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MANAGEMENTOF UTERINE RUPTURE AT THE TEACHING HOSPITAL OF BRAZZAVILLE

Radiodiagnosis

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ABSTRACT

The aim of the study was to describe the epidemiological, clinical, therapeutic and prognostic aspects of uterine rupture at the Teaching Hospital of Brazzaville during the period which the caesarean section deliveriesand other major surgical obstetric interventions werefree of charge of charge, in order to appreciate the contribution of free health care on the performance of care.

It was a descriptive and transversal study, with retrospective data collection.

The frequency of ruptured uteruswas 1 in 288 deliveries (0.34%). Uterine rupture occurred in patients with low socioeconomic status, of whom 82% were referred from peripheral health care facilities. Women aged 30 to 40 years (69.6%), women with history of more than three pregnancies(60.9%), and multiparous (78.3%) were the most affected; with often a scarred uterus(78.3%). Uterine ruptures were caused by the scarred uterus (60.8%); cephalo-pelvic disproportion (26%); the use of uterotonics(Misoprostol and Oxytocin) in 13% of cases.The uterine lesion found was most often segmental-corporeal (19.6%) and segmental (13%) rupture. Injuries toother close organs were also noted, mostlythe vagina (10.8%). Uterine repairwas preferred surgical intervention (78.3%).

Conclusion: No uterus rupture occurred in the ward, risk factors for rupture were certainly not identified before the admission, during antenatal care, and it seems that the caesarean section free of charge was not an effective measure in solving of problems related to the management of mothers and their product of conception' health by policies makers.

KEYWORDS

Uterine rupture, Management, Brazzaville.

Introduction

Uterine rupture refers to disruption of all uterinelayersduring pregnancy or labor. It corresponds to two different prognostic entities. The first one refers to complete (or true) disruption of all uterine layers, including the serosa[1]. By comparison, the second one known as an incomplete or uterinedehiscencewhereuterinescarseparation in noted and the serosaremains intact.The latest is most often asymptomatic, its diagnosis isfortuitous (during iterative caesarean section) and has a better maternal and fetal prognosis compared to the complete rupture [2].

The incidence of uterine rupture in France, on scarred or unscarreduterus, is estimated according to studies to range between 1/1000 and 1/2000 births;it reaches 1/100 in developing countries [3]. Its management sometimes ends in a hysterectomy which compromises the procreation in still young women, in countries where family stability is related to a woman's ability to procreate.

The increasing frequency of deliveries in scarred uterusjustifies the increase in the incidence of uterine rupture [4,5]. This obstetric problem, a rare condition in developed countries, occurs frequently in developing countries due topoor surveillance of pregnant women, insufficiencyof trained staff, low socioeconomic status of patients and lack of operating equipment [6]. In Madagascar, the incidence of uterine rupture went from 0.5% to 0.24% in 2006 due to the improvement of accessibility to care related to the implementation of the free caesarean section policy [4].

In Congo-Brazzaville, apart from the policy of free cesarean section whichlasted some time, the obstetrics and gynecology department of the Teaching Hospital of Brazzaville has undertaken restructuring as part of the strengthening of trained staff members, mandatory and permanent presence in the emergency unit of a team supervised by a senior, the improvement of the laborsurveillance (mandatory Partogramand Cardiotocograph). According to a previous study carried out in the department, the improvement of the maternal and fetal prognosis in the management of the third trimester bleeding is dependent upon the availability of blood products and especially on the mastery of emergency obstetric and neonatal care [7].

Uterine rupture, anindicator of the management of obstetric emergencies, is influenced by the socioeconomic status of the country [8]. Hence, this studywas conducted to describe the epidemiological, clinical, therapeutic and prognostic profile of parturients with uterine rupture at the Teaching Hospital of Brazzaville during the period of the existence of free of charge caesarean section deliveries and major obstetric interventions (which compensate the socioeconomic level), in order to appreciate the contribution of free of charge cares on the performance of care.

Patients and methods

It was a descriptive and cross-sectional study, withretrospective data collection,conducted from January 2nd, 2015 to January 2nd, 2016, in the Obstetrics and Gynecology department of the Teaching Hospital of Brazzaville. Records of pregnant women of at least 28 weeks of gestation, based on thelast menstrual period and / or the early ultrasound, who presented with ruptured uterus were included. Those with uterine raptures of traumatic origin, or managed in another health care facility referred later in our facility for the management of postoperative complications were not included.

The sampling was non-probabilistic.Studied variables were: socio-demographic characteristics (age, occupation, marital status), obstetrics and gynecology past history, management data, maternal and fetal complications. Data were analyzed using Epi Info software 3.4.5.

Results

During the study period, 13,264 deliveries were performed,uterine rupture was noted in 46 cases, thus the frequency of l uterine rupture in 288 deliveries (0.34%).

Uterine rupture was more frequentin housewives aged 30 to 40 years, with history of more than three pregnancies, multiparous, with scarred uterus (Table I).

Table II summarizes the reasons for hospitalization in women with ruptureduterine.The causes of rupture were represented by scarreduterus in 28cases (60.8%); cepholopelvicdisproportion in 12 cases (26%); the use of uterotonics (Misoprostol and Oxytocin) in 6 cases (13%).

The uterine lesion found was most often the segmento-corporeal and segmental rupture. Injuries toclose organs were dominated by vaginal lesions(Table III).

concerning the management of patients, resuscitation was performed in 30 cases (65.2%), blood transfusion in 10 cases (21.7%), uterus repairin36 cases (78.3%) was the most performed surgical intervention

under general anesthesia in 34 cases (73.9%), sometimes associated with vascular ligation in 13 cases (28.3%) (Table IV).

Neonatal complications were severe, including neonatal asphyxia 12 cases (26.1%) and death 26 cases (56.5%). Anemia was the most common maternal complication, causing one maternal death (Table VI).

Discussion

The frequency of uterine rupture reported in this study 0.34%, is close to the literature [8,9]. The age of onset of uterine rupture corroborates the findings of Rajoaonarisonwith the mean age of 30 years in Africa [10].

Uterine rupture was more common among women of low socioeconomic status (housewives, older, with more than three pregnancies and multiparous); with scarred uterus. Several risk factorsresponsible for uterine rupture in developing countries have been already reported [3, 11, 8]. Indeed, uterine rupture was mostly found (78.3% of cases) in patients with scarred uterine, some authors claim that rupture of a previouscaesarean section scaris the main risk factor [11].However, others suggest a vaginal delivery attempt in case of two previous uterine surgeries when the obstetric situation is favorable, and recommend a booked caesarean section only in case ofthree previous uterine surgeries. However, it is believed that the data currently published in the literature do not recommend the ultrasound measurement of the lower segment during pregnancy to decide the route of delivery [12]. For other authors [13], the risk of uterine rupture during a vaginal delivery attemptin patient with scarred uterus bya previous caesarean section is caused by many factors and predictive scores have not shown clinical utility. This risk appears to be decreased in case of a previous vaginal delivery and increased in corporal scar, a previous uterine rupture, induction of labor, macrosomia and interpregnancy interval of six months. Thus, the decision of the choice of delivery route had to be made with the obstetrician's approval no later than the eighth month of gestation, based on the individual risk factors for failure of attempt of vaginal delivery after a previous caesarean section and scarred uterus. The attemptof vaginal delivery after a previous caesarean sectionis the preferred option for patients with less risk factors [14].

Most parturients (82.6% of cases) were referred. Suspected uterine rupture and pre-rupture syndrome were the most common reasons for hospitalization, with 26 and 17.4% of cases, respectively. It should be advocated strict labor monitoring by partographand early referral of patients with abnormal labor [8]. In peripheral health care facilities, patients are often referred by non-medicalized means of transportation, without even a simple venous line.

Two cases of uterine rupture were diagnosed after delivery. Delayed presentations of uterine rupturearealso reported in literature, the diagnosis being make in a context of delivery [15]. For other authors, the association of alteredfetalheart rate pattern(mainly low heart rate) and disappearance of the uterine contractions is pathognomonic of the onset of uterine rupture [16]; we did not report it.

Segmental-corporeal lesions were the most predominant with 19.6% of cases, often associated injuries of the vagina, the uterine artery and sometimes the bladder. Itwas often vertical lateral parametrial rupture, likely to more frequently reach the cervix and the ipsilateral uterine vascular pedicle [13]. There are controversies in the literature: some authors report up to 50% of segmental-corporeal lesions [9], others find more segmental lesions (57.2% of cases) and rarely segmental-corporeallesions (5.7%) [6]; followed by segmental lesions 13% of cases.

The management required intensive resuscitation in 65.2% of cases prior to the surgical procedure. This urgent surgery was performed most often under general anesthesia (73.9% of cases). Taking into account the extent of the lesions, the young age of parturientsand the desire of maternity, and maternalgeneralcondition,theuterine repair (78.3% of cases of hysterorraphy) was the preferred surgical intervention performed. In some cases, in order to control postoperative hemostasis, vascular ligation was performed (28.3% of cases). When the uterus was too weak, a tubal ligation was associated (13% of cases) to prevent possible uterine rupture during the subsequent pregnancy. Some authors achieve up to 50% of cases of hysterectomy [9].

Anemia was the most common maternal complication (69.6%). However, due to frequent breaks in blood products, only 21.7% of patients had blood transfusion. Moreover, anemia has been the cause of one maternal death. Fetal death related to uterine rupture were 65.5%. These results are below most of the African series data on the perinatal mortality rate [9, 17, 18].

The causes of uterus rupture are dominated by the scarred uterus (60.8%), the cepholopelvicdisproportion(26%), and the use of oxytocic (13%).Lesions were segmental-corporeal and segmental. Uterine repairbyhysterorrhaphywas the most common surgical intervention performed.

No uterus rupture occurred in the department, risk factors for rupture were certainly not identified before the admission, nor during antenatal care, and we preferred performing the uterine repair.

The maternal- and fetal morbidity associated with uterine rupture is dominated by the risk of perinatal death and hemostatic hysterectomy [11]. Uterine rupture is therefore a real barometer in the management of obstetric emergencies [8], however, maternal death is a very rare event [13]. With regard to the above, we can note that cares provided in our facility have improved considerably during the period when caesarean section and other major obstetrics surgical interventions were freeof charge.

Conclusion

Uterine rupture was the prerogative of parturientswith low socio-economic status, whose antenatal care were not donein our health facility, admitted at the stage of obstetric complications. Segmental-corporeal lesions were the most common found lesions, often requiring resuscitation and uterine repair. Anemia was the most dread maternal complication, however there are unmet needs in blood products. The fetal outcome is worse.

Free caesarean section not only did not solve maternal and fetal' health problems upstream, but also downstream many aspects have not been solved.

Table I: Epidemiological data of parturientswho presented with uterine rupture at the Teaching Hospital of Brazzaville

	Frequency(n=46)	Percent (%)
Occupation		
Students	6	13
Housewife	30	65.2
Marketvendor	10	21.8
Age (year)		
15 – 19	6	13
20 – 29	8	17.4
30 – 40	32	69,6
Number of pregnancies		
One	6	13
2 –	412	26.1
5 –	828	60.9
Parity		
Nulliparous	4	8.7
Primiparous	8	17.4
Multiparous(≥4)	34	73.9
Pastobstetrichistory		
Scarred utérus	36	78.3
Unscarred utérus	10	21.7

Table II: Reason for hospitalization of parturients with uterine rupture at the TeachingHospital of Brazzaville

	Frequency (n=46)	Percent (%)
Referred		
Hypovolemicshock	6	13
Suspectedrupturedуterus	12	26
Pre-rupture syndrome	8	17.4
Bleeding	8	17.4
Malpresentation	2	4.4
Haemorrhage of delivery	2	4.4
Self referral		
Acute fetaldistrees	3	6.5
Pre-rupture syndrome	5	10.9

The causes of rupture were: scarred uterus: 28cases (60.8%); cephalopelvicdisproportion 12 cases (26%); use of uterotonics (Misoprostol and Oxytocin): 6 cases (13%)

Table III: Type of injuries in patients with uterine rupture at the Teanching Hospital of Brazzaville

	Frequency (n=46)	Percent (%)
Uterine injuries		
Dehiscence scar	1	2.2
Peritoneal rupture	2	4.3
Complete segmental rupture	6	13
Segmental-corporeal rupture	9	19.6
Corporeal rupture	3	6.5
Associated injuries		
Bladder	1	2.2
Vaginal	5	10.8
Round ligament injuries	3	6.5
Uterine artery rupture	4	8.7

Table IV: Management ofParturientswith Uterine Rupture at Teaching Hospital of Brazzaville

	Frequency(n=46)	Percent (%)
Medical management		
Resuscitation	30	65.2
Frozen plasma	3	6.5
Blood transfusion	10	21.7
Surgical management		
Type of anesthesia		
Rachi anesthésie	12	26.1
General anesthesia	34	73.9
Type of surgical intervention		
Hysterectomy	10	21.7
Uterinerepair	36	78.3
Additionalsurgical intervention to uterinerepair		
Tubalsterilization	6	13
Vascular ligature	13	28.3

Table V: Maternal and fetal complications in parturientswithuterine rupture at the Teaching Hospital ofBrazzaville

	Frequency(n=46)	Percent (%)
Maternal complications		
Anemia	32	69.6
Infection	3	6.5
Death*	1	2.2
Intravasculardisseminated coagulation	2	4.4
Thrombopenia	1	2.2
Fetal complications		
Neonatal asphyxia	12	26.1
Iintra-partumdeath	26	56.5

***maternaldeath by hypovolemiarelated to bloodproductssupply**

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