

Practice of Obstetrical Hysterectomy at the Sylvanus Olympio University Hospital Center: Indications and Maternal Prognosis

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Abstract

Obstetric hysterectomy is a surgical procedure most often performed in a context of extreme emergency in an obstetric environment. The incidence of obstetric hysterectomy is differently expressed around the world. In the CHU-SO maternity ward, hemorrhagic obstetric emergencies are common. The extreme urgency in which patients are admitted, the insufficiency of the technical platform, associated with the challenge of the availability of blood products, often leads to performing an obstetric hysterectomy for hemostasis. It is responsible for high maternal morbidity and mortality. Since 2000 no study has been carried out on this practice in the service. **Objective** was to describe the practice of obstetric hysterectomy at the CHU-SO and specifically to determine the prevalence, the prognostic factors to be able to act to reduce maternal mortality. **Method:** A descriptive, cross-sectional, and analytical study was carried out at the Gynecology-Obstetrics clinic of the CHU-SO; from January 1, 2021, to June 30, 2022. All hysterectomies performed in an obstetric emergency context (during pregnancy, perpartum or postpartum) in the department were included in our study. We did not include cases of obstetric hysterectomies outside the SO hospital or planned non-obstetric hysterectomies. **Results:** We recorded 75 cases of obstetric hysterectomy and 15,625 deliveries (0.48%). The average age was 32.89 ± 5.93 . The age group between 30 and 35 years old was the most affected with a rate of 37.33%. Labor and third trimester hemorrhage were the main reasons for admission, patients were referred in 80% of cases. The average parity was 3.25 ± 1.92 with utmost of 0 and 11. The pauciparous (41.67%) and multiparous (32%) were the most affected. The indications frequently found were uterine atony (44%); uterine rupture (33.33%). Subtotal inter adnexal hysterectomy was performed

in 94.67%. General anesthesia practiced in 69%. They were all polytransfuses. Three poor prognostic factors were observed during our study, namely: uterine atony; the state of hemodynamic shock before the operation; lack of blood transfusion. The maternal death rate was 21.33%. **Conclusion:** Obstetric hysterectomy is a very mutilating and complicated surgical procedure and is still common practice in Africa. The maternal prognosis is still reserved with a very high mortality rate in Togo.

Keywords

Obstetric Hysterectomy, Indications, Maternal Prognosis, CHU-SO

1. Introduction

Obstetric hysterectomy is a surgical procedure most often performed in a context of extreme emergency in an obstetric environment. Exceptional in developed countries, obstetric hysterectomy remains the last possible life-saving gesture in the event of an obstetric emergency in Africa. This heavy and mutilating intervention definitively compromises a woman's ability to procreate. The incidence of obstetric hysterectomy is differently expressed around the world [1] [2] [3] [4].

In the CHU-SO maternity ward, hemorrhagic obstetric emergencies are common. The extreme urgency in which patients are admitted, the insufficiency of the technical platform, associated with the challenge of the availability of blood products, often lead to performing an obstetric hysterectomy for hemostasis. It is responsible for high maternal morbidity and mortality.

Since 2000 no study has been carried out on this practice in the service. The general objective was to describe the practice of obstetric hysterectomy at the CHU-SO and specifically to determine the prevalence, the prognostic factors to be able to act to reduce maternal mortality.

2. Method

A descriptive, cross-sectional, and analytical study was carried out at the Gynecology-Obstetrics clinic of the CHU-SO. The study took place from January 1, 2021, to June 30, 2022.

All hysterectomies performed in an obstetric emergency context (during pregnancy, perpartum or postpartum) in the department were included in our study.

We did not include cases of obstetric hysterectomies outside the SO hospital or planned non-obstetric hysterectomies.

The variables studied were: frequency, sociodemographic characteristics, indications and prognostic factors

The statistical tests used were the odds ratio, chi-square or Fisher's exact test. Differences were considered statistically significant for a p-value less than 0.05.

3. Results

We recorded 75 cases of obstetric hysterectomy and 15,625 deliveries, representing a hospital frequency of 0.48%.

The average age was 32.89 ± 5.93 years with extremes of 18 and 46 years. Sixty patients, or 80%, were evacuees. The average parity was 3.25 ± 1.92 with extremes of 0 and 11. Uterine atony was the main indication in 44% cases (**Figure 1**).

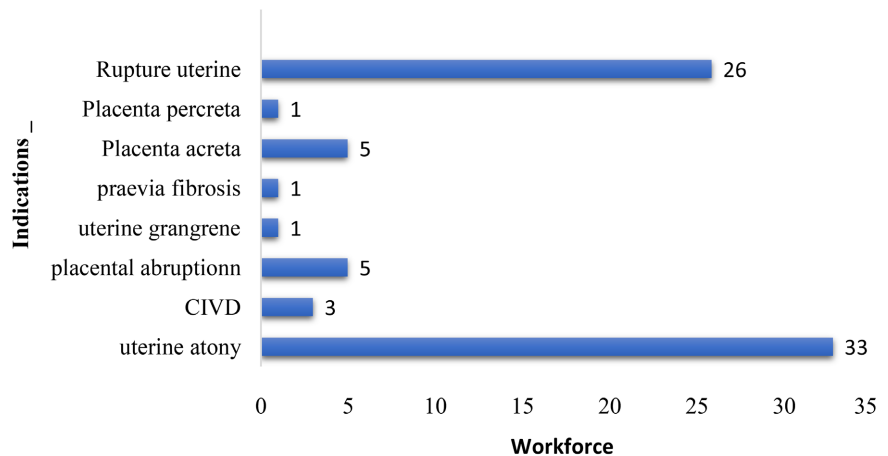


Figure 1. Distribution of patients according to indications.

Subtotal inter-adnexal hysterectomy was performed in 71 cases (94.67%). General anesthesia was performed in 69% of patients.

Fifty-seven (57) patients (76%) were operated on by students at the end of their specialized studies diploma in gynecology-obstetrics.

The average treatment time was 148.02 minutes with extremes of 10 min and 2880 min. Fifty-eight patients (77.33%) were treated in less than 60 minutes.

The average duration of interventions was $110.07 \text{ minutes} \pm 3.36$ with extremes of 15 minutes and 180 minutes. There was no significant relationship between operator qualification and intervention duration.

Sixty-four patients or 85.33% had received blood transfusion. The average number of 250 ml bags received per patient was 2.48 ± 1.10 with extremes of 1 and 5 bags.

Three cases (5.08%) of parietal suppuration, one case of parietal hematoma and one case of vesico-vaginal fistula. Sixteen cases or 21.33% of maternal death recorded.

Three poor prognostic factors were observed during our study, namely: uterine atony increases the risk of death by 4 (OR = 4 [1.1 - 12] at 95% CI; $p = 0.024$); hemodynamic shock before surgery with $p = 0.016$; 95% CI. The absence of blood transfusion increases the risk of death by 18 (OR = 18 [4 - 85] at 95% CI; $p = 0.000$) (**Table 1**).

Table 1. Distribution of patients according to prognostic factors.

	Deceased		GOLD	P-value
	YES (not)	NO (not)		
Age				
Less than 35 years old	11	40	1 (0.3 - 34)	NS
Greater than or equal to 35 years old	5	19		
Operator				
Students	14	43	2 (0.5 - 12.6)	NS
Gynecologists	2	16		
Indications				
Uterine atony	11	22	4 (1.1 - 12)	0.024*
Others	5	37		
Parity				
Less than 4	11	34	2 (0.5 - 5.2)	NS
Greater than or equal to 4	5	25		
Hemodynamic status				
Stable	0	16	1 (0.4 - 7)	0.016**
State of shock	16	43		
No transfusion				
Yes	8	56	18 (4 - 85)	0.000**
No	8	3		
Quality of ANC				
Bad	11	38	1 (0.4 - 4)	NS
Good	5	21		

NS: not significant; *: chi 2; **: Fisher test; ANC: Antenatal Care.

4. Discussion

4.1. Frequency

During the study period we recorded a hospital frequency of 0.48%. It is close to that found in developing countries, in Pakistan (0.40%) in 2018 [5]. On the other hand, we observe a trend towards a reduction in the use of this intervention in Europe and the United States, Dorigon *et al.* [6]; Pathiraja *et al.* [7] and Kallianidis *et al.* [8] who reported 0.08% respectively; a variation between 0.02% to 0.08% and 0.05%. Several factors are involved in this high frequency in Africa: difficult access to quality obstetric care, insufficient health infrastructure and an economically weak population [9].

4.2. Sociodemographic Characteristics

4.2.1. Age

The average age was 32.89 ± 5.93 years with extremes of 18 and 46 years. The age group between 30 and 35 was the most represented with 37.33% of cases. Age was not associated with any risk of obstetric hysterectomy in our study. Randriambelomnanana found an average age of 26.3 ± 5.8 years [1]; similarly Dorigon *et al.* [6] and Oge *et al.* [10] reported respectively a mean age of 31.2 years and 31.3 ± 5.5 years. In the literature, high age (greater than 35 years) is classically reported to be associated with an increased risk of obstetric hysterectomy [1].

4.2.2. Parity

Multiparity is classically reported to be associated with an increased risk of obstetric hysterectomy. We observed in our series that the average parity was 3.25 ± 1.92 with extremes of 0 and 11. Pauciparous and multiparous were in the majority respectively in 41.67% and 32% of cases. These results are similar to those reported in the literature. Sy *et al.* reported 58% multiparous [9]. According to Lhagadang *et al.*, the average parity was 6.2 ± 2.3 with extremes of 0 and 13. Multiparous people represented 41.7% [11]. Multiparity is described as a risk factor for uterine atony and uterine rupture. These elements (uterine atony and uterine ruptures) are the main indications for obstetric hysterectomy in our study. Multiparity is therefore a risk factor for obstetric hysterectomy.

The socioeconomic level of the patients was low. This low socio-economic level is a source of obstacle to access to quality obstetric care responsible for complications during pregnancy, during or after childbirth in very young women.

4.2.3. Indications

Uterine atony was the main indication in 44% of cases followed by uterine rupture in 36%. These results are consistent with those reported in wrapping countries. Randriambelomanana *et al.* found 69.23% uterine rupture [1]. Lhagadang *et al.* reported 63% uterine rupture and 21.7% uterine atony [11]. Korejo *et al.* found 47.10% uterine rupture [12]. On the other hand, in developed countries the main indications were placental insertion anomalies (placenta previa, placenta accreta or percreta) linked to the increase in cesarean sections over the last two decades. Dorigon *et al.* reported 44.7% placenta accreta [6]. Athanasios *al* reported 34.8% placental anomaly [8]. Colmorn *et al.* reported 26% placenta accreta [13]. In developing countries the indications (uterine atony and uterine rupture) are linked on the one hand to poor quality of obstetric care, to an unsuitable technical platform and on the other hand to prolonged obstructed labor, to dehiscence of a old scar, excessive use of oxytocics.

4.2.4. Type of Hysterectomy Performed

Subtotal interadnexal hysterectomy was performed in 71 cases or 94.67%. Our results are consistent with literature data where subtotal interadnexal hyste-

rectomy is the most commonly performed type of hysterectomy [1] [9]. The precarious state of patients upon entry requires rapid hemostasis, excluding all unnecessary procedures. Subtotal interadnexal hysterectomy therefore constitutes the main operative technique in cases of emergency hysterectomy. Delivery hemorrhage represents the main indication for obstetric hysterectomy in developed countries; it is only considered in the event of failure of conservative treatments (use of prostaglandins, arterial embolization). Moreover, other conservative surgical techniques such as vascular ligations (ligations of the hypogastric arteries, or staged vascular ligations), or uterine padding (B-Lynch and Cho techniques) constitute an alternative as effective as hysterectomy in case of delivery hemorrhage. These techniques deserve to be widely disseminated to all obstetric practitioners [1].

4.2.5. Type of Anesthesia and Hemodynamic Status

General anesthesia was performed in 52 patients or 69%. All anesthesia was carried out by senior anesthesia technicians due to the lack of an anesthesiologist-resuscitator in our health structures. Before the surgical intervention 78.67% of patients were in a state of hemodynamic shock. General anesthesia was therefore indicated given this high rate of hemodynamic shock. This is the anesthesia technique carried out in a hemodynamic emergency because spinal anesthesia causes hypotension.

4.2.6. Incidents

Seven cases incidents took place intraoperatively including 5 cases or 6.67% of bladder lesions and two cases (2.67%) of appendix lesions. They have been noted in the indications for hysterectomy of dilapidated uterine rupture. Our results are comparable to those reported by other studies, namely: lesions of the adnexa, lesions of the bladder, ligation or section of the ureters. Abidi *et al.* reported 6% of bladder lesions [14]. In Africa, these bladder wounds are sometimes sources of vesicovaginal fistulas that are difficult to treat and problems with social integration [1].

4.2.7. Blood Transfusion

Sixty-four patients or 85.33% had received blood transfusion. The average number of bags of packed red blood cells transfused was 2.48 ± 1.10 with extremes of 1 and 5 bags. Our results are similar to those reported in the literature where the patients were polytransfused [6]. In our study, the absence of blood transfusion constitutes a poor prognostic factor, multiplying the risk of death by 18 (OR = 18 [4 - 85]; $p = 0.000$ at 95% CI). This high rate of transfusions is linked to blood loss with shock due to delay in treatment due to patient referral. The absence of transfusion for certain patients was linked to the unavailability of blood products and/or the patients lack financial means.

4.2.8. Complications and Maternal Prognosis

In our series we identified three cases (5.08%) of parietal suppuration, one case

of subparietal hematoma and one case of vesico-vaginal fistula. Sixteen cases or 21.33% of maternal deaths were recorded. Three poor prognostic factors were observed during our study, namely: uterine atony increases the risk of death by 4 (OR = 4 [1.1 - 12]; $p = 0.024$ at 95% CI); hemodynamic shock was linked to a risk of death (OR = 1 [0.4 - 7]; $p = 0.016$; 95% CI); the absence of blood transfusion increases the risk of death by 18 (OR = 18 [4 - 85]; $p = 0.000$ at 95% CI). As for the occurrence of uterine atony, it was significantly linked to vaginal delivery and increased the risk of occurrence by 10 (OR = 10 [3.1 - 32.1]; $p = 0.000$; 95% CI). The delay in treatment and the extreme urgency of these interventions expose these patients to many complications, particularly infectious ones. The classic complications are hemorrhagic shock and bladder lesions. Extension of uterine lesions towards the bladder and/or accidental injury to the bladder during the procedure is not uncommon [1]. In both southern and northern countries, the maternal death rate remains high but more pronounced in the south than in the north: 29% in Guinea Conakry in 2017 [9]; 4.26% in Brazil in 2021 [6]. Korejo *et al.* reported 9% maternal deaths [12]. In 2022, Abidi *et al.* reported 8% maternal deaths in Tunisia [14].

5. Conclusion

A mutilating practice fraught with complications is common in Togo, more precisely at the CHU-SO with a frequency of 0.48% of births. The high rate of obstetric hysterectomy in Togo is linked to the low socio-economic level of the population; a lack of technical support and the unavailability of quality obstetric care. Improving the health system would be an asset for reducing the mortality rate linked to obstetric hysterectomy in black Africa and precisely in Togo.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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