

Uterine rupture in Dohuk, Iraq

M.A. Yalda¹ and A. Munib¹

تمزق الرحم في دهوك، العراق
ميلاد إلياس يلدا، أفين منيب

الخلاصة: يعد تمزق الرحم من الطوارئ الخطيرة في طب التوليد، إذ يعرض حياة الأم وجنينها للخطر. وقد أجرى الباحثون دراسة في المستشفى العام في دهوك، في العراق، ابتدأت في كانون الثاني/يناير 2003 واستمرت حتى كانون الأول/ديسمبر 2004، وجدوا أن معدّل حدوث تمزق الرحم 0.2% (42 حالة من بين 20 574 ولادة) وكان معظم الحالات (81%) ممن تعسرت ولادتهن ولم تتح لهن الرعاية السابقة للولادة. وكان مدى عدد الولادات السابقة يتراوح بين 1 و13، وهو في الوسطي 7. أما الأسباب الرئيسية فكانت المخاض العسير (36% من الحالات) ووجود ندبة عملية قيصرية سابقة (36% من الحالات). وبلغ معدّل وفيات الأمهات بين هذه الحالات 5%، فيما بلغ معدّل الوفيات بين الولدان حول الولادة 62%. وتمس الحاجة إلى إدخال تحسينات على الرعاية السابقة للولادة وإلى وجود دلائل إرشادية لتدبير المخاض، وتدريب العاملين على التعاطي مع الطوارئ.

ABSTRACT Rupture of the uterus is a serious obstetric emergency endangering the life of both mother and fetus. In a study at the general hospital in Dohuk, Iraq, from January 2003 to December 2004, the incidence of ruptured uterus was 0.2% (42 out of 20 574 deliveries). The majority of these women (81%) were unbooked and had had no antenatal care. The range of parity was 1–13, median 7. The main causes were obstructed labour and previous caesarean scar (36% of cases each). The maternal mortality rate among these cases was 5% and the perinatal mortality rate was 62%. Improvements are needed in antenatal care and labour guidelines and emergency drill training for staff.

Rupture utérine à Dohuk (Iraq)

RÉSUMÉ La rupture de l'utérus est une urgence obstétrique grave qui met en danger la vie de la mère et du fœtus. Dans une étude menée à l'hôpital général de Dohuk (Iraq) de janvier 2003 à décembre 2004, l'incidence des ruptures d'utérus était de 0,2 % (42 accouchements sur 20 574). La majorité des femmes concernées (81 %) n'étaient pas inscrites pour l'accouchement et n'avaient pas reçu de soins anténatals. Les parités étaient comprises entre 1 et 13, avec une médiane de 7. Les principales causes étaient la dystocie d'obstacle et la cicatrice de césarienne antérieure (36 % des cas chacun). Le taux de mortalité maternelle chez ces cas était de 5 % et le taux de mortalité périnatale de 62 %. Des améliorations sont nécessaires sur le plan des lignes directrices relatives aux soins anténatals et au travail lors de l'accouchement et dans le domaine de la formation du personnel aux interventions d'urgence.

¹Department of Obstetrics and Gynaecology, Azadi Teaching Hospital, Dohuk, Iraq (Correspondence to M.A. Yalda: sylvana737@yahoo.com).

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Introduction

Rupture of the gravid uterus is a grave obstetric complication that is associated with a high maternal and perinatal mortality rate [1]. In developing countries, uterine rupture may be seen in both scarred and previously intact uteri. Its main cause is spontaneous rupture due to cephalopelvic disproportion and malpresentations resulting in an obstructed labour [2].

In modern obstetrics the overall incidence of uterine rupture is 0.05% [3]; however, considerable differences in incidence exist in different parts of the world depending on obstetric services and standards as well as awareness of antenatal care and effectiveness of family planning activities of a given community.

Women in Iraq do not come for regular antenatal check-ups, preferring home delivery by traditional birth attendants. Some of these deliveries require proper medical management, for example when there is a previous caesarean scar, and when traditional birth attendants fail to effect delivery, women are brought to hospital after prolonged dysfunctional and obstructed labour.

In Dohuk, northern Iraq, the incidence of uterine rupture remains high. The high levels of grandmultiparity, growing numbers of deliveries and lack of medical staff in crowded maternity hospitals all play a role in exacerbating the problem. The severe disruption in emergency transport facilities is a factor in receiving cases of late obstructed labour. The financial resources available for recruitment of medical staff, nurses and midwives and for purchase of the necessary medical equipment are also reduced.

The present study was conducted to find out the frequency of uterine rupture and to analyse the predisposing factors and maternal and fetal outcomes.

Methods

This cross-sectional study was conducted over a period of 2 years from 1 January 2003 to 30 December 2004 in the Department of Obstetrics and Gynaecology at Azadi Teaching Hospital, a government hospital in Dohuk in the Kurdistan region of Iraq.

The total number of deliveries during this period was 20 574. This study included all cases of ruptured uterus admitted to the emergency outpatient department of the hospital or referred from rural areas and also cases that arose during delivery at the hospital. Inclusion criteria were all cases in which ruptured uterus was confirmed during labour. Exclusion criterion was cases in which uterine rupture was suspected preoperatively but was not confirmed at the time of laparotomy. Provisional diagnosis of uterine rupture was made on history and clinical examination and confirmed by laparotomy. Patient's age, parity, booking status, social status, history of present pregnancy and previous obstetric and gynaecological history were all recorded.

The clinical features noted were: signs of shock, severe abdominal pain, cessation of uterine contractions, easily palpable fetal parts, whether fetus was extruded into abdominal cavity and irregular or absent fetal heart sounds. Other signs were bleeding per vagina and fetal loss-of-station. An intravenous line was inserted immediately and blood grouping and crossmatching carried out for blood transfusion. Consent for prompt surgical intervention was taken.

The surgical management followed 1 of 2 methods: preservation of the uterus (with or without tubal ligation) or hysterectomy. The surgical procedure depended on the general condition of the patient, parity, desire for future childbearing and the site, severity and extent of the rupture.

All patients were followed up during hospitalization and all maternal and fetal complications were registered. The likely cause of rupture and postoperative maternal and fetal outcomes were noted.

Data were analysed using *SPSS*, version 12.0.

Results

There were 42 cases of ruptured uterus recorded out of 20 574 total deliveries, an overall incidence of 0.2% or 1 in 490 deliveries.

The majority of women were aged between 26 and 40 years (88%). The mean age was 33 years. The highest incidence of uterine rupture occurred in women aged between 31 and 40 years (62%). The parity of the women ranged from 1 to 13, with a median of 7. The highest incidence of uterine rupture was in women with parity > 6 (64%).

The majority of women (81%) were not booked for delivery and had received no antenatal care by a physician. Only 19% of the women had antenatal care provided by either a specialist in private practice or

general practitioner in a primary health care centre (Table 1).

The predisposing and etiological factors identified are shown in Table 2. Obstructed labour and the presence of previous caesarean scar were the main causes (15 cases each, 36%). The next most frequent causes were malpresentation and multiple pregnancy (7% each), followed by precipitous labour and congenital abnormal babies (5% each). Use of oxytocic agents in labour was reported as a cause of rupture in only 2% of cases.

Postoperative febrile illness was the highest cause of maternal morbidity (57% of women) with most of the cases due to wound infection (22%). Adjacent organ injury was assessed; 8 cases of urinary bladder injuries were identified and there were 3 cases of ureter injuries necessitating further surgery. A high rate of postoperative pneumonia was also noted (12%). Four cases (10%) needed surgical revision for uncontrollable postoperative bleeding. Disseminated intravascular coagulation led to 2 maternal deaths, giving a maternal mortality rate from uterine rupture of 5% (Table 3). There were 5 women admitted to the intensive care unit.

A total of 26 babies died, giving a perinatal mortality rate of 62%.

Table 1 Distribution of cases of uterine rupture by age, parity and booking status (*n* = 42)

Variable	No.	%
<i>Age (years)</i>		
21–30	15	36
31–40	26	62
> 40	1	2
<i>Parity</i>		
1–2	3	7
3–6	12	29
> 6	27	64
<i>Booking status</i>		
Booked	34	81
Unbooked	8	19

Table 2 Distribution of the 42 cases of uterine rupture by probable cause

Cause	No.	%
Prolonged obstructed labour	15	36
Previous caesarean scar	15	36
Malpresentation	3	7
Twin pregnancy	3	7
Precipitous labour	2	5
Congenitally abnormal babies	2	5
Accidental haemorrhage	1	2
Use of oxytocic agent	1	2
Total	42	100

Table 3 Distribution of cases of uterine rupture by postoperative complication (n = 42)

Complication	No.	%
Febrile morbidity	24	57
Wound infection	9	21
Bladder injury	8	19
Pneumonia	5	12
Repeat laparotomy for bleeding	4	10
Ureter injury	3	7
Disseminated intravascular coagulation & coagulopathy ^a	2	5
Septicaemia	1	2
Vesicovaginal fistula	1	2

^aLed to maternal death.

All the women needed some degree of blood transfusion: 9 (21%) needed 1–2 units of blood, 21 (50%) received 3–4 units, 7 (17%) 5–7 units and 5 (12%) needed massive blood transfusion (> 8 units).

Hysterectomy was performed in 15 cases (34%); the majority of the women underwent conservative surgery (64%).

The length of hospital stay was 3–6 days for 29% of cases, 7–10 days for 60% and 11–14 days for 12%.

Discussion

The occurrence of ruptured uterus varies in different parts of the world. In the developed world the frequency has dropped in recent decades due to improvement in antenatal care services [4,5]. Nevertheless, it is still a major public health problem in developing countries in general and in Africa in particular [6,7]. This case series shows a high frequency of serious preventable obstetric problems, which can lead to high fetal and maternal mortality. Although the sample was a small one and it does not reflect all maternity cases in Iraq, it has identified a

serious problem for which future solutions could be planned.

Our results are similar to those seen in other developing countries [8,9]. The incidence of ruptured uterus (1:490 deliveries) in this study was lower than the 1:112 and 1:110 reported earlier in eastern Nepal [10] and Ethiopia [2] respectively, but higher than 1:6331 deliveries reported from Singapore [11].

A majority of patients in our study had received no antenatal care. The same findings were reported by Gessesew and Melese from Ethiopia [2]. Antenatal assessment is an essential step in the early detection of high-risk patients in whom hospital deliveries are mandatory. Good antenatal assessment is also an indicator of the quality of maternity services in the community.

The 2 main causes of ruptured uterus in this study were obstructed labour and the presence of previous caesarean scar. These findings are comparable to similar reports from different hospitals in other developing countries such as Pakistan [12] and Saudi Arabia [13]. The magnitude of these problems might be exacerbated by the delay in referral and the mismanagement of high-risk patients at the time of labour. The use of oxytocic agents in labour was very low (2%) and the reason may be related to the high parity of many of the women which may have limited the use of this medication in labour.

The morbidity rate due to ruptured uterus was high in our study, higher than that reported in other studies, e.g. Kieser and Baskett in Canada [14]. The high incidence of bladder and ureter injuries in our study highlights the need for medical staff to remember the possibility of urinary tract association with uterine rupture and for greater vigilance when managing such cases. Bladder injuries were also specifi-

cally mentioned as a serious complication in other case series [2,6].

The maternal mortality rate from uterine rupture was 5% (2/42) in our study, in contrast to the findings of Castaneda et al. [15] and Zelop et al. [16] who reported no maternal deaths in their studies. Bujold and Gauthier reported 4.2% maternal mortality and 46% perinatal mortality in Canada [17]. The high morbidity and mortality rate in our study could be related to the delay in appropriate medical management, since many of our patients were transferred late in labour. The perinatal mortality rate associated with uterine rupture was 62% (26/42). This rate is slightly lower than the rate of 74% reported from 3 studies from developing countries [18] but considerably higher than the rates of 7.4% and 10.3% reported from Singapore and Israel respectively [11,19].

The mode of management of uterine rupture varies greatly across different studies. Ahmadi et al. found that 32.1% of cases with ruptured uterus had hysterectomy while repair was done in 67.9% [20]. Lema et al. reported that repair of the uterus was the treatment of choice in most cases (59%) [21]. These results are similar to ours, where 36% of cases resulted in hys-

terectomy. A higher incidence of repair was found by Zine et al. in Tunisia (73.6%) [22]. Other studies conducted in Ethiopia, Nigeria and Sudan recorded a higher incidence of hysterectomy (61.2%, 53.6% and 80% respectively) [2,8,23].

The high incidence of ruptured uterus seen in our community might be due to poor public knowledge about the risks of pregnancy and childbearing and lack of resources in the country. Our community has a high fertility rate combined with a lack of well-equipped maternity hospitals capable of handling the large numbers of deliveries carried out daily. Inappropriate placement of patients for trial of scar together with the widespread use of untrained traditional birth attendants may be significant factors in this problem.

The high maternal and infant mortality and morbidity following uterine rupture calls for an integrated effort to prevent its occurrence or at least reduce its incidence. Improvements which could be implemented include advances in antenatal counselling, addition of world guidelines for labour and training sessions for staff in emergency management of uterine rupture.

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