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Short Communication

Labor induction just after external cephalic version with epidural analgesia at term

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ABSTRACT

Objective: To analyze the benefits of external cephalic version (ECV) with epidural analgesia at term and labor induction just after the procedure.
Materials and methods: This is a retrospective observational study with patients who did not want trying a breech vaginal delivery and decided trying an ECV with epidural analgesia at term and wanted labor induction or cesarean section after the procedure. We present the results of 40 ECV with epidural analgesia at term and labor induction or cesarean section just after the ECV.
Results: ECV succeeded in 26 out of 40 (65%) patients. Among the 26 successful ECV, 6 delivered by cesarean (23.1%). 20 patients delivered vaginally (76.9%; 50% of all patients).
Conclusion: Considering that a high number of cesarean deliveries can be avoided, induction of labor after ECV with epidural analgesia at term can be considered after being discussed in selected patient.

Introduction

Attempting external cephalic version (ECV) at term decreases the rate of cesarean deliveries in non-cephalic presentations [1]. The factors associated with an increased probability of cesarean delivery after a successful ECV, are not well known. Labor induction due to obstetric indications has been reported as the most important factor determining the risk of cesarean delivery after a successful ECV besides a previous cesarean delivery [2].

Different results have been reported when comparing patients undergoing labor induction after successful ECV to patients with vertex presentation at term. A retrospective matched cohort study refers a statistically significant difference in the cesarean delivery rate when compared to general patients undergoing labor induction [3]. While another retrospective study refers only a statistically significant difference in the cesarean delivery rate for nulliparous women (36.7% vs. 15%), but not for multiparous women [4]. Recent data from a prospective cohort study found nulliparity as the only factor that could predict the risk of a cesarean delivery, while labor induction was not associated to a higher risk [5]. Other data suggest that the time between the ECV and the delivery is an important risk factor for cesarean delivery [2,6]. The risk has been reported to be increased when less than 96 h have passed since the ECV [6].

In relation to the neonatal outcomes after an ECV, worse neonatal outcomes have been reported after successful and unsuccessful ECV [7,8], while other investigators have found no difference [9].

Among all patients with breech presentation at term that do not want trying a vaginal breech delivery, there is a group of patients that want to wait till term (expecting an spontaneous version) and do only consider an ECV if it will be followed by either labor induction or a cesarean delivery. Our aim is to analyze the benefits of ECV with epidural analgesia at term and labor induction just after the procedure in selected patients.

Methods

We conducted a retrospective observational study. Findings are presented from patients who did not want trying a breech vaginal delivery and decided trying an ECV with epidural analgesia at term and wanted labor induction or cesarean section just after the procedure depending on its success or failure. ECV followed by labor induction or cesarean section was only performed after 38 weeks of gestational age in order to avoid any possible problem due to preterm birth. The patients were evaluated in Quiron San Jose hospital from May 2013 to November 2015.

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Table 1
Characteristics of the 26 successful ECV according to the mode of delivery.

	Vaginal Del. n = 20	Cesarean Del. n = 6	p	Total n = 26
Nulliparous/Multiparous	11/9	3/3	1.00	14/12
GA (Weeks + days)	38.65 ± 0.647	38.9 ± 0.606	0.228	38.875 ± 0.598
Maternal age (Years)	33.9 ± 1.6	35.5 ± 2.8	0.275	33.6 ± 2.7
Gender (Male/Female)	10/10	2/4	0.652	12/14
Fetal weight (g)	3242 ± 519	3193 ± 374	0.750	3345 ± 499
Maternal BMI (kg/m^2)	28.3 ± 5.9	25.3 ± 5.4	0.568	27.7 ± 5.2
Instrumental Del.	4 (20%)	0 (0%)	0.543	4 (15.4%)
Apgar 1	8.5 ± 0.5	8.8 ± 0.4	0.245	8.6 ± 0.5
Apgar 5	9.6 ± 0.5	9.7 ± 0.5	0.663	9.6 ± 0.5
Umb. Art. pH	7.26 ± 0.06	7.32 ± 0.07	0.085	7.27 ± 0.07

GA (Gestational Age); BMI (Body Mass Index); Del. (Delivery); Umb. Art. (Umbilical Artery).
Quantitative variables are presented as Mean ± SD.
p (Fisher's Exact test for qualitative variables and Student's T test for quantitative variables).

For the ECV epidural analgesia and ritodrine infusion (0.025 mg/min) was used.

For inducing labor, the epidural analgesia infusion was stopped, but the catheter placed in the epidural space was not removed. Labor induction was performed with prostaglandins (misoprostol 25 mcg every six hours PV) during 24 h; and if labor did not start, induction with oxytocin was performed. If epidural analgesia was needed the catheter previously placed in the epidural space was used.

Results

40 attempts of ECV were performed (always after 38 weeks of gestational age), succeeding in 26 cases (65%). Vaginal delivery occurred in 20 out of the 26 successful ECV (76.9%). 14 women were nulliparous and 12 multiparous (Table 1). There was one emergency cesarean delivery due to an umbilical cord prolapse in a multiparous woman. The other five cesarean deliveries were due to induction failure in two cases, prolonged second stage of labor with a head station above +2 in two cases and a case of a non-reassuring CTG (false positive) who delivered a healthy baby with an umbilical artery pH of 7.34 in one case.

Four instrumental deliveries were performed (20%). Different instruments were used: one Kjelland's Forceps due to a pathological CTG and one Vacuum and two Thierry's Spatulas due to prolonged second stage of labor.

Discussion

The objective of ECV is reducing the cesarean delivery rates. When patients do not want trying a breech vaginal delivery, the cesarean delivery rate will depend mainly on the ECV success rate and the vaginal delivery rate after a successful ECV. The ECV success rate is increased when epidural analgesia in combination with a tocolytic is used [10], while the vaginal delivery rate after a successful ECV seems to be increased when labor induction is not needed [2,3,6].

Epidural analgesia is costly and invasive, but may be advised in selected patients who do want labor induction or cesarean section just after the ECV. Epidural analgesia before ECV is considered safe and women suffer less pain and discomfort, which is related to a higher success rate [10].

The rate of cesarean deliveries in our study is higher than the rate reported when no labor induction is performed after ECV [2]. Labor induction may be a risk factor for cesarean section delivery after ECV and may be the reason why our study has higher rate of cesarean deliveries [2,3]. Counseling women prior to ECV is of high importance. The likelihood of success with and without epidural analgesia and the likelihood of vaginal delivery with and without labor induction should be discussed.

There are controversial results regarding neonatal outcomes after ECV. Worse neonatal outcomes have been published after successful and unsuccessful ECV [7,8]. The risk of ECV is very low and a significant relationship between fetal position after ECV and the neonatal outcomes has not been found [9]. We did not find differences between the patients with successful ECV and the patients with failed ECV.

Considering that a high number of cesarean deliveries can be avoided, we think induction of labor just after ECV with epidural analgesia at term can be considered in selected patients. We think that ECV should be performed with epidural analgesia in order to increase the ECV success rate, when it is going to be followed by labor induction. We believe that with this protocol around 50% of cesarean deliveries in patients who do not want a breech vaginal delivery, and do not want leaving the hospital after an ECV can be avoided.

Conflict of interest/funding statement

Authors do not have any potential conflict of interest or funding.

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