ISSN: 1676-4285

OBJN
Online Brazilian Journal of Nursing
ENGLISH
Federal Fluminense University
AURORA DE AFONSO COSTA NURSING SCHOOL

Profile of women undergoing cesarean section according to Robson's Classification: field research

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ABSTRACT

Objective: To characterize the profile of women undergoing cesarean section according to the Robson Scale classification at a public hospital in the coastal lowlands of the State of Rio de Janeiro. **Method:** Descriptive, quantitative field research, using the retrospective documentary technique, performed in 2016. **Results:** 267 medical records of women undergoing cesarean section were analyzed, representing 53.4% of the total births, with a higher incidence in women belonging to Group 02 (31.46%); Group 01 (9.36%); and Group 05 (29.96%) of the Robson Scale. **Conclusion**: The Robson Scale can be a useful tool in identifying the groups that effectively need intervention in order to reduce unnecessary cesarean rates. The study highlights the immediate need for measures that can qualify childbirth care in the researched institution.

Keywords: Childbirth; Cesarean section; Women's Health.

Oliveira EG, Ferreira LM, Sales JL, Marins MAR, Knupp VMAO, Quitete JB. Profile of women undergoing cesarean section according to Robson's Classification: field research. Online Braz J Nurs [Internet]. 2019 [cited year month day];18(3):e20196217. Available from: https://doi.org/10.17665/1676-4285.20196217

INTRODUCTION

This study is an excerpt from the research entitled "Giving birthing and Being Born in Rio das Ostras/RJ", which demonstrated that the researched institution did not meet the recommendations of the World Health Organization (WHO), which recommend a maximum of 15% of cesarean sections of total births in a given period, however, the average surgical delivery of this health unit in the first 9 years of operation (2005 to 2013) was 53.5%, exceeding the number of recommended procedures by 35%[1].

In the face of such a discrepancy, the need to conduct a study that could provide a careful assessment of the characteristics of pregnant women undergoing the surgical procedure was identified with the aim of identifying and analyzing the characteristics of the different groups.

The main objective regarding the care provided to women and babies is to maintain the integrity and safety of both with minimal use of medical interventions, with the latter only recommended when labor exposes the woman and/or baby to the risk of death or morbidity[2]. However, cesarean section has been used quite frequently due to social, cultural, economic factors and according to the preference of the physician.

In 2011, WHO performed an orderly analysis aiming to identify and evaluate the existing classification systems and found that the Robson Classification is the most appropriate to meet the universal needs in the evaluation of the characteristics of pregnant women, in order to allow the comparison of rates of procedures in different hospitals and recommends that it be used as a basis for the development of an internationally used classification system[3].

The Robson Scale classifies pregnant women into 10 groups, which are inclusive and exclusive for the recommendation of cesarean section. The groups are formed by five obstetric characteristics, namely: parity (nulliparous or multiparous with and without previous cesarean section), onset of delivery (spontaneous, induced or cesarean section before the start of labor), gestational age (preterm or term), fetal presentation/situation (cephalic, pelvic or transverse) and number of fetuses (single or multiple)[3].

Based on the above considerations, the object of this study was to characterize women undergoing cesarean section in a public hospital in the coastal lowlands of the state of Rio de Janeiro, according to the Robson Scale classification.

The present study aims to improve the use of surgical intervention at birth, provide important indicators through collected epidemiological data, for the development of measures that help to reduce the high rates of cesarean sections in this unit. In addition to being an instrument that, after being made public, will contribute to changes in women's understanding regarding the high rate of cesarean sections in groups of parturients who do not have certain characteristics that justify the performance of this surgical procedure.

Likewise, it aims to offer statistical support that fosters in the Hospital, the setting of the study, the interest in developing protocols about cesarean section indications, based on scientific evidence, as well as developing strategies that are aimed at the continuous training of the teams that work directly in the

birthing process and consequently, minimize the obstacles that favor the surgical procedure in the unit, so that from this perspective it is possible to collaborate in the construction of the care network, based on humanized care, in order to improve the experience of women and family in the pregnancy, delivery and postpartum process.

This academic production is part of the research line entitled: "Sexual and reproductive rights for childbirth and birth care", from the research group entitles Laboratory of Studies on Women and Nursing/LEME/REN/Campus Rio das Ostras.

METHOD

This study consisted of a descriptive, quantitative field research and used the retrospective documentary technique. Field research seeks to deepen a certain reality through direct observation of the activities of the groups under study and/or through interviews with informants in order to collect explanations and interpretations regarding the reality experienced.

This manuscript is an excerpt from the research "Giving birthing and Being Born in Rio das Ostras/RJ", which recieved funding from CNPQ/PIBIC. The setting was a public hospital in the coastal lowlands, located in the state of Rio de Janeiro[1].

Data collection was carried out in 2016. The medical records of parturients who underwent surgical delivery at that institution was used as the primary data source. A checklist-type spreadsheet, filled out by the researcher, containing numerous variables was used as the data collection instrument. However, this study only considered the following variables: parity (nulliparous or multiparous with and without previous cesarean section), onset of delivery (spontaneous, induced or cesarean section before the start of labor), gestational age (preterm or term), presentation/fetal situation (cephalic, pelvic or transverse) and number of fetuses (single or multiple).

The research consisted in determining a sample related to the total number of births that took place in the maternity ward through an abdominal (cesarean) route, from January to April, November and December in 2015. Exclusion factors from this sample group were considered parturients with pregnancy associated pathologies at the time of hospital admission.

This study was submitted to the Health Research Ethics Committee of *Hospital Universitário Antônio Pedr*o (HUAP), CAAE opinion nº 52649615.2.0000.5243. The researchers followed all pre-established principles and rules of Resolution No. 466/2012 of the National Health Council, which regulates research involving human beings. Before the approval of this research by the HREC, the consent letter was presented to the Board of the Health institution, and data collection was authorized.

RESULTS

The medical records of 267 women who underwent cesarean section from January to April, November and December 2015 were evaluated. The average rate of cesarean section in 2015 was 53.4%. It was observed that this rate is well above that recommended by WHO, according to which it should reach a maximum of 15% of births[4].

According to the Robson Scale [3,5], we found

a higher incidence of cesarean section in women belonging to Group 02 (31.46%) – (All nulliparous women with a single, cephalic fetus, ≥ 37 weeks, whose labor is induced or who are submitted to cesarean section before the start of labor), to Group 01 (9.36%) – (All nulliparous women with single fetus, cephalic, ≥ 37 weeks, in spontaneous labor); and to Group 05 (29.96%) – (All multiparous with at least one previous cesarean section, with a single fetus, cephalic, ≥ 37 weeks).

When comparing groups 02 and 05 with multiparous women without previous uterine scarring or previous cesarean section, in the case of those who fit in Group 03 (2.99%) (Multiparous women without previous cesarean section, with single fetus, cephalic, ≥ 37 weeks, in spontaneous labor) and Group 04 (10.48%) (Multiparous women without previous cesarean section, with a single fetus, cephalic, ≥ 37 weeks, whose labor is induced or who undergo a cesarean section before the start of labor) it is evident that the incidence of cesarean sections in these last two groups was lower. This circumstance can be justified by the fact that the history of previous cesarean raises the indication of operative delivery in future pregnancies and that the experience of previous vaginal delivery decreases the chances of delivery by cesarean section in subsequent pregnancies.

With regard to data from Group 06 (1.49%) (All nulliparous women with a single fetus in breech presentation), Group 07 (2.24%) (All multiparous women with a single fetus in breech presentation, including those with previous cesarean section and, Group 09 (1.12%) (All pregnant women with fetuses in a transverse or oblique situation, including those with previous cesarean section), it was possible to show that pregnancies of fetuses with non-cephalic presentations are not considered by the obstetricians of the unit, as an absolute indication for performing the surgical procedure, having less representativeness in the total incidence of cesarean section.

It was also possible to observe that group 08 (2.62%) (All women with multiple pregnancies, including those with previous cesarean section) had a low representative index in the number of abdominal deliveries performed in the unit, reaching only 2.62% of the total number of cesarean sections, this result can be justified by the low rate of twin pregnancies.

Group 10 (8.23%) (All pregnant women with single fetus and cephalic, <37 weeks, including those with previous cesarean section), appears in the results as the 5th group with the highest incidence, contributing significantly to an increase in the general rate of cesarean section of the studied health institution, which can also be justified by the fact that the history of previous cesarean section directly influences the choice of operative delivery in future pregnancies.

DISCUSSION

The Robson Classification is an instrument that helps in the identification and analysis of the characteristics of parturients treated in a specific unit, it is used in several countries around the world with the objective of promoting a comparative analysis of births by groups and cesarean rates between different services within an institution over time[5,6].

Group 01: Nulliparous women with single fetus, cephalic, ≥ 37 weeks, in spontaneous labor

According to CFM Resolution No. 2.144/2016[7], pregnant women have the right to opt for an elective cesarean, provided that they have received all the details in detail about the risks and benefits, regarding normal birth and cesarean section. Their decision must be recorded in a free and informed consent term, drawn up in easy to understand language. However, in order to ensure the safety of the fetus, a cesarean section at the request of the pregnant woman, in situations of habitual risk, can only be performed after the 39th week of pregnancy.

An elective cesarean section results in iatrogenic prematurity, which consequently will prolong hospital stay and impair breastfeeding. Women undergoing this procedure are exposed to surgical risks and to anesthetics that can cause consequences in subsequent pregnancies, such as a greater hemorrhagic potential (low placental insertion and placental accreta) whose complications often cause maternal death[8].

According to the Recommendations and Guidelines for Attention to Pregnant Women Report: the cesarean section/MS[8], performed between 37 - 42 weeks provides a greater risk of respiratory changes for the newborn, the risk varies according to the gestational age, being lower with increased gestational age. Newborns of scheduled cesarean section without the pregnant woman having started labor, tend to have neonatal respiratory distress, newborn transient tachypnea, resulting in the need for admission to the neonatal Intensive Care Unit (NICU).

Group 02: Nulliparous women with a single, cephalic fetus, ≥ 37 weeks, whose delivery is induced or who undergo a cesarean section before the start of labor

Labor induction consists of artificially stimulating coordinated and effective uterine contractions before their spontaneous onset, leading to the onset of labor in women from the 22nd week of pregnancy [9].

The indications for induction of labor range from elective indications, such as pregnant women in the 41st week of pregnancy without obstetric disease, until when the termination of pregnancy is necessary due to life threatening maternal or fetal diseases if the pregnancy is prolonged. It is strongly indicated in cases of post-term pregnancies and premature rupture of membranes ([10].

Labor induction is indicated when the continuation of pregnancy poses a risk to the mother and/or the fetus. The previous cervical preparation directly interferes with the chances of success of the intervention, because in most situations the cervix does not present any dilation or thinning, factors that hinder the induction process[6,10].

Group 03: Multiparous women without previous cesarean section, with single fetus, cephalic, ≥ 37 weeks, in spontaneous labor

Cesarean section directly influences the appearance of maternal predisposition to complications such as hemorrhages, infections and the possibility of accidental laceration of some internal organs, resulting in a high risk of maternal morbidity and mortality, in addition to negative repercussions on women's sexual and reproductive health. It also causes me-

dium to long term alterations in newborns, such as early weaning, atopic conditions and deviations in child growth[11].

A Danish study, carried out in 2015, analyzed two million births and found that birth by the abdominal route is an isolated risk factor for chronic diseases, when compared to vaginal birth, presenting a greater chance of developing asthma (risk 20% higher), juvenile arthritis (10% higher risk), immunological deficiencies (40% higher risk), leukemia (17% higher risk), in addition to systemic connective tissue diseases and inflammatory bowel disease. This study observed that the causal justifications for the increased risk of these affections related to the immune system are associated with the microbiome, i.e, the composition of bacteria and other microorganisms that make up the human flora, the immunological markers and hormone levels, especially cortisol, which is related to the maturation of the immune system and which showed differences in newborns from cesarean sections and vaginal delivery. In addition, the administration of prophylactic antibiotics during cesarean section can also alter the baby's microbiome[14].

Group 04: Multiparous women without previous cesarean section, with a single fetus, cephalic, ≥ 37 weeks, whose delivery is induced or who are submitted to cesarean section before the start of labor

Labor induction in pregnant women with high parity may be associated with an increased incidence of precipitated labor, abnormal uterine contractility, uterine rupture, intracavitary infection, umbilical cord prolapse, iatrogenic prematurity, fetal suffering or death, failure of the fetus induction and postpartum hemorrhage[9].

In the event of an abnormality of uterine contractility, with or without changes in fetal heart rate, early diagnosis and treatment can prevent damage to the fetus caused by hypoxia. The removal of part of the prostaglandin introduced in the vaginal canal that was not absorbed in order to reduce the tone and the number of contractions is recommended.

Group 05: All multiparous women with at least one previous cesarean section, with a single fetus, cephalic, ≥ 37 weeks

Previous cesarean section is often used as an indication for a new surgical procedure, as it is the obstetrician's concern that the uterine scar will rupture in relation to the previous procedure. However, several studies describe the safety of vaginal delivery after previous cesarean section[8].

The systematic review that analyzed observational studies between 2000 and 2007 describes a global rate of uterine rupture of 1.3%, being considerably lower in pregnant women who delivered vaginally without intercurrences, in relation to those who had failed labor attempts[11].

The increased risk of uterine rupture is counterbalanced by the reduction of maternal morbidity, uterine injuries and hysterectomy when vaginal delivery occurs satisfactorily, societal guidelines recommend offering proof of labor to women with previous cesarean section after clarifying the risks and benefits of the procedure. The rate of satisfactory vaginal deliveries after cesarean ranges from 60 to 80%, above all a reduction occurs when these deliveries are performed from induc-

tion, in this case the rate is 50% of chances of having an uneventful delivery[8,11].

In Brazil, the incidence of vaginal delivery after previous cesarean section is still low when compared to that of other countries. In a study carried out in Campinas, São Paulo, the rate of vaginal delivery was 57%. In another study carried out in Recife, Pernambuco, it was observed that one of the main factors associated with the success of vaginal delivery after cesarean section was the history of previous vaginal delivery. In this study, which included only pregnant women with previous cesarean section, vaginal delivery occurred in 68.4%, with the main indications for cesarean delivery being dystocia, pregnancy complications and cephalopelvic disproportion[8].

Group 06: All nulliparous women with a single fetus in breech presentation

There is no pre-established way of delivery for pregnancies with a fetus in breech presentation, in some countries, cesarean delivery for breech presentation is around 80%, this high percentage is justified by the association of breech delivery with increased neonatal morbidity and mortality. The decision regarding choosing the mode of delivery in this situation should be based on the parturient's desire and the experience of the obstetrician, many obstetricians today do not have adequate training and skill to conduct a pelvic delivery, thus choosing cesarean section as the safest route in their judgment, aiming to reduce neonatal risks[12].

The Recommendations and Guidelines for Attention to Pregnant Women: Cesarean section/MS Report[8], states that in situations where the fetus is in breech presentation, it is recommended to perform the external cephalic version (maneuver performed on the mother's abdomen to change the fetal position) at 36 full weeks of gestational age, in the absence of labor, fetal impairment, vaginal bleeding, ruptured membranes or maternal complications. This procedure is not indicated for pregnant women with a term fetus.

Vaginal delivery with a fetus in breech presentation has increasing difficulties, as it is necessary to have an experienced obstetrician, anesthetist and neonatologist and to have a careful selection of the parturients who will be submitted to this process, parity must be considered (the nulliparity is not a factor that contraindicates but multiparity is a facilitating factor), the maternal pelvis (which should not offer resistance, i.e., should not have narrowing), uterine activity (which should be adequate, preferably spontaneous), abdominal press (adequate), fetal assessment (regarding gestational age, weight, degree of flexion and rotation of the head and variety of presentation), ovular membranes status, presence or absence of uterine scar and presence of nuchal cord [8,12].

Group 07: All multiparous women with a single fetus in breech presentation, including those with previous cesarean section

Women in labor with the fetus in breech presentation are prone to a greater risk of antepartum fetal death, umbilical cord prolapse, trauma, low rates of APGAR at birth and a higher incidence of neonatal death when delivered vaginally, these changes

result from intrapartum fetal anoxia due to cord compression, marked delay in the expulsive period, obstetric trauma and fetal malformations. Therefore, these factors are related to the incidence of cesarean section indication as the best route of birth in cases of pregnancies with the fetus in breech presentation, although there are no definitive conclusions about the best way of delivery for this situation[13].

Group 08: All women with multiple pregnancies, including those with previous cesarean section

Programmed cesarean section is not recommended in situations of uncomplicated twin pregnancy in which the first fetus is in cephalic presentation, being indicated in cases of twin pregnancies where the first fetus is in a presentation other than cephalic [11].

The mode of delivery in twin pregnancies varies according to the chronicity of the pregnancy, the number of fetuses, maternal and fetal complications and the presentation of the fetuses. Vaginal delivery should be indicated in uncomplicated term twin pregnancies with the first twin in cephalic presentation[6,8]. Considering that the perinatal morbidity and mortality of the second twin is high, the performance of elective cesarean section does not minimize these complications, therefore, it should not be routinely indicated. When the first twin is not in cephalic presentation, the effect of cesarean section in this case is not yet considered positive, but this procedure is commonly indicated, however, it should not be performed before the 38th week of pregnancy, except in pregnant women who have already started spontaneous labor due to high risk of respiratory distress that can affect newborns[12].

Group 09: All pregnant women with fetuses in a transverse or oblique presentation, including those with previous cesarean section

Term fetuses in a persistent transverse situation, on occasions when the professionals involved in the birthing process do not have mastery of the external version technique, should undergo cesarean section outside of labor, as high rates of fetal morbidity are evidenced when gestation of a transverse fetus progresses to labor[8,13].

Group 10: All pregnant women with single fetus and cephalic, <37 weeks, including those with previous cesarean section

Prematurity alone is not an absolute indication of abdominal delivery, this indication occurs when prematurity is associated with other situations in which there was risk to the mother and baby. Vaginal delivery is favorable for the premature birth, as the passage through the vaginal canal and the labor process improve neonatal performance. However, it can be indicated when premature delivery results from a decision to terminate preterm pregnancy justified by a condition of fetal impairment[12,14,15].

Iatrogenic prematurity and the elective birth of babies before 39 weeks cause an increase in hospitalizations in neonatal ICU, number of deaths, premature and low birth weight[16]. Performing elective cesarean sections as a routine in pregnancies with preterm fetuses is directly associated with increased mater-

nal morbidity and preventable early birth, that is, early births that could be inhibited through some interventions during labor. This procedure used in situations that really indicate its performance may be associated with beneficial effects for the newborn, but these benefits are not yet well defined in view of the increase in maternal risks[13].

Newborns who were born via the abdominal route are more likely to have respiratory problems such as tachypnea, respiratory failure syndrome, persistent pulmonary hypertension; the need for oxygen and mechanical ventilation was observed when compared to neonates born by vaginal delivery[11,16]. Infections and an increase in the number of neonatal ICU admissions were also seen. In addition to the impact on maternal and neonatal morbidity and mortality, cesarean sections can affect other aspects such as the formation of the maternal and child bond, the economic sector, due to hospital expenses and the woman's reproductive future[17].

CONCLUSION

The results showed that the Robson Classification is a very useful tool in the identification of priority groups that need interventions, with a view to reducing the rates of unnecessary cesarean sections and highlights the immediate need to develop measures that, when implemented, can modify the current scenario of the researched unit, since the cesarean section rate is above that recommended by the WHO, a fact that directly influences the quality at birth and maternal recovery.

Through the data collected it was possible to identify that the majority of the parturients of this unit were classified into two groups in which they indicate that the majority of cesarean sections performed occur in women with previous conditions for the evolution of a normal delivery, leading to the conclusion that a good amount of the births that were performed through the abdominal route were for reasons not recognized as an absolute indication for such procedure.

In this way, the present work aimed to promote data that sensitize all professionals involved in the birth process so that they can act more efficiently and consciously in face of the reality of the unit, favoring the implementation of an effective and adequate assistance to the reality of pregnant women and their respective newborns.

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Received: 05/17/2019
Revised:06/04/2020
Approved: 06/04/2020