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ORIGINAL ARTICLE

Labor trials in 300 patients with a previous cesarean section

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KEYWORDS

Previous cesarean section;
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Risk factors;
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Abstract

Objective: To evaluate the safety and efficacy of labor in patients with a previous uncomplicated cesarean section in the Obstetrics Department at a University Hospital.

Material and methods: We performed an observational, longitudinal, prospective, descriptive, non-blind, comparative study of patients with a history of previous cesarean sections who attended a tertiary care teaching hospital in northeastern México for the care of their pregnancy from March 2013 to July 2014, where they were monitored during labor. A descriptive statistic, with a *p*-value significance and a Chi-squared analysis, was applied.

Results: Three hundred patients attended the hospital, with 119 (39.6%) vaginal deliveries and 181 (60.3%) C-sections. The most common indication of a previous cesarean section was a narrow pelvic outlet in 59 patients (19.6%). There were more vaginal births in patients with cervical dilatation >4 cm and previous vaginal births. Fetal weight >3500 g, absence of previous vaginal birth, cervical dilatation <3.5 cm and gestational age >40 weeks increase the risk of a cesarean section.

Conclusion: Labor in women with uncomplicated previous cesarean sections is a useful clinical behavior, allowing an uncomplicated delivery in 39.6% of cases.

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Introduction

Cesarean sections are one of the most significant advances in the care of pregnant patients. However, with time, the higher number of indications of C-sections has caused a significant increase in its incidence worldwide.¹

In 1985, the WHO established the highest accepted number of indications of C-sections at 15%, considering a higher number as unjustified.² In Mexico, estimates suggest that the incidence of C-sections is between 36% and 42%.³ Labor after an uncomplicated C-section is considered to be safe, and one who can turn out successful in between 60% and 80% of cases.⁴⁻⁶ Since 1981, the American College of Obstetrics and Gynecology (ACOG) proposed the promotion of labor in pregnant women who had previously undergone a C-section.⁷ In 2004, the ACOG proposed the selection and contraindication requirements for a labor trial; these are still current.⁸ The incidence of complications is estimated to be between 0.05% and 1.09%.⁹ Labor induction with oxytocin and prostaglandins in women with a previous C-section is controversial due to reports which indicate a greater risk of uterine rupture.¹⁰⁻¹² In our hospital, we have, as a rule, the allowance of a labor trial in women with a previous non-complicated C-section, but only when this offsets spontaneously.

Materials and methods

We performed an observational, longitudinal, prospective, descriptive, non-blind and comparative study of patients with a history of previous cesarean sections who attended a tertiary care teaching hospital in northeastern México for pregnancy care. The following aspects were investigated: the indication of a previous cesarean section, previous deliveries, maternal age, gestational age, fundal height and cervical changes found during their admission. According to the ACOG criteria,⁸ only patients who were beyond 26 weeks of pregnancy, had a history of a previous cesarean section with at least a year's time from the cesarean section and the moment of pregnancy. Also, with a non-complicated transverse segmental hysterotomy and a physical examination ruling out a narrow pelvis or a cephalopelvic disproportion were selected. The time and evolution of spontaneous labor were analyzed. No labor-inducing medication was utilized. Moreover, different aspects were assessed in newborns, i.e., weight, clinical gestational age using the Capurro method, the Apgar score, and admission to the Neonatal Intensive Care Unit (NICU). A descriptive statistical study was conducted, with a *p*-value significance and a Chi-squared analysis. Relative risks were analyzed using 2 × 2 contingency charts, with data comparisons between them.

Results

A total of 300 patients with spontaneous labor and a history of previous cesarean section were included, median maternal age was 25 years (range, 17–42) and median uterine fundal height was 32 cm (range, 22–39). One-hundred and nineteen patients (39.6%) had subsequent natural deliveries

Table 1 List of indications of previous cesarean sections and obstetric care received in 300 patients undergoing labor. CPD, cephalo-pelvic disproportion; PN, pelvic narrowing; AFD, acute fetal distress; DPPNI, premature detachment of placenta normo-insert.

Indication of previous cesarean section	N	Delivery		Cesarean	
		n	%	n	%
CPD × PN	59	21	35.5	38	64.5
Contraction dystocia	32	10	31.5	22	68.5
CPD × macrosomic	31	13	41.3	18	58.7
Elective	33	16	48.4	17	51.5
AFD	33	16	48.4	17	51.6
Pelvic presentation	28	11	39.2	17	60.8
Hypertensive disease	24	9	37.5	15	62.5
Oligohydramnios	16	5	31.2	11	68.8
Twins	12	4	33.3	8	66.6
Transverse situation	9	3	33.3	6	66.6
Condylomatosis	7	5	71.4	2	28.6
Preterm birth	5	1	20	4	80
Failed inductive driving	4	2	50	2	50
DPPNI	3	0	0	3	100
Postmaturity	1	0	0	1	100
Chorioamnionitis	1	1	100	0	0
Maternal surgery	1	1	100	0	0
Fetal gastroschisis	1	1	100	0	0
Total	300	119	39.9	181	60.1

and 181 (60.3%) cesarean sections. The reasons for the previous cesarean sections are shown in Table 1.

The labor trial was conducted with a duration of more than 4 h in 263 (87.6%) patients; for the remaining 37 (12.3%), the trial was suspended between 1 and 2 h due to risky obstetric conditions (fetal distress, membrane rupture, and eclampsia). In patients who underwent a delivery, the average time in labor was 6.3 h (range, 1–29), forceps were needed in 59 patients (49%) and 66 patients (55%) had a history of delivery prior to the cesarean section (37 completed delivery and 29 ended in a C-section).

The differences between groups in the studied variables (previous birth, fundal height, fetal weight, dilatation and gestational age) are shown in Table 2, the risk factors for repeat cesareans are established in Table 3.

Three patients had maternal complication: third-degree perineal tears in two of them and one uterine rupture with obstetric hysterectomy. The median Apgar score at 5 min was 8 for both groups. Twelve neonates had complications: perinatal asphyxia caused by the cesarean in 2 of them, one stillbirth, and 9 admissions to the NICU due to prematurity (7 C-sections and 2 deliveries).

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