

Caesarean in Case of Scar Uterus: Indications and Maternal and Neonatal Prognosis at the University Hospital of Brazzaville (Republic of Congo)

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Abstract: Objective: Caesarean section in case of cicatricial uterus generates a real epidemiological and prognostic obstetric problem. It is a real concern for the obstetrician with regard to all the factors that can influence the maternal and perinatal prognosis. The aim of this study is to analyze indications for caesarean section in cases of uterine scarring and to establish maternal and neonatal pronotics at the University Hospital of Brazzaville. Methods: A cross-sectional analytical study conducted from January 1, 2015 to June 30, 2017 at the University Hospital of Brazzaville in Congo, comparing 150 deliveries by caesarean to 300 by vaginal route. Results: one hundred and fifty cesarized were recorded among 1212 women giving birth with scar uterus (12.3%). They were different from vaginal deliveries with uterine scarring in age (31 vs 28 years, $p < 0.05$) and mostly referred (70% vs 20.7%, $p < 0.05$). Caesareans were performed more urgently (52.7%) than prophylactically (47.3%). The risk of being caesarized was higher in the case of multiple scar (OR = 9.8 [4.5-21.1]), less than 16 months (OR = 10.2 [2.2-47.6]), and without evidence of strength in connection with a previous vaginal delivery (OR = 4.5 [1.7-11.8]). Emergency caesarean were dominated by acute fetal asphyxia (OR = 7.3 [3.6-14.5]) and dynamic dystocia (OR = 13.3 [10.1-26.6]). Maternal morbidity in cesarized patients was related to parietal suppuration (14, 9.3%) and was associated with a low risk of endometritis (3.4% vs 12%, OR = 0.2 [0.1-0.6], $p < 0.05$). Newborns born to caesarean mothers were more resuscitated (17.2% vs 4%, OR = 4.9 [2.4-10.2], $p < 0.05$), transferred to neonatology (19.8% vs 7.6%, OR = 2.9 [1.6-5.3 $p < 0.05$) and died in the neonatal period (2.6% vs 0.3%, OR = 8.1 [1.2-52], $p < 0.05$). Conclusion: Caesarean section indications for cicatricial uterus are dominated by obstetric emergencies involving maternal and neonatal prognosis.

Keywords: Scarred Uterus, Caesarean, Prognosis, Brazzaville

1. Introduction

The uterus is scarred when it carries one or more anterior myometrial lesions in any part of the body or isthmus [1].

Cesarean delivery increases the probability of a new caesarean section by 8 to 10 because of the risk of uterine rupture associated with the fragility of the uterus [2]. In addition to the scar, delivery in case of scar uteri depends on

obstetric conditions and maternal and fetal status [1, 3]. Thus, the objective pursued by the present study was to analyze the indications for caesarean and the maternal and neonatal prognosis for scarred uterus at the University Hospital of Brazzaville.

2. Methods

It was a cross-sectional analytical study conducted from January 1, 2015 to June 30, 2017 at the University Hospital of Brazzaville in Congo.

Included in the study were women with an uterine anterior scar, comparing each cesarized to two vaginal deliveries. On this basis, 150 cesarized were the first group and 300 delivered vaginally the second group. Births with a scar uterus who had been admitted to the expulsion phase of delivery were not included.

Caesarean indications were classified according to the degree of urgency according to Lucas [4] in emergency cesareans (extreme emergency and emergency) and prophylactic caesareans (programmed and elective).

Were analyzed for each case:

- a) prenatal variables: age in years, parity, reference, uterine scar, operative indication, intercurrent pathology;

- b) neonatal characteristics: Apgar score in the first minute, weight, resuscitation, and transfer to neonatology;
- c) the suites of layers and / or operations.

Stata 13 and Epi info7 software were used for data analysis. Chi2 was calculated for the comparison of proportions and Fisher's exact test for that of proportions with a lower theoretical size. The T-Student test and Mann Whitney were used to compare the means and medians, respectively.

The odds ratio with a 95% confidence interval was calculated to assess the association between two variables. The p-value of the probability was considered significant for a value less than 0.05. This study has been approved by the national ethics committee in accordance with the Helsinki recommendations.

3. Results

One hundred and fifty cesarized were registered among 1212 women giving birth to scar uterus (12.3%).

The cesarized were different from the vaginal delivery in age (31 vs 28 years, $p < 0.05$) and referred majority. The same is true for the characteristics of their scar, including: the origin, number, duration, and evidence of strength in relation to anterior vaginal delivery, as shown in Table 1.

Table 1. Characteristics of women giving birth cicatricial uterus.

	Caesarean N=150 n (%)	Vaginal way N=300 n (%)	OR	IC (95%)	P
Median age (years) [q1-q3]	31[26.5-37]	28[24.5-33.5]			0.0001
Median parity [q1-q3]	3 [1-3.5]	4 [1-5]			0.0001
Referred	105 (70)	62 (20.7)	8.9	5.7-14	0.0001
Scar					
Origin			0.2	0.08-0.5	0.001
Myomectomy	5 (3.3)	40 (13.3)			
Caesarean	145 (96.7)	260 (86.7)			
Number (≥ 2)	16 (10.7)	2 (0.7)	9.8	4.5-21.1	0.0001
Duration (< 16 mois)	10 (6.7)	2 (0.7)	10.2	2.2-47.6	0.0001
Absence of childbirth after scar	145 (96.7)	259 (86.3)	4.5	1.7-11.8	0.001

Caesareans were performed more urgently (52.7%) than prophylactically (47.3%). Caesarean indications have been reported in Table 2.

Table 2. Caesarean indications for women with uterine scarring.

	n (%)	OR	IC (95%)
Extreme emergency			
Eclampsia	15 (10)		
Placenta praevia hemorrhagic	8 (5.3)	7.3	3.6-14.5
Retroplacental Hematoma	2 (1.3)		
Acute fetal asphyxia	35 (23.4)		
Emergency			
Pre-rupture syndrome	5 (3.3)	13.3	10.1-26.6
Dynamic dystocia	14 (9.3)		
Programmed			
Hypertension and pre-eclampsia	3 (2)		
Prolonged pregnancy	5 (3.3)		
Elective			

	n (%)	OR	IC (95%)
Multiple uterine scar	16 (10.7)	9.8	4.5-21.1
Anomaly of the pelvis	10 (6.7)	3.2	1.5-5.7
Scar less than 16 months	10 (6.7)	10.2	2.2-47.6
Fetal macrosomia	13 (8.7)		
Seat presentation	11 (7.3)		
Twin pregnancy	1 (0.7)		
Older primiparity	2 (1.3)		
Total	150 (100)		

Maternal morbidity in cesarized patients was related to parietal suppuration (14, 9.3%) and was associated with a low risk of endometritis (3.4% vs 12%, OR = 0.2 [0.1-0.6], $p < 0.05$).

With a different Apgar score in the first minute, neonates born to caesarean mothers were more resuscitated, transferred to the neonatal department, and died in the neonatal period (Table 3).

Table 3. Characteristics of newborns born to mothers with uterine scarring.

	Caesarean n (%)	Vaginal way n (%)	OR	IC (95%)	P
Apgar score 1 st minute					
[0-3]	14 (9.3)	2 (0.7)	16.1	3.6-72	0.0001
[4-6]	12 (8)	10 (3.3)	2.8	1.1-6.5	0.02
[7-10] (Reference)	125 (82.7)	288 (96)			
Resuscitation	26 (17.2)	12 (4)	4.9	2.4-10.2	0.0001
Transfer to neonatology	30 (19.8)	23 (7.6)	2.9	1.6-5.3	0.001
Neonatal death	4 (2.6)	1 (0.3)	8.1	1.2-52	0.045

4. Discussion

The exclusive clinical assessment of the scar and the monitoring of labor in a context of limited resources such as our own, constitute a difficulty in the management of scar uterus. This reality contributes to a non-homogenous attitude, through which the fear of the complications expressed by some and the risk-taking by others, can lead either to caesareans abusive, or to missed opportunities of cesarean prophylactics. Thus, an attitude of caution has been observed in most African sub-Saharan series, motivated by modest material and human resources [5-10]. This would justify a tendency for prophylactic caesarean section in view of the increased risk of uterine rupture and maternal and neonatal morbidity.

However, the frequency of caesarean in this study in the carriers of uterus scar, which reflects both emergency and non-emergency situations, is in the context of a reference hospital, depending on the most often cited reason for admission, despite the uterine scar relegated to the background. This contributes to a relatively high rate of emergency caesarean.

In addition, the heterogeneity of the indications and the plurality of caesarean classifications would contribute to changing the context of achievement and caesarean rates in cases of scar uteri. Thus, in referring to the caesarean indications according to Boisselier [11], which grouped them into compulsory, cautious and necessary indications, Koulimaya-Gombet [5] in Dakar attests that the scheduled caesarean section would be 18.1% more at 44.5%.

While in France, in the presence of technical means to

assess the quality of the scar and fetal well-being, the 2010 national perinatal survey reported 51% of caesareans before work, this rate reaching 92% in women with multi-cicatricial uterus [12, 13].

The multi-scar uterus is an absolute indication of caesarean section in our practice. While, Martel [14] in Canada reported some cases of trial of labor for vaginal birth after caesarean in the context of multi-cicatricial uterus, with a significant rate of uterine rupture. Similarly, in a meta-analysis, Tahseen [15] found an average rate of vaginal delivery that was superimposable both in the case of a monocicatricial (76.5%) and bicicatricial uterus (71%), despite a relatively high rate of uterine rupture low but significant (1.3% vs 0.7%, $p < 0.001$). Of the above, the bicicatricial uterus is certainly not a contraindication for the vaginal approach, but the assessment of the quality of the scar by medical imaging should be a prerequisite [14, 15].

As for the duration of the scar, controversial in the literature, a period of less than 16 months is retained to practice a scheduled caesarean. The duration of less than 12 months was recommended in 2009 by 65.1% of French institutions [12]. However, other institutions have shown that a delay of less than 18 to 24 months between caesarean section and delivery increases the risk of uterine rupture [14].

Regarding the history of vaginal delivery after caesarean section, like other authors, it is a factor in the success of a uterine test [16].

The data from the study on uterine overdistension in a scarred uterus context is consistent with the reported caesarean section [13]. Similarly, the 2009 French survey reported that 80% of establishments did not accept vaginal delivery for an estimated fetal weight of more than 4000 g [12]. On the other

hand, for Martel [14], twin pregnancy is not a contraindication to the vaginal way.

With regard to siege delivery in case of uterine scarring, scheduled caesarean section rates increased with reluctance to accept term delivery with associated uterine scar [12].

When they were not prophylactic, emergency caesarean sections were performed significantly in the referees either before labor for a complication of arterial hypertension or obstetric hemorrhage; either during labor for dynamic dystocia and / or acute fetal asphyxia.

In this context, maternal morbidity is the responsibility of both maternal pathology and caesarean. Postoperative infection occurred in a prolonged labor setting for stagnant dilatation and premature rupture of membranes, suggesting, as Beucher [17], the involvement of associated factors rather than caesarean section. As for newborns, dominant maternal-fetal emergencies were detrimental in four cases. A lethality higher than ours varying between 3.4% and 8.2% in the same reference maternity context has been reported by other African authors [6, 7, 18]. This situation could be explained by the poor practice of prognosis and the absence of a delivery plan in our maternity wards.

5. Conclusion

In light of the results of this study, cesarean indications are dominated by maternal and fetal obstetric emergencies involving maternal and neonatal pronotics. As a result, the inherent morbidity and mortality is not attributed to the cesarean operation but rather to its indication. Taking into account the status of scar uterus and quality prenatal follow-up would make it possible to anticipate emergencies.

Conflicts of Interest

All the authors do not have any possible conflicts of interest.

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