

Childbirth by Vaginal Delivery in Double Scarred Uterus: Uterine Trial Conducted in the Borgou Department, Benin

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Abstract

Objective: To investigate the possibility of vaginal birth after two caesarean deliveries.

Patients and methods: This was a cross-sectional analytical study with prospective data collection, conducted from March 1st to September 30th 2016, in three maternities in reference hospitals in the Borgou department, Republic of Benin.

Results: Of the 162 patients registered, 87 (53.70%) began spontaneous labour and 75 (46.30%) benefited from a C-section before labour began. Of the 87 women who started spontaneous labour, 54 (62.07%) did not meet the requirements for vaginal birth, and benefited from a C-section; one patient (1.15%) gave birth in the course of referral, and 32 (36.78%) went through our trial. Of the 32 patients who went through the trial of scar, 28 (87.50%) delivered successfully; among them were two twin pregnancies. All four unsuccessful trials (12.50%) were due to the occurrence of acute fetal distress. Among the 28 successful cases, 03 (10.71%) developed to a vasculo-renal syndrome in the sequences of immediate layers. We encountered no case of scar dehiscence nor of child nor maternal death.

Conclusion: Vaginal birth in double scarred uterus is possible and can be considered, with minimum damage to the mother and the fetus. Nevertheless, the recruitment of subjects must be rigorous and labour surveillance done in a surgical environment.

Keywords: Double scarred uterus; Trial of scar; Benin

Introduction

Child delivery in double scarred uterus remains controversial in our days [1] because of the higher risk of scar dehiscence. However Trial of scar has recently been reported in recent research, thus breaking the dogma that after two uterine scars, a c-section is an absolute indication and suggesting the possibility of delivery by natural ways. It is in this light that this study was initiated in three hospitals located in the Borgou department, Benin. These are hospitals that have a technical platform for the surgical management of obstetric emergencies whose main objective is to study the possibility of vaginal delivery in a double scarred uterus, after a well conducted uterine trial.

Method of Study

Cross-sectional study with prospective data collection, with analytical aim, conducted from March 1st to September the 30th of 2016, in three maternities of reference hospitals located in the Borgou department, Republic of Benin.

Inclusion criteria

Gestation women with two (2) c-section scars; ongoing pregnancy of gestational age superior or equal to 28 weeks.

Exclusion criteria

- Gestation women who refused partaking in the study.
- Pregnant woman presenting an add-on risk factor (cardiopathy, HIV, hemoglobinopathies, severe respiratory insufficiencies, gestational diabetes)
- Gestating woman with counter indication for uterine trial.

Non inclusion criteria

Other scars than c-section ones.

Natural delivery acceptability criteria

- Inter-births space superior or equal to 15 months,
- Clinically normal pelvis,
- Normally implanted placenta,
- Normal weight fetus when checked on ultrasound.

For management of the delivery work, careful monitoring is done by the partograph in the presence of a midwife and an obstetrician. Besides the usual means were used, in case of hypokinesia, calcium or syntocynon infusion if the oxytocin score infusion is favorable (see Table 1). Data processing was performed with the software Epi data 3.1 and Epi Info 7.1.1. Chi-square χ^2 Pearson statistical, Yates or Fischer tests were used to compare proportions. The study received approval of hospital authorities and data confidentiality was guaranteed and

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Rating	Maternal age	Parity	Caesarean rank*	Inter birth interval	Previous cesarean indication	Technique used	Postoperative effects
1	<30 yrs	<4	1-3	2 - 5 yrs	AFD irreducible dystociodynamic	Known valid	Normal
2	30 -35 yrs	4	4-5	6 mths to 2 yrs	Unknown		Unknown
3	>35 yrs	> 4	> 5	>5 yrs or <6 mths	Placenta previa bruptioplacentaesyndrome pre rupture amniotic Infectiont	Invalid unknown Hysterotomy Fusion	Abnormal

* Rank compared to vaginal deliveries

Interpretation: 7 to 10: Favorable for infusion 11-13: Conditionally favorable for infusion >13: Unfavorable for infusion.

Table 1: Oxytocin infusion score.

respected.

Results

Figure 1 shows that of 5070 deliveries, 258 uteruses were double scarred with 162 that meet the inclusion criteria.

The study focused on 162 included cases.

The average age of the women was 30.28 yrs ± 4.51 yrs.

Figure 2 shows that the 26 to 30 age range was the most represented, and the age limits were 21 yrs to 44 yrs.

The patients were pauci gestures (61.73%) and multi gestures (38.27%) with a gestivity average of 1.26 ± 3.74. They were pauci pares (85.19%) and multi pares (14.81%) with an average parity of 2.64 ± 1.11. The types of uterine scar were unknown for the 1st Caesarean (95.68%) and the 2nd cesarean (75.93%) and segmental for the 1st Caesarean (04.32%) and the 2nd caesarean (24.07%). The patients came by themselves in 55.56% of cases and were in full term pregnancy in 79.01% of cases. The median inter birth interval was 37.65 months with ranges of 15 months to 110 months. The average of prenatal consultation was 3.69 ± 1.46 with extremes of 0 to 7. The 3rd semester ultrasound was made in 82.72% of cases.

Figure 3 shows that of the 162 women, 87 (53.70%) went spontaneously into labour, and 32 went through a uterine trial with 87, 88% success. 50% of these had a natural delivery.

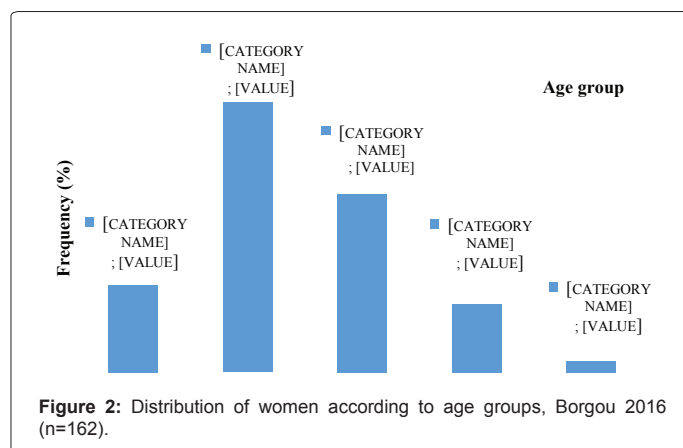
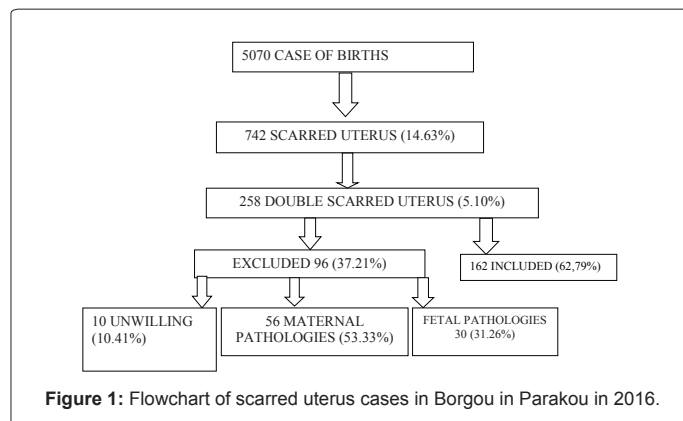
During vaginal delivery, delivery was natural (8 cases, 28.57%) and artificial (20 cases, 71.43%). The uterine check was completed because there were no warning signs. In the postpartum, 3/28 (10.71%) new mothers had developed vascular-renal syndrome. A hemorrhagic shock state by placental debris retention was observed with the new mother prior to admission. Among the 28 infants, 04 were transferred to a neonatal care because of low birth weight representing a neonatal morbidity rate of 14.28%. No maternal, fetal or neonatal death was recorded.

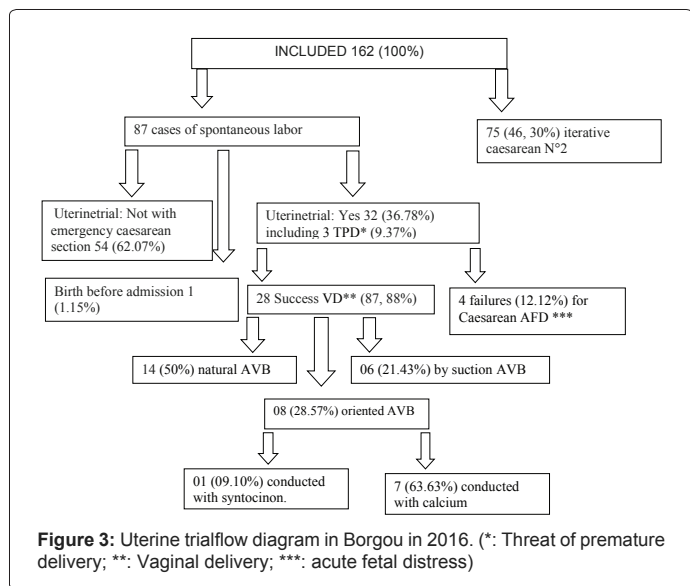
Discussion

The prevalence of double scarred uterus was 5.10% in this study. Jocelyne Thachinamurthi in France in 2012 had found a lower rate of 0.97% [2]. The average age was 30.28 years ± 4.51 years ranging from 21 to 44. This result is comparable to that of Jocelyne Thachinamurthi in France (2012): 32.4 years with range of 23 and 43 years [2] and Macones et al. in the United States (US) (2005): 31.9 years [3]. The average gestivity was 3.74 ± 1.26. The pauci gestures were more frequent (61.73%). Macones et al. in the US (2005) had reported an average of 4 [3]. As for parity, the average was 2.64 ± 1.11. The paucipares were more frequent (85.19%). Jocelyne Thachinamurthi in France (2012): 81% [2] and Lemouton in France (2014): 85.05% [4] had similar rates.

The gestational age was 37 weeks or more (79.01%), and direct admission to one of the centers more often than not (55.56%). Lemouton in France (2014), reports that 100% of these pregnant women had gestational age higher or equal to 37 weeks [4]. These findings may be explained by the fact that patients included in this study were in the

3rd quarter and therefore not necessarily full term. Among the 162 women, 87 (53.70%) entered spontaneously into labor. Macones et al. in the US (2005) reported spontaneous labor in 35.00% of cases [3] and Tanuja et al. in India (2005) reported a proportion of 42% [5]. This rate is slightly higher in our study, and could be explained by the fact that the triggering is common practice in the other studies: Macones et al. in the US (2005): 30.10% [3]; Tanuja et al. in India (2005): 58% [6]. Out of the 162 women, 32 (19.75%) met the criteria for acceptability. In the literature we find variable rates namely the one of Macones et al. in the US (2005): 27.25%, which is a proportion higher than ours because his study was conducted over 5 years in 17 hospitals [3] while ours took 18 months in 3 hospitals. Lemouton in France (2014) [4]: 7.48%. This is lower than our rate because his study was conducted in a single center for 4 years. But it excluded pregnant with ruptured membranes, the premature labor; which is not the case in our study. Oxytocin infusion was used with one (01) woman (3.13%). In the literature, oxytocin was also used during labor as noted by Lemouton in France in 2014 (37.5%) [4]. This rate is higher than ours. This could be explained by the fact that the use of oxytocin is conditioned by the oxytocin infusion score in this study. In other studies, oxytocin was used for delivery on multi scarred uterus as noted by Spaans et al. in 2003 (16%) [7] and Landon et





al. in 2006 in the US (25%) [8]. In this study the success rate of uterine trial was 87.50%. The 4 failure cases or 12.50% were due to fetal distress during the trial of labor. In 2009 a meta-analysis on double scarred uterine found on 5666 cases of uterine trial a success rate of 71.7% [9]. In Jocelyne Thachinamurthi's study, as well as this one, uterus examination was indicated in case of warning signs [2]. In the literature, 100% of newborns were unique as in this study, due to the fact that the twin pregnancy was an exclusion criterion [4,7,8,10]. In our study, the neonatal mortality is zero. All newborns hospitalized in neonatology have been exit and no neonatal death was recorded. In the literature, the rate of zero perinatal mortality was reported [4,10-13]. Neither case of dehiscence of the old scar, nor uterine rupture was recorded. The same thing was observed by Jocelyne Thachinamurthi in France 2012 [2], and Bretelle et al. [14] Dehiscence is recorded by Abassi et al. in MOROCCO in 1999 (3.10%) (04/130) [11]. Cases of uterine rupture were reported by Caughey et al. in the United States in 1999: 3.73% (5/134) [15] and by Macones et al. in the US (2005): 1.80% [3]. No maternal deaths were recorded by Jocelyne Thachinamurthi in France in 2012 [2], Spanish et al. 2003 in Netherlands [7], Lemouton in France in 2014, [4] Ramp et al. [14]. In the literature, history of vaginal birth was not predictive of successful uterine trial, but these studies were conducted on small sample, and the results were not significant [2,7]. Caughey et al. in the United States in 1999 [15] found a rate four times greater of uterine rupture with women who vaginally delivered once, than those who had never experienced it (RR=0.26 CI 95% [0.08 0.88]).

Limitations and Difficulties of the Study

- Reluctance of certain gynecologists to perform the study;
- Lack of operatory detailed reporting from anterior sections. This is due to difficulties in finding old files and the fact that the patients (subjects) do not have their detailed reporting;
- Unavailability of a in the delivery room

Conclusion

Vaginal birth in double scarred uterus is possible and can be considered, with minimum damage to the mother and the fetus on condition of rigorous recruitment of subjects, strict surveillance with partogram in obstetric –chirurgical environment, and in the presence of a midwife and an obstetrician gynecologist.

At the end of this study,

The profile of the women with double scarred uterus who can be approved vaginal birth is the one who:

- has given free and informed consent after a thorough explanation;
- having an ongoing pregnancy with a gestational age higher than or equal to 28 weeks of amenorrhea (SA);
- free from any superimposed risk factors (heart disease, HIV, hemoglobinopathy, respiratory failure, gestational diabetes)
- with no counter indication of uterine trial, and with no absolute-counter indication previous to a vaginal delivery;
- having a reproductive interval ≥ 15 months;
- with clinically normal judged pelvis;
- having a normally inserted placenta;
- having a fetus in the vertex and normal weight;

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References

1. Magnin G (2012). Management of the delivery on scarred uterus. *Realities in gynecology and obstetrics* 166: 1-3.
2. Thachinamurthi J (2012) To what extent can patients with a bicatrictrial uterus give birth through natural routes? Study of maternal-fetal morbidity in 93 cases at the Intercommunal Hospital in Villeneuve Saint Georges. *Memory University of Paris Descartes PA05MA* 29: 76.
3. Macones GA, Cahill A, Pare E, Stamilio MD, Ratcliffe S, et al. (2005) Obstetric outcomes in women with two prior cesarean deliveries: Is vaginal birth after cesarean delivery a viable option? *Am J of Obstetrics and Gynecology* 192: 1223-1229.
4. Lemouton T (2014) Low birth after two cesarean sections: study of maternal-fetal morbidity, about 107 cases at Rouen University Hospital. *Memory midwife: Rouen*.
5. Torris H, Magnin G, Pierre F (2003) *Gynecology and obstetrics, illustrated manual*, 7th edition, Masson Paris.
6. Tanuja A, Shahida M, Shafika M (2005) Vaginal delivery after previous two cesarean section. *International Journal of current medical science and practice* 12: 18-19.
7. Spaans W, Vlietme VD, Roell-Schorer E, Bleker O, Vanroosmalen J (2003) Trial of labor after two or three previous cesarean sections. *European J of Obstetrics and Gynecology and Reproductive Biology* 110:16-19.
8. Landon B, Spong CY, Thom E, Hauth JC, Bloom SL, et al. (2006) Risk of Uterine Rupture with a Trial of Labor in Women with Multiple and Single Prior Cesarean Delivery. *Obstet Gynecol* 108:12-20.
9. Chattopadhyay SK, Sherbeeni MM, Anokute CC (1994) Planned vaginal delivery after two previous cesarean section. *Br J Obstet Gynecol* 101: 498-500.
10. Bretelle F, Ercole C, Cravello L, Piechon L, Roger V, et al. (1998) Uterus bicatrictrial: place of the uterine test. *J Gynecol Obstet Biol of the Reprod* 27: 421-426.
11. Abbassi H, El Karroumi M, Aboulfalah A, Bouhya S, Beqqay M (1998) Laboratory test on bicatrictrial uterus: prospective study, about 130 cases. *J Gynecol Obstet Biol Reprod* 27: 806-817.
12. Guettier X, Marpeau L, Larue L, Jault T, Rhimi Z, et al. (1992) Bicatrictrial uterus: can the low road be allowed? *J Gynecol Obstet Biol Reprod* 21: 103-107.
13. Baurtant E, Baubli L, Nadal F, Khouzami A, Ercole C, et al. (1993) Delivery in bicatrictrial uterus: 41 uterine tests. *J GynecolObstet Biol Reprod* 22: 543-547.
14. Grobman WA, Lai Y, Landon MB, Spong CY, Leveno KJ, et al. (2008) Prediction of uterine rupture associated with attempted vaginal birth after cesarean delivery. *Am J Obstet Gynecol* 199: 31-35.
15. Garg VK, Ekuma-Nkama EN (2004) Vaginal birth following two cesarean sections. *Int J Gynecol Obstet* 88: 53-54.