INTRODUCTION

Hysterectomy is one of the common gynaecological procedures however in obstetrics it is a rare and lifesaving procedure. The first successful cesarean hysterectomy was done in 1876 by Eduardo Porro in which both the mother and baby survived.\(^1\) Centuries have passed, obstetrician are still adherent to this complex surgical procedure which needs years to excel and are learning to make a wise timely decision in order to decrease maternal mortality and morbidity.

The incidence varies from 0.24-8.9/1000 deliveries.\(^2\) Most of the cases are Emergency Peripartum Hysterectomy (EPH) which is performed at the time of cesarean section or following vaginal delivery for abnormal placentation, uterine atony and ruptured uterus whereas elective are reserved for preoperatively diagnosed morbidly adherent placenta, pregnancy with cervical cancer and huge fibroid.\(^3\) Earlier the most common indication for EPH was uterine atony but these days it is due to abnormal placentation.\(^4,5\) This rise in abnormal placentation has been seen in parallel to rising cesarean section.\(^6,7\)

This study was undertaken to find out the incidence of EPH, indications and its morbidities in our center.

METHODS

This is a hospital based retrospective study conducted over a period of 18 months from April 2017 to October 2018. Approval for the study was taken from the ethical committee of the hospital. The data were collected from the record section and records maintained at Operation Theater. The variables studied were age, parity, risk factors, conservative measures, morbidity, duration of surgery and anesthetic management. Descriptive data were generated as percentage and mean.

RESULTS

There were a total of 30917 deliveries among which 18 cases had EPH so it was 0.58/1000 deliveries. Eight were done during cesarean section and 5 for ruptured uterus. Morbidly adherent placenta and placenta praevia (8; 44%)
were the common indication for EPH followed by ruptured uterus (5; 28%), uterine atony (4; 22%) and one case of bleeding disorder. There was no elective peripartum hysterectomy during the study period. [Table-1]

Table-1: Incidence of EPH according to mode of delivery

<table>
<thead>
<tr>
<th>Mode of delivery</th>
<th>Total delivery</th>
<th>EPH</th>
<th>EPH/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean Section</td>
<td>7520</td>
<td>13</td>
<td>1.73</td>
</tr>
<tr>
<td>Vaginal delivery</td>
<td>19324</td>
<td>5</td>
<td>0.26</td>
</tr>
</tbody>
</table>

The average age of women who underwent EPH was 28.9 (range: 19-36) years. The mean weeks of gestation was 36w3d (range: 30w – 40w6d). There were 16 (94.44%) multigravida, 1 grand-multi and 1 primi. The identified common risk factors were past cesarean section (8 single and three twice) and morbidity adherent placenta/ placenta previa (7; 39%).

Primary medical and conservatory measures were applied in all cases prior to proceed for hysterectomy. Among 5 case of vaginal delivery, 4 received uterine plus compression suture and uterine artery ligation in one case; and one had internal artery ligation. Seven cases had total hysterectomy and subtotal in 11 cases. EPH is associated with increased morbidities. [Table-2]

Table-2: Post-operative morbidities

<table>
<thead>
<tr>
<th>Infective/febrile morbidity</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Febrile morbidity</td>
<td>7</td>
</tr>
<tr>
<td>Wound infection/ Dehiscence</td>
<td>3</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>1</td>
</tr>
<tr>
<td>Septicemia</td>
<td>1</td>
</tr>
<tr>
<td>Pneumonitis/ Pneumonia</td>
<td>1</td>
</tr>
</tbody>
</table>

Despite these measures, two maternal deaths occurred who had vaginal delivery. Infective febrile morbidity occurred in 13 cases, 3 had bladder injury and one DIC. Average anaesthesia time (for 11 general, 3 spinal, 3 spinal to general and one intravenous to general anaesthesia) was 149 minutes (range: 1-4 hours). Hospital stay is not related with only EPH and includes from antepartum observation till discharge; so it averaged 16.9 (range: 1-44) days. ICU stay averaged 4.5 (range: 1-16) days. Blood transfusion was 7.7 units in average (range: 2-13) with average blood loss of 3150 (range: 1000-5000) ml.

DISCUSSION

There has been varying incidence of peripartum hysterectomy in different centers in different parts of the world. In developed countries like Australia and New Zealand it was 0.85/1000 and 0.4/1000 deliveries respectively whereas in a center in India it was reported to be as high as 6.9/1000 deliveries.8-10 In our center it was 0.58/1000 deliveries, similar rates were seen in other tertiary centers in Nepal.11,31 There has been increased EPH in women who underwent cesarean section compared to the vaginal delivery.12 It was 1.73/1000 deliveries in cesarean section and 0.26/1000 deliveries among vaginal delivery.

There has been a shift in the indication for EPH. Earlier it was uterine atony.13 Currently, worldwide we can see the most common indication being abnormal placentation.14 In our center the most common indication for EPH was abnormal placentation in 44.0%. Similar indication was observed in India which contributed for 43.1% and in Korea 54.3% of cases.15,16

This shift has been closely related to the rising cesarean section worldwide. Both cesarean section and prior cesarean section were strong risk factors for emergency peripartum hysterectomy with higher risks conferred for each additional cesarean section. Although WHO states 10-15% of CS rate is optimal but in our center its 30% whereas in private centers in Nepal it is as high as 81%,17,18 This is a global problem, even developed countries are facing the same so the increased risk of emergency peripartum hysterectomy should be factored into the decision of whether to proceed with cesarean delivery, particularly for women who desire more children.19

The second common indication being ruptured uterus as 28%. Still in some centers in Nepal and Nigeria it contributes to be the major indication of EPH accounting for 65.5% (21/19,539 deliveries) and 73.3% (22/7532 deliveries) respectively. The main reason being unbooked cases, obstructed labour and previous cesarean section.20,21 Whereas in some center, in Nepal and Egypt the primary indication is uterine atony.11,22

EPH is a massive challenge to the obstetrician and anesthesiologist. It's associated with massive blood loss so requires prompt measures to balance the haemodynamics. There’s prolonged operating time with mean duration of 149 minutes. In Korea the mean operative time was 189 minutes.16 It needs expert surgical skill to perform peripartum hysterectomy, so the surgeon decides whether to perform subtotal or total hysterectomy. In our center there were 11 (61.11%) subtotal hysterectomy which might be attributed to surgeon’s competency, shorter operating time and better control of haemorrhage compared to total hysterectomy. Similar practice was seen in Pakistan and Saudi Arabia.23,24

With peripartum hysterectomy, its associated with serious morbidities. Febrile morbidity as 27% was
most common followed by wound dehiscence and bladder injury 20%. Similar finding was observed in a tertiary center in India.10 Apart from febrile morbidity bladder injury is the most common morbidity in other centers as well.22,23 Mortality from peripartum hysterectomy is more than 25 times that of hysterectomy performed outside of pregnancy.14 Peripartum hysterectomy is also associated with increased financial burden to the health care cost and psychological trauma.24,27

In modern obstetrics, uterus preserving procedures are proven to be promising. The novel technique like the “Triple P Procedure” (Perioperative placental localization and delivery of the fetus via transverse uterine incision above the upper border of placenta, Pelvic devascularization, Placental non separation with myometrial excision and reconstruction of the uterine wall) and Uterine Artery Embolization can be embraced in our practice as well.28,29

CONCLUSIONS
The primary indication of EPH is abnormal placentation with previous cesarean section and the cesarean section is associated with increased morbidity.

REFERENCES