International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
Indexing: Embase
Impact Factor (RJIF): 6.71

www.gynaecologyjournal.com
2026; 10(1): 01-04
Received: 02-11-2025
Accepted: 05-12-2025

Hissien AM
1. Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad
2. Mother and Child University Hospital, N'Djamena, Chad

Kodjibetim R
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Gabkika BM
1. Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad
2. Mother and Child University Hospital, N'Djamena, Chad

Maimian DG
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Tchombi H
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Barma D
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Toudjirob D
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Toyoum RS
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Passoret KE
Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad

Foumsou L
1. Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad
2. Mother and Child University Hospital, N'Djamena, Chad

Corresponding Author:
Hissien AM
1. Faculty of Human Health Sciences, University of N'Djamena, N'Djamena, Chad
2. Mother and Child University Hospital, N'Djamena, Chad

Uterine ruptures on scarred uterus: Epidemiological and prognostic aspects in N'djamena mother and child university hospital

Hissien AM, Kodjibetim R, Gabkika BM, Maimian DG, Tchombi H, Barma D, Toudjirob D, Toyoum RS, Passoret KE, Foumsou L

DOI: https://www.doi.org/10.33545/gynae.2025.v10.i1l.1846

Abstract

Objective: show the epidemiological and prognostic aspects of uterine ruptures on scarred uterus in N'djamena the mother and Child University Hospital.

Patients and Methods: retrospective cross-sectional observational study conducted from 25 November 2020 to 24 November 2021, covering 235 deliveries on scarred uteri, of which 26 cases of uterine ruptures were diagnosed and operated on. The variables studied were sociodemographic, reproductive, clinical, therapeutic and prognostic. The data collected were analyzed using SPSS software. Absolute and relative frequencies and variables of interest were calculated.

Results: a total of 235 deliveries on scarred uteri were recorded, among which 26 cases of uterine ruptures were reported, representing a frequency of 11.1%. The 30-35 age group was the most affected The 30-35 age group was the most affected (38.5%), with a mean age of 28 ± 6.51 years and extremes of 18 and 41 years. The patients were married (96.2%); had no schooling (76.9%) and had few children (61.5%). Most patients were referred (57.7%) and the ambulance was used as a means of transport (50%). The intergenetic interval was greater than or equal to 24 months (38.4%). Prenatal care consisted of 1 to 3 antenatal visits in 46.2% of cases. Labor had started at home for 96.2% of the women, with a maximum duration exceeding 18 hours in 73.1%. Obstetric maneuvers were performed in 30.8% of cases. Uterine bleeding was the main reason for referral in 88.5%; hemoglobin levels were between 7 and 10 g/dl in 57.7%. The rupture was complete in 50% of cases, segmental in 69.2%, and associated injuries (bladder, uterine pedicle, and bowel) were reported in 23.1%. Hysterorrhaphy without tubal ligation was performed in 56.7%. We reported that newborns from incomplete ruptures were alive in 46.2% of cases, while those from complete ruptures were deceased in 50%.

Conclusion: The prevalence of uterine rupture in scarred uteri remains high, especially with the advent of free emergency cesarean sections in our context. However, awareness and information regarding previous diagnoses and assessment of the old scar, good quality monitoring of the pregnancy, and avoiding delays in the decision to bring the laboring woman to the hospital could help reduce the risk of uterine rupture in scarred uteri.

Keywords: Scarred uterus, uterine rupture, epidemiology, prognosis N'djamena

Introduction

Uterine rupture is defined as a complete or partial non-surgical disruption of the wall of the pregnant uterus. It is a serious obstetric complication that jeopardizes both maternal and fetal prognosis. It constitutes an obstetric emergency and, along with other obstetric hemorrhage situations, represents the leading cause of maternal mortality worldwide [1, 2]. Over the past twenty years, the number of pregnant women with a scarred uterus has increased with the advent of free cesarean delivery in Africa and especially in most developed countries. In Europe, uterine rupture complicates about 3% of deliveries in cases of a uterine scar. In sub-Saharan Africa, its frequency ranges from 0.2% to 11.5%, with 0.34% in Congo in cases of a healthy uterus, and it accounts for nearly 60% of deliveries involving a scarred uterus [3]. Due to the presumed fragility of the lower segment, the presence of a uterine scar significantly increases the risk of uterine rupture, reaching 2 to 4% according to various studies [3, 4]. Delays and the sociocultural weight in making decisions to bring the patient to the hospital very early, along with poor monitoring of labor in a low-resource technical setting like ours, represent a major concern for obstetricians when deciding on the mode of delivery in the case of a scarred uterus.

Thus, the aim of the present study was to demonstrate the extent of uterine rupture in cases of a scarred uterus at the mother and Child University Hospital in N'Djamena.

Patients and Methods: This was a retrospective cross-sectional observational study conducted from November 25, 2020, to November 24, 2021, in the Gynecology-Obstetrics departments of the Mother and Child University Hospital of N'Djamena, covering 235 deliveries on scarred uteri, of which 26 cases of uterine rupture were diagnosed and surgically treated. Included were parturients with a gestational age of 28 weeks or more who consented to participate in the study. Cases of uterine rupture in a healthy uterus were excluded. The study variables included sociodemographic and reproductive factors (age, education level, marital status, mode of admission, parity), clinical factors (circumstances of discovery, functional and physical signs, fetal and pelvic status, labor progress and duration, use of uterotonics, abdominal expression, use of delivery instruments, and type of rupture), and therapeutic factors (medical, surgical:

2. Results: Uterine rupture was observed in 11.1% (n=26) of the 235 women with a scarred uterus.

Table 1: Sociodemographic and reproductive characteristics

Sociodemographic characteristics	N	%
Age (years)		
< 20	2	7.7
20-25	8	30.8
25-30	4	15.4
30-35	10	38.5
35-40	1	3.8
≥ 40	1	3.8
Schooling		
No No schooled	20	76.9
Primary	5	19.2
Secondary	1	3.8
Maritus statut		
Married	25	96.2
Divorced	1	3.8
Admission mode		
Referred	15	57.7
Not referred	11	42.3
Means of transport		
Ambulance	13	50.0
Common urban transport	8	30.8
Personal car	5	19.2
Parity		
Primipara	2	7.7
Paucipara	16	61.5
Multipara	5	19.2
Grand multipara	3	11.5

The majority of the patients were young, and most were uneducated. The mode of transport remains the ambulance, as most of these patients first go through district hospitals before being referred to the Mother and Child University Hospital.

Table 2: Clinical Characteristics

Intergenesic Space (Month)	N	%
≤ 12	8	30, 7
12-24	8	30, 7
>24	10	38, 4
Prénatal surveillance		
0	5	19, 2
1 à 3 C	12	46, 2
4 à 7	9	34, 6
Gestationnal Term		
28 SA - 36 SA + 6days	1	3, 8
37 SA - 41 SA + 6 days	25	96, 2
Surgical Antécédents		
Myomectomy	2	7, 7
Cesarean	24	92, 3
Delivery		
Home	25	96, 2
Hospital	1	3, 8
Duration <18 hours	7	26, 9
Duration≥ 18 hours	19	73, 1
Cause of the rupture		
Use of Ocytocin	6	23, 1
Surgical pelvic	5	19, 2
Pbstetrical Maneuver	8	30, 8
Macrosomia	2	7, 7
Multipara	1	3, 8
Short inter genesic space	2	7, 7
No cause	2	7, 7

The identified etiologies are variously distributed among previous cesarean scars, the onset of labor at home, delays in referral, and improper obstetric maneuvers (labor monitoring).

Table 3: Therapeutic aspects and prognosis

Evolution	Treatment		Total
	Hystérectomie	Hystérorraphia	
Simple	19 (73.1%)	3 (11, *.5%)	22 (84, *.6%)
Complications	4 (**15.4**%)	0 (0%)	4 (15.4%)
Total	23 (88.5%)	3 (11.5%)	26 (100%)

Postoperative outcomes were independent of the treatment method received. Statistically non-significant result: Chi²=0.617, P=0.432.

Table 4: Distribution of patients according to the nature of the rupture and the condition of the newborn.

Type of rupture	Etat du nouveau-né		Total
	alive	Death	
Complète	1 (3.8%)	13 (50%)	14 (53.8%)
Incomplète	12 (46.2%)	0 (0%)	12(46.2%)
Total	13 (50%)	13 (50%)	26 (100%)

The condition of the newborn at birth was significantly related to the nature of the uterine rupture. Thirteen (50%) of the newborns from complete ruptures died before birth. Chi²=18.726, P=0.000

Discussion

The formation of the uterine scar would follow the same rules as tissue healing in general and muscle healing in particular, consisting of fibrous tissue, short bundles of smooth muscle, and neovascularization. Several histological factors would favor poor healing: muscle fragmentation, hyalinization, inflammation, and trophoblastic proliferation.

The delay and sociocultural weight in making the decision to bring the patient to the hospital very early and the poor monitoring of labor in a context of a limited-resource technical platform like ours constitute a constant concern for obstetricians when deciding the mode of delivery in the case of a scarred uterus. Regarding the parturient, several African authors report the high frequency of uterine rupture among referred women, after prolonged labor lasting several hours or even several days in healthcare facilities by unqualified personnel, who are unaware of the contraindications for vaginal delivery in the case of a scarred uterus and who misuse oxytocin [6, 7, 8]. Moreuver, the combination of characteristics such as the young age of the patients, the lack of schooling of young girls, multiparity, and late referrals constituted risk factors for uterine rupture on a scarred uterus. At this age, sexual activity is most intense, especially due to early maternity in sub-Saharan Africa [9, 10]. Uterine ruptures were also frequently found in pregnant women with pregnancies on a scarred uterus from previous cesarean sections, where prenatal care (PNC) was not of good quality. Metrorrhagia was generally the reason for referral, usually after poorly monitored labor, and the referral was made late [11, 12]. Hysterorrhaphy without tubal ligation was the treatment of choice since high parity results from the pronatalist nature of our societies and the refusal of hysterectomy by some families [13]. Most patients were transfused despite the reluctance of some parents regarding blood donation. The condition of the newborn at birth was significantly related to the nature of the uterine rupture. Fifty percent of newborns from complete ruptures died before birth, and a maternal death was also reported [14, 15].

Conclusion

Uterine rupture on a scarred uterus remains frequent with the free provision of cesarean sections in our context. The quality of pregnancy monitoring, poor labor supervision, the overuse of uterotonics, the lack of knowledge regarding acceptable conditions for vaginal delivery in cases of a scarred uterus, and late referrals all increase the occurrence of uterine ruptures on a scarred uterus. It would therefore be important, following this study, to conduct a multicenter analytical study in the city of N'Djamena to obtain an overall view of uterine rupture on a scarred uterus and to deduce the risk factors.

References\

1. Marpeau L. Treatise on obstetrics: uterine rupture. Paris (France): Elsevier Masson SAS; 2010.
2. Kinenkinda X, Mukuku O, Chenge F, *et al*. Cesarean section in Lubumbashi, Democratic Republic of Congo II: risk factors for maternal and perinatal mortality. Pan African Medical Journal. 2017;26:208. doi:10.11604/pamj.2017.26.208.12148.
3. Guiliano M, Closset E, Therby D, Le Gouëff F, Deruelle P, Subtil D. Signs, symptoms, and complications of complete and partial uterine ruptures during pregnancy and delivery. European Journal of Obstetrics and Gynecology and Reproductive Biology. 2014;179:130-134.
4. Gueye M, Diouf A, Wade M, *et al*. Update on the epidemiology of uterine rupture in Africa based on hospital data from Senegal. Journal of the SAGO. 2020;21(2):20-28.
5. Mbongo JA, Ndinga H, Itoua C, Iloki LH. Management of uterine rupture at the Teaching Hospital of Brazzaville. International Journal of Scientific and Academic Research. 2019;8(1):53-55.
6. Baldé IS, Sylla I, Diallo MH, *et al*. Evolution of uterine ruptures at the maternity of the National Hospital Ignace Deen (CHU of Conakry). Medecine Tropicale Sante Internationale. 2021;1(1):ZY14-QG95. doi:10.48327/ZY14-QG95.
7. Fane S, Sylla C, Bocoum A, *et al*. Epidemiology of uterine rupture: a case-control study at the District Hospital of Bougouni, Sikasso (Mali). Journal de la SAGO. 2020;21(1):36-41.
8. Fouelifack YF, Fouedjio JH, Ngowe F, *et al*. Therapeutic pathway of parturients arriving with uterine rupture at the Central Hospital of Yaoundé. Health Sciences and Diseases. 2019;20(1):39-45.
9. Hamet TA, Gallais A, Garba M. Childbirth on a scarred uterus in Niger: about 590 cases. Medecine d'Afrique Noire. 2001;48(2):63-66.
10. Diallo FB, Idin C, Vangeederhuysen D, Baraka I, Hadiza I, Labo I, Dare M, Garba M. Uterine rupture at the central reference maternity hospital of Niamey (Niger): epidemiological aspects and prevention strategies. Medecine d'Afrique Noire. 1998;45(5):277-282.
11. Diallo MH, Baldé IS, Mamy MN, Diallo BS, Baldé O, Barry AB, *et al*. Uterine rupture: sociodemographic, etiological aspects and management at the University Clinic of Gynecology and Obstetrics of Donka Hospital, CHU of Conakry, Guinea. Medecine Sante Tropicale. 2017;27:305-309.
12. Racheif KBH. Uterine rupture [doctoral thesis]. Bejaia (Algeria): Faculty of Medicine, University of Bejaia; 2016.
13. Boutaleby A, Aderdour M, Zhirima A. Uterine ruptures. Journal de Gynecologie Obstetrique et Biologie de la Reproduction. 1982;11:87-89.

14. Keren O, Eyal S, Amalia L, Miria K, Moshe M. Uterine rupture: differences between a scarred and an unscarred uterus. American Journal of Obstetrics and Gynecology. 2014;191:425-429.
15. Kelechi NE, Adegboyega KI, Farzana A, Chisara CU. Patterns of uterine rupture in Nigeria: a comparative study of scarred and unscarred uterus. Journal of Obstetrics and Gynaecology. 2005;25:260-262.

How to Cite This Article
Hissien AM, Kodjibetim R, Gabkika BM, Maimian DG, Tchombi H, Barma D, *et al*. Uterine ruptures on scarred uterus: Epidemiological and prognostic aspects in N'djamena mother and child university hospital. International Journal of Clinical Obstetrics and Gynaecology 2026; 10(1): 01-04.