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Prognosis of Syntocinon Infusion on Scar Uterus Cotonou-Benin

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Abstract

Objective: This study aims to assess prognosis of actively managed childbirths through oxytocin infusion into uterus with prior caesarean section in the Lagoon University Teaching Hospital for Mother and Child (CHU-MEL).

Method: It was a case control study of descriptive and analytical type based on 82 observations of actively managed delivery with oxytocin infusion into uterus with caesarean section scar at the Maternity over a two-year period from February 1, 2014 to December 31, 2015.

Results: Actively managed childbirth with oxytocin accounted for 8.4% of childbirths through uterus with C-section scar; success rate was 79.3%. Caesarean section was necessary for delivery in 19.5% of the cases. The mean age of our parturient women was 29.5 years. The mean pregnancy bearing rate of parturient women was 3.5 pregnancies with extremes of 2 and 7 pregnancies. Most parturient women had an inter delivery interval between 2 and 5 years i.e. a 78%. The surgical outcomes of first caesarean section were not characterized by any particularity. In this research work, we did not note any case of maternal death, but we registered 1 case of uterine rupture (1.2%). We also registered 3 neonatal deaths, i.e. a 3.6% rate including 1 death after vaginal birth i.e. 1.2%. These deaths were due to uterine rupture (1 case) and neonatal distress (2 cases).

Conclusion: Despite all the constraints of obstetrical practice in Sub-Saharan Africa, using Oxytocin may be contemplated for the management of labor on uterus with c-section scar.

Keywords: Oxytocin infusion; Uterus; Caesarean section

Introduction

In the presence of uterus with prior C-section, the normal procedure to be followed is one of the most debated topics in obstetrics because of significant rising caesarean delivery rate [1]. Indications for vaginal birth after caesarean section increased in order to reduce the rate of repeated caesarean sections. Delivery through uterus with prior C-section exposed to high risk for rupture. Even if in developed countries maternal and fetal prognosis seems to be mastered in case of uterine contraction, there is still a lot of progress to be made in developing countries.

Use of oxytocin on uterus with prior caesarean section had been a long time contraindicated but up to now it is still possible. Few studies had been conducted in Sub-Saharan Africa on the topic; hence the relevance and importance of our research work. The purpose is to assess the prognosis of actively managed births through oxytocin infusion into uterus with prior caesarean section in the Lagoon University Teaching Hospital.

Materials and Methods

It was a retrospective study of descriptive and analytical type based on 82 observations of actively managed child births through oxytocin infusion into uterus with C-section scar, made in the CHU-MEL Maternity over a period of two years from January 1, 2014 to December 31, 2015. The inclusion criterion is uterus characterized by prior C-section on one side with actively managed childbirth through oxytocin administration (Table 1).

1	2	3
<30	30-35	>35
<4	4	>4
1-Mar	4-May	>5
2-5 years	6 months - 2 years	>5 years or <6 months
Fetal distress, Intractable shoulder dystocia	Unknown	Placenta previa, Abruptio placentae (infarction of the placenta), Chorioamnionitis, preterm rupture
Normal	Unknown	abnormal
Known, valuable	Unknown	Invalid hysterectomy

Table 1: Score of uterus with prior caesarean section for Oxytocin infusion. Score between 7 and 10: uterus fit for infusion. Score between 11- 13: uterus fit for infusion, subject to increased monitoring. Score higher than 13: uterus unfit for infusion.

In practice, the parturient women benefitting from oxytocin infusion into uterus with prior C-section are selected after awarding of score of uterus with prior C-section for oxytocin infusion. It is a score focused on seven parameters, each rated from 1 to 3; these are: maternal age, parity, rank of caesarean section, inter delivery interval, indication for caesarean section, surgical outcomes and surgical techniques. The parturient women selected are those whose score varies between 7 and 13.

The data are collected from admission, delivery and operating room records as well as maternal records; EPI-INFO 3.5 software was used for their processing.

Results

Total 134 cases of oxytocin infusion into uterus were recorded over a total of 8184 childbirths, i.e. 1.6%. We registered 134 cases of infusion into uterus with prior C-section over a total of 1595 cases of uterus with prior C-section, i.e. 8.4%.

Among the 134 cases we selected 82 cases for our study. Parturient women's mean age is 29.5 years, with extremes of 20 and 43 years. The age of two thirds of the parturient women oscillates between 25 and 34 years. The average number of pregnancy of parturient women is 3.5, with extremes varying between 2 and 7 pregnancies. Multiparous women are more common; their percentage is estimated at 43.9%. Most parturient women have an inter delivery interval between 2 and 5 years (78%) (Table 2).

Inter-delivery Interval	Number of Cases	%
<2 years	4	4.90%
2-5 years	64	78.00%
>5 years	14	17.10%
Total	82	100%

Table 2: Distribution of parturient women according to inter delivery interval

As regards uterine scar, the type of hysterectomy is a transverse low-segment incision. In most cases, the surgical outcomes of first caesarean section have no particularity and sometimes they are not specified. The average score of uterus with caesarean section is 9.9 with extremes between 8 and 13. Predominant score is between 8 and 10 i.e. 69.5%. Labor is spontaneous in 81 parturient women. Only one was subject to induction through oxytocin infusion for premature rupture of membranes. All the parturient women benefitted from oxytocin infusion. 81.7% were administered an antispasmodic drug.

Antibiotic therapy was necessary in 13.4% of the cases; antihypertensive drug is administered in 7.3% and antipyretic drug in 4.8% of parturient women. Uterine contraction lasted less than 2 hrs in 29.4% of the cases and more than 2 hrs in 70.6%. Vaginal birth is performed in 65 parturient women (79.3%) and caesarean delivery in 19.5% of the cases. Out of 65 vaginal births, actively managed childbirth was performed in 56 cases (87.5%) and induced labor in 12.5%. Uterus cleaning is carried out in 25 parturient women (38.5%).

No abnormality of uterine wall was detected during Uterus cleaning. Delivery outcomes are simple in 69 newly-delivered women all modes/ways of delivery combined (84.1%). 13 newly-delivered women showed at least one complication (15.9%).

Laparotomy is performed for uterine rupture.

- No maternal death was recorded.
- Length of stay in hospital is more than 72 hrs in most cases (94.1%) (Table 3).
- Two new-borns are resuscitated (2.4%).

Length of stay	Vaginal birth	Caesarean delivery
<72 hrs	55(84.6%)	1(5.9%)
≥ 72 hrs	10(15.4%)	16(94.1%)
Total	65(100%)	17(100%)

Table 3: Distribution of parturient women according to length of stay in hospital

We recorded 3 intra-partum deaths, i.e. a 3.6% mortality rate, including 1 by vaginal birth. Death is due to uterine rupture (1 case) and respiratory distress (2 cases).

Discussion

In our cohort, the rate of actively managed childbirth with oxytocin infusion in uterus with prior caesarean section is estimated at 8.4%. Several research works conducted recently pointed out that using oxytocin drugs to cure dynamic dystocia has no effect on the rate of dehiscence and uterine ruptures [2,3]. Our parturient women's mean age is 29.5 years; it is close to the one of BAETA [4]. In France, mean age of parturient women bearing a uterus with prior caesarean section is 32.4 years in Poissy [5]. The number of pregnancy in parturient women is 3.5 with extremes varying between 2 and 7 pregnancies. In our cohort, multiparous women are predominant; they accounted for 43.9%.

Multiparity is considered as a weakening factor for uterine scar which causes uterine rupture [6]. The annual rate of actively managed childbirth through oxytocin infusion into uterus with prior C-section scar increased from 4.9 in 2014 to 12% by the end of 2015. This increase is undoubtedly associated with the introduction of score of uterus with C-section scar for oxytocin infusion.

Vaginal birth before caesarean delivery remains the most reliable predictive factor for new natural childbirth [2]. Most parturient women i.e. 90.2% came themselves to hospital. Counselling on risk for uterus with C-section scar seems to be satisfactory. In our research work, most parturient women have an inter delivery interval between 2 and 5 years (78%).

Many authors think that a minimum inter birth interval of two years is recommended but it is not a sufficient criterion for contraindicating uterine contraction [2]. It appears that short inter delivery interval is still a risk factor for uterine rupture since uterine contraction is preferred.

As far as uterine scars concerned in our study, the type of hysterectomy is a transverse low segment incision and surgical outcomes of initial caesarean section have no particularity and sometimes are not specified. ACOG [1] noted that unknown surgical outcomes alone may not contraindicate uterine contraction. Several studies show that postpartum endometritis is increases risk for uterine rupture during subsequent pregnancies [1,2]. Uterine over distension is also considered as a weakening factor for uterine scar [6]. 69.5% of our

parturient women have a score of uterus with C-section scar varying between 8 and 10; they may thus benefit from oxytocin infusion without any add-on significant risk. We did not record parturient women with score higher than 13, the high limit beyond which oxytocin infusion is forbidden.

Labor is spontaneous in 81 parturient women. Only one was induced by oxytocin infusion for premature rupture of membranes. All our parturient women benefitted from oxytocin infusion. In our series, there is a relationship between duration of labor management and uterine contraction outcome. Duration of labor management lower than 2 hrs is associated with a high probability of vaginal birth.

81.9% of our parturient women were administered antispasmodic drugs. Indication for an antispasmodic drug is large enough to perform delivery in a uterus with C-section scar. In our series, duration of uterine contraction is between 6 and 12 hrs in 69.5% of parturient women. El Mansour [7] also found an average length of time equal to 6 hrs. The course of labor enabled vaginal birth in 65 parturient women i.e. a success rate of 79.3%. This rate is slightly lower than the one found out by Cissé [6] in Dakar i.e. 85%.

Caesarean delivery rate is 19.5%. This is above the one of Cissé [6] who obtained 15% of caesarean section for contraction failure in Dakar. Uterus cleaning is performed in 38.5% of the cases in our research work and did not diagnose uterine dehiscence. Systematic character of uterus cleaning is currently being challenged because of its poor diagnostic use fullness and risk for infection and trauma.

Uterine rupture is the major risk for pregnancy and delivery on uterus with prior caesarean section. It is this specific risk that requires taking census of vaginal birth trial as well as use of oxytocin. We recorded one case of uterine rupture (1.2%) with an infusion score of uterus with prior C-section estimated at 10 after one hour of use of oxytocin infusion. Laparotomy was performed for uterine rupture. The rate of uterine rupture observed in uterus with prior caesarean section found out by Zelop [3] is 0.7% in case of spontaneous labor and 2% in case of induction through oxytocin infusion.

In our study, we did not record any maternal death. Death rate is near 0.35% according to Herlicoviez [8]. Postpartum period was simple in 69 newly-delivered women (84.1%). 13 newly-delivered women presented with at least one complication i.e. 15.9%. There is no significant relationship between complications and mode of delivery. By contrast, there is an association between length of stay and mode of delivery. Those who delivered by vaginal birth have a shorter length of stay. Most newly-delivered women have a length of stay in hospital higher than 72 hrs (94.1%). Three deaths of new-borns were registered in our cohort; this corresponds to an overall mortality of 3.6% including 1.2% by vaginal birth and 2.4% by caesarean delivery. Our rate is lower than the one reported by Berger [9] which is 5.6% of death.

Conclusion

Pregnancy on uterus with prior caesarean section is a high-risk pregnancy; the major risk is uterine rupture, particularly in case of active management of labor.

During our research work, we colligated 82 records of parturient women who benefitted from oxytocin infusion during labor. The rate of actively managed delivery on uterus with prior C-section is 8.4% of deliveries on uterus with C-section and 1.6% of deliveries in general; success rate of uterine contraction is 79.3%. The rate of uterine rupture is not significantly high. Maternal mortality is null. Fetal prognosis is satisfactory.

Despite the constraints of obstetrical practice in Sub-Saharan Africa, use of oxytocin infusion may be contemplated for an efficient management of delivery on uterus with prior caesarean section.

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