk factor was Cesarean section (71.4%) followed by placental abnormalities (42.8%) and previous abortion in 32.1% cases .

Conclusion: Emergency Peripartum Hysterectomy rate was 0.05%. Increasing Cesarean section rates were associated with increasing Cesarean Hysterectomy rates.

Key words: emergency, peripartum, hysterectomy

Introduction

Hysterectomy done for obstetric reason is one decision which is difficult to make. The nature and clinical situation with which we are faced is an acute one where, on one hand hysterectomy may be life saving but on the other hand the child bearing capacity is fully lost. Most of these women are young so the dilemma is even greater. Peripartum hysterectomy has been defined in various ways but basically includes those cases of emergency hysterectomy which are done during delivery and in the postpartum period for obstetric related indications. The traditional reasons for which it is being done has gone some changes and the problems faced are those resulting from increasing Cesarean Section (CS) and its complications thereof.

This study was therefore done to assess the indications for hysterectomy at our institute and the risk factors involved so that we could find ways to prevent and or be properly prepared for such emergencies.

Methods

This was a retrospective analysis of all cases of hysterectomy done at cesarean section or after delivery upto the puerperium ie 6 weeks postpartum for obstetrics related indications during the last 16 years from 1997 -2013 in Department of Obstetrics and Gynecology, Tribhuvan University Teaching Hospital, Kathmandu, Nepal. All case sheets were analysed and all necessary information were filled into a pre formed questionnaire. Permission from Department and Hospital Ethical Committee were taken . Data was analysed using mean and percentages and Odds Ratio (OR) with 95% confidence interval (CI) were estimated to evaluate the association between peripartum hysterectomy and mode of delivery.

Results

Table 1 : General statistics

Delivery	Number
Total delivery	54353
Total vaginal delivery	40539(74.59%)
Total LSCS delivery	13814(25.41%)
Total Peripartum Hysterectomy	28 (0.052%)

Among the peripartum hysterectomy cases the age of the patients ranged from 19-39 yrs with mean age of 27.5yrs.

Table 2: Patient characteristics

Age	number	parity	number
<20yrs	1(3.6%)	Primi	7 (25%)
21-25yrs	7(25%)	P1	13 (46.4%)
26-30yrs	16(57.1%)	P2	4(14.3%)
31-35yrs	3(10.7%)	P3	2 (7.1%)
>35yrs	1(3.6%)	>P3	2(7.1%)

The period of gestation ranged from 26 weeks to 41 weeks with mean gestational age of 37.3 weeks. Term pregnancies were 18(64.3%) and preterm deliveries accounted for 10 (35.7%) cases. Cesarean section was the mode of delivery in 20(71.4%) cases, instrumental in 2 ((7.1%) and vaginal delivery in 7 (25%) cases. The risk of hysterectomy with CS was found to be increased with OR 7.3 (95%CI 3.2-16.7). With vaginal delivery the risk of hysterectomy was not increased with OR 0.13(95% CI 0.6-3.0)

Fetal outcome was good with only 1 IUFD. There were 13 females and 16 males and mean weight of newborn was 3kg.

Table 3: Indication of LSCS

Indication	Number (n=20)
Placenta Praevia	6 (30%)(4 came with antepartum Hemorrhage
Fetal distress	3 (15%)
Cephalo Pelvic Disproportion	3 (15%)
Non progress of labour	1 (5%)
Primi Breech with PIH	1 (5%)
Failed induction	1 (5%)
Prev CS ,post dated	1 (5%)
Prev 2 CS	1(5%)
Hand prolapse of 2nd twin	1(5%)
Triplet	1(5%)
Incomplete uterine rupture	1(5%)

The blood loss ranged from 300 ml in a placenta accreta case to 4L in a case of uterine atony. In cases of secondary post partum haemorrhage there were repeated episodes of bleeding which were difficult to estimate. Hysterectomy was done during the Cesarean section (CS) in 14(50%) of case, whereas it was done after delivery in the rest of cases (50%) . Of those in which the hysterectomy was after delivery 6 of the cases were after CS, 6 after vaginal and 2 after instrumental delivery. After delivery hysterectomy was done in the first 24 hrs in 9(32.1%) cases and after 24 hrs in 5(17.9%) cases. The cases in which hysterectomy occurred within 24 hrs the main causes were atony (5 cases) and uterine trauma (3cases) and 1 case of adherent placenta. Out of the 5 cases in which the hysterectomy had to be done after 24hrs, 4 were due to secondary PPH with sepsis and uterine wound dehiscence.

Table 4: The indications of hysterectomy were

Indication	Number
Placental abnormality: placenta praevia (7) adherent placenta(9),	12(42.6%)
Primary PPH with atony	10(35.7%)
Uterine trauma/rupture uterus	5(17.9%)
Secondary PPH with sepsis	4(14.3%)

Table 5: The trend of indications for hysterectomy seen in the last 16 years

Indication	First 8 years (1997-2005)	Second 8 yrs (2006-2013)
Total cases	11	17
CS Hysterectomy	4(36.4%)	10 (58.8%)
LSCS Rate	18.6%	30.7%
Primary PPH with atony	3 (27.3%)	4 (23.5%)
Placental problems Placenta praevia Adherent placenta	3 (27.3%) 1 (was adherent) 2	9 (52.9%) 6 (3 was adherent) 3
Trauma, rupture uterus	2 (18.1%)	3 (17.6%)
Secondary PPH with wound sepsis	3 (27.3%)	1 (5.9%)

Placental abnormalities were the leading cause (43%) of hysterectomy followed by uterine atony (36%). In many cases placenta praevia was associated with atony and this combination proved to be deadly. Analysing the trend of hysterectomy for obstetrics reasons, it is seen that over the years the percentage of CS hysterectomies has increased drastically from 36% to 59% in these last 8 years. This has coincided with the increasing CS rates in these years from 18.6% to 30.7% . Placental abnormality especially placenta praevia has replaced atony as the leading cause for hysterectomy in recent years.

Total hysterectomy was done in 13(46.4%) cases and subtotal hysterectomy in 15(53.6%) cases. Unilateral adnexal removal had to be done in 5 cases along with the hysterectomies.

There were 2 mortalities, both being due to irreversible shock. One in a case after cesarean section with uterine artery laceration and broad ligament haematoma and another after vaginal delivery with uterine atony.

Table 6: Morbidities associated with hysterectomy

Morbidities	
Prolonged hospital stay	Mean 11days
Blood transfusion	All cases, mean of 6 pints
ICU stay	10 (35.7%)
Sepsis	8(28.6%)
DIC	3 (10.7%)
Relaparotomy	1 (3.6%)

Table 7: Risk factors for Peripartum Hysterectomy

Risk Factor	Number	percentage
LSCS	20	71.4
Placental abnormality	12 { placenta praevia (7), adherent placenta (9)}	42.8
Prev abortion	9	32.1
Prev LSCS	7	24.9
Induction of labour	5	17.8
PIH	4	14.3
Multiple gestation	2	7.1
Big baby> 4kg	2	7.1

Discussion

The incidence of emergency peripartum hysterectomy is seen to vary between 0.24 -8.7 per 1000 deliveries according to a recent medline review of emergency peripartum hysterectomies published in the English literature.[1] In the last ten years the trend has not drastically increased although the indications might have shown a change. Studies done in Asian countries show varying incidence with 2.6/1000 deliveries in India,[2] 0.9/1000 deliveries in HongKong,[3] 10.52/1000 deliveries in Pakistan and 8.5/1000 deliveries in China .[4,5]

Studies done in Midddle Eastern countries show the peripartum hysterectomy rates to be 0.5/1000 deliveries in Saudi Arabia,[6] Jordan 0.8/1000 deliveries,[7] 0.39/1000 deliveries in Kuwait and 0.29/1000 deliveries in Turkey . [8,9]

In European countries the peripartum hysterectomy range varies from Greece 0.92/1000 deliveries,[10] Netherlands

0.33/1000 deliveries and 0.48/1000 deliveries in London .[11,12]

In Australia 0.85/1000 deliveries and 0.4/1000 deliveries in New Zealand land up with peripartum hysterectomy. [13,14]

In South African countries, the incidence of peripartum hysterectomy ranged between 0.2%(2/1000 deliveries) to 0.95% (9.5/1000 births). [15,16] The rates varied depending on the nature of cases and availability of essential emergency obstetric care.The rate in the US was 0.02% in the first decade of twentieth century[17]. The incidence of peripartum hysterectomy was seen to be 0.05% ie 0.5/1000 deliveries at this institute, which is in keeping with trends seen in developed countries. The incidence in another institute in Nepal was also found to be on the lower side ie 0.07%.[18] The low incidence could be explained by the fact that both these studies were in tertiary level institutes in the capital city where facilities are relatively better and most of the cases being booked cases . In countries like Africa the incidence seems to be higher probably due to the poor obstetric services and infrastructure and in most cases hysterectomy is being done for rupture or atony after obstructed labour. In the Nigerian study 80% of the cases were unbooked. [15]

Common indication for peripartum hysterectomy: The most common indication for peripartum hysterectomy has traditionally been for uterine atony. But over the years there are increasing reports of placental abnormalities taking precedent over atony. In this present study the most common indication for hysterectomy was placental abnormalities(42.6%) which included placenta praevia and morbidly adherent placenta. The review by Lovato also has shown that abnormal placentation was the most common indication with ranges between 45 to 73% compared to uterine atony 20-42%.[1] In developed countries placental abnormalities and atony account as the two major indications of hysterectomy whereas in developing countries uterine rupture and atony account for the majority of cases. This could be due to the poor infrastructure and lack of obstetric care which results in women coming with obstructed labour and rupture uterus. In the South African studies where rupture and atony are most common, between 50-80% of the cases were unbooked. [15,16]

A study in Dublin, comparing the indications for hysterectomy between the years 1966-1975 with 1996-2005 found that the indications have changed significantly with uterine rupture as the indication decreasing from 40.5 to 9% ($p<0.0001$) and placenta accreta as the indication increasing significantly from 5.4% to 46.5% ($p<0.00001$).[19] In the study by Hernandez et al, at a single institute between 1988-2009 there was a three fold increase in pathologically confirmed placental invasion in the second half of the decade (p value <0.001).[20] In this present study too, in the later half of the study, placental abnormalities (52.9%) has overtaken atony (23.5%) as one of the most common indication for peripartum hysterectomy . Apart from the increasing CS rate, this could also be explained by the easy availability of prostaglandin F2alpha and increasing use of conservative measures like B Lynch at our institute to conservatively manage uterine atony before resorting to hysterectomy.

Cesarean Section as a risk factor: With the changing scenario of indications for peripartum hysterectomy, the risk factors have also changed simultaneously. In this present study the CS hysterectomy rate has shown an increasing trend from 36.4% to 58.8% which has coincided with increasing CS rates from 18% to 30%. The risk of hysterectomy was increased with CS in index pregnancy with OR 7.34 (95% CI 3.2-16.7). Kwee et al in his study noted that both previous CS and CS in the index pregnancy were associated with significant increased risk of emergency peripartum hysterectomy. The number of previous LSCS was related to an increased risk of placenta accreta, 0.19% for one previous LSCS to 9.1% for four or more previous LSCS.[2] In the study by Flood and colleagues, he has shown that although peripartum hysterectomy has decreased over the last 4 decades, along with the rising Cesarean delivery rate, there has been a marked increase in the incidence of placenta accreta.[19] In the studies done in Sydney and New Zealand too there was significant association between previous uterine surgery and abnormal placentation ($p=0.02$), especially those with previous Cesarean ($p= 0.03$). [13,14] In the study by Tapisiz et al, he showed that 7/7 ie 100% cases with placenta praevia and 11/12 ie 91.7% with placenta accreta had previous cesarean section.[21] In a study done at a tertiary institute in London, it was found that independent risk factors for emergency peripartum hysterectomy were history of previous caesarean section (OR 13.5, 95% CI 2.7-65.4), caesarean delivery in index pregnancy (OR 11.6, 95% CI 2.1-68.6) and caesarean delivery in index pregnancy for placenta praevia (OR 18, 95% CI 3.6-69).[12]

Therefore it can be said that the increasing Cesarean section not only increases risk in present pregnancy but also in forthcoming pregnancies by increasing the placenta praevia and abnormal invasion rates. Therefore steps to decrease the primary cesarean rate will help to reduce the risks associated with it. Studies have also shown that prior knowledge of abnormal placentation is associated with less chance of emergency hysterectomy for massive haemorrhage.[22] Apart from the usual conservative measures like B Lynch, uterine artery ligation and figure of 8 compression sutures, novel methods like Triple P procedures

(which involves perioperative placental localization and delivery of the fetus via transverse uterine incision above the upper border of the placenta; pelvic devascularization; and placental non-separation with myometrial excision and reconstruction of the uterine wall) have been advocated as a safe and effective alternative method to conserve the uterus. [23]

Conclusion

The incidence of Emergency Peripartum Hysterectomy was low in this institute. Placental abnormalities were the most common indication for peripartum hysterectomy replacing uterine atony. Increasing Cesarean trends have been associated with increasing risk of cesarean hysterectomy. Awareness of the risk factors, anticipation with prior diagnosis and employment of conservative measures will help to reduce the incidence of emergency peripartum hysterectomy.

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