

Identification of post-cesarean surgical site infection: nursing consultation

Identificação da infecção de sítio cirúrgico pós-cesariana: consulta de enfermagem
Identificación de la infección de sitio quirúrgico después de la cesárea: consulta de enfermería

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ABSTRACT

Objective: To describe the profile of women in relation to their living conditions, health status and socio-demographic profile, correlating it with the presence of signs and symptoms suggestive of post-cesarean surgical site infection, identifying information to be considered in the puerperium consultation performed by nurses and proposing a roadmap for the systematization of care. **Method:** Quantitative, exploratory, descriptive, cross-sectional and retrospective review of medical records of women who had cesarean deliveries in 2014, in the city of São Paulo. **Results:** 89 medical records were analyzed, 62 of them with incomplete information. In 11, there was at least one of the signs and symptoms suggestive of infection. **Conclusion:** Given the results of the study, the systematization of puerperal consultation is essential. The roadmap is an instrument that can potentially improve the quality of service and the recording of information.

Descriptors: Primary Health Care; Cesarean Section; Puerperal Infection; The Role of the Nursing Professional; The Health of Women.

RESUMO

Objetivo: Descrever o perfil das mulheres em relação às suas condições de vida, de saúde e perfil sociodemográfico, correlacionando com a presença de sinais e sintomas sugestivos de infecção do sítio cirúrgico pós-cesariana, identificar informações a serem consideradas na consulta de puerpério realizada pelo enfermeiro e propor um roteiro para a sistematização da assistência. **Método:** Pesquisa quantitativa, exploratória, descritiva, transversal e retrospectiva de revisão de prontuários de mulheres que tiveram parto cesariano em 2014, no município de São Paulo. **Resultados:** 89 prontuários foram analisados, 62 deles com informações incompletas. Em 11, houve a presença de, pelo menos, um dos sinais e sintomas sugestivos de infecção. **Conclusão:** Diante dos resultados do estudo, a sistematização da consulta puerperal é imprescindível. O roteiro é um instrumento que pode potencialmente melhorar a qualidade do atendimento e o registro das informações.

Descritores: Atenção Primária à Saúde; Cesárea; Infecção Puerperal; Papel do Profissional de Enfermagem; Saúde da Mulher.

RESUMEN

Objetivo: Describir el perfil de las mujeres en relación con sus condiciones de vida, de salud, así como el perfil sociodemográfico, que correlacionan con la presencia de signos y síntomas sugestivos de infección del sitio quirúrgico post-cesárea; identificar informaciones a ser consideradas en la consulta de puerperio realizada por el enfermero y proponer un itinerario para la sistematización de la asistencia. **Método:** Investigación cuantitativa, exploratoria, descriptiva, transversal y retrospectiva de revisión de prontuarios de mujeres que tuvieron parto cesárea en 2014, en el municipio de São Paulo. **Resultados:** Se analizaron 89 prontuarios, 62 de ellos con informaciones incompletas. En 11 de ellos, hubo la presencia de al menos uno de los signos y síntomas sugestivos de infección. **Conclusión:** Ante los resultados del estudio, la sistematización de la consulta puerperal es indispensable. El itinerario es un instrumento que puede potencialmente mejorar la calidad de la atención y el registro de las informaciones.

Descriptor: Atención Primaria a la Salud; Cesárea; Infección Puerperal; Papel del Profesional de Enfermería; Salud de la Mujer.

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INTRODUCTION

Healthcare-associated Infections (HAI) in health services are a serious global public health problem⁽¹⁾. Among them, Surgical Site Infections (SSI) are among the most frequent and are responsible for increased hospitalization, costs, morbidity and mortality. SSI account for 38% of all hospital-acquired infections in surgical patients and 16% of all hospital-acquired infections in general⁽²⁻⁴⁾.

The present study has as object the post-cesarean SSI given the magnitude of this problem and the high number of this birth roadmap, as shown in a study of the year 2012, in the state of São Paulo, where 304,188 cesarean deliveries were reported⁽⁵⁾. When comparing the number of other surgical procedures in the same year, there has been 450% increase in cesarean deliveries when compared to the second one, cholecystectomy⁽⁵⁾.

The high incidence of cesarean delivery results in increased maternal and neonatal morbidity and mortality, and has increased over 1.5 times more than natural delivery for most problems⁽²⁻³⁾. In Latin America, cesareans without medical follow-up are responsible for the occurrence of 100 maternal deaths and 40,000 cases of neonatal respiratory disease each year⁽⁶⁾.

In Brazil, the proportion of cesarean deliveries in 2009 was 48.9% of total deliveries, reaching 55.62% in 2012; The World Health Organization recommends that cesarean deliveries be less than 15% of the total deliveries⁽⁷⁾. In the Brazilian Unified Health System (*Sistema Único de Saúde - SUS*), from all deliveries, about 40% are cesarean, while in the private sector this percentage reaches 80%, emphasizing that 48% of the women in their first pregnancy underwent a caesarean delivery and 46% of all cesarean deliveries were performed with prior scheduling⁽⁸⁻⁹⁾.

Related to cesarean delivery and the development of SSI are risk factors that translate into prolonged labor, excessive vaginal contact, meconium, premature delivery, primiparity, ruptured membranes, emergency cesarean delivery, caesarean section of twins, advanced age over 35 years old and prolonged surgical time. In the cesarean section, the expected time to perform the procedure is 57 minutes^(3,10).

Studies on the incidence of post-cesarean SSI, shown in international and Brazilian surveys, point out that more than 80% of women who developed the infection had onset of symptoms after hospital discharge, within 15 days of delivery, showing the importance of follow-up of the puerperal woman at home and in the Primary Care, either in the puerperium consultation or when having the stitches removed⁽¹⁰⁻¹¹⁾.

Primary Care plays a key role in the prevention of HAI, as well as in the early identification of postoperative surgical site infection. It should be active in the system of reference and counter-referral of this disease, contributing to post-discharge surveillance in the hospital. In this sense, nurses are essential because of their role in accompanying women from prenatal to puerperium⁽¹²⁻¹³⁾.

Considering the work of nurses in the puerperium consultation, studies have shown the fragility of this care, in a

non-systematized practice, aimed at care with the newborn, with no actions to promote the health of women in this period⁽¹³⁾.

Given the importance of patient safety, the improvement in the quality of health care for women and the Systematization of Nursing Care (SAE) in the puerperium consultation in Primary Care, this study proposes a roadmap that helps to identify, in women submitted to cesarean delivery, conditions suggestive of SSI. The roadmap was based on an earlier study that describes the profile of pregnant women in relation to their socio-demographic characteristics, life and health conditions, correlating the presence of signs and symptoms suggestive of surgical site infection in women submitted to cesarean delivery.

OBJECTIVE

- To describe the profile of women in relation to their living conditions, health status and socio-demographic profile who were prenatal and were followed up in the puerperium;
- To correlate the profile of women submitted to cesarean delivery with the presence of signs and symptoms suggestive of surgical site infection;
- To identify information to be considered in the nursing consultation that help to recognize signs and symptoms suggestive of post-cesarean surgical site infection.

METHOD

Ethical aspects

This research project was approved by the Ethics Committees (*Comitê de Ética em Pesquisa - CEP*) of the institutions involved, according to the numbers of opinions emitted by CEP of the *Universidade de São Paulo - USP* Nursing School and the *Secretaria Municipal de Saúde* (Municipal Health Secretariat) of the Municipality of São Paulo-SMS-SP. A meeting was held with the Community Health Agents (CHA) of each Basic Health Unit - BHU to present the research and discuss the procedure for women to be contacted to learn about the study and sign a Free and Clarified Consent Term in research for those who agreed to participate. Thus, it was defined that the CHA would be responsible for presenting the research and signing the term, at the time of the home visit.

Design, place of the study and period

This is an exploratory, descriptive, cross-sectional, retrospective study with a quantitative approach, performed through a medical records review. The study was carried out in the city of São Paulo, western region, where six Basic Health Units (BHU) are located with Family Health Strategy teams with women who had cesarean deliveries between January and December 2014.

Population, exclusion and inclusion criteria

The population was defined based on the universe of 369 cesarean deliveries in 2014, of women registered in the health

teams and who performed prenatal care at the unit, who had the puerperium visit or visit within 30 days after selected from the data provided by the *Mãe Paulistana* Program.

Study protocol

Data were taken from the general chart of *Mãe Paulistana* and card A of (Basic Healthcare Information System) SIAB and entered in a data collection instrument, containing the variables that included data on living conditions, socio-demographic, health, last gestation, childbirth and puerperium, thus elaborating a database in Excel for data organization.

Results analysis and statistics

Data analysis and processing were performed using descriptive and inferential simple frequency statistics. Regarding the analysis that addresses the vulnerability of women to post-cesarean surgical site infection, the results were analyzed considering two groups of records: A) those who contained a medical diagnosis or record of at least one suggestive condition of signs and SSI symptoms; and B) in which the information contained in the medical records did not indicate any of the above situations. In this analysis, the medical records with incomplete or absent information were deleted.

Fisher's Exact Test and the estimation of *odds ratios* were used to evaluate the distribution of clinical and socio-demographic variables, according to the two groups. For the variables, age, weight and height, the results were presented by position measurements (medium, minimum and maximum) and scale (standard deviation and interquartile range), and their means between groups were compared according to t-student test. The level of significance was set at 5%.

Theoretical framework

The present study was based on the theoretical-conceptual framework from the point of view of vulnerability in health, seeking to explain the triggering factors of the process of sickness and death, and the mechanisms for coping in individual, collective and social contexts. Vulnerability can be defined in two dimensions that guide its analysis and are interdependent BHU between them, determining the understanding of people's lives and the community, the individual and collective⁽¹⁴⁾.

The individual dimension brings the aspects of the way of life of people who contribute to the exposure to the risk. It is also related to access to information, understanding and promoting transformative practices aimed at preventing injuries⁽¹⁴⁾. The collective dimension encompasses the social and programmatic aspects of health-disease processes as social processes and permeates educational, religious, political, social, economic, health and gender, cultural aspects and access to media, generating the behavior phenomena (practices that expose individuals to risks)⁽¹⁴⁻¹⁶⁾.

It is understood that the vulnerability of women to post-cesarean SSI results from their condition and context in both the individual and collective spheres, that is, the social and programmatic condition that competes for their occurrence. The programmatic scope deals with access to resources and the safety net in an effective way that reduces risk exposure⁽¹⁴⁻¹⁶⁾. It

is also related to the evaluation of how institutions behave in the face of socially vulnerable conditions⁽¹⁴⁾.

The profile of women in relation to their living conditions, health and socio-demographic profile during pregnancy, delivery and puerperium, and the presence of signs suggestive of surgical site infection, have to do with the individual dimension. These factors indicate needs from the point of view of the programmatic dimension, that is, initiatives that Primary Care can perform and that interfere in the individual dimension of the vulnerability of women to postpartum infection. The proposal of the roadmap has this perspective, since improving the nursing consultation is an action that aims at reducing the vulnerability of women to puerperal infection.

RESULTS

The sample consisted of 89 charts of women who accepted to participate in the study, based on the analysis of their individual, family and SIAB records.

Women who had cesarean deliveries in 2014 were 25 years old on average; they also had brown skin color, white and black, respectively; they were born in the southeastern and northeastern regions of the country; they were living in the masonry house, with access to the network electrical, sewage and general water, in households of three to four rooms, accommodating three to five people; most of them were living with partners and children; they were either married or single; half of them was engaged in paid activity, with family income ranging from one to three minimum salaries and with declared education between 8 and 11 years, for 60% of the medical records studied.

We identified 62 (69.7%) medical records being incomplete or with no records, according to variables of life conditions and presence or absence of signs, and symptoms suggestive of post-cesarean surgical site infection. In 27 records, they were complete, supporting analysis for the definition of two groups of women (A and B). In group A, 16 records were identified where at least one of the signs and symptoms suggestive of infection was verified in 11 registries. In group B, six medical records had a medical diagnosis of post-cesarean surgical site infection.

Of the women who presented signs and symptoms of surgical site infection, 50% had appropriate weight, and the other 50% were overweight or presented some degree of obesity, a factor considered as risky in the studies. The incidence of diseases in this group was small as well as the use of tobacco. There was no positive reference regarding the use of alcohol and other drugs. The presence of reactive serology for syphilis and hepatitis B was more frequent, as was urinary infection in this group of women.

In group A, four had low belly pain, one associated with fever, pain at the surgical site, presence of yellow and purulent secretions, one with some urinary alterations, one with bleeding, four had secretion and two, dehiscence, with onset of signs and symptoms between 7 and 11 days. The nursing team was responsible for the observation of the event in 83% of the cases, followed by medical staff in 17% of the medical

records. Among the women who attended the nursing team, five were referred for medical evaluation, two were not and two did not contain the information in the medical record. In six charts, there were notes of the medical diagnosis of post-cesarean surgical site infection.

Variables related to living conditions (household type and family income) and socio-demographic variables (age, schooling, place of birth, work, marital status and people with whom they reside) presented a variation in absolute and percentage frequency distribution, but without significance. In the variable skin color, brown or black women were significantly more frequent in group A ($p = 0.038$).

In both groups, there were women with unique or associated morbidities: arterial hypertension, cardiac arrhythmia, arthrosis, panic syndrome, hepatitis B and unspecified sexually transmitted infection. Related to community infections, serological tests with reactive results for syphilis and hepatitis B were more frequent in group A. Urinary infection was present in seven women. Overweight or some degree of obesity were found in 25.3% of the women, in groups A and B.

Regardless of the presence of SSI, most women entered prenatal care in the first trimester, having more than six visits; 14 were primigravidae and 10 were in the second gestation or more, with an interval of more than four years since the last

delivery and gestation in 60% of the cases. Among the immunobiological measures recommended in prenatal care for the woman to be considered as immunized, 74% of the records were found to receive a dose against tetanus and diphtheria; 63% against hepatitis B; and 59% against influenza.

Information on emergency cesarean section was present in five charts, four in group B. The mean length of hospital stay was three days. Two women in group B were hospitalized for more than seven days, and the postpartum consultation or visit was between eight and 30 days after delivery.

The complaints of these women began within seven days after the cesarean delivery. They presented, in the symptoms and signs, low belly pain, fever, urinary alteration, bleeding, yellow and purulent secretion, pain at the surgical site, dehiscence and diagnosis infection in 50% of cases with treatment of choice with antibiotic therapy.

Based on the results obtained, the Nursing Consultation Guide was developed in the Post-Cesarean Postpartum with the purpose of promoting a better quality of care. The aim of this guide is to promote the systematization of nursing care to assist nurses in the identification of post-cesarean surgical site infections, alerting the need for prevention and surveillance of this disease. The roadmap has simple indicators. It is easy to fill in and contemplates the steps of the nursing process.

ROADMAP FOR POST-CESAREAN POSTPARTUM NURSING CONSULTATION			
Name:	BD		
SUS/ CNS Card	Records:		
Date:			
NURSING HISTORY			
Childbirth date:			
Hospital name/ maternity of childbirth:			
Duration of labor: ___ hours			
Premature rupture of membranes	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> no information
If yes, how long has elapsed between rupture and childbirth: ___ hours			<input type="checkbox"/> no information
Appearance of amniotic fluid:	<input type="checkbox"/> normal	<input type="checkbox"/> presence of meconium	<input type="checkbox"/> no information
Time of hospitalization: ___ days			
Cesarean section performed urgently:	<input type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> no information
Reason for urgent Cesarean section:	<input type="checkbox"/> maternal hypertension	<input type="checkbox"/> fetal distress/meconium	<input type="checkbox"/> umbilical cord prolapses
Gestation	<input type="checkbox"/> single	<input type="checkbox"/> twin	
Gestational age at childbirth: ___ weeks			
Intercurrences in labor and childbirth:	<input type="checkbox"/> yes	<input type="checkbox"/> no	
If yes, which ones:			
<i>HEALTH EDUCATION GROUPS</i>			
PREGNANT WOMEN GROUP			
Participation in the group	<input type="checkbox"/> yes	<input type="checkbox"/> no	How many meetings have you had?

To be continued

Figure 1

ROADMAP FOR POST-CESAREAN POSTPARTUM NURSING CONSULTATION				
SEXUAL AND REPRODUCTIVE PLANNING				
Participated in the sexual and reproductive planning group		<input type="checkbox"/> yes	<input type="checkbox"/> no	
Contraceptive counseling		<input type="checkbox"/> yes	<input type="checkbox"/> no	
Contraceptive prescription		<input type="checkbox"/> yes	<input type="checkbox"/> no	
If yes, what method prescribed:				
PUERPERIUM				
Puerperium consultation	<input type="checkbox"/> by 7 days	<input type="checkbox"/> from 8 to 30 days	<input type="checkbox"/> from 31 to 42 days	<input type="checkbox"/> above 42 days
Feeding *	<input type="checkbox"/> appropriate	<input type="checkbox"/> inappropriate		
Ferrous Sulfate Supplementation		<input type="checkbox"/> yes	<input type="checkbox"/> no	
Emotional state	<input type="checkbox"/> normal	<input type="checkbox"/> depressed	<input type="checkbox"/> bored	<input type="checkbox"/> sad
Hygiene	<input type="checkbox"/> daily bath	<input type="checkbox"/> intimate hygiene once a day	<input type="checkbox"/> sit baths	
Hygiene	<input type="checkbox"/> tidy	<input type="checkbox"/> not tidy		
Sex in the puerperium		<input type="checkbox"/> yes	<input type="checkbox"/> no	
COMPLAINTS				
Fever	<input type="checkbox"/> yes	<input type="checkbox"/> no		
Pain underbelly	<input type="checkbox"/> yes	<input type="checkbox"/> no		
Surgical site pain	<input type="checkbox"/> yes	<input type="checkbox"/> no		
Urinary alterations (dysuria, polyuria...)		<input type="checkbox"/> yes	<input type="checkbox"/> no	
Vaginal secretion (appearance)	<input type="checkbox"/> yellow	<input type="checkbox"/> green	<input type="checkbox"/> colorless	<input type="checkbox"/> not applied
Another:				
OBSTETRIC PHYSICAL EXAMINATION				
General Vital Signs	BP:	Heartbeat:		
LL Edema	<input type="checkbox"/> yes	<input type="checkbox"/> no	If yes, how much + ?	
Breasts	<input type="checkbox"/> symmetrical	<input type="checkbox"/> asymmetrical	<input type="checkbox"/> turgid	<input type="checkbox"/> ingurgitated
Nipples	<input type="checkbox"/> flat	<input type="checkbox"/> protruding	<input type="checkbox"/> inverted	<input type="checkbox"/> sores
Abdomen	<input type="checkbox"/> flaccid	<input type="checkbox"/> distended		
Involution of the uterus (according to the time of puerperium)		<input type="checkbox"/> appropriate	<input type="checkbox"/> inappropriate	<input type="checkbox"/> not palpable
Surgical site	<input type="checkbox"/> without signs of inflammation	<input type="checkbox"/> local warm	<input type="checkbox"/> edema	<input type="checkbox"/> dehiscence
Surgical site secretion		<input type="checkbox"/> yes	<input type="checkbox"/> no	
Secretion appearance	<input type="checkbox"/> serous	<input type="checkbox"/> yellow/purulent	<input type="checkbox"/> with blood	
Gynecological examination	<input type="checkbox"/> normal (cervix intact)	<input type="checkbox"/> altered (presence of lesion, warts)	<input type="checkbox"/> not done	<input type="checkbox"/> not applied
Lochia Appearance	<input type="checkbox"/> red (dark, after 2 days)	<input type="checkbox"/> yellow (after 10 days of delivery)	<input type="checkbox"/> white or serous (16 th day postpartum)	<input type="checkbox"/> purulent (pathological)
Other findings:				
NURSING DIAGNOSIS- ICNPHC				
Vaginal discharge	<input type="checkbox"/> present			
Underbelly pain	<input type="checkbox"/> present			
Urinary elimination	<input type="checkbox"/> appropriate	<input type="checkbox"/> affected		
Body hygiene	<input type="checkbox"/> appropriate	<input type="checkbox"/> altered		
Food intake	<input type="checkbox"/> appropriate	<input type="checkbox"/> altered		
Breast Engorgement		<input type="checkbox"/> present		
Mastitis	<input type="checkbox"/> present			
Rest	<input type="checkbox"/> altered			

To be continued

Figure 1 (concluded)

ROADMAP FOR POST-CESAREAN POSTPARTUM NURSING CONSULTATION				
Skin trauma	<input type="checkbox"/> present			
Mom-child bond	<input type="checkbox"/> preserved	<input type="checkbox"/> affected		
Other diagnoses:				
INTERNATIONAL CLASSIFICATION OF PRIMARY CARE- ICPC				
<input type="checkbox"/> Medical examination/health evaluation/complete				
<input type="checkbox"/> W17 Postpartum bleeding (postpartum bleeding criteria: frank bleeding during or up to 6 weeks postpartum).				
<input type="checkbox"/> W19 Signs/symptoms of breast/lactation (galactorrhea, ablation, weaning).				
<input type="checkbox"/> W70 Sepsis/puerperal infection (criteria: infection of the birth canal or reproductive organs up to 6 weeks postpartum).				
<input type="checkbox"/> W71 Infections that complicate pregnancy (maternal infections that complicate pregnancy or the puerperium).				
<input type="checkbox"/> W92 Birth of live birth (assisted delivery, pelvic delivery, cesarean section, dystocia, induced delivery, lesions caused by delivery, low-lying placenta during delivery).				
<input type="checkbox"/> W94 Puerperal mastitis (breast abscess; criteria: pain, inflammation of the breast at 6 weeks postpartum or during lactation).				
<input type="checkbox"/> W95 Other problems of the breast during pregnancy/puerperium (problems of the breast during the puerperium, sores nipple).				
Other Classifications:				
NURSING PRESCRIPTION				
REFERRALS				
Signature and stamp of professional:				
STITCHES REMOVAL				
Date of stitches removal:				
Surgical site appearance:				
Referrals:				
Evaluation of the surgical site for stitches removal:				
Signature and stamp of professional:				
*Feeding: take into account food routine recommended by the 10 steps of a healthy diet, with 3 meals daily (breakfast, lunch and dinner) plus two healthy snacks per day, following the recommendations by groups.				
Recommendation: eat rice and beans every day of the week (at least 5 times a week). Drink 2 liters of water a day (6 to 8 glasses). Avoid industrialized products and salt.				

Notes: SUS- Unified Health System; CNS-Social Security Card; BP- Blood Pressure; LL- Lower Limbs; ICNPCH- International Classification of Nursing Practices in Collective Health; ICPC- International Classification of Primary Care; BD- Birth Date.

Figure1 - Roadmap for post-cesarean postpartum nursing consultation

DISCUSSION

The results presented show the weakness of notes in records, since the lack of information or incomplete data does not clarify in more details the socio-demographic and living conditions profile, making it difficult to verify the real proportion of women who presented or not signs and symptoms suggestive of infection.

The difficulty of precisely identifying the vulnerability of women with post-cesarean SSI, given the poor quality of data and information contained in the documents that record their follow-up, is a limitation in the research that has as its source the review of medical records⁽³⁾. At the same time, it shows weaknesses in terms of what is registered or not in medical records, pointing out that this is an aspect of programmatic vulnerability, insofar as the records can be considered an indirect

indication of the quality of care provided and the organization of services.

It was verified that the instrument called São Paulo Gestation Monitoring Chart, used in the city of São Paulo, does not consider important and determinant variables for the identification of signs and symptoms suggestive of post-cesarean SSI, which reinforces the hypothesis of vulnerability infection. In the proposal of the Nursing Consultation instrument to the puerperal woman in the Basic Attention in which 73 Diagnoses and 155 Nursing Interventions were selected, according to the CIPE® nomenclature, there is indication of diagnoses suggestive of surgical site infection⁽¹⁷⁾. However, it does not contemplate relevant aspects that help nurses to identify their occurrence.

The role of nurses during prenatal, childbirth and puerperium periods is very clear, a determinant factor in postpartum infection prevention initiatives, with guidelines and care in the puerperium, well defined in the protocols of care and in the nursing consultation. The puerperium consultation is when the nurse should be vigilant and aware of the risks, signs and symptoms of a possible post-cesarean surgical site infection, its prevention and the imminence of occurrence, conducting, in the care of the woman through anamnesis, general and specific physical examination, events that promote the development of the infection or even identify the ongoing infection.

Nurses have a fundamental responsibility in recording the data of their care in addition to the chart of pregnancy monitoring. The absence of notes in medical records may be indicators that the nurse practitioner approaches and observes in his puerperium consultation signs and symptoms that indicate infection, but does not describe or are not yet attentive to the conditions that may incur in such an event. They do not perform the physical examination; they make their care directed to the health of the newborn, addressing only the issues of breastfeeding, violating in one way or another the Federal Nursing Council rules that determine the Systematization of Nursing Care in all its stages⁽¹⁸⁾.

The variable skin color, presented results with statistical significance for black and brown women, which may be an element of vulnerability to SSI. Studies with the black female population show that they live in contexts of social vulnerability, such as: low income and schooling, no paid work, no partner, teenage pregnancy, difficulty in accessing prenatal care and information about signs of labor⁽¹⁹⁻²²⁾.

Although the results did not show statistically significant differences, women who presented signs and symptoms suggestive of SSI were mostly single, lived with a partner or with a partner and children and did not have paid work, according to other studies⁽²³⁾.

Although there was no statistically significant difference between women who had or did not have evidence of SSI in both groups, there were important warning signs to be investigated. Body mass index, indicating overweight or obesity is an example, due to ineffective tissue circulation, greater accumulation of seromas, hematomas and the presence of subcutaneous tissue greater than two centimeters, promoting a greater risk of dehiscence and consequent SSI^(3,24-25). The use of tobacco, alcohol, and other drugs has a direct impact on the risk of SSI

development reported in studies. They indicate that tobacco, associated with vascular alterations, affects the healing process, increasing the risk of developing local infections. The use of drugs and alcohol is related to social vulnerability⁽³⁾.

Important information from the point of view of being predictors of infection are caesarean section, pregnancies of twins, membranous rupture time greater than 12 hours, prolonged labor, excessive vaginal touches, amniotic fluid with presence of meconium which are situations that increase the risk for the development of infections⁽²⁴⁾. Nevertheless, this information was not present in the charts evaluated in the present study.

Although the chart of pregnancy monitoring, *Mãe Paulistana*, in the puerperium consultation brings the variables: pain in the belly, urinary alterations, bleeding and leukorrhea, many charts did not present the notes about such complaints. On the other hand, the variables like fever, pain in the surgical incision, abdominal pain and presence of secretion had a large number of medical records, making the analysis difficult, interfering in the qualification of the infection of women who presented signs and symptoms of surgical site infection post-cesarean section, as well as a statistically significant difference, and consequently few women had a diagnosis made by the physician.

An important moment for the observation of the surgical site, stitches removal, had few notes of the date of removal and appearance of the site, directly influencing the quality of care and identification of possible surgical site infection.

It is understood that a consultation of high quality in the puerperium by the nurse is one of the elements of the programmatic dimension that interferes in the extent of the individual vulnerability of the woman to surgical site infection.

The puerperium consultation must comply with the requirements of the nursing process, which is, in its first stage, the collection of data or the nursing history: the information of the person, family, community and the health-disease process. The next step is the nursing diagnosis that aims to support decision making in order to achieve the expected results⁽¹⁸⁾.

Study limitations

The retrospective analysis of the medical records of the puerperal women, the impossibility of interviewing the women and the need to collect the FCCT signature after the lapse of up to one year of delivery, made the study sample reduced. The lack of information or incomplete information in the medical record, *Mãe Paulistana*, limited the study where only 27 of the 89 medical records could support the analysis that suggested the infection or not of a post-cesarean surgical site.

Contributions to the area of nursing, health or public policy

The Roadmap for Post-Cesarean Postpartum Nursing Consultation has the power to qualify the puerperium consultation of the nurse in primary care, systematizing nursing care, assisting in the identification of surgical site infection, subsidizing decision-making, and promoting the creation of an indicator that can measure this event in BC (Basic Care), as well as the provision of safe care for the puerperal woman.

CONCLUSION

The results of this research indicate that there is a clear need for systematization in the puerperium consultation, highlighting the importance of recording professional actions. It is fundamental that nurses look at the quality of information guided by the Systematization of Nursing Care.

The complaints by women began at a time when the home visit and/or consultation at the UBS occurred and stitches were removed, demonstrating the importance of the comprehensive evaluation of the puerperal woman, especially the surgical site in search for possible signs of infection post-cesarean section as well as having complete medical records.

The proposal elaborated for the Roadmap for Post-Cesarean Postpartum Nursing Consultation contains information to help nurses recognize signs and symptoms suggestive of post-cesarean surgical site infection, selected from the studies that have indicated risk factors for the development of this problem in addition to the data needed for an adequate nursing process, promoting patient safety, with quality and harm reduction assistance.

The Roadmap for Post-Cesarean Postpartum Nursing Consultation to pregnant women attending in Primary Care aims to qualify nursing care, helping to identify conditions suggestive of surgical site infection. It is emphasized that, later, this instrument will be validated by professionals of Basic Care and Specialists.

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