EMERGENCY HYSTERECTOMIES IN OBSTETRICS

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SYNOPSIS

Between the period 1 Jan 1983 and 31 Dec 1986, 13 cases of emergency hysterectomy for obstetric haemorrhage were performed at A Unit, Kandang Kerbau Hospital, Singapore. The incidence was 1:2,273 deliveries; 1 out of every 6,305 vaginal deliveries and 1 after 481 Caesarean sections. The main indications were placenta accreta and uterine atony. The major problems encountered were coagulopathy and haemostasis. Urological injuries and mortality were low. Early recognition of the need for hysterectomy in cases of intractable obstetric haemorrhage is vital before the situation becomes irretrievable. The operation should be performed by experienced staff and total hysterectomy preferred to subtotal procedure.

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INTRODUCTION

The place for hysterectomy in obstetrics was first contemplated as a mean to reduce the high mortality from uterine haemorrhages and sepsis after Caesarean sections. Joseph Cavallini of Florence stimulated much interest with his works on experimental animals in 1768. A century later, Horaito Storer performed the first elective Caesarean hysterectomy on 21st July 1868 but his patient died 78 hours post-operatively. In 1876, Eduardo Porro succeeded in performing an elective hysterectomy after a Caesarean section on a 25 years old primiparous dwarf who survived after a stormy 40 days post-operative course(1). Since then much had been published on this subject. However most of the reported series included both emergency hysterectomies for obstetric haemorrhage as well as elective hysterectomies for a variety of reasons, such as sterilization, control of infection, and removal of a diseased uterus. The place of elective Caesarean hysterectomy remains controversial but there is no doubt that emergency hysterectomy in the face of intractable obstetric haemorrhage is life-saving. In addition these series span over a decade in time, with some before the availability of modern blood transfusion services and antibiotic therapy which reduce their relevance to modern practice. It is with these in mind that this report was written to review the recent experience at A Unit, Kandang Kerbau Hospital, of emergency hysterectomies for obstetric haemorrhages.

MATERIALS AND METHODS

A retrospective study of the case-records of patients who had emergency hysterectomies after Caesarean sections or vaginal deliveries for haemorrhage unresponsive to conservative measures was made. All the patients were delivered at A Unit, Kandang Kerbau Hospital, Singapore, between 1 Jan 83 to 31 Dec 86. All the operations were performed by consultants.

RESULTS

During the four year period of study, 13 emergency hysterectomies were performed in the unit for uncontrollable obstetric haemorrhage. 8 were after Caesarean sections, 4 after vaginal deliveries, and 1 was for a ruptured uterus.

During this period there were 25,220 vaginal deliveries and 4,331 Caesarean sections, giving an incidence of 1:6,305 vaginal deliveries and 1:481 Caesarean sections were followed by emergency hysterectomies. The total number of deliveries was 29,551 which gave an overall incidence of 1:2,273 deliveries.

The main indications for hysterectomy were placenta accreta and uterine atony. One case was done for a torn left uterine artery after spontaneous vaginal delivery of a 3.28 kg baby. Another was done for a ruptured term uterus during labour with torrential haemorrhage. (See Table 1).

The mean age of the patients was 32 years, with a mean gravidity of 4 and a mean parity of 2.

Six (46%) of the patients had previous lower segment Caesarean sections and 5 of them had 2 or more Caesarean sections.

The average estimated blood loss before hysterectomy was 1700 mls., with a range from 1000 mls. to 3000 mls. The average amount of blood loss during hysterectomy was 3000 mls. with a range from 1000 mls. to 12,000 mls.

The mean operating time was 3 hours with a range of 1 to 6 hours. The average post-operative stay in the hospital was 12 days with a range from 7 to 19 days.

There was 1 case of inadvertent subtotal hysterectomy while the rest were all total hysterectomies.

TABLE 1
INDICATIONS FOR EMERGENCY HYSTERECTOMY

Indications	No of Patients	%
Placenta accreta	6	46%
Uterine atony	5	38%
Torn uterine artery	1	8%
Ruptured uterus	1	8%

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TABLE 2
COMPLICATIONS AND MORBIDITY

	Number	%
DIVC	7	54%
Intra-operative bleeding	4	54%
Re-operation	4	31%
Febrile morbidity	1	8%
Bladder injury	1	8%
Mortality	1	8%

Complications and morbidity was as shown in Table 2. 7 of the patients had evidence of DIVC before the hysterectomies. During the operations, 7 patients required unilateral salpingo- oophorectomies to control intra-operative bleeding. 4 patients required re-operations in the immediate post-operative period to control persistent intraperitoneal bleeding.

All the patients were put on prophylactic parental antibiotics cover. 4 of the patients had significant post-operative febrile morbidity as defined by 2 oral temperatures of 38 C or more on 2 consecutive occasions after the first 24 hours. All of them responded to conservative therapy.

There was 1 case of inadvertent cystostomy due to extensive dense adhesions of the lower uterine segment to the bladder from repeated previous Caesarean sections. The same patient also developed persistent haemorrhage after hysterectomy which required bilateral internal iliac artery ligation to secure haemostasis.

There was 1 maternal death in this series. This patient had a ruptured uterus at term during labour at home and was admitted in a moribund state with DIVC and in shock. Bleeding persisted post- operatively and she was re-operated upon. However she succumbed on the operating table.

Of the 6 cases of placenta accreta, 4 had previous Caesarean sections and all 4 had 2 previous Caesarean sections. 3 of these cases presented as placenta praevias.

Of the 5 cases with uterine atony, 3 had vaginal deliveries after short labours and all had oxytocin augmentation during their labour. 1 case had a prolonged labour of 18 hours and was delivered by Caesarean section for no progress. This is the only case in the group who had a previous Caesarean birth. The remaining case had Caesarean section for placenta praevia.

DISCUSSION

A comparison of the incidence of hysterectomy after Caesarean section and vaginal delivery of some of the reported series are tabulated in Table 3.

The decreasing popularity of elective hysterectomy at the time of Caesarean section over the years is apparent from the figures. There is also a suggestion of a decreasing trend in the incidence of emergency hysterectomy either after Caesarean section or vaginal delivery. Our incidence of 1:481 Caesarean sections and 1:6305 vaginal deliveries were lower than most of the reported series.

In the older and larger series, abruptio placentae and amnionitis were the most frequent indications for emergency hysterectomy (2,3). However in modern obstetrics with advances in blood transfusion techniques and new antiiotics, these are no longer sufficient reasons for hysterectomy. Table 4 shows a comparison of the indications for emergency hysterectomies in some of the more recent series. Uterine atony and placentae accreta have became important indications for hysterectomies. This concurred with our findings.

The incidence of placenta accreta in Singapore was reported as 1:13,860 deliveries for the period from 1971 to 1978(7). For the period of our study the incidence had increased to 1:4,925 deliveries. The trend towards an overall increase incidence of placenta accreta was noted by Read et al(8), who also noted the association between uterine scars and placenta accreta. In the earlier local report(7), 30% of the cases of placenta accreta were associated with previous Caesarean sections. In the current series, 4 out of the 6 cases of placenta accreta had previous Caesarean births. Thus the increasing trend in Caesarean section rate may account for the increased significance of placenta accreta as seen in the present series.

4 of the patients had major degree of placenta praevia, and 3 of them had placenta accreta as well. All of these 3 patients had previous Caesarean sections. Thus the combination of previous Caesarean section and placenta praevia is ominous. One should be forewarned and when intractable haemorrhage occurs, an early decision to perform definitive therapy is essential to avoid shock and coagulopathy(6).

Uterine atony was the other major indication for emergency obstetric hysterectomy. The association between induced labours and post-partrum haemorrhages has been noted by various authors(9,10). Prolonged second stage, lumbar epidural analgesia (with its associated longer second stage and more frequent instrumental delivery), and the use of oxytocin alone instead of syntometrine in management of third stage in hypertensive patients, were all associated with higher risk of post-partrum haemorrhages(10). With the changes in labour ward practices, the increase in the rate in induction of labour, acceptance of longer second stage, and increase use of epidural analgesia, may thus contribute to the increase significance of uterine atony as a major factor. With the introduction of newer drugs such as prostaglandins, it is hopeful that the problem may be reduced in the future.

It is interesting to note that 3 out of the 5 cases of uterine atony had desseminated intravascular coagulation (DIVC) as well. It had been suggested that the associated fibrin degradation products may inhibit the action of oxytocin on the uterus. Thus rapid correction of the DIVC is necessary before the oxytocics can work.

Uterine rupture was the major indication in Hill and Beischers' series(4). In our series there was one case. The incidence of uterine rupture in labour in Singapore was reported as 1:3,869 deliveries (1:7,738 for intact uterus and 1:940 for previous Caesarean section) and 56% of these cases of ruptures required hysterectomy(11). With the current rising trend in Caesarean sections one would expect the incidence of uterine rupture to increase. For primiparous patients desiring further pregnancies, primary repair may be considered. However for the multiparous patients hysterectomy would be a safer course of action. Should circumstances warrant a primary repair, then an effective sterilization procedure should be used bearing in mind that a Pomeroy ligation in the immediate post-partrum period has a 3% failure rate(12).

The major morbidity encountered in this series was bleeding. The mean blood loss prior to hysterectomy was 1700 mls. and the mean loss intra-operatively and post-operatively was 3000 mls. Review of the literature showed reports of blood loss varying from 340 mls. in elective

TABLE 3
COMPARISON OF INCIDENCE OF HYSTERECTOMY

AUTHORS	YEARS	AFTER CS ELECTIVE	AFTER CS EMERGENCY	AFTER ND EMERGENCY	TOTAL
Barclay	'52–'58	1:6	1:28	–	–
(2)	'59–'67	1:5	1:21	–	–
Haynes & Martin (3)	'53–'77	120	193	–	–
Hill & Beischer (4)	'71–'79	1:838	1:322	1:1808	1:1044
Clark et al (5)	'78–'82	–	1:137	1:6041	1:981
Current series	'83–'86	–	1:481	1:6305	1:2273

TABLE 4
COMPARISON OF INDICATIONS

INDICATIONS	HILL et al (4) 1980	CLARK et al (5) 1984	THORNET (6) 1986	CURRENT SERIES 1987
Placenta accreta/ Praevia	36%	30%	23%	46%
Uterine atony	21%	43%	27%	38%
Rupture	43%	13%	32%	8%
Torn ut artery	–	–	–	8%
Bleeding at CS	–	10%	9%	–
Fibroids	–	4%	9%	–

cases to 1450 mls. for emergencies(1). Clark et al(5) reported a mean total loss of 3575 mls. in their series of emergency hysterectomies, and with an average loss of 2153 mls. subsequent to the decision to proceed with hysterectomy. This additional loss is significant and should be taken into consideration when one contemplates conservative management. 7 of our patients (54%) had coagulopathy. Oedematous tissues, adhesions from previous Caesarean sections, compounded by coagulopathy made haemostasis a difficult task. 7 of our patients had persistent intraoperative bleeding which required sacrifice of appendages to secure haemostasis, of which 5 had coagulopathy. 4 cases required reoperation for persistent intra-peritoneal bleeding, of which 3 had coagulopathy. Thus great vigilance and prompt decision are vital in managing such cases.

About a third of our patients experienced post-operative febrile morbidity. Various authors reported incidences varying from 34%(3) to 50%(5). All of our patients received prophylactic antibiotics, mainly Ampicillin, Gentamycin and Metronidazole, post-operatively. Probably not all instances of febrile morbidity are due to infections, as pelvic or vaginal cuff cellulitis may play a role(1).

We had one case of bladder injury. Rates of urological injuries in reported series varied from nil(6), to 7.4%(3). With good haemostasis and careful technique, urological injuries can be avoided in most instances.

The only mortality in our series was a patient who ruptured her uterus at home and was admitted in a moribund state. Park and Duff(1) in their extensive review of the literature reported an average mortality rate of 0.71%. Haynes and Martin(3) reported a rate of 0.67%, while Barclay(2) quoted an overall rate of 1.04%, with 0.29% for elective cases and 3.9% for emergency cases.

In our series total hysterectomy was attempted in all the cases. There was one case of supposed total operation where the cervix was inadvertently left behind. Fortunately the patient did not experience any cyclical bleeding or troublesome discharges during subsequent follow-ups. Inadvertent subtotal operation had been experienced by others too(13). Subtotal hysterectomy has traditionally been viewed as a quicker procedure, associated with less blood loss. However problems with the remnant cervical stump such as discharges and cyclical bleeding are common; 11.4% of a total of 866 cases was reported by Barclay(2). There is always the possibility of subsequent stump cancer and regular cytology follow-ups are necessary. Moreover subtotal hysterectomy may not be effective in the case of placenta accreta where the source of bleeding is the cervical branch of the uterine artery.

In the face of intractable haemorrhage, apart from hysterectomy, there are few alternatives. Vaginal or uterine packs have long been condemned. Ligation of internal iliac arteries is a daunting task and may not be effective. Evans and McShane(14) recently reported 57% failure rate for their series of severe obstetric haemorrhage treated with internal iliac artery ligation. For patient with low parity it may be considered, otherwise one should carefully weigh the gains of a more conservative procedure against the expense of the delay in performing definitive hysterectomy. Embolization of pelvic vessels has been advocated but this is only feasable in special centres only.

CONCLUSION

In the event of severe obstetric haemorrhage the single most important danger is waiting too long before embarking on definitive therapy. Obstetric haemorrhage should be energetically treated and early consultation with experienced obstetrcian should be made. The significant additional blood loss to be expected subsequent to the decision to perform hysterectomy, the attending danger of developing coagulopathy, and the difficulty posed by the oedematous tissues and adhesions that are usually present, should be taken into consideration. An experienced team of surgeon, anaesthetist and physician should be in attendence as there is a vast difference in morbidity and mortality between elective and emergency hysterectomies.

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