Scientific Research Publishing

Surgical Science, 2025, 16(1), 26-33
https://www.scirp.org/journal/ss
ISSN Online: 2157-9415
ISSN Print: 2157-9407

The Birth on a Scarred Uterus at the Reference Health Center (csref) of Kolondiéba: Socio-Epidemiological and Maternel-Fetal Prognosis Aspect

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How to cite this paper: Konaté, S., Dembélé, K.S., Samaké, M., Dembélé, Y., Goita, M., Diarra, M., Dembélé, S.B., Dembélé, B.T. and Togo, A.P. (2025) The Birth on a Scarred Uterus at the Reference Health Center (csref) of Kolondiéba: Socio-Epidemiological and Maternel-Fetal Prognosis Aspect. *Surgical Science*, **16**, 26-33.
https://doi.org/10.4236/ss.2025.161004

Received: December 4, 2024
Accepted: January 23, 2025
Published: January 26, 2025

Abstract

Introduction: Childbirth on a scarred uterus is a major issue for health centers, especially peripheral, due to the major obstetric risks it presents. The objectives were to evaluate the frequency, route of delivery and maternal-fetal prognosis of this type of delivery at csref of Kolondiéba. **Materials and Methods:** This was a retrospective cross-sectional study for one year (1 January 2023-31 December 2023). All patients admitted to the maternity ward of the center with at least one uterine scar and treated in the center were included. We extracted data from partograms, OR records, birth records and obstetric records. Input was done on Excel 2010 and analysis on SPSS.23. **Results:** The frequency of scarring uterus was 16.8% (217/1285 births). The average age was 27. Pauciparous were most represented (59%). Patients were received from community health centers (44.7%). Prenatal consultation sessions (1 - 3 sessions) were performed at (64.9%). Uterine scars were obstetric in (99%). The cesarean section was performed immediately in (59.4%), it was prophylactic in 17%. The uterine test was attempted in (25.34%) with (69%) success. We recorded 3.6% uterine ruptures, 8.7% postoperative complications, 5.5% stillbirths and one maternal death (0.46%). **Conclusion:** Births on a scarred uterus are frequent and associated with a high rate of complications.

Keywords

Uterus Scar, Delivery, Kolondiéba Reference Health Center

1. Introduction

Delivery on a scarred uterus, a major obstetric risk factor, remains a major issue for health centres, especially peripheral ones.

The global rate of cesarean section has increased from 6.7% in 1990 to 19.1% in 2014, according to WHO estimates [1]. This increase will lead to an increase in the frequency of scarred uterus, which is a well-established risk factor for maternal and fetal morbidity and mortality.

Both developed and developing countries are affected by the phenomenon, but to different degrees.

In France, for example, the prevalence rate of scarred uteruses was estimated at 11% of women [2]. Low-income countries are not immune to this phenomenon. Thus

In Central Africa, a study conducted at the Katuba General Referral Hospital in Lubumbashi in 2020 found a prevalence of 8.58% [3].

In West Africa, a study of birth on scarred uterus at the Pikin Hospital in Senegal in 2017 found a frequency of 9.6% [4].

In Mali, a team from the Hôpital Fousseini Daou de Kayes in (2021) found a prevalence of 5.5% [5].

The scar uterus with a history of cesarean section increases the risk of uterine rupture, which is estimated to be between 0.1% and 0.5% [2] and this rupture significantly affects the maternal-fetal prognosis, especially in centres with limited resources.

In peripheral centers that do not have adequate technical staff and equipment, the management of patients with scarred uterus is very inadequate.

The Kolondiéba reference health centre provides care for pregnancies at risk throughout the health district and some neighbouring countries.

Administrative reports are written on a monthly basis on obstetric activities but the management of pregnancies at risk, including scarred uteri, has never been evaluated, what motivated the initiation of this study, whose objectives were to determine the frequency of delivery on scar uterus, evaluate the routes of delivery and maternal-fetal prognosis.

2. Materials and Methods

We conducted a cross-sectional, retrospective, descriptive study during one year (1 January 2023 to 31 December 2023).

Sampling: We used a non-random sample, which, in this case, was a convenience sample. The sample consisted of recruiting all patients affected by the inclusion criteria during the study period.

Inclusion criteria: Included in this study:

All women who gave birth either by vaginal delivery or by cesarean section during the study period at the Kolondiéba reference health center

All women with a history of cesarean section

All women with a history of uterine surgery

The study was conducted at the Reference Health Center (CSREF) in kolondiéba, the capital of the health district of kolondiéba. It is a health district in the Sikasso region, with a population of 312690 inhabitants in 2023. There are twenty community health centers and medical practices in the district, which refer or evacuate patients to the CSREF.

The center has an operating theatre with two operating rooms, a maternity hospital with 12 beds, a general medicine unit and a general surgery unit. This maternity has no cardiotopograph for monitoring labor delivery

The center is located 225 km from the city of Sikasso and 250 km from Bamako, where there are hospitals with resuscitation services.

The technical staff consists of three midwives and two obstetric nurses. The surgical activities are carried out by one general surgeon and three general practitioners. An assistant in anaesthesia-resuscitation ensures the activities of anaesthesia and resuscitation, he is assisted by a non-specialist health technician.

Data collection was done from obstetric records, birth and surgical records. Variables studied were: Elderly, education level, reference/evacuation, parity, contraception, surgical history, intergynetic interval, prenatal consultation, mode of delivery, complications, maternal prognosis fetal prognosis.

Data was entered in Excel 2010 and analysis was done by epi-info 2.0 and SPSS.23.

We used the Fischer test with a significance threshold $P \leq 0.05$.

Ethical considerations: the files were registered with an anonymous number after obtaining the agreement of the patients, the ethics committee of the centre gave its approval.

Results: During our study period, we recorded 217 uteri scarring (16.8%) of the 1285 births.

The average age was 27 with extremes of 17 and 40.

Other sociodemographic characteristics were summarized in Table 1.

Reference-evacuation: Patients were referred or evacuated from the community health center in 97 cases (44.7%), rural maternity hospitals in 10 cases (4.6%) and medical offices in 2 cases (0.92%) for a total of 109 cases (50.2%) However, 104 patients had come directly to Kolondiéba Reference Health Center without going through an intermediate center (47.92%) and 4 patients (1.8%) were followed up at the Kolondiéba Reference Health Center.

Parity: the paucipar were most represented 128 (59%) followed by the multipares 67 (30.9%) and finally the large multipares 22 (10.13%) with an average parity of 3.43.

Intergynetic interval (IGI): 102 patients (47%) had an IIG greater than 24

Table 1. Sociodemographic characteristics of scarred uterus births.

Sociodemographic aspects	Workforce (n: 217)	Percentage (%)
Age		
<20 years	22	10.1
21 - 35	141	65
>35 years	54	24.9
Level of study		
Unschooled	198	91.24
Primary	15	6.91
Secondary	4	1.84
Residency		
In town	52	24
Outside the town	165	76

months, in 99 cases (45.62%) the IIG was less than or equal to 24 months and in 16 patients (7.37%) the IGI was not specified.

Prenatal consultation (PNC): In this study, 141 patients (64.97%) had performed between 1 and 3 sessions of PNC, 65 patients (29.9%) had performed more than 4 sessions and 11 patients (5.06%) had not performed any PNC.

Contraception: 139 patients (64.05%) did not use any contraceptive method. Among those who used contraceptive methods, implants were the most used in 37 cases (17.05%), followed by injectable pills in 7 cases (3.22%) and 2 cases (0.92%) of tablets.

Surgical history: Patients with a history of one caesarean section were 154 (70.96%), two caesareans 46 cases (21.19%), three caesareans 11cases (5%), four caesareans 4cases (1.8%), myomectomy 2 cases (0.9%).

Route of delivery: The caesarean section was performed upon admission in 129 patients (59.4%) with 37 prophylactic cases (17%).

The uterine test was attempted in 55 patients (25.3) with 38 success cases (69%) and 17 failure cases (31%).

25 patients (11.5%) were received either in full dilation or in expulsion phase who could give birth by vaginal route.

In total, 63 patients (29%) gave birth by vaginal delivery, 146 by caesarean section (67.2%) and 8 cases of laparotomy (3.6%).

The caesarean section was associated with tubal ligation resection in 4 patients (1.8%) and one case of intrauterine device.

We recorded 8cases (3.6%) of uterine ruptures, 7 complete (3.2%) and one case of dehiscence (0.46%).

Blood transfusion was performed in 21 patients (9.9%).

Maternal prognosis: We recorded 19 cases of per and postoperative complications (8.7%), the main ones were summarized in Table 2.

Table 2. Complications per and postoperative of scarring uterus deliveries.

Complications	Workforce (n: 19)	Percentage %
Bleeding	8	42.1
Anemia	7	36.8
Vesicovaginal fistula	2	10.5
Pneumonitis	1	5.2
Stroke	2	10.5
Total	19	100

Fetal prognosis: We recorded 205 live births (95.7%), 12 stillbirths (5.5%) with 10 cases (4.6%) of fresh stillbirth and 2 cases (0.9%) of macerated stillbirth.

In post-natal 4 deaths were recorded (1.9%).

Overall, the survival rate for newborns was 201 (92.6%).

One maternal death was recorded 0.46%.

3. Discussions

Delivery on a scarred uterus remains a challenge in that it engages the maternal-fetal prognosis. To cope with this, it is important to have an appropriate technical platform and a well-trained human resource.

The frequency of scarring uteri in our study was 16.8%, this result is statistically comparable to those of Balbé and Sima [6] [7] who found 14.14% and 14.23% respectively with $P > 0.05$. However, it was statistically higher than those of K. Sidibé and S. Dembélé [8] [5] with rates of (10.2%) and (5.5%), $P < 0.05$. This difference could be explained by the high number of scarred uteri coming from community health center and rural maternity hospitals and the absence of a gynecologist in the centre which could influence in the part indications for caesareans prior.

The average age in our study was 27 years, this result was statistically comparable to those of Cyr Espérance Koulimaya [4] and S. Dembélé [5], who found 29.4 and 29.29 years respectively.

The reference/evacuation system is a national provision for reducing maternal and fetal mortality through early management of obstetric emergencies in rural areas. It gives the mandate to the Rural Maternity and Care Center to refer or evacuate systematically all women with a scarred uterus in labor or not.

In our study, the reference/evacuation affected 50% of patients. This result was statistically higher than that of the Cameroonian study [9], which had found (25%) reference received, $P>0.05$. This may be explained by the lack of similar centres capable of treating scarring uteri in our area.

Paucipar was the most represented group (59%). This predominance of paucipar was observed by Mian [10] (41.97%).

Prenatal monitoring allows the detection of risk factors to determine the route of delivery. In our study, 94.9% of patients had at least one prenatal consultation.

This was statistically comparable to the result of the Ntanga study, which found 91.43% [3]. The high attendance rate in prenatal consultation1 (First Consultation) could be explained by the motivation of women to use mosquito nets to encourage regular prenatal consultations.

On the other hand, the total absence of follow-up (5%) could be linked to the low level of education of women (91.24% not in school).

We found a predominance of single-scar uteri (70.96%). Some authors had made the same observations, notably Mansour Niang and al. [11] with (75%) and Sima O and al. [12] (79.54%)

In patients with a scarred uterus, the decision on the route of delivery is an essential step in obstetric management. It may depend on the couple's agreement and clinical findings. In our context, this agreement was obtained socially from the head of the family who is not necessarily the wife's husband.

The practice of cesarean section minimizes maternal-fetal complications in patients with a scarred uterus.

This rate in our study (42.3%) was comparable to that of the Cameroonian study [9], which found 39% with no statistical difference, $P > 0.05$. However, it was statistically higher than that of the team of Kayes [5] (29%), $P < 0.05$.

This difference could be explained by the position of our structure in the health pyramid of Mali, especially as the first reference in rural areas.

Prophylactic caesarean should be the preferred delivery method to minimize complications. It was performed in less than 20% of patients as found in other studies [5] [10];

The uterine test is an alternative for safe vaginal delivery.

Its frequency differs between authors. [3] [11] [12]. It was successfully performed in more than 50% of the women in our study.

Uterine rupture is a major factor in morbidity and mortality of birth on scar uterus. In the literature, its incidence varies between 0.2-4% in women with uterine scarring [13].

Our frequency was less than 4%, comparable to that of S. Dembélé [3] who found 3.27%, $P > 0.05$.

Even if our frequency was less than 4%, it remained statistically higher than that of Sima (1.3%) and Mian (0.5%) [7] [10]; $P<0.05$. This difference could be explained by the delays in evacuation and the poor condition of rural roads.

Scarring uterus births are grafted with many complications related to the presence of the scar (uterine rupture, placenta preavia) and postoperative infections.

The frequency of complications observed in our study (8.7%) was comparable to that of the Rwandan study which had recorded 6.4% [14]. $P > 0.05$.

Other similar African studies [1] [15] have reported the same frequencies 4.76% and 3.5% respectively.

One of the challenges of obstetrics is reducing maternal death. In centres with limited human and material resources, this chalenge is even more difficult.

The maternal death recorded in our study was due to a hemorrhagic shock by

uterine rupture on single-scar uterus in a 9th pregnant woman.

This rate was lower than that of Ntanga MN and al. [3] (2.86%) but higher than that of Mian DB and al. [10] (0.3%).

4. Conclusions

Births on a scarred uterus are frequent and associated with a high rate of complications at the Kolondiéba Health Center. Improving prognosis will require raising awareness of the parturient and staffing the centre with qualified staff.

We recommend:

Institutionnalization of the reference/Evacuation system

Recruitment of qualified and competent personnel at the operational level

The improvement of the technical equipment in health centres.

The Study Limits

We conducted a retrospective study in a center with low-skilled staff.

The study could not assess the survival rate of newborns after leaving the center, given the rural context and remote origins.

Contribution from Authors

Konaté S. and Samaké M. initiated and developed the protocol and completed the data collection.

Data were analyzed by Diarra M. and Dembélé S K.

Dembélé Y, Goita M., Dembélé S B., Dembélé B T, Togo A P.: have corrected the manuscript.

Acknowledgements

We thank the team of the maternity hospital of csref d Kolondiéba for having made available to us the documents necessary for the accomplishment of this work.

Conflicts of Interest

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

References

[1] Dumont, A. and Guilmoto, C.Z. (2020) Trop et pas assez à la fois: Le double fardeau de la césarienne. *Population & Sociétés*, **581**, 1-4. https://doi.org/10.3917/popsoc.581.0001

[2] Deneux-Tharaux, C. (2012) Utérus cicatriciel: Aspects épidémiologiques. *Journal de Gynécologie Obstétrique et Biologie de la Reproduction*, **41**, 697-707. https://doi.org/10.1016/j.jgyn.2012.09.022

[3] Ntanga, M.N., *et al.* (2021) Accouchement sur utérus cicatriciel à l'hôpital général de référence de Katuba à Lubumbashi, République Démocratique du Congo. *Revue de l'Infirmier Congolais*, **5**, 48-56.

[4] Koulimaya-Gombet, C.E., Diouf, A.A., Diallo, M., Dia, A., Sène, C., Moreau, J.C., *et*

al. (2017) Grossesse et accouchement des patientes ayant un antécédent de césarienne à Dakar: Aspects épidémio-cliniques thérapeutiques et pronostiques. *Pan African Medical Journal*, **27**, Article 135. https://doi.org/10.11604/pamj.2017.27.135.11924

[5] Dembélé, S., *et al.* (2021) Accouchement sur utérus cicatriciel à l'hôpital Fousseini Dao de Kayes. *Jaccr Africa*, **1**, 290-292.

[6] Baldé, I.S., Sy, T., Diallo, A., Baldé, O., Diallo, M.H., Diallo, M.C., *et al.* (2017) Accouchement dans un contexte d'utérus cicatriciel à la maternité de l'hôpital national Ignace-Deen (Guinée). *Revue de médecine périnatale*, **9**, 32-36. https://doi.org/10.1007/s12611-017-0395-y

[7] Sima, O., *et al.* (2017) L'utérus cicatriciel: Aspects épidémiologiques te mode d'accouchement à la maternité du CHU d'Owendo (Gabon). *Bulletin Médical d' Owendo*, **15**, 45-51.

[8] Sidibé, K., *et al.* (2019) Les épreuves utérines à l'hôpital de la zone d'Abomey-CALAVI-SÔ-AVA, BENIN. *Revue Malienne de Science et de Technologie*, **22**, 14-20.

[9] Valère Mve, K., *et al.* (2018) Accouchement sur utérus cicatriciel dans les pays à faibles ressource: Circuit de prise en charge et devenir maternofœtal. *Pan African Medical Journal*, **30**, Article 255.

[10] Mian, D.B., *et al.* (2021) Accouchement sur utérus cicatriciel à la maternité du CHU de Cocody. *Annales de la SOGGO*, **36**, 22-28.

[11] Matumo, P.M., *et al.* (2018) Pronostic d'accouchement chez les gestantes porteuses d'utérus cicatriciels dans la ville de Butembo en République Dé-mocratique du Congo. *International Journal of Innovation and Applied Studies*, **24**, 1750-1760.

[12] Dembélé, A., *et al.* (2012) Issue des accouchements sur utérus cicatriciel dans un hôpital universitaire au Burkina. *Pan African Medical Journal*, 12, Article 95.

[13] Niro, J., Velemir, L., Vendittelli, F., Jacquetin, B., Gallot, D. and Lemery, D. (2010) Accouchement avec utérus cicatriciel. *Revue de médecine périnatale*, **2**, 12-18. https://doi.org/10.1007/s12611-010-0056-x

[14] Kalisa, R., Rulisa, S., van Roosmalen, J. and van den Akker, T. (2017) Maternal and Perinatal Outcome after Previous Caesarean Section in Rural Rwanda. *BMC Pregnancy and Childbirth*, **17**, Article No. 272. https://doi.org/10.1186/s12884-017-1467-5

[15] Mouhamadou, M.N., *et al.* (2021) Accouchement sur utérus cicatriciel: Expérience d'un centre de santé de niveau 2 à Dakar (SENEGAL). *Revue Africaine et Malgache pour la Recherche Scientifique/Sciences de la Santé*, **3**, 85-93.