

# Obstetric hysterectomy performed at N'Djamena mother and child hospital (Chad): indications and prognosis

## Abstract

**Background:** Obstetric hysterectomy is a life-saving procedure in severe obstetrical hemorrhage.  
**Objective:** Determine its frequency, indications and prognosis.

**Patients and methods:** This was a retrospective and descriptive survey performed at the department of Obstetrics and Gynecology, of N'Djamena Mother and Child Hospital. All patients who had undergone obstetric hysterectomy during the four-year study period from April 2011 to April 2015 were studied.

**Results:** During the study period, 29,490 patients were delivered at N'Djamena Mother and child hospital. A total of 46 obstetric hysterectomies were performed that give a frequency of 0.16%. The average age was 31.2 years, with the extremes ranging from 15 to 44 years. Parity ranged from 1–13 with 41.7% of grand multipara. The commonest cause of obstetric hysterectomy was ruptured uterus, seen in 29 (63%) patients. Uterine atony was responsible in 10 (21.7%) cases. In 91.3% of the cases (n=42) subtotal hysterectomy was performed and in others total hysterectomy was performed (8.7%). Main maternal complications were: sepsis (6.5%) and urological injuries (6.5%). Maternal outcome was enameled by three deaths giving a lethality rate of 6.5%. Fetal prognosis was worst with a fetal death rate of 69.5%.

**Conclusion:** Obstetric hysterectomy remains frequent in our regions. Adequate prenatal consultation and surveillance of patients during labor are required for curbing the frequency of obstetric hysterectomy.

**Keywords:** obstetric hysterectomy, indications, maternal and fetal morbidity and mortality, N'Djamena mother and child Hospital

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## Introduction

Obstetric hysterectomy is one marker of obstetric morbidity. It is considered one of the riskiest and dramatic operations in modern obstetric, where the uterus is removed at the time of caesarean section, following caesarean section immediately after vaginal delivery or in the period of puerperium in order to reduce maternal mortality and morbidity.<sup>1</sup> Emergency obstetric hysterectomy is a life saving surgical procedure in life threatening catastrophes of uterine rupture, morbidly adherent placenta, coagulopathy or uncontrollable hemorrhage. Many times, attempts to control hemorrhage failed and women's life is saved by compromising her reproductive capability by obstetric hysterectomy.<sup>2,3</sup> Obstetric hysterectomy in the developed world is mainly done for gynecological indications such as sterilization and leiomyoma in obstetrical practice, but in developing countries it is usually done when conservative measures fail to control the hemorrhage.<sup>4-6</sup> The purpose of the present study was to determine the frequency, indications, maternal and perinatal mortality and morbidity associated with emergency obstetrics hysterectomy.

## Patients and methods

This was a retrospective and descriptive survey performed at the department of Obstetrics and Gynecology, of N'Djamena Mother and child hospital. All patients who had undergone obstetric hysterectomy during the four-year study period from April 2011 to April 2015 were studied in detail regarding their age, parity, prenatal consultation, admission mode, gestational age, indication and type of obstetric

hysterectomy, and feto-maternal mortality and morbidity. The data was analyzed on SPSS 18.0.

## Results

### Frequency

During the study period 29,490 patients were delivered at N'Djamena Mother and child hospital. A total of 46 obstetric hysterectomies were performed, 11(24%) followed vaginal delivery, 29 (63%) during the course of, or following a caesarean section, and 6(13%) in the postpartum period. The frequency of obstetric hysterectomy was 0.16% of all deliveries (i.e., 1.6 obstetric hysterectomies for 1000 deliveries) (Table 1). The age group between 30–34 years was the most represented with 41.3%. The average age was 31.2 years, with the extremes ranging from 15 to 44 years. Twenty six patients (56.5%) were not schooled. Parity ranged from 1–13, with a mean of 6.2±2.3. Twenty two (41.7%) patients were grand multipara. Mean gestational age was 38.2 weeks with extremes ranging from 33 to 42 weeks. The majority of patients (60.9%) had not attended prenatal consultation.

### Admission mode

The majority of patients (78.3%) were referred from department hospital. The remaining 10 patients (21.7%) were referred from N'djamena' periphery health center. Women coming from department hospital had gone over a distance between 50–600km to reach N'Djamena Mother and child hospital.

**Table 1** Social and epidemiologic characteristics

Social and epidemiologic characteristic	Number	%
Age (year)		
15 – 19	2	4.3
20 – 24	3	6.5
25 – 29	10	21.8
30 – 34	19	41.3
35 – 39	7	15.2
≥ 40	5	10.9
Schooling		
No schooled	26	56.5
Primary	12	26.1
Secondary	5	10.9
University	3	6.5
Parity		
Primipara	7	15.2
Paucipara	3	6.5
Multipara	14	30.4
Grand multipara	22	47.9
Number of Prenatal consultation		
0	28	60.9
1	12	26.1
2	4	8.7
3	2	4.3

### Hysterectomy indications

The commonest cause of obstetric hysterectomy was ruptured uterus, seen in 29 (63%) patients. Uterine atony was responsible 10 (21.7%) cases, and placenta 7 (15.3%) patients (Table 2). Factors predisposing to uterine rupture recorded were: obstructed labor due to disproportion (n=15), prolonged labor (n=5), history of inadequate use of oxytocin injection (n=9). All patients with rupture of unscarred uterus were grand multiparas, while 7 cases had rupture of the previous caesarean section scar.

### Type of operation

In 91.3% of the cases (n=42) subtotal hysterectomy was performed and in others total hysterectomy was performed (n=4). Blood transfusion was giving to 38 patients (82.5%) ranging from 2 to 6 units.

**Table 2** Hysterectomy indications

Indications	Number	%
Uterine rupture	29	63
Uterine atony	10	21.7
Abruptio placenta	5	11
Acreta placenta	2	4.3

**Table 3** Complications

Complication	Number	%
Ureteral Injury	2	4.3
Bladder Injury	1	2.2
Sepsis	3	6.5
Maternal Death	3	6.5
Fetal Death	32	69.5

### Complications

Three patients presented sepsis (6.5%) (Table 3). Three urological injuries (6.5%) were noted. Maternal outcome was enameled by 3maternal deaths giving a lethality rate of 6.5%. Maternal death

causes were: 2 for clot disorder and the remaining one for acute renal failure linked to severe post partum hemorrhage. Thirty two fetuses died giving a perinatal death rate of 69.5 %.

### Discussion

The reported incidence of emergency peripartum hysterectomy varies between 0.1 and 5.4 in 1000 deliveries.<sup>7-11</sup> In general, the average incidence is put at 1 in 1000 deliveries, the higher incidence is being reported from the developing world while developed countries generally report lower rates.<sup>10-13</sup> Our findings of 1.6 hysterectomies for 1000 delivery confirmed earlier data in developing countries. The high incidence of peripartum hysterectomy in the developing world may be due to her phenomenon of unbooked emergencies and the earlier recourse to hysterectomy due to the lack of adequate cross matched blood and other blood products which limit the time available for examining the effectiveness of other conservative procedures.<sup>3,6,10</sup> Moreover, certain modern conservative procedures involving interventional radiology are not practicable in most developing world settings due to lack of human and material resources involved.<sup>10</sup>

Nineteen patients (41.3%) were in the age group of 30 to 34years and twenty two (41.7%) were grand multipara .High association with multiparity was seen by previous studies.<sup>3-6,12,14,15</sup> Other risk factors for Emergency peripartum hysterectomy (EPH), like previous cesarean birth, obstructed labor, current cesarean delivery, and abnormal placental implantation and invasion, were similar to the literature.<sup>1,2,12,13</sup>

Schooling is an element that makes prenatal consultation comprehensive for pregnant women. It allows depiction of uterine rupture during labor which can lead to obstetric hysterectomy. The lack of schooling often affects prenatal consultation. This was valid in this study where 56.5% were not schooled and 60.9% had not attended to prenatal consultation.

The most common indication for peripartum hysterectomy is hemorrhage but the underlying causes vary from series to series. In the developing world, preventable factor such as uterine rupture or uterine atony are the most common indication for peripartum hysterectomy.<sup>4-7,9,10,13,14,16</sup> The common causes of uterine rupture in this part of the world include prolonged obstructed labour, rupture of a previous caesarean scar, injudicious use of oxytocics and trauma from instruments or manual removal.<sup>3,4,6,11,17,18</sup> If the rupture is extensive and hemorrhage cannot be controlled by uterine repair, then hysterectomy may become necessary.<sup>17</sup> Ours findings confirm this assertion with uterine rupture and uterine atony as main indications of obstetric hysterectomy respectively 63% and 21.7%. Anita<sup>14</sup> & Sarwat<sup>16</sup> previously reported more uterine atony than uterine rupture.

Peripartum hysterectomy may be either subtotal or total. A subtotal hysterectomy is thought to be technically easier and associated with shorter operating time, less blood loss, less urological injury and low morbidity.<sup>16,19,20</sup> It is therefore preferred in situations where maternal instability mandates a more expeditious procedure.<sup>19,20</sup> Moreover in developing countries where homologous blood is often not available, pelvic pathologies are extensive and clinical presentation of patients is worse, subtotal hysterectomy may be preferred.<sup>4,5,9</sup> We reported a high proportion of subtotal hysterectomy of 91.3%. Earlier studies<sup>3,4,6</sup> had noted a proportion of subtotal hysterectomy ranging between 81 to 94%.

Peripartum hysterectomy has been described as one of the catastrophes of modern obstetrics.<sup>1,21,22</sup> The difficulties associated with the procedure are not necessarily the surgical technique but the

anatomical and physiological changes associated with late pregnancy and the indications for the surgery as well as the support for such ill patients.<sup>21,22</sup> These difficulties are more pronounced in developing countries where patients present very late and the facilities for intensive care are lacking.<sup>4-6</sup>

The most frequent complication of peripartum hysterectomy is excessive blood loss and need for transfusion.<sup>21,22</sup> Only part of this blood loss is attributable to the procedure itself. The extensive blood loss is related mainly to the primary indications for hysterectomy and delay in deciding to carry out hysterectomy. The next most frequently reported complication is urological injury which affects the bladder or the ureters.<sup>11,21</sup> The reported incidence of urological injuries with peripartum, hysterectomy is between 4.6% and 12.5%.<sup>10,11</sup> We had noted a proportion of urological injuries of 6.5% which confirm these data.

The post operative morbidity of peripartum hysterectomy is high. The post operative complications include bleeding, wound sepsis/dehiscence, urinary tract infections, ileus, anemia, prolonged duration of hospital stay and/or injury after urinary tract infection.<sup>21,22</sup> Occasionally pulmonary embolism occurs. Many complications such as bleeding, infections and fistula may require relaparotomy or reoperation for proper management.<sup>11,21,22</sup> Three patients have presented a sepsis, factors like delay for better care, prolonged or obstructed labor can explained our proportion.

The outcome of obstetric hysterectomy was fatal for 3 patients (6.5%). Our lethality rate confirms literature's data showing a maternal mortality rate linked with obstetric hysterectomy ranging between 4.35 to 28.57%. According to previous studies, fetal prognosis is worst and associated with a high fetal mortality rate ranging between 55.5%–81%.<sup>4,5,7,9</sup> We reported a fetus death rate of 69.5%. The commonest cause of fetal death is uterine rupture.<sup>5,6</sup> Uterine rupture' mechanism it is often followed by fetus death.<sup>23</sup>

## Conclusion

Obstetric hysterectomy remains frequent in our regions. Adequate prenatal consultation and surveillance of patients during labor are required for curbing the frequency of obstetric hysterectomy. Preventive means against uterine rupture and uterine atomy should be instituted mainly during labor and post partum period.

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## Conflicts of interest

The authors declare there is no conflict of interests.

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