Original Research Paper Medical Science

Peripartum hysterectomy-analysis of last 5 years in a tertiary care centre in north Kerala

Dr.Beena George	Associate Professor of Obstetrics and Gynaecology ACME, Pariyaram, Kannur, Kerala
Dr. Veena Praveen	Associate Professor of Obstetrics and Gynaecology ACME, Pariyaram,Kannur, Kerala
Dr. Ajith S	Professor of Obstetrics and Gynaecology ACME, Pariyaram, Kannur, Kerala
Dr. Deepak Raju	Consultant interventional cardiologist, Indira Gandhi Metro Cardiac centre, Thalassery

ABSTRACT

This retrospective study of peripartum hysterectomy was conducted in Dept of Obstetrics and Gynecology in ACME Pariyaram. Previous records of peripartum hysterectomy during period of 5 years (2011-2015) were reviewed in detail. The parameters studied were demographic details, previous obstetric history, details of the current pregnancy and delivery, indications for peripartum hysterectomy, outcomes of hysterectomy, intraoperative and postoperative complications, length of hospital stay, amount of blood transfused, neonatal outcomes, maternal complications. Overall incidence of EPH was 2.1 per 1000 deliveries, 27% were following vaginal deliveries and 73% were following CS. The parity specific risk was higher in multiparity. Common indications of emergency peripartum hysterectomy were placenta previa in 61% , uterine atony in 23%, uterine rupture in 15%. 65 % cases underwent total hysterectomy; 35 % subtotal hysterectomy.

KEYWORDS EPH, Uterine atony, abnormal placentation

Introduction

Emergency peripartum hysterectomy (EPH) is a major surgical venture invariably performed in the setting of life threatening hemorrhage during or immediately after abdominal and vaginal deliveries.It is a life saving surgery.It is one of the most demanding surgical procedures performed in obstetrics. Hysterectomy following cesarean section (CS) was first described by Parro in 1876, and was used to prevent maternal mortality due to post partum hemorrhage[1]. In modern obstetrics, the overall incidence of EPH is 0.05%, but there are considerable differences in incidence in different parts of the world, depending on modern obstetric services, standards and awareness of antenatal care, and the effectiveness of family planning activities. Incidence of peripartum hysterectomy in the literature is reported as 0.24, 0.77, 2.3, and 5.09 per 1,000 deliveries by Sakse et al., Whiteman et al. , Bai et al. and Zeteroglu et al., respectively[2]. Severe postpartum hemorrhage was reported to occur in 6.7/1,000 deliveries worldwide.

Main causes of the uncontrollable hemorrhage necessitating an EPH have changed since the 1980s. Uterine atony and rupture have been overtaken by abnormal placentation in many studies. This may be due to improved conservative management of uterine atony, reduced incidence of uterine rupture due to the extensive use of the lower uterine segment incision, actual increase in the incidence of the morbidly adherent placenta(rising rate of CS). Studies have consistently demonstrated that previous CS increases the risk of EPH and abnormal placentation is associated with a previous uterine scar.It is also established that the risk of EPH increases with the number of previous CS. Other factors that have been associated with EPH include advanced maternal age, multiparity, multiple gestations and gestational diabetes.

Conservative treatment of postpartum hemorrhage includes uterotonics (oxytocin, ergotamine), uterine massage, uterine artery embolization, uterine packing, pelvic vessel ligation, B-Lynch suture, multiple square sutures, and recombinant-activated factor VII . Most severe complication of hemorrhage is maternal death. Maternal death occurs in 1 in 100,000 deliveries in developed countries and 1 in 1,000 deliveries in developing countries Other maternal complications of postpartum hemorrhage include hypovolemic shock, disseminated intravascular coagulopathy, renal failure, hepatic failure, and adult respiratory distress syndrome (ARDS)

Aims and objectives

Objectives of this retrospective study are to examine the incidence, risk factors, indications, outcomes and complications of EPH performed in a tertiary teaching hospital, between 2011 January to 2015 December, and to compare the results with other reports in the literature. This would help highlight the lack of availability and utilization of antenatal services, identify avoidable factors, and stress the need to organize health care services so as to improve maternal and fetal outcome.

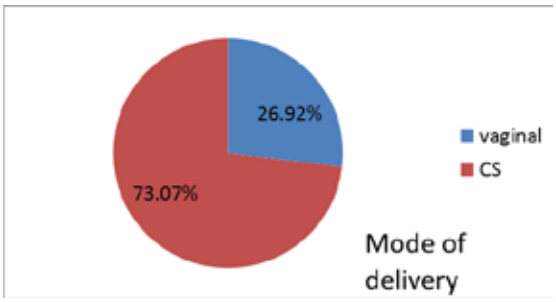
Patients and methods

This study was a retrospective case series study conducted in Dept of Obstetrics and Gynecology, ACME Pariyaram. Medical records of patients who had undergone emergency hysterectomy following vaginal or cesarean delivery between January 2011 and December 2015, in a tertiary teaching hospital, were reviewed retrospectively. The parameters studied were demographic details,previous obstetric history,details of the current pregnancy and delivery, indications for peripartum hysterectomy, outcomes of hysterectomy, intraoperative and postoperative complications, length of hospital stay, amount of blood transfused, neonatal outcomes, maternal complications

Results

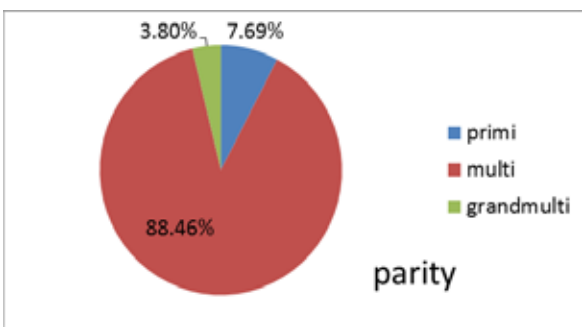
During the 5year study period between 2011 to 2015 there was 8536 total of deliveries in our institution. 26 peripartum hysterectomies were reported in this period;of which 18 delivered in our hospital, all were CS, 8 cases were referred after delivery representing an overall incidence of 2.1 per 1000 deliveries. 27 % [7] were following vaginal deliveries and 73% [19] were following CS.

Table 1



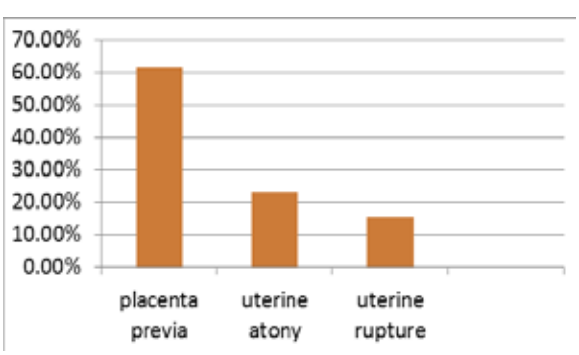
The incidence of cesarean hysterectomy was much higher than that of hysterectomy following vaginal deliveries. Age distribution among 26 patients who underwent EPH revealed that 42.3% [11] were between age 20-30years and 57.6% [15] were between 31-40 years. It showed a rising trend in the frequency of EPH with increasing age. Among the 26 patients 7.69% [2] were primigravida, 88.46[23]were multigravida and 3.84 [1] were grand multi. The parity specific risk was higher in multiparity.

Table 2.



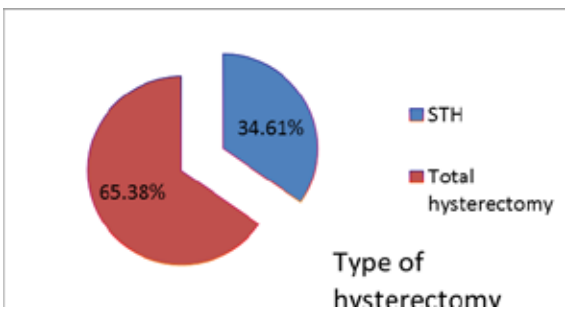
46.15%[12]were above 37weeks, 42.30% [11] between 34 and 37 weeks and 11% [3] cases were less than 34 weeks of gestation out of which one case was placenta percreta with intraperitoneal bleeding at 28 weeks. 69.23% [18] cases had undergone prior cesarean out of which 12 cases had history of 1 CS,5 were previous 2 CS and 1 was previous 3 CS. 3 patients had undergone uterine curettage earlier. Common indications of emergency peripartum hysterectomy were placenta previa- 16 (61.53%), uterine atony-6(23.07%), uterine rupture-4(15.38%).

Table 3.



57.69% [15] cases due to morbidly adherent placenta of which 3 cases were placenta percreta.One case was placenta previa only .All cases of placenta previa were previous cs. 4 cases of uterine atony were following vaginal delivery ;2 cases following CS. One case had multiple large fibroids and had uterine atony following cs. 2 cases of uterine rupture were following instrumental delivery ;one case had rupture at fundus following vaginal delivery and one was scar rupture in a case of previous 3 cs. 4[15.38%] had bladder injury and all of them had morbidly adherent placenta. 1[3.8%] developed acute renal failure and required dialysis.7[26.92%] had febrile morbidity ,4 due to URI , 2due to LRI, 1due to wound infection. 3 patients [11.53%] needed relaparotomy due to intraperitoneal bleed.One of them required another laparotomy after hours to remove the pelvic pack. 12 patients [46.15%] had mild to severe coagulopathy ,One had post operative paralytic ileus. 17 patients [65.38%] underwent total hysterectomy; 9 [34.61%] were subtotal hysterectomy.

Table 4.



There was no significant difference between both in operative time,blood transfusion,ICU admission or hospital stay. STH was mainly dictated by the condition of the patient. Internal iliac ligation was done in 9[34.61%]cases. B Lynch suturing done in 2 cases. 2 cases required removal of one adnexa and one required removal of both adnexa to assure adequate hemostasis. Less than ten blood was required in 19 cases,10 to20 in 4 cases and more than 20 in 3cases. 73.07%[19] cases required <or equal to 10 days of hospital stay;26.92%[7] cases required >10 days of hospital admission. In 88.46% [23] patients had live birth;3 patients had IUD.

Discussion

Despite advances in medicine and surgery, postpartum hemorrhage remains one of the leading causes of maternal morbidity and mortality. Peripartum hysterectomy is performed in the treatment of a life-threatening obstetric hemorrhage that cannot be controlled by conventional methods. Reported incidence of emergency peripartum hysterectomy varies from 0.24 to 5.09 per 1,000 deliveries in the literature. Our incidence of 2.1 per 1,000 deliveries is in agreement with the recent studies . Zeteroglu et al. reported the incidence of EPH in a teaching hospital as 5.09/1,000 deliveries, which is higher than that of other studies because it was a tertiary care centre[2].Similarly our incidence may also be higher than actual due to referred cases.

In our study, majority of patients who underwent EPH were in age group ≥30 years and were multipara. Similar trend was observed by Amad and Mir and Barclay et al[3,4]. Other risk factors for EPH like previous cesarean birth, induced labor, current cesarean delivery, and abnormal placental implantation and invasion, were similar to the literature.

In 1984, Stanco et al. reported that 43.4% of their emergency hysterectomies were done because of uterine atony, while 33.9% were due to placenta previa with accreta[5]. A study from the same institution in 1993 stated that their primary indication was placenta accreta, the problem in 45% of cases, followed by uterine atony, with 20% cases. The rate of EPH increased with increasing age and parity. The present study identified placenta accreta as the major reason for EPH. All the cases of morbidly adherent placenta were previous CS.The risk of having placenta accreta increased from 24% with one prior CS to 67% with 3 or more CS. The availability of prostaglandin preparation may contribute to the decreased need for hysterectomy due to uterine atony.

Peripartum hysterectomy is associated with high complication rates, mainly due to the need for massive blood transfusions, coagulopathy, and injury of the urinary tract, and it is also associated with the need for reexploration because of persistent bleeding and febrile morbidity. Urological injuries appear to be related to scarring and secondary adhesion of the vesicouterine space following previous cesarean section. In comparison with Smith's 6%, Kwee's 15%, Yucel's 8.8%, Zeteroglu's 12.5%, and Zelop's 9%, our urinary tract injury rate is 15 %[6,7]. Higher percentage of urological injuries may be due to increase in prior CS cases and placenta previa. In our series 40 % developed disseminated intravascular coagulopathy, similar to 33% rate previously reported by Smith and Mousa and Lau et al[6,8]. Reexploration was performed in 11% for persistent postoperative bleeding, compared with Smith's 11%, Kwee's 25%, Zeteroglu's 12.5%, and Ozden's 6.8%[2,6,7].

There was one maternal death (7.7%) in our study. Lower rates of 4 and 4.5% were cited by Kwee et al. and Zorlu et al. and much higher rates of 20 and 23.8% were found by Hamsho and Alsakka and Umezurike et al[7,9,10,11]. Our low mortality rate may be related to a high rate of antenatal follow up and optimal obstetric intervention in the cases of EPH in our department. Our results confirm the previous observations that EPH is associated with high operative and postoperative complications rates.

Comorbidities were PIH in 2 cases, GDM in 2 cases, AFLP in 1 case, IUD &Abruption in 1 case, PPROM in 1 case, Anemia in 2 cases, Multiple large fibroids in 1 case.

In majority TAH was done compared to STH. Some authors preferred STH because of reduced operating time,need for blood transfusion,and intra and post operative complications. Some preferred TAH when there is active bleeding from lower uterine segment as the cervical branch of uterine artery may remain intact. Total hysterectomy is the recommended surgical method of EPH due to the potential risk of malignancy developing in the cervical stump and the need for regular cytology and other associated problems such as bleeding or discharge associated with the residual cervical stump. Currently the proportion of subtotal hysterectomy performed for EPH ranges from 53% to 80% .The proponents of subtotal hysterectomy report a lesser blood loss, a reduced need for blood transfusion, reduced operating time and reduced intra and postoperative complications. Subtotal hysterectomy may not be effective in management of accreta located in lower uterus. Total hysterectomy should however be considered when active bleeding occurs from lower uterine segment as the cervical branch of uterine artery may remain intact. All pedicles are doubly ligated because of hyperemia and peripartum pelvic tissue tears. Final decision to perform subtotal or total hysterectomy would be influenced by patient's condition. While total abdominal hysterectomy is a more convenient procedure, subtotal EPH may be a better choice in certain conditions where surgery needs to be completed in a shorter time. Internal iliac artery ligation was done prior to EPH in 6 cases of morbidly adherent placenta. In 3 cases it was done during relaparotomy due to intra peritoneal hemorrhage. Conservative measures to arrest bleeding are initially tried before considering EPH. The measures include uterotonic drugs, uterine or hypogastric artery embolisation, hemostatic sutures, uterine or internal iliac artery ligation.Conservative management is of particular importance in patients who are young, have low parity and who are haemodynamically stable. However while there are reports of 96% success rate following uterine artery ligation there are others who have achieved success in only 39.4% of these cases. The choice between conservative management and EPH should be individualized. In situations where conservative treatment is likely to fail or has failed, there should be no further delay in performing EPH as delay leads to increase in blood loss, transfusion requirement, operative time, DIC, and increased possibility of admission to ICU.

Conclusion.

Risk factors associated with emergency peripartum hysterectomy should be identified antenatally. High risk group of women should be delivered by skilled birth attendants and following protocols of action. Cesarean delivery should be performed only when exclusively necessary, in appropriate clinical settings and by experienced surgeons when such risk factors are identified. The combination of factors including high parity, number of previous cesarean sections, abortion, previous curettage, strongly increased the likelihood of placenta previa and increased risk of abnormal adherent placenta. Therefore, it appears prudent for the obstetrician to prepare for the possibility of EPH for massive hemorrhage in patients undergoing cesarean section with these risk factors. Proper surgical measures such as hemostatic sutures or uterine or hypogastric artery ligation or embolization are options in attempting uterine conservation particularly in patients who are young and in whom future fertility is important and who are relatively haemodynamically stable. When conservative treatment is not feasible or has failed, prompt EPH is performed failing which the delay would contribute to the maternal morbidity and in unfortunate cases mortality.

References

1. Parro E. Dell amputazione utero-ovarica come complement di taglio cescareo. Ann leniv Med chir. 1876:237–289. (cited by Durfee RB: evolution of cesarean hysterectomy. Clin Obstet Gynecol 1969; 12(3): 575-589.
2. Zeteroglu, Y. Ustun, Y. Engin-Ustun, G. Sahin, and M. Kamaci, "Peripartum hysterectomy in a teaching hospital in the eastern region of Turkey," European Journal of Obstetrics Gynecology and Reproductive Biology, vol. 120, no. 1, pp. 57–62, 2005.
3. S. N. Amad and I. H. Mir, "Emergency peripartum hysterectomy: experience at Apex Hospital of Kashmir Valley," Internet Journal of Gynecology & Obstetric, vol. 8, no. 2, 2007
4. D. L. Barclay, B. L. Hawks, and D.M. Frueh, "Elective cesarean hysterectomy: a 5 year comparison with cesarean section,"American Journal of Obstetrics and Gynecology, vol. 124,no.8, pp. 900–911, 1976.
5. L. M. Stanco, D. B. Schrimmer, R. H. Paul, and D. R. Mishell, "Emergency peripartum hysterectomy and associated risk factors," American Journal of Obstetrics and Gynecology, vol. 168, no. 3, pp. 879–883, 1993S.
6. J. Smith and H. A. Mousa, "Peripartum hysterectomy for primary postpartum haemorrhage: incidence and maternal morbidity," Journal of Obstetrics and Gynaecology, vol. 27, no.1, pp. 44–47, 2007
7. A. Kwee, M. L. Bots, G. H. A. Visser, and H. W. Bruinse, "Emergency peripartum hysterectomy: a prospective study inthe Netherlands," European Journal of Obstetrics Gynecology and Reproductive Biology, vol. 124, no. 2, pp. 187–192, 2006.
8. W. C. Lau, H. Y. Fung, and M. S. Rogers, "Ten years experience of cesarean and postpartum hysterectomy in a teaching hospital in Hong Kong," European Journal of Obstetrics & Gynecology and Reproductive Biology, vol. 74, pp. 133–137,1997.
9. C. G. Zorlu, C. Turan, A. Z. Is¸ik, N. Danis¸man, T. Mungan, and O. G¨okmen, "Emergency hysterectomy in modern obstetric practice. Changing clinical perspective in time," Acta Obstetricia et Gynecologica Scandinavica, vol. 77, no. 2, pp. 186–190, 1998.
10. M. A. Hamsho and M. Alsakka, "Emergency obstetric hysterectomy in Qatar—a 20-year review," International Journal of Fertility and Women's Medicine, vol. 44, no. 4, pp. 209–211,1999.
11. C. C. Umezurike, P. A. Feyi-Waboso, and C. A. Adisa, "Peripartum hysterectomy in Aba southeastern Nigeria," Australian and New Zealand Journal of Obstetrics and Gynaecology, vol.48, no. 6, pp. 580–582, 2008.