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Original Research Article

Histopathological examination of emergency obstetric hysterectomy specimens

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ABSTRACT

Background: Obstetric hysterectomy is done as a lifesaving procedure in very trying circumstances of life threatening severe hemorrhage. The study was undertaken with the aim to evaluate the relative frequency of hysterectomy done for obstetric indication among the hysterectomy specimens and also to assess the histopathological findings in the hysterectomy specimens.

Methods: The study was conducted at a tertiary care center over a period of two and half years. Consecutive specimens of hysterectomy done for obstetrical indication were included. Gross and microscopic findings noted and data analysed. The study was approved by the Institute Ethical Committee.

Results: Of the total hysterectomy specimens received obstetrical hysterectomy comprised only 1.3%(12/915) of all the hysterectomies. Patient's age ranged from 20-36 years; mean 28.6 years. Parity ranged from 1 to 5; mean 2. More multiparous women 91.7%(11/12) had hysterectomies as compared to primiparous 8.3%(1/12) cases (p value <0.0001). All patients had single pregnancy. All (100%) patients underwent surgery through abdominal route with subtotal hysterectomy with preservation of the bilateral adnexae undertaken in most (11/12; 91.7% cases). About 5(41.6%) cases hysterectomies were performed after previous caesarean section and had abnormal placentation. Histopathological examination revealed adherent placenta in 33.4%(4/12), endometritis in 25%(3/12), rupture in 25%(3/12) and histologically unremarkable in 16.6%(2/12) cases.

Conclusions: Obstetric hysterectomy is an emergency lifesaving procedure done in situations of uncontrolled post-partum hemorrhage. In recent years with more number of caesarean sections the incidence of abnormal placentation has drastically increased, thus making adherent placenta as the most common histopathological finding.

Keywords: Adherent placenta, Caesarean section, Emergency obstetric hysterectomy, Histopathological examination, Post-partum hemorrhage

INTRODUCTION

Obstetric hysterectomy is done as a lifesaving procedure in very trying circumstances of life threatening severe hemorrhage at the time of delivery. In the year 1876

caesarean hysterectomy was first described by Eduardo Porro an Italian obstetrician to reduce hemorrhage.^{1,2} The procedure usually involves removal of the uterus only while retaining cervix and adnexae. Multiple underlying factors contribute to the need for emergency

hysterectomy especially in women having undergone previous delivery by caesarean section. The study was undertaken with the aim to evaluate the relative frequency of hysterectomy done for obstetric indication among the hysterectomy specimens and also to assess the histopathological findings in the hysterectomy specimens.

METHODS

The study was conducted at a tertiary care center. Consecutive specimens of hysterectomy done for obstetrical indication were included in the study for a study period of two and half years. Detailed clinical information was noted and consent was taken. The hysterectomy specimens were washed to remove excess blood followed by fixation in 10% formalin. Gross examination done and specimens were thoroughly sectioned and representative blocks were obtained as per the guidelines for handling of surgical specimen.³ At least two sections each were taken from cervix, uterine wall including adjacent myometrium, ovaries and fallopian tubes depending on the size of specimen and requirement multiple sections were taken.

The tissue was processed through graded alcohol in Leica automatic tissue processor, paraffin embedded, sectioned and routinely stained with Haematoxylin and Eosin. The histopathological findings were noted as per the protocol. Statistical analysis was done using paired t-test. The study was approved by the Institute Ethical Committee.

RESULTS

During the study period of two and half years of the total hysterectomy specimens obstetrical hysterectomy comprised only 1.3% (12/915) of all the hysterectomies. The youngest patient was 20 years old while the oldest was 36 years old, mean age 28.6 ± 5.2 years. The age distribution of cases is as shown in Table 1.

Table 1: Age distribution of cases.

Age (years)	Number	Percentage
10-20	1	8.3
21-30	7	58.3
31-40	4	33.3

Table 2: Indication for obstetric hysterectomy.

Study	Uterine rupture (%)	Atony (%)	Abnormal placentation (%)	Haemorrhage at caesarean section (%)	Abruptio placentae (%)	Secondary Post-partum haemorrhage (%)	Non obstetric indication (%)
Dutta et al ¹⁰	67						
Thonet et al ¹¹	31.8	-	22.7	9		27.2	9
Al- Sibai et al ¹²	53.8	-	25.6	4.3		20.5	-
Ogyunniyi et al ¹³	62.5						
Suchartwatnachai et al ¹⁴	10	32.5	31.2				
Wong et al ¹⁵	-	42.8	42.8	-	15.2		
Baskett et al ¹⁶		32.8	50				
Okogbenin et al ⁶	30.4	28.2	19.5			4.3	
Ecezhi et al ¹⁷	9.1	45.5	45.8				
Sharma et al ¹⁸	15.4	14.7				15.4	
Sakse et al ¹⁹		25.4	30.9				
Rahman et al ²⁰	23.3	23.3	39.5	11.6	-		
Christopoulos et al ²¹		26.6	73.3				
Wong et al ²²	10.5	16	63				
Chawla et al ²³	17.5	25	21				
Bhattacharya et al ⁵	32		24.7			43.2	
Satia et al ²⁴		48	34				
Present study	25	16.6	25	-	-	33.3	-

Table 3: Histopathological findings in various studies.

Study	Adherent placenta (%)	Placenta previa (%)	Endometritis (%)	Fibroid (%)	Rupture (%)	Unremarkable (%)
Chibber et al ²⁹	20	7.1		14.2	-	58.9
Bhattacharya et al ⁴	32	-	-	4.9	-	63.1
Present study	33.4	-	25	-	25	16.6

Parity ranged from 1 to 5; mean parity was 2. More multiparous women 91.7%(11/12) had hysterectomies as compared to primiparous 8.3%(1/12) and this was statistically significant (p value <0.0001). While the period of gestation ranged from 28 weeks to term with a mean of 38 weeks. The most common indication for hysterectomy was post-partum hemorrhage as seen in 33.3%(4/12) cases followed by abnormal placentation and rupture seen in 25%(3/12) cases each and uterine atony seen in 16.6%(2/12) cases.

All patients had single pregnancy. Six (50%) hysterectomies were performed after vaginal delivery and 6 (50%) performed after caesarean section. In 5(41.6%) cases hysterectomies were performed after previous caesarean section. Abnormal placentation was seen in 5 patients in form of placenta percreta 1, placenta accreta 2 and placenta previa 2 cases. Most (4; 80%) were associated with uterine scar due to previous caesarean section except in 1(20%) case with prior vaginal delivery. Patients with placenta previa had atonic hemorrhage. Three patients had rupture uterus 1 had prolonged labour followed by vaginal delivery with cervical tear at home by dai and two had history of instrumentation of which 1 patient had transverse arrest of fetus with obstructed labour and rupture uterus with fetus found lying in the peritoneal cavity. In 4 patients hysterectomy was done for secondary postpartum hemorrhage which occurred in patients within five days of delivery, on day 45 and day 52 respectively after delivery. There was uterine sub involution due to uncontrollable secondary postpartum hemorrhage. Histopathological examination revealed post-partum endometritis in this group of patients.

All (100%) patients underwent abdominal hysterectomy. Subtotal abdominal hysterectomy with preservation of the bilateral adnexae was undertaken in most (11/12; 91.7% cases) except in one patient who had total abdominal hysterectomy.

Histopathological examination revealed adherent placenta in 33.4%(4/12), endometritis in 25%(3/12), rupture in 25%(3/12) and histologically unremarkable in 16.6%(2/12) cases.

DISCUSSION

In present study obstetric hysterectomy was done in patients in 3rd and 4th decade which is comparable to study by few other authors while Okogbenin et al had cases even in the 5th decade.⁴⁻⁶ Further on some authors have attributed age more than 35 years as a risk factor.^{4,7,8}

Multiparous and multigravida cases constituted majority of hysterectomies as also seen in present study with most of the pregnancies going onto term.^{4,5,9} Review of literature revealed uterine rupture was the most common clinical indication before 1990, thereafter abnormal placentation and post-partum hemorrhage took over as discussed in Table 2. No elective obstetric hysterectomy

was done for gynecological indication like cervical intraepithelial neoplasia or leiomyoma as the indication.^{4,11}

Study of literature emphasizes on the preference of subtotal hysterectomy in cases of emergency peripartum hemorrhage however at the same time it is necessary to assess the surgical accessibility, patient's condition before deciding the route of surgery.^{24,25} Subtotal hysterectomy is a reasonable alternative in emergency peripartum hysterectomy as the total time of surgery is less thus less amount of blood loss and less chances of injury to adjacent structures like urinary tract.^{4,6,17,26} Subtotal hysterectomy was done in most of the cases in present study and also in studies by few other authors also.^{5,12,20} Study by some authors had more number of total hysterectomies and recommended total hysterectomy in case of bleeding from lower uterine segment and abnormal placentation like placenta previa.^{4,16,27}

In present study the adnexae were retained while in study by Dobrosława et al unilateral or bilateral adnexae were removed in 15.4% cases due to hematoma of the parametrium or history of malignancy.⁴

History of previous caesarean section is also a risk factor as abnormal placentation, to be more specific morbidly adherent placenta at the site of caesarean scar leading to uncontrolled post-partum hemorrhage and ultimately to emergency obstetric hysterectomy. Thus, the need to regularize the guidelines for performing caesarean section.^{4,5,7}

On histopathological examination adherent placenta was the most common finding while few authors found no histopathological lesion. The finding of endometritis was seen exclusively in the present study and this could be attributed to the time duration of about 45 days post-partum.^{5,28} The Table 3 shows the histopathological findings in various studies. An incidental finding of leiomyoma has been observed by some authors, the fibroid was about 2-5 cm in diameter in most while a asymptomatic leiomyoma up to 8 cm was also seen in study by few authors.^{4,5,28}

CONCLUSION

Obstetric hysterectomy is an emergency lifesaving procedure done in situations of uncontrolled post-partum hemorrhage. In recent years with more number of caesarean sections the incidence of abnormal placentation has drastically increased, thus making adherent placenta as the most common histopathological finding.

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