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EMERGENCY OBSTETRIC HYSTERECTOMY

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ABSTRACT… Background: Emergency hysterectomy in obstetric practice is generally performed in the setting of life-threatening hemorrhage which fails to be controlled by conservative management. **Objective:** To review 8 years' experience of emergency obstetric hysterectomy in a teaching hospital. **Study Design:** A retrospective descriptive study based on hospital data of 156 patients undergoing emergency Obstetric hysterectomy. **Settings:** Obs. & Gynae. Department Unit-I, PMC Allied Hospital Faisalabad. **Methods:** This was a retrospective review carried out from March 2004 to Feb 2012 Main outcome measures were frequency, indications, associated risk factors and maternal morbidity and mortality associated with emergency peripartum/obstetric hysterectomy. **Results:** During 8 years there were total 156 (0.38%, 3.8 per 1000) emergency obstetric hysterectomies out of which there were 46 caesarian hysterectomies, 65 post partum, 45 for ruptured uterus with total number of delivery 40062. Number of hysterectomies was 48 in the first 4 years of the study (March 2004- Feb 2008) and during the last 4 years (March 2008- Feb 2012) it was 108. Maximum obstetric hysterectomies were in para 3-5 (53.20%) and in 26-30 years age group (35.89%). The most common indication for hysterectomy was uterine atony (44.23%) followed by uterine rupture (28.85%), Placenta accreta (14.745%) and placenta previa (11.53%). The maternal mortality was 6.41% (10 patients). In this series 80% patients were referred from other areas. **Conclusions:** Frequency of emergency Obstetric hysterectomy is high in our tertiary center and it is continuously increasing due to increased referral of patients. The mortality and morbidity of performing obstetric hysterectomy is higher in patients referred from outside hospital.

Key words: Obstetric hysterectomy, peripartum hysterectomy, atony, post partum hemorrhage, abnormal placentation, ruptured uterus.

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INTRODUCTION

Peripartum or Emergency obstetric hysterectomy is defined as any hysterectomy performed within 24 hours of a delivery[1]. It includes both postpartum and cesarean hysterectomy. It is a vital procedure to save life of a mother although it is opted as a desperate attempt when all measures fail to control catastrophic hemorrhage from placental bed in previa or moribund adherence of placenta or due to uterine atonia[2]. Emergency obstetric hysterectomy was first performed in the 19th century to lessen the high maternal mortality and morbidity related with the caesarian delivery. The indications were mainly grave sepsis and hemorrhag[3]. Subsequently common indications for emergency peripartum hysterectomy were uterine rupture and uterine atony[4]. Over the past 2-3 decades indication for hysterectomy were uncontrollable haemorrhage due to placenta accreta or uterine atonia[5]. The risk factors for abnormal placcentation include scarred uterus owing to previous cesarean section, myomectomy, dilatation and curettage, multiparty and older age group.

As reported by Clarke[6] et al incidence of placenta previa increases from 0.5% in general population to 3.9% after one caesarean section and up to 10% after four caesarean sections. The incidence of placenta accreta is 5% in patients with placenta previa and one caesarean scar; while moribund placental adherence increases to 67% with previous four caesarean sections[4].

MATERIALS AND METHODS

Data of all patients admitted in labour ward from March 2004 to Feb 2012, regarding frequency of hysterectomy, maternal age, parity, causes

of hemorrhage, type of hysterectomy and its complications, was retrieved from yearly maintained registers / performas of obstetrical hysterectomy.

Exclusion Criteria

Lower segment caesarian sections performed on elective list. Obstetric hysterectomy performed after 24 hours of delivery.

Inclusion Criteria

All normal vaginal deliveries and emergency caesarian sections and all obstetric hysterectomies done within 24 hours of delivery.

In our setup emergency obstetric hysterectomy is mostly performed by senior obstetrician, junior obstetricians and senior residents are not allowed to proceed for obstetric hysterectomy.

RESULTS

Total number of deliveries (normal vaginal and emergency caesarean) during the study period was 40062 out of which 156 emergency obstetric hysterectomies were undertaken; these were 65 postpartum, 46 Caesarian, 45 hysterectomies after ruptured of gravid uterus frequency being 0.38% (3.8 in 1000 deliveries). In the first 4 years (2004-2008) total number of emergency obstetric hysterectomies was 48 while in the last 4 years (2008-2012) they were 108 showing the increasing trends in the procedure.

Study	Total hysterectomies	Duration	Incidence per 1000 deliveries
Glaze S et al[1]	87	8 year (1999-2006)	0.8
Christopoulos et al[5]	15	14 year (1994 to 2009)	.92
Clark et al[6]	70	4 year (1978 to 1982)	1.02
Zelop,et,al[7]	117	9 year (1983 to 1991)	1.55
Nusrat Shah[8]	69	5.5 year (2002 to 2007)	6.8
Gupta, et al[9]	169	5 year (1976 to 1980.)	1.69
Authors' Study	**156**	**8 year (2004 to 2012)**	**3.8**

Table-I: Comparison of incidence of obstetric hysterectomy in different studies

The three most common causes were uterine atony in 69 women (44.23%) followed by ruptured uterus in 45 women (28.85%) and morbidly adherent placenta in 23 women (14.74%), placenta previa in 18 (11.53%) and fibroid uterus in one patient.

Indication		No. of patients	%age
Uterine atony	Post NVD	65	44.23
	Post LSCS	4	
Uterine rupture, trauma or broad ligament haematoma		45	28.84
Moribund adhesion of placenta increta & percreta		23	14.74
Placenta previa		18	11.53
Fibroid uterus		1	0.64
Total		156	99.98

Table-II: Main indications for EOH

Maximum 56 (35.89%) emergency obstetric hysterectomies were done in 26-30 years age group followed by 31.41%, 18.58% and 14.10% in 31-35, 20-25 years, and 36-40 years age groups respectively.

Age in years	No. of patients	%age
20-25	29	18.58
26-30	56	35.89
31-35	49	31.41
36-40	22	14.1
Total	156	99.98

Table-III. Distribution of emergency obstetric hysterectomy according to age

Para 3-5 was most vulnerable group (83 patients, 53.20%) followed by 20.51%,17.30 % and 8.97% in P_{6-8}, P_{0-2} and P_{9-11} groups respectively.

Parity	No. of patients	%age
P_0-P_2	27	17.30
P_3-P_5	83	53.20
P_6-P_8	32	20.51
P_9-P_{11}	14	8.97
Total	156	99.98

Table-IV: Number of patients according to parity

Ten women died; giving mortality of 6.41% out of these 8 (5.12%) were in group A (referred) and 2 (1.28%) in group B (booked). These were due to DIC following acute blood loss in 4, prolonged hypovolemic shock 4, septicemia 1 and anesthesia complication in 1.

Risk factors were identified in three most common indications for hysterectomy. These risk factors for uterine atony were induction of labour outside hospital 20, injudicious use of oxytocin 20, placental abruption in 8, Chorioamnionitis 6, twin delivery 3 and inversion of uterus in 2 patients. While in ruptured uterus 17 patients had prior uterine scar, injudicious use of oxytocin in 10, Manipulation in 4, Obstructed labour 3, cervical tears extending up to the uterus 3 and 2 had instrumental delivery. Considering morbidly adherent placenta in 22 out of 23 women had prior caesarean .In placenta previa 14 out of 18 had either previous surgery or curettage.

Type of obstetric hysterectomy	Risk factors	Number	Total
Postpartum	Induction of labour	20	65
	Injudicious use of oxytocin	10	
	Abruption	8	
	Chorio aminionitis	6	
	Twin delivery	3	
	Inversion	2	
	No risk	16	
Rupture	Scarred uterus	17	45
	Instrumental delivery	2	
	Obstructed labour	3	
	Manipulation for second twin	2	
	Manual removal of placenta	2	
	Injudicious use of oxytocin	19	
Caesarian hysterectomy	Abnormal placentation	23	46
	Placenta previa	18	
	Fibroid	1	
	Abruption (atonia due to couvalair uterus)	2	
	Uterine atonia	2	
Grand total		156	156

Table-V. Risk factors of emergency obstetric hysterectomy

88% were markedly anemic. Minimum blood transfusion of 3 units and maximum of 8 units were given. Only 20% of women were booked. Total hysterectomy was undertaken in 49 (31.41%) and subtotal in 107 (68.59 %.) women.

Type	Number	%age
Total hysterectomy	49	31.41
Subtotal hysterectomy	107	68.59
Total	156	100.00

Table-VI. Type of hysterectomy

Morbidity was noted in 68 (43.59. %) out of which 60 were in group A (referred) and 8 (5.13%) in group B (booked). Major intra-operative complications were bladder injury 7 (4.49%) injury to ureter 2 (1.28 %,), rectum1 (0.64%). Extended surgery included repair of bladder in 7, internal iliac ligation 7 (five at the time of hysterectomy while two were done at re laparotomy for secondary hemorrhage) and colostomy1 patient. Out of 2 internal iliac ligations, one had injury to rectum at re laparotomy. Postoperative wound infection 15 (9.62%), DIC 5 (3.21%), burst abdomen 4 (2.56%), re laparotomy for secondary

hemorrhage 3 (1.92%), vesico vaginal fistula in 2 (1.28%), septicemia in 1(0.64%), paralytic ileus in one (0.64%) patient, hospital stay more than 10 days 10 (6.41%) patients. ICU admission needed by 15 (9.61%) patients. Morbidity related to type of hysterectomy was not significant

Complication	Group (referred)	Group B (booked)	Total
Bladder injury	5	2	7 (4.49%)
ICU admission.	12	3	15 (9.62%)
septicemia	1	-	1 (0.64%)
Wound infection	13	2	15 (9.62%)
Burst abdomen	4	-	4 (2.56%)
DIC	5	-	5 (3.21%)
Thrombosis	1	-	1 (0.64%)
Relaparotomy for internal hemorrhage	2	1	3 (1.92%)
Paralytic ileus	1	-	1 (0.64%)
Gut injury	1	-	1 (0.64%)
Ureteric injury	2	-	2 (1.28%)
Vesico-vaginal fistula	2	-	2 (1.28%)
Prolonged hospital >10 days	10	-	10 (6.41%)
Anesthesia Complication	1	-	1 (0.64%)
Total	60	8	68(43.59.%)

Table-VII. Intra and post operative complications

DISCUSSION

Emergency obstetric hysterectomy is unpleasant to perform especially in primiparous or Para 2. There is no doubt that it has to be opted to decrease maternal mortality and morbidity though procedure itself is said to be associated with many complications.

In the present study we have an incidence of 0.38% (3.8 per 1000). It is a very high incidence if we compare it with studies in developed[1,5,6,7] and other developing countries[9, 19] while less than in nigeria[12] whereas two recent studies in Pakistan make it less in one[8] at the same time comparable with the other[20].

In this study maximum (35.89%) emergency obstetric hysterectomies were done in 26-30 years group (exactly the same described in one study[23]). Para $_{3-5}$ was most vulnerable group followed by Para $_{6-8.}$ In Najam10 R et al study Parity distribution revealed the incidence of this radical and life saving surgery was more in patients who were para 5 and above.; whilst in our case it is max in P_3-P_5 followed by P_6-P_8,.

S Ahmad[4] highlighted that the major indication for cesarean hysterectomy was uterine rupture followed by placenta previa, uterine atony and abnormal placentation that is increta/accerta/ percreta. It is contrary to our results where main indication was uterine atony followed by uterine rupture, Placenta previa, abnormal placentation. These are partly similar to Clark et al study[6] (report). While comparing current study with alike circumstance[11] in Pakistan where uterine atony followed by uterine rupture and abnormal placentation run in conformity with our results. Uterine rupture is parallel with study of other developing country, Nigeria[12], where it is 28.6% very near to present study because of the similarity of circumstances.

Abnormal placentation was the primary cause of cesarean hysterectomy in many studies[7,12,13] where identifiable risk factors for abnormal placentation were prior cesarean delivery and placenta previa. It is also picked from our study that 95.6% (22 out of 23) patients with placenta accreta or percreta had previous cesarean deliveries.

Over the past few decades indications for emergency hysterectomy have revealed a change of trend. It is attributable to previous history of caesarian section which increases the risk for hysterectomy by raising the incidence of placenta previa and abnormal placentation.

In spite of the above facts, obstetric hysterectomy due to uterine atony is still high in developing countries. It is considerably associated with factors like unbooked status, labour induction/ augmentation outside hospital, unsupervised delivery, chorioamnionitis due to prolonged labor

and trial by traditional birth attendants.

Subtotal hysterectomy is preferred procedure than total hysterectomy owing to more safety and quickness[14]. It connected with less post operative morbidity[14,15]. Associated morbidity in relation to type of hysterectomy was not significant in our study. Our observed experience regarding type of hysterectomy is different from many studies[8,16] but similar with.others[14,15] . Currently the proportion of subtotal hysterectomy performed for Emergency Peripartum Hysterectomy ranges from 53 to 80%[14]. In our study 68.59% underwent sub-total hysterectomy. Total hysterectomy was 89.3% in. Amos et, al[22] study while it was 31.41% in present study .It was further noticed that most of the time hemorrhage in uterine atonia and uterine rupture (not involving the lower uterine segment) responded to sub total hysterectomy but 7 patients underwent internal iliac ligation along with sub-total abdominal hysterectomy. Associated morbidity in relation to type of hysterectomy was not significant in our study

The late referral and delayed appearance to the hospital, associates emergency obstetric hysterectomy with high maternal morbidity and mortality[17]. Maternal mortality 6.41 % in our study is more than in developed world[5,7,22] but comparable with study in Pakistan[21] and other developing countries[12,16,18]. Al-Sibai[18] extracted that mortality is dependent on severity of indication for emergency obstetric hysterectomy and condition of patient at the time of performing surgery.

Our experience is no more different from Al-Sibai, that most patients are in such a deteriorating condition at the time of initial presentation to the hospital which severely affects the outcome of patient. More over Poverty, unbooked, uneducated status of patient, injudicious use of oxytocin, non availability of transportation, further add to morbidity and mortality. Morbidity (43.59 %) remained high in our study but less than described in other studies[7,22].

Our complications of urinary tract injury including vesic- vaginal fistula (7.05%) and re-exploration for persistent hemorrhage (1.92%) are not very high as compared to 22.2% and 12.5% respectively in Lau WC study[19] and intra operative urologic injury 9%[7]. Prompt surgical intervention, quick resuscitation, management[18] and expertise[10,23] of surgeon minimize morbidity and mortality. Postoperatively we found DIC, wound infection/ febrile illness, burst abdomen; which fortunately appeared to be less than described in similar locality[2o].

Need for blood transfusion remained 100% in above[20] and present study as compared to *87*% in another study[7]. Paralytic ileus not very significant but postoperative stay more than10 days was noted in 6.41% and ICU admission was needed by 9.61% patients contrary to 53% admission requirement to the intensive care unit observed in one study[1]. Post operative sepsis was 10.26% while it was 37% reported in one study[23].

CONCLUSIONS

Frequency of emergency Obstetric hysterectomy is high in our tertiary center and it is continuously increasing due to increased referral of patients. It is a valuable life saving measure opted for uncontrollable hemorrhage. The associated morbidity and mortality with the procedure can be reduced by rapid resuscitation of patient, immediate availability of blood, timely decision, quickness and experience of obstetrician.

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