

## EMERGENCY OBSTETRIC HYSTERECTOMY: 8-YEAR REVIEW AT TAIF MATERNITY HOSPITAL, SAUDI ARABIA

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Emergency or obstetric hysterectomy was first performed in the 19th century to reduce the high maternal mortality and morbidity associated with the cesarian procedure.<sup>1</sup> The indications were mainly life-threatening sepsis and hemorrhage. Some years later, other less serious clinical indications, such as sterilization, were included, which gave the procedure a bad reputation.<sup>2</sup> In the last few decades, uncontrolled hemorrhage has become a major indicative factor. Causes such as uterine atony, ruptured uterus and placenta previa vary from one area to another, and are influenced by standards of practice and quality of antenatal care.<sup>3,4</sup>

Although the operation is referred to as "cesarian hysterectomy," peripartum or obstetric hysterectomy is a better classification. A previous history of cesarian section (CS) increases the risk for hysterectomy by increasing the incidences of factors such as placenta previa/accreta and uterine rupture.<sup>5,6</sup>

In this study, we reviewed all the available notes of obstetric hysterectomies (25 cases) performed at the Taif Maternity Hospital (TMH) between 1990 and 1998. We compared this with 25 cases of patients who had had at least their third CS operations during the data collection period. Our objective was to evaluate the sociodemographic distribution, risk factors, indications and outcome of emergency obstetric hysterectomy.

### Materials and Methods

Twenty-five of 29 case notes of emergency obstetric hysterectomy cases were reviewed. Relevant data were extracted using a predesigned form. The 25 cases of CS performed during the data collection period were taken randomly and consecutively. The only inclusion criteria were that the patient should have had at least her third CS and had not had a previous hysterectomy. This group acted as a controlled group to compare the result with our study group. Statistical analysis, using two-tailed Student's *t*-test, was applied. A consultant or an experienced specialist usually performed obstetric hysterectomy in our institution.

In the study, there was one exception, in a case where a repeat CS was performed by a senior registrar.

### Results

There were 29 cases of emergency hysterectomy (25 reviewed) during the eight years, giving an incidence of 1/2559 births (total births were 74,200). Table 1 shows some sociodemographic data and results obtained in the two compared groups. All patients of the hysterectomy group required blood transfusion, and 17 were transfused with 4 units of blood or more. A procedure duration of three hours or more and a hospital stay of >11 days were significantly higher in the hysterectomy group.

The incidence of placenta previa was also significantly higher in patients of the hysterectomy group compared to patients with repeated CS that did not end in hysterectomy. Table 2 shows the details of major complications in both groups. The rate of major complications (48%) was significantly higher in the study group. Further details of complications are shown in Table 2.

There were two maternal deaths in the hysterectomy group, giving an incidence of 8% for this procedure. In one of those two cases, the operation was performed by a senior registrar in a nearby hospital before the patient was transferred to our institution. The same patient had ureteric injury. In the two cases, the indication for hysterectomy was uterine atony and disseminated intravascular coagulation (DIC) was the cause of death.

Of the 25 cases of hysterectomy, one patient had been induced with PGE2 vaginal pessary and one was augmented with oxytocin. Both had hysterectomy for uncontrolled hemorrhage associated with uterine trauma. The second patient was a grand multiparous with an intrauterine fetal device (IUID), and she was augmented at 7 cm of cervical dilation.

Among those who had hysterectomy, five women had a normal vaginal delivery, two with instrumental help and the remaining (72%) delivered by CS. Thirteen out of 25 hysterectomy patients had a history of previous CS. We also found that five patients had total hysterectomy. The indication in three of these cases was morbidly adherent placenta.

Histopathology confirmed nine cases of adherent placenta of different degrees (accreta, percreta). In seven cases, the diagnosis of placenta previa had been made

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initially. Two had no previous scar, one had a previous scar,

TABLE 1. Details of patients included in the study.

	Hyst (No=25)	CS (No=25)	t-test
Age >35	17	7	S
Unbooked	11	7	NS
Parity >6	17	5	S
Type of CS (elective)	9	10	NS
Placenta previa	7	1	S
Duration of procedure >3 hours	12	0	S
Hospital stay of 11 days	10	0	S
Blood transfusion	25	1	S
Complications	12	2	S

S=significant; NS=nonsignificant.

TABLE 2. Intra- and postoperative major complications.

	Hysterectomy*	CS
No complications	13 (52%)	23 (92%)
Bladder injury	5 (20%)	0
Ureteric injury	2 (8%)	0
DIC	2 (8%)	0
Wound infection	2 (8%)	0
Burst abdomen	1 (4%)	0
Thrombosis	1 (4%)	0
Other	1 (4%) pelvic abscess, paralytic ileus	2 (8%) amnionitis, extension of incision

\*Two maternal deaths were among the hysterectomy group (8%); DIC=disseminated intravascular coagulation.

TABLE 3. Comparison with other studies.

	No. of cases	Major complication	Mortality rate	Hysterectomy/delivery rate
Sturdee & Rushton <sup>1</sup>	35	10 (28.57%)	00	35/69,576 1/1988
Thonet <sup>2</sup>	22	5 (22.73%)	00	22/48,110 1/2187
Giwa-Osagie et al. <sup>7</sup>	61	33 (54.09%)	15 (26.2%)	1.9/1000
This series	25	12 (48%)	2 (8%)	29/74,200 1/2559
		Indications for Hysterectomy		
	Uterine injury or rupture	Uterine atony	Placenta previa/accreta	Other
Sturdee & Rushton	6 (17.14%)	5 (14.29%)	17 (48.57%)	7 (20%) 2 <sup>nd</sup> PPH
Thonet	7 (31.82%)	3 (13.63%)	10 (45.45%)	2 (9.09%) fibroids
Giwa-Osagie et al.	38 (62.29%)	12 (19.67%)	9 (14.75%)	2 (3.28%) sepsis
This series	10 (40%)	6 (24%)	9 (36%)	0

PPH=postpartum hysterectomy.

and one had two previous CS. The remaining five had undergone three or more previous CS.

The main risk factors obtained in our study included an age >35 (17 patients, or 68%), a parity >6 (17, or 68%), placenta previa (7, or 28%), and a previous CS (13, or 52%). As the number of factors increased, so did the risk. Table 3 shows other series in comparison to ours. The comparison includes the incidence, indications,

complications and the mortality rate associated with the procedure.

## Discussion

To the best of our knowledge, this is the first published series on emergency obstetric hysterectomy from Saudi Arabia. The incidence of this procedure is 1 in 2559 births, which is comparable to that of Thonet,<sup>2</sup> but is much lower than many other studies.<sup>7-9</sup> This may have been the result of efforts on the part of surgeons to conserve the uterus. This was especially apparent in cases of uterine rupture, where only 33% had hysterectomy in a previous series which dealt with rupture of the uterus.<sup>10</sup> The maternal mortality rate (MMR) in Saudi Arabia is said to be 18 per 100,000 births.<sup>11</sup> The mortality rate of the procedure in this study (8%) is higher than many reported series in the U.S. and some developed countries,<sup>2,8</sup> however, it is lower when compared with reports from other countries.<sup>4,12,13</sup> Perhaps availability of backup facilities and methods of blood transfusion are factors. This may explain why DIC was the cause of death in both cases in this series.

The majority of our patients were >35 years (17 cases), and 17 patients were of para 6 or more. This is consistent with other studies<sup>14,15</sup> that indicate these variables as risk factors. Prior CS and placenta previa/adherent placenta as major risk factors for hysterectomy are quoted in all studies we reviewed,<sup>16-18</sup> and this was confirmed in our present study.

The major complications noted in our study (Table 2) are in accord with other series.<sup>1</sup> When we compared this with patients who had at least three CS, the result (48% vs. 8%) strongly indicates increased morbidity with hysterectomy. This, we believe, is associated with the nature of the operation, the significant increase in operative time, the need for blood transfusion (100% of cases) and demographic risk factors (age and parity) noted in our study, as well as the surgeon's experience.<sup>19</sup>

Our study showed uterine injury or rupture as a leading indicator in our studied population (40%), followed by placenta previa/accreta (36%) and uterine atony (24%). This order differs in various studies,<sup>15,20</sup> however, it is worth noting the rise in the contribution of placenta previa and the morbidly adherent placenta<sup>21</sup> with the decline of factors like uterine atony and sepsis. This is probably related to the global increases in the cesarian section rate and possibly the active management of the third stage of labor with the liberal use of oxytocic drugs, PGE<sub>2</sub><sup>8</sup> and prophylactic antibiotics. In our hospital, the CS rate was 15.1% in 1998 compared to 8%-10% in 1990, the first year included in the study.

Oxytocin infusion in a grand multiparous with secondary inertia resulted in uterine scar rupture, underlying the fact that the judicious use of oxytocin and careful observation are highly important.

Other management modalities for uncontrolled hemorrhage that have claimed to be successful are limited

either by lack of staff experience in diagnosing the initial indication and lack of facilities. These include internal iliac A ligation,<sup>22</sup> uterine A ligation,<sup>23</sup> radiological embolization of vessels,<sup>24</sup> and B-Lynch surgical technique.<sup>25</sup> They are also not without complications and not in wide use. Finally, the psychological impact on women who are in prime reproductive age in communities where big families are the norm does deserve further evaluation.

Emergency obstetric hysterectomy remains an essential life-saving procedure. Effective antenatal care, identification of patients at risk, enhancement of blood transfusion facilities, together with improvement of surgical skills are important to reduce the morbidity associated with the operation. Attempts to reduce the primary cesarian section rate should be helpful in reducing the relative risk for hysterectomy.

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### References

1. Sturdee DW, Rushton DI. Caesarian and postpartum hysterectomy, 1968-1983. *Br J Obstet Gynaecol* 1986;93:270-4.
2. Thonet RGN. Obstetric hysterectomy: an 11-year experience. *Br J Obstet Gynaecol* 1986;93:794-8.
3. Konard S, Tanyai J. Postpartum hysterectomy. *Orv-Hetil* 1996;137:1127-31.
4. Gupta U, Ganeesh K. Emergency hysterectomy in obstetrics: review of 15 years. *J Obstet-Gynaecol (Asia-Oceania)* 1994;20:1-5.
5. Sturdee DW, Rushton DL. Caesarean and postpartum hysterectomy. In: Studd J, editor. *Progress in Obstetrics & Gynaecology*. London: Churchill Livingstone, 1987.
6. Chen LH, Tan KH, Yeo GS. A ten-year review of uterine rupture in modern obstetric practice. *Ann Acad Med (Singapore)* 1995;24:830-5.
7. Giwa-Osagie OF, Uguru V, Akinla O. Mortality and morbidity of emergency obstetric hysterectomy. *Obstet Gynaecol* 1983;4:94-6.
8. Stanco LM, Schrimmer BS, Paul RH, Mishell DR Jr. Emergency peripartum hysterectomy and associated risk factors. *Am J Obstet Gynecol* 1993;168:879-83.
9. Suchartwantachai C, Linasmita V, Chaturachinda K. Obstetric hysterectomy: Ramathibodi's experience, 1969-1987. *Int J Gynaecol Obstet* 1991;36:183-6.
10. Elzien AE. Rupture of the gravida uterus: a study at Taif Maternity hospital, Saudi Arabia. *Int Tutorials* 1997;4:11-8.
11. Al-Mashari A, Chattopadhyay K, Younes B, Hassonah M. Trends in maternal mortality in Saudi Arabia. *Int J Gynaecol Obstet* 1996;52:25-32.
12. Korrejo R, Jafarey SN. Obstetrics *Int J Gynaecol Obstet* 1996;52:25-32. hysterectomy: five years experience at Jinnah Postgraduate Medical Centre, Karachi. *Jinnah Postgrad Med Assoc* 1995;45:86-8.
13. Ozumba BC, Mbagwu SC. Emergency obstetric hysterectomy in Eastern Nigeria. *Int Surg* 1991;76:109-11.
14. Zelop CM, Harlow BI, Frigoletto FD, Safon LE, Saltzman DH. Emergency peripartum hysterectomy. *Am J Obstet Gynaecol* 1993;168:1443-8.
15. Garcia-Benitez CQ, Roberto-Ahued J, Obeid-Layon J. Obstetric hysterectomy: review of 675 cases at the Instituto Nacional de Permatologia. *Ginecol Obstet de Mexico* 1997;69:119-24.
16. Makhseed M, Moussa MA. The outcome of placenta accreta in Kuwait. *Int J Gynaecol Obstet* 1995;50:139-44.
17. Clark SL, Yek S, Phelan JP, Bruce S, Paul RH. Emergency hysterectomy for obstetric haemorrhage. *Obstet Gynaecol* 1984;64:376-80.
18. Chattopadhyay SK, Kharif H, Sherbeeni MM. Placenta praevia and accreta after previous caesarean section. *Eur J Obstet Gynecol* 1993;52:151-6.
19. Boriboohirunsarn D, Sutanthavibul A, Chalermchock-Charoenkit A. Caesarean hysterectomy in Siriraj Hospital: a 5-year review. *J Med Assoc Thai* 1996;79:513-8.
20. Lau WC, Fung HY, Rogers MS. Ten years experience of caesarian and postpartum hysterectomy in a teaching hospital in Hong Kong. *Eur J Obstet Gynaecol Reprod Biol* 1997;74:133-7.
21. Eltabbakh GH, Watson JD. Postpartum hysterectomy. *Int J Gynaecol Obstet* 1995;50:257-62.
22. Clark SL, Phelan JP, Yek S, Bruce S, Paul RH. Hypogastric artery ligation for obstetric haemorrhage. *Obstet Gynaecol* 1985;66:353-6.
23. O'Leary JA. Uterine artery ligation in the control of post caesarian haemorrhage. *J Reprod Med* 1995;40:89-93.
24. Ito M, Matsui K, Mabe K, Katabuchi H, Fujisaki S. Transcatheter embolization of pelvic arteries as the safest method for postpartum haemorrhage. *Int J Gynaecol Obstet* 1986;24:373-8.
25. B-Lynch C, Coker A, Lawal AH, Abu J, Cowen MJ. The B-Lynch surgical technique for the control of massive postpartum haemorrhage: an alternative to hysterectomy? Five cases reported. *Br J Obstet Gynaecol* 1997;104:372-5.