

Childbirth on a Scarred Uterus: Epidemiology and Maternal-Fetal Prognosis in Mbuji mayi

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Abstract

A scarred uterus refers to a uterus bearing one or more incisions of the wall, most often following a cesarean section, a situation that has become increasingly frequent. This study at Grace Divine Hospital (Mbuji mayi, DRC) aimed to determine the frequency of deliveries on a scarred uterus, describe the profile of the women, specify the causes/indications of the scars, and document the maternal-fetal prognosis.

We conducted a retrospective descriptive study from June 1, 2024, to May 31, 2025. Out of 850 deliveries, 122 involved a scarred uterus. Data were collected from medical records and analyzed using SPSS 20 (statistical tests, chi-square, $p < 0.05$).

The frequency was 14.4%. The mean maternal age was 25 years (58.2% between 20–35 years). Cesarean section was the main cause (94.3%). Most women had a single uterine scar (72.1%). Regarding the mode of delivery, 96.7% delivered vaginally and 3.3% by cesarean section. Maternal complications occurred in 9% of cases, mainly uterine atony (36.3%) and rupture (27.3%). On the neonatal side, 83.6% had an Apgar score of 8–10 at the 5th minute, and 89.3% had a birth weight between 2500–4000 g.

Delivery on a scarred uterus is frequent at Grace Divine. Vaginal birth remains predominant, with an overall favorable prognosis, despite a non-negligible risk of maternal complications (uterine atony, rupture). Rigorous prenatal follow-up and careful selection of candidates for vaginal delivery are essential.

Keywords: Uterus cicatriciel, accouchement.

INTRODUCTION

The scarred uterus is a uterus with one or more myometrial scars, in any part of the body or the isthmus. The most common circumstances that lead to the creation of a scar on the uterus are: cesareans, myomectomies, uterine plastic surgeries, uterine rupture. The incidence of scarred uteri has been sharply increasing in recent decades.[1]

The obstetrician is then frequently called upon to decide on the most appropriate mode of delivery for the mother and her fetus. [2]

The occurrence of a pregnancy on a scarred uterus is characterized by a high incidence of complications and a high maternal-fetal mortality rate. Among these complications are dynamic dystocias, delivery hemorrhages due to the presence of placenta previa or accreta, and dehiscence of the uterine scar. [5]

The existence of a uterine scar also has a significant psychological impact on these women. Some believe they can no longer procreate because they feel diminished or even handicapped. Others are rather afraid of becoming pregnant again, remembering 'the terrible episode.' This anxiety experienced throughout the pregnancy will only fade after a complication-free delivery, whether vaginal or cesarean. The woman will then have confidence and will embrace her future pregnancies while following the obstetrician's advice. [6]

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In the DRC, just under half of cesarean sections are performed after an attempt at vaginal delivery, and others are obstetric emergencies. [3]

Site, Population and Study Period

This study was conducted in the gynecology and obstetrics department of Grace à Dieu

Hospital, located in the city of Mbuji-Mayi in the Democratic Republic of the Congo.

It is a retrospective, cross-sectional, and analytical study carried out in the gynecology and obstetrics department of Grace Divine Hospital. All cases of childbirth on a scarred uterus during the period from June 1, 2024, to May 31, 2025 (12 months) were collected.

Selection Criteria

Inclusion criteria

All pregnant women with a pregnancy on a scarred uterus admitted to the gynecology and obstetrics department of Grace Divine Hospital for childbirth were included.

Non-inclusion criteria

Pregnant uterus without scar was the only criterion for non-inclusion.

Study Design

This is a cross-sectional retrospective and analytical study.

RESULTS

Socio-Demographic Characteristics of Respondents

Table 1. Distribution of respondents by socio-demographic characteristics

Socio-demographic characteristics	Frequency	Pourcentage
Age		
< 19	17	13,9
[20-35]	71	58,2
≥36	34	27,9
Total	122	100
Profession		
Shopkeeper	50	41,0
Gouvernement employee	32	26,2
Hearthcare worker	13	10,7
Seamstress	11	9,0
Unemployed	6	4,9
Student	6	4,9
Other	4	3,3

Data Collection Procedure

To study the files of scarred uteruses, data collection was done from medical records and operative protocols. We emphasized the general characteristics and the various factors that influence delivery modalities in the presence of a scarred uterus. For the pregnant women, the following parameters were studied: the number and indications of previous cesarean sections, the interpregnancy interval, the number of prenatal consultations, the history of vaginal delivery, the modalities of the current pregnancy delivery, the indications for a possible current cesarean section, and maternal evolution. For each newborn, the Apgar scores (at the first, fifth, and tenth minutes) and birth weight were studied. The data were entered and analyzed using SPSS 20 software. The statistical tests used for the comparison of proportions were odds ratio, χ^2 , and p-value.

Study Variables

a. Dependent variable: Delivery on scarred uterus.

b. Independent variables: Age of respondent; Marital status of respondent; Professions or occupation of woman and/or her spouse; Municipality of residence; Educational level; Socio-economic level; Weight of woman; Parity; Gestity; Age of last child; Medical history (malaria, intestinal parasitosis...); Surgical history; Complaints; Clinical signs.

Expression of Interest

We have no conflicts of interest to declare for this work.

Total	122	100
Martial status		
Mrried	89	73,0
Single	26	21,3
Divorced	5	4,1
widowed	2	1,6
Total	122	100

The average age of pregnant women was 25 years, with extremes of 18 years and 37 years. The age group between 20-35 years was the most represented, accounting for 58.2% of the cases. In our study, a large number of our pregnant women were traders, representing 41% of the cases. Married women accounted for 73.0% of the cases, and only 21.3% were single.

Table II. *Distribution of parturients by parity*

Parity	Effective	Pourcentage
Nulliparous	5	4,1
Few births	44	36,1
Multiparous	57	46,7
Grand multiparous	16	13,1
Total	122	100

On note une prédominance des multipares dans 46,7% des cas.

Table III. *Distribution of parturients according to the interpregnancy interval*

Inter-genic interval (an)	Number	Percentage
< 1	2	1,7
]1-2[	60	49,1
[2-3]	40	32,8
>3	20	16,4
Total	122	100

The most predominant inter-genic interval was between 1 year and 2 years, at 49.1%.

Table IV. *Distribution of parturients who gave birth vaginally on a scarred uterus.*

Vaginal delivery uterus scarred	Effectif	Pourcentage
Yes	83	68
No	39	32
Total	122	100

The majority of the women in labor had already given birth vaginally on the scarred uterus, in 68% of cases.

Table V. *Distribution of women in labor according to the number of previous cesareans.*

Number of cesareans	Effective	Percentage
1	88	72,1
2	32	26,2
3	2	1,7
Total	122	100

The single scarred uterus was the most common, representing 72.1% of cases.

Table VI. *Distribution of pregnant women according to the cause of the uterine scar.*

Cause of uterine scar	Number	Percentage
Cesarean section	115	94,3
myomectomie	4	3,3
Utérine rupture	3	2,4
Total	122	100

The cesarean section was the main cause of the uterine scar in 94.3% of cases.

Table VII. *Distribution of pregnant women according to uterine height*

Fundal height (cm)	Effective	Percentage
<32	26	21,3
[32-35[	86	70,5
>35	10	8,2
Total	122	100

The uterine height ranging from 32-35cm was the most commonly found. It represented 70.5% of the cases.

Table VII. *Distribution of pregnant women according to the clinical state of the pelvis.*

Pelvis	Effective	Percentage
Normal	120	98,4
Limit	2	1,6
Total	122	100

The majority of pregnant women had a normal pelvis, accounting for 97.5% of cases.

PROGNOSIS

Maternal

Table IX. *Distribution by mode of delivery*

Route	Number	Percentage
Low	113	92,7
High	9	7,3
Total	122	100

The low route was predominantly observed, accounting for 92.7%.

Table X. *Distribution of pregnant women according to the indication of the high route.*

Indications	Number	Percentage
Non-reassuring fetal stade	3	33,3
Twin pregnancy	3	33,3
Failed uterine trial	2	22,2
Transverse presentation	1	11,1
Total	9	100

The non-reassuring fetal state and the twin pregnancy were more pronounced in 33.3% of cases respectively.

Table XI. *Distribution of patients according to maternal complications*

Complications	Effectif	Pourcentage
None	111	91,0
Uterine atony	4	3,3
Perineal tear	3	2,5
Cervical tear	2	1,6
Retained placenta	2	1,6

Uterine atony represented 3.3% of the population. Foetal

Table XII. *Distribution of newborns according to the APGAR score*

APGAR	Number	Percentage
1st min		
0 à 3	7	5,7
4 à 6	20	16,4
7 à 10	95	77,8
5st min		
0 à 3	5	4,3
4 à 6	16	13,1
7 à 10	102	83,6
10st min		
0 à 3	3	2,5
4 à 6	9	7,4
7 à 10	110	90,1

The APGAR score at the 5th minute was between 7 and 10 in 83.6% of cases.

Table XIII. *Relationship between mode of delivery and scarred uterus*

Variables			SCARRED UTERUS			Chi ²	P-value
			1	2	3		
Mode of delivery	Vaginal		87	31	0	2,122 ^a	0,023
		High road	(73,7%) 1	(26,3%) 1	(0%)		
			(25,0%)	(25,0%)	2		
					(50,0%)		
Total			88	32	2 (1,7%)		
			(72,1%)	(26,2%)			

This table shows that there is a significant link between the mode of delivery and the scarred uterus (P-value=0.023), with women who delivered vaginally having a unicatricial uterus in 73.7% of cases.

DISCUSSION OF RESULTS

Frequence

Our study reveals a frequency of 14.4% of births on scarred uterus among the 850 cases analyzed, which reflects a significant part of this situation in the local obstetrical practice. This percentage indicates that more than one in seven women giving birth at Grace Divine Hospital has a history of cesarean section. This frequency is lower than that reported in some developed countries where cesarean section is widely practiced, such as in France where Deneux-Tharaux describes a rate that can reach 52.2%. On the other hand, it remains relatively high compared to some African contexts, for example in Cameroon where Moudi E, Nguetsa R report a rate of 20.2%.

Sociodemographic aspects

The age group of 20-35 years represented 58.2% in our series, which corresponds to the age of peak reproductive activity. The average age of 25 years in our series was consistent with the results reported in Burkina Faso and Cameroon, where the majority of women with uterine scars were aged 20 to 35 years. This age group is also when women are most exposed to repeated childbirths, increasing the risk of uterine scars. Ouattara A found extremes of 16 years and 44 years.

Background

Many authors [50, 51, 62] believe that multiparity is a factor in the weakening of the scar and consequently a predisposing factor for the failure of the uterine trial, noting that this risk is significant among grand multiparas. Grand multiparas represented 13.1% in our series, whereas Mallé MB found 20.9% at the regional hospital of Ségou [47].

In our study, 1.7% of parturients had an intergestational interval of less than 12 months, and 49.1% had an intergestational interval of 12 to 24 months. Ouattara A and Camara A found respective rates of 22.8% and 10.7% for intergestational intervals of less than 24 months [53].

This could be explained by the low prevalence of contraceptive use.

Diagnostic Data

The majority (54.9%) presented with lumbopelvic pain resembling uterine contractions, which corresponds to typical clinical signs of labor. The gestational age was mostly between 37 and 39 weeks of amenorrhea (72.1%), which indicates a full-term pregnancy, thus ensuring better fetal maturity. This distribution aligns with the general recommendation to plan delivery on a scarred uterus around this term to minimize the risks of maternal-fetal complications. The predominance of singleton pregnancies (95.9%) reflects the usual frequency of simple gestations in this context. The uterine height, ranging from 32 to 35 cm in 70.5% of cases, also confirms the clinically assessed gestational age. Dans l'étude de Ouedraogo et al, 72 % des parturientes porteuses d'un utérus cicatriciel avaient réalisé une NFS, taux nettement supérieur au nôtre [67].

La différence pourrait s'expliquer par la gratuité partielle des examens dans leur contexte ou par des protocoles hospitaliers plus stricts.

In our series, 53.2% of the patients had undergone their blood group/Rh factor testing. This examination is crucial for anticipating transfusion management in the event of hemorrhage and administering anti-D prophylaxis in Rh-negative patients. The WHO recommends determining blood type and Rh factor, especially in high-risk pregnancies such as those involving a scarred uterus. In a study conducted in Morocco by Bencheikroun et al., 95% of patients had undergone this assessment, which highlights a significant gap compared to our results. This low rate in our study may be attributed to limited access to laboratories, the cost of the examination, or incomplete prenatal follow-up.

5. Prognosis Regarding the mode of delivery, the success rate of the uterine trial was 96.7%. Indeed, the uterine trial is indicated in 27.8% to 88.2% of cases, with a success rate that varies from 45 to 92.2%. Our data are above average and can likely be explained by the proportion of unicollic and bicolic uteri in our series, at 72.1% and 26.2% respectively. Even though these remain an indication for higher delivery routes in our setting. Tahseen S. and Griffiths M. found in a meta-analysis a vaginal delivery rate of 71.1% with a relatively low frequency of uterine rupture

(1.36%) in cases of bicolic uterus. The same observation was made by a recent meta-analysis which estimated that bicolic uterus, or associated with twin pregnancy and the absence of recurrent indications, were no longer contraindications for vaginal delivery; the assessment of the quality of the scar through medical imaging must be performed.

CONCLUSION

The incidence of scarred uterus is steadily increasing and will continue to be the cause of the increasing indications for cesarean sections. Understanding the gynecological and obstetric history of parturients with a scarred uterus is essential for choosing the appropriate mode of delivery. The success of the uterine trial is linked to the indication for previous cesarean section and the history of vaginal delivery. Prenatal care is crucial in the case of pregnancy on a scarred uterus, as it allows for early treatment of maternal-fetal morbidities associated with the scarred uterus.

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Cite this article: Tshodi Bulanda Arsène, Ngalula Tshanda Micrette, et al. *Childbirth on a Scarred Uterus: Epidemiology and Maternal-Fetal Prognosis in Mbuji mayi*. *International Journal of Research in Medical and Clinical Sciences*. 2026; 4(1): 70-78.

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