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Women Believes and Practice toward Cesarean Section Wound Healing

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ABSTRACT

This study aimed to determine women believes and practices toward cesarean section wound healing. Design: Descriptive, cross sectional analytical design. Setting: This study was conducted at El Kasr-EL Aini, Cairo University maternity hospitals, at antenatal clinics and postpartum units. Sample: A total of 400 women who had undergone an uncomplicated cesarean section, with singleton low risk pregnancy were invited to participate in the study. Our inclusion criteria were; age ranged between 18-35 years old, read and write, no previous surgery in uterus other than cesarean section. Our exclusion criteria were any risk factors that lead to poor wound healing. Tools: Data were collected utilized a structured questionnaire. Intervention: Women who met the inclusion criteria were interviewed to get the baseline data as well as identifying their perception and their practice for cesarean section wound. Results: Most of women believed that poor healing in one cesarean section (C.S) means poor healing in the subsequent C.S (84.5%), wound healing depends on sterilization of operation's equipment (100.0%), antibiotics before surgery (87.5%) and good nutrition (86.0%). Further, women used to receive high protein diet (90.5%), and multi-vitamins to improve wound healing (80.2%). Ensured that keep the wound away from water (82.5%) and covered it with dressing (60.0%) protect it from infection. While fifty eight point eight percent apply corn starch water for wound's inflammation if present. Conclusion & recommendation: There are few believes and practices related to cesarean wound healing need to be corrected. Women need preparation though mother classes conducted during antenatal period, after operation and before discharge. Information should directed to woman's needs and include both routine and additional care required where there is a deviation from normal recovery.

Key Words: Cesarean section, believes, practice, and wound healing.

Background

Cesarean section (C.s.) operation is common management of delivery which can be done either as emergency or elective. There are two priorities that must be achieved; the baby and the mother, including good wound care (Blanc etal., 2006). Wound care is an expensive area of treatment for health care services (Posnett and Franks, 2007). Whenever a person has a cesarean section there is a risk that there will be a problem with wound healing. The most common type of wound healing problem is separation, opening of the skin and fatty tissue just beneath the skin (Kwee et al., 2007).

Furthermore, women undergoing cesarean section have a five to 20-fold greater risk for infection compared with a vaginal delivery. The National Nosocomial Infections Surveillance (NNIS) System reports rates of surgical site infection (SSI) for cesarean section of 3.35% when there are no risk factors present for infection (risk index zero) (NNIS, 2000). Ibrahim etal. (2011) discuss different strategies for prophylactic antibiotics in preventing post cesarean section wound infection. While many studies concentrate on risk factors lead to wound infection (Olsen etal., 2008; Mitt, Lang, Peri and Maimets, 2005; Myles, Gooch and Santolaya, 2002; Killian etal., 2001 & Tran etal., 2000).

In general, effective wound management depends on understanding a number of different factors such as the type of wound being treated, the healing process, patient conditions in terms of health (e.g. diabetes), environment and social setting, and the physical chemical properties of the available dressings (Morgan, 2002). McIntosh and Ousey (2008) added that optimal care is not always provided by nurses. Reduction of patients' quality of life may lead to delay healing, increase pain and increase risk of infection. However, recommendations for wound care after obstetric and gynecologic procedures remain based on tradition and anecdote (Minig etal., 2009). There is a dearth of information on culturally appropriate practice in wound management for parturient women with cesarean section. Most of researches discuss different view of cesarean wound techniques and its complications as well as women perception toward caesarean section as a choice for delivery. But never discuss the delivered women believes and practices toward wound care. A sense of empowerment during childbirth can be achieved by choosing a childbirth professional who values woman-centered care. Addressing women's views, concerns, believes and traditional practices should be recognized as being integral to redesigned post cesarean section care.

The aim of the study

To determine women believes and practices toward cesarean section wound healing.

Research questions

The following research questions were emerged:

1-What are the women's believes toward cesarean section wound healing?

2-What are the women's practices toward cesarean section wound healing?

Material and methods

Design:

Descriptive, cross sectional analytical design.

Setting:

This study was conducted at El Kasr-EL Aini, Cairo University maternity hospitals, at antenatal clinics and postpartum units.

Sample:

A total of 400 women who had undergone an uncomplicated cesarean section, with singleton low risk pregnancy were invited to participate in the study. Our inclusion criteria were; age ranged between 18-35 years old, read and write, no previous surgery in uterus other than cesarean section. Our exclusion criteria were any risk factors that lead to poor wound healing (obesity, diabetes mellitus, age≥ 36 years, repeated cesarean section≥ 4, emergency, chorioamnionites, absence of the antibiotic prophylaxis dose, ect…).

Tools and measurements:

Data were collected utilized a structured questionnaire. It divided into four parts: *first part* includes the demographic data and sample characteristics; *second part's* questionnaire of eleven items reflect women's believes related to post cesarean wound healing; while *third part* reflects women's practices toward caesarean section wound in terms of diet, daily activities and care which contains eleven items; while *fourth part* designed to assess wound healing condition. The criteria of wound healing assessment stated after reviewing the related literatures. The inter-rater reliability for the designed questionnaire has been achieved by seven nursing clinical instructors. While content validity was revised by nursing consultants (n=3), faculty of nursing- Cairo University. Expert's opinions were taken into consideration. The needed modifications were carried out. The reliability of the scale was calculated using the Statistical Package of the Social Science (SPSS) software (English version 9.0). Reliability coefficient was calculated for questions related to women's believes and practices, revealed Cronbach's alpha for first part questionnaire (believes) = 0.94 and 90.0 for second part questionnaire (practice) indicated very good internal consistency.

Recruitment of participants and randomization

An official permission was obtained from the administrative authorities of El Kasr-El Aini maternity hospital of Cairo University for conducting this study. Identifying the random sample was done on the admission of women through the following three steps; *First*, identifying women who had an elective cesarean section who admitted in the postpartum cesarean section unit in one day from admission registration notebook. Then determining the hospital numbers wrote on the main admission paper. *Second*, limiting the number of mothers in term of who were met the inclusion criteria. *Third*, ordering the hospital numbers. Woman who had an even number on her admission paper was included in the study. Woman who agreed to participate in the study provided an information sheet containing the aim and details of the study. Further, formal consent was signed ensuring that all data obtained were to be strictly confidential.

Intervention

The researcher attended the hospital between the periods of June 2013 to September 2013. The present study grounded by Leininger's culture care; diversity and universality theory (1991). She emphasized that nurses who understand and value the practice of culturally competent care are able to provide health care practices positively for clients of designated cultures. Sharing a cultural identity requires knowledge of transcultural nursing concepts and principles, along with an awareness of current research findings. Culturally competent nursing care can only occur when client beliefs and values are thoughtfully and skillfully incorporated into nursing care plans. In order to develop a suitable tool that reflects women's believes and practices toward cesarean section wound care. Semi-structured interviews sought data from thirty parturient women in the

postpartum unit were chosen randomly. Free and open discussion occurred, and was not limited by time constraints. Questions were directed to identify knowledge and experience of wound management. The participant's perspectives were used as a basis for questionnaire items. Two interviews were conducted for data collection. First was conducted in postpartum unit. Women who met the inclusion criteria were interviewed to identify their perception and practice toward cesarean section wound. While the second interview was conducted at the outpatient clinics. All participants were contacted by telephone within ten days after surgery. Women asked to visit the outpatient clinics in order to check on their wound's condition.

Statistical analysis

Statistical package for the social science (SPSS) was used for statistical analysis of data. Regarding descriptive statistics, data was summarized using; 1) the arithmetic mean as an average, describing the central tendency of observations for each variable studied; 2) The standard deviation as a measure of dispersion of results around the mean; 3) the frequency and percentage.

Results

Distribution of sample characteristics

Regarding sample characteristics, women's age ranged between 18-35 years old. Most of them had secondary and university education. Their body mass index ranged between normal to overweight. Most of them were nullipara and primipara with gestational ages ranged between 37-40 weeks. All patients received prophylactic antibiotic therapy (i.e. intravenous cefoxitin 2 g. thirty minutes before surgery, followed by 1 g. every 6 hours for 24 hours). Ninety five point eight percent had one continuous suture wound closure. And their operating time ranged between 30 to 60 minutes. While hospital stay ranged between two to four days after operation (table 1).

Table 1. Distribution of sample characteristics

Women characteristics	n=400	
	Mean	SD
Age	29.20	4.26
Gestational age (weeks)	38.44	1.11
	No.	%
Education		
Read and write	16	4.0
Elementary	28	7.0
Preparatory	66	16.5
Secondary	134	33.5
University	156	39.0
BMI (kg/m2)		
Underweight: <18.5	0	0.0
Normal: 18.5-24.9	296	74.0
Overweight: 25-29.9	104	26.0
Number of prior cesarean section		
Zero	160	40.0
One	116	29.0
Two	105	26.2
Three	19	4.8
Type of closure		
One continuous suture row	383	95.8
Interrupted suture	17	4.2
Operating time (min)		
≤30 minutes	97	24.2
31-60 minutes	303	75.8
	Mean	SD
Hospitalization period (days)	2.52	0.49

Women's believes toward caesarean section wound healing

Regarding women's believes toward caesarean section wound healing, most of women believed that poor healing in one C.s. means poor healing in the subsequent C.s (84.5%), wound healing depends on

sterilization of operation's equipment (100.0%), antibiotics before surgery fast the process of healing (87.5%), and good nutrition facilitates wound healing (86.0%), (table 2).

Women's practices toward caesarean section wound

Regarding women's practices toward caesarean section wound healing, most of women used to receive high protein diet (90.5%), and multivitamins (80.2%) to improve wound healing. Ensured that keep the wound away from water (82.5%) and covered it with dressing (60.0%) protect it from infection. While 58.8 % apply corn starch water for wound's inflammation (table, 3).

Table 2. Women's believes toward caesarean section wound healing

Women believes	n=400			
	No	%	No	%
	Agree		Not agree	
Increasing woman age contribute to poor healing.	260	65.0	140	35.0
Psychological state affect wound healing.	110	27.5	290	72.5
Increase body weight delay healing.	362	90.5	38	9.5
Poor healing in one C.s. means poor healing in the subsequent C.s.	338	84.5	62	15.5
Increase cesarean numbers means increase days for wound healing.	130	32.5	270	67.5
Wound healing depends on type of suture.	361	90.2	39	9.8
Wound healing depends on sterilization of operation's equipment.	400	100.0	0	00.0
Antibiotics before surgery fast the process of healing.	350	87.5	50	12.5
More pain means good healing processes.	176	44.0	224	56.0
Shaving hair prior C.s. lead to wound infection.	12	3.0	388	97.0
Good nutrition facilitates wound healing.	344	86.0	56	14.0

Table 3. Women's practices toward caesarean section wound

Women practices to facilitate good wound healing	n=400			
	No.	%	No.	%
	Agree		Not agree	
Practices related to diet				
High protein diet.	362	90.5	38	9.5
Take oral vitamins supplementation	321	80.2	79	19.8
Eating Garlic.	42	10.5	358	89.5
Practices related to daily activities				
Early ambulation after surgery.	303	75.8	97	24.3
Wear the C.s. support belt.	121	30.2	279	69.8
Warming wound area.	53	13.2	347	86.8
Keep the wound away from water.	330	82.5	70	17.5
Practices related to wound care				
Keep the wound covered with dressing.	240	60.0	160	40.0
Moist the wound by topical antibiotic.	132	33.0	268	67.0
Apply burning cream for the scar appearance.	148	37.0	252	63.0
Using corn starch water for wound's inflammation.	235	58.8	165	41.2

Cesarean section wound healing follow up

Regarding C.s. wound healing follow up, table (4) denoted that, 3.7% of women had local infection with systemic reaction, the extension of infection varied between one stitch, part of wound or whole wound (3.7%). Manifested by serous and purulent discharge (1.5%). While sixty nine percent of women had external wound healing within one week.

Table 4. Post cesarean C.s. wound healing follow up

Wound healing follow up. score	n=400	
	No.	%
Wound status		
No sign of inflammation reaction	370	92.5
No signs of infection	385	96.3
Systemic reaction with local infection	15	3.7
Extension of infection		
Just one stitch	11	2.7
Part of wound	2	0.5
Whole wound	2	0.5
Discharge		
Serous discharge	4	1.0
Purulent discharge	2	0.5
Bloody discharge	0	0.0
Days of healing		
8 days	276	69.0
9-15 days	118	29.5
> 15 days	6	1.5

Discussion

Caesarean section is a common operation in obstetric practice. Some of women believe that caesarean delivery represents reproductive failure whereas vaginal delivery is a proof of womanhood. The morbidity and mortality associated with the operation, prolonged hospital stay and the higher cost of caesarean delivery vis-à-vis vaginal delivery, all are the contributing factors (Jido and Garba, 2012). It is important to monitor healing progress and measure outcomes according to the treatment goals. Leininger (1991) states that care is the essence of nursing. Health care personnel should work towards an understanding of care and the values, health beliefs, and life-styles of different cultures, which will form the basis for providing culture-specific care. NICE (2008) have highlighted the importance of adequate patient information as well as a number of other key interventions as a means of reducing the risk of surgical site infections. This study aimed to identify whether the woman had appropriate believes and practices to manage their cesearean section wound.

Regarding women characteristics, their age ranged between 18-35 years old, had different level of education, they had term to full term single pregnancies, their body mass index ranged between normal to overweight but not obese, and most of them had one to two cesarean sections. All are factors contributing to fair wound healing. EWMA (2008*)* stated, patient age and the presence of significant comorbidities all impact on the healing process, as do factors such as wound size and depth, location of the wound and wound duration. While Olsen etal. (2008) and Roy (2003) added, avascularity of adipose tissue of obese woman, the increase in wound area, and the poor penetration of prophylactic antibiotics in adipose tissue are well known explanations for wound infection. Further, Sobande & Eskandar (2006) concluded, the major complications of repeated caesarean sections include rupture of the scarred uterus, placenta accrete, and intraoperative complications such as bladder or bowel injury. On the other hand, Ojiyie etal. (2013) failed to demonstrate any significant association between maternal age, parity and type of caesarean section with the risk of developing post-caesarean section wound infection. Beside, anecdotal case reports of women had more than ten caesarean sections have been documented. With the improved safety of anesthesia, the availability of safe blood transfusion, and the use of prophylactic antibiotics, many caesarean sections are performed uneventfully (Sobande & Eskandar, 2006).

All women in the present study received prophylactic antibiotic therapy; most of them had one continuous suture wound closure. And their operating time ranged between 30 to 60 minutes. While hospital stay ranged between two to four days after operation. Actually, prophylactic antibiotics are routinely used for cesarean deliveries these days, typically cefazolin even in the penicillin allergic, given ideally 30 to 60 minutes before the incision (Ibrahim etal., 2011 & Sullivan etal., 2007). Moreover, the relationship between use of staples for skin closure and surgical site infection (SSI) after cesarean section remains unresolved. Our estimate is similar to the findings of Johnson etal. who reported that skin closure with staples doubled the risk of SSI after cesarean section (Johnson, Young & Reilly, 2006). This type of wound suture will usually heal within eight to 14 days depending on the type of surgery (Dealey, 2005). Further, when there is a prolonged operation time, there is significant tissue handling resulting in decreased tissue perfusion and tissue devitalisation which contribute to

poor healing (Jido & Garba, 2012). Similar effect will be with long duration of labor prior to the caesarean section (Ward etal., 2008).

Regarding women believes related to wound care or healing, data in the present study denoted that, not all their believes were accurate (i.e. More pain means good healing processes, psychological state not affect wound healing, poor healing in one C.S. means poor healing in the subsequent C.s. and shaving hair prior C.s. lead to wound infection). In fact, it is known that patients with wounds can experience nociceptive pain (a persistent ache) as a result of tissue damage and neuroceptive pain (a stinging or stabbing pain) as a result of nerve damage and this pain not means good healing (Coutts, Woo & Bourque, 2008). Further, stressors are known to have a physiological impact on wound healing, as it may lead to raise the cortisol hormone level. Which lead to increase heart rate, blood pressure, and can negatively impact on immunity (Ebrecht etal., 2004). Moreover, every time the woman had cesarean section wound considered new situation with its related factors to complete healing processes. Vowden & Vowden (2009) reported that, the normal process can be interrupted at any stage and is vulnerable to a variety of intrinsic and extrinsic inhibitory factors (i.e. the wound, the patient and the systems of care). Beside, Tanner, Norrie and Melen (2011) looked at 14 studies assessing several different methods of hair removal before surgery including shaving, clipping and depilatory cream. In 1,345 patients they found that clipping the hair from the surgical site caused significantly less post surgical infection than shaving.

Further results of the present study denoted that eating Garlic, wear the C.s. support belt, warming wound area, moist the wound by topical antibiotic and applying burning cream for the scar appearance were less practices for wound care. Several studies have shown that garlic stimulates immune function by making macrophage or killer cells more active. The most reasonable explanation for its effectiveness is that, it picks up toxic materials and transports them out of the body. Women in the present study believe that garlic contributes to abdominal distension. Garlic is full of nutrients including 17 amino acids (Alton and Alton, 2012). Clinical tests using garlic extracts on infected wounds found that treatment with the phytocides of garlic resulted in an increase of RNA and DNA levels as well as a significant inhibition of bacterial growth. Consequently, the wound healed faster. In addition, women in the present study reported that, wearing support belt is very painful with cesarean wound. This results go on the opposite side with Martin (2013) who reported that, support belt protect woman from the tearing and infections. Compression helps to reduce swelling, move stagnant lymph out of an area, stabilizes the skin, and supports tissue which was cut. The uterus also can benefit from support as it shrinks back into its pre-pregnancy place. Moreover, women in the present study believe that topical antibiotics ointment may delay wound healing and sutures removal. Actually, cells require moisture to migrate from the wound edges to close a wound. Cells cannot migrate in a dry wound where granulation tissue production is impaired. Therefore, wounds that are allowed to dry out will heal more slowly than those that have the benefit of moisture. Atiyeh etal. (2003) reported, the safety of simple ointment application was found to be a valid alternative treatment for local management of chronic wounds. Additionally, moist wound healing maintains optimal wound temperatures and reduces the rate of infection and scarring (Martin, 2011). Further, in the present study, burn ointments were less practice for cosmetic purpose. This result agrees with the study of Manafi etal. (2008) who reported that, burn ointments' action continues to be the antimicrobial agent most often used in burn care facilities, but did not affect on scar appearance.

Research from the Health Protection Agency identified 394 (9.6%) surgical site infections among 4,107 women followed up after a caesarean section operation (Health Protection Agency 2012). Moreover, wound separation or opening is occurring in approximately five percent of cases. Of those wounds that open, nearly two-thirds are infected (Cunliffe, 2002). Wound infection presents with erythematic and tenderness, and may develop purulence and fever (Towler, 2000). Most of women in the present study had appropriate wound healing with no sign of inflammation reaction. The external wound healing was within the first week after cesarean section surgery. These results may interperated as the inclusion criteria of the present study aimed to include all women with low risk factors. In addition, the formation of collagen during the first fourth to fourteen days after surgery results in marked increase in the wound strength. The present results go on the same line with previous studies identified independent risk factors for SSI after cesarean section which were younger age; obesity; presence of hypertension or preeclampsia; diabetes mellitus; chorioamnionitis; nulliparity; premature rupture of membranes; emergency delivery; longer duration of operation; use of staples for skin closure; and twin delivery (Johnson, Young & Reilly, 2006; Schneid-Kofman etal., 2005; Killian etal., 2001 & Tran etal., 2000). Further, the rate of infection without prophylactic antibiotic approaches eighty five percent, while the infection rate with prophylactic antibiotics is only about five percent (Smaill &Gyte, 2010; Hopkins & Smaill, 2009). In conclusion, there are few believes and practices related to cesarean wound healing need to be corrected. Women

need preparation though mother classes conducted during antenatal period, after operation and before discharge. Information should directed to woman's needs and include both routine and additional care required where there is a deviation from normal recovery.

Implication in practice

Identifying the women's perceptions of wound management and finding out the guidelines they use in their daily practice would be valuable and important for the promotion of quality nursing care.

Implication in research

There is an obvious gap between researches and actual practice regarding post cesarean wound care. The need to prove effectiveness of care enable specialists provide research-based evidence for new protocols.

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