Applying of Amniotic Membrane Versus Traditional Dressing for Pain and Wound Healing after Cesarean Section

Noha Hassan Abd Elfattah Mohamed[(1)], Howida Ragab Mohamed Ragab[(2)], Hagar kamal Masoud[(3)]

(1) Assistant Professor of Maternal & Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt

(2) Assistant Professor of Obstetrics and Gynecological nursing, Faculty of Nursing Zagazig University

(3) Lecturer of Maternal & Newborn Health Nursing. Beni-sueif University, Egypt.

Abstract

Background: In Egypt , the number of caesarean sections performed has increased, but so have the difficulties and issues related to this procedure. The use of conventional and biological therapies in the healing and prevention of caesarean wound infections has increased as a result of factors such problems related to caesarean scars, the high expense of chemical treatments, and the ineffectiveness of pharmaceuticals in treating conditions. **Aim:** This research aims to compare between applying of amniotic membrane versus traditional dressing for pain and wound healing after cesarean. Research **Design:** A comparative quasi-experimental research design (study /control group) was used in the study. **Setting:** The study was conducted labor unit in Emergency Obstetric Hospital in Zagazig University Hospital ,Elaharar Hospital ,Elsharkia ,Egypt. **Sample:** A purposive sample of 200 laboring women. The total sample divided into two groups equally; study group (100) and control group (100). **Tools for data collection:** Data was gathered using three tools; Tool (I): Questionnaire for structured interviews: which is divided into two parts Part A: Demographic Characteristics, Part B: Obstetric history. Tool (II): REEDA scale was used to assess cesarean section wound healing. **Tool (III) P**ain assessment questionnaire for labouring women consists of two parts, **Part A :** Qualitative pain assessment using the behavioural rating scale, **Part B:** Quantitative pain assessment using the visual analogue scale. **Results:** The current study revealed a highly statistically significant improvement in laboring women' wound healing and decreases the pain level in the study group. **Conclusion:** The current study concluded that, the applying of amniotic membrane in cesarean section wound improve the healing and decrease level of pain more than routine care, which supports the research hypothesis **Recommendations:** the present study findings high light on applying of amniotic membrane in management of cesarean section wound is recommended as effective intervention among laboring women.

Keywords: Amniotic Membrane, Traditional Dressing, Pain and Wound Healing, Cesarean Section

Introduction:

Caesarean sections (CSs) are one of the most common surgical procedures done worldwide; they allow a foetus to be born through an incision in the mother's and child's abdominal and uterine walls. In certain cases, a CS can save a mother's life as well as the child's. One of the most popular ways to manage the after effects of a CS is to manage the discomfort, hematoma, and delayed wound healing. This is especially important in maintaining the mother's health and her capacity to care for the newborn. **(Niazi, et al., 2021: Sanjaya et al., 2023).**

The complicate process of wound healing takes place in three stages: proliferation (up to 4 weeks of granulation and neovascularization), maturation or remodelling (up to 1-2 years of collagen formation, deposition, and remodelling), and inflammation of damaged blood vessel serum (in the first days of homeostasis and immune system reactivity). These steps must be taken in the precise order and within the allotted time period for a successful wound restoration because the mending of the incision region is the ultimate result. For the purpose of healing a caesarean incision, the same methods and dates are recommended. **(Stupak, et al .,2021).**

The placenta's inner layer, known as the amniotic membrane, produces a sac containing amniotic fluid around the developing embryo. A thin, translucent, strong membrane rich in collagen lines the chorionic layer. During intrauterine development, the amniotic

membrane's main job is to shield the foetus from dangerous outside factors **(Elkhenany et al., 2022; Patil., 2023).**

Wounds may be treated with placental tissues of all major kinds. Patients with chronic wounds are increasingly receiving placental tissues as allografts to enhance wound healing results. These substances promote cell migration and proliferation as well as the release of cytokines from recruited fibroblasts, endothelial cells, and stem cells. Some of the special qualities of the amniotic membrane and their effects on different aspects of the wound healing process include increased vascularization, decreased scaring, decreased fluid formation, decreased inflammation, decreased pain, shortened healing times, increased wound closure rate, prevented blood clots, decreased scare formation, and decreased bacterial contamination. **(Molazem et al., 2018; Klama Baryła, et al., 2020).**

Each patient's experience with pain following a caesarean delivery is distinct and multifaceted. The likelihood of increased opiate use, a delayed recovery, and a compromised mother-fetal relationship is raised with the severity and length of pain. In patients with CS, severe acute pain is a major risk factor for chronic pain and postpartum depression, which can lead to long-term psychological, social, and financial challenges. Pharmaceutical therapy is not the only option for pain management, though, given its side effects on the mother, potential for transfer to the newborn through breastfeeding, and expense. Complementary therapies have also been created, including hypnosis, music therapy, aromatherapy, thermotherapy, and the use of amniotic membrane as a wound dressing. **(Elsayed et al., 2024).**

In order to provide effective wound care, a nurse must: Assess, monitor, clean, and bandage wounds; collaborate with other members of the patient care team to determine whether further treatments or modifications to care are necessary; educate patients and carers on wound care, infection control, and injury prevention; and write orders to hasten wound healing and prevent skin breakdown. In addition to these responsibilities, wound care nurses frequently act as supporters, wellness instructors, and advocates for patients, particularly during rather invasive medical treatments**. (Morton& Thurman, 2023).**

In the care of postoperative pain, nurses are crucial. The patient's degree of pain and the efficacy of pain management must be evaluated by the nurse. A doctor, nurse, or nursing technician assessed pain in the first 24 hours following a caesarean section using a Visual Analogue Scale (VAS) score **(Kiabi, et al., 2021).**

Significance of the study:

The prevalence of caesarean sections worldwide increased from approximately 7% in 1990 to 21% in 2021.Egypt is one of just five countries, according to the World Health Organisation, where C-sections predominate over spontaneous births. Data on the Health of the Egyptian Family (HEF) released in late August by the Central Agency for Public Mobilisation and Statistics (CAPMAS) showed that the percentage of C-section births rose from 52 percent in 2014 to 72 percent in 2021 **(Elsayed et al., 2024).**

Complications from caesarean sections are serious procedures that might include bleeding, infection, slow wound healing, and pain. Around 50–70% of individuals report discomfort after a caesarean section, making it the most prevalent consequence. Inability to breastfeed, a mother's immobility, a higher risk of thromboembolic disorders, and subpar baby care can all result from pain **(Taheri, et al., 2022).**

Following a caesarean section, pain is often managed with narcotic analgesics or nonsteroidal anti-inflammatory drugs. However, in addition to being expensive, pharmaceutical therapy has negative effects on the mother that are transferred to the newborn through nursing. Complementary therapies are therefore employed, including aromatherapy, music therapy, thermotherapy, hypnosis, honey dressing, and amniotic membrane as a wound dressing. Growth factors from the placental membrane are essential for the healing of wounds. Numerous growth agents can be found in the chorion and amnion. Additionally, antibacterial and anti-inflammatory qualities **(Roy, et al., 2022).**

Aim of the study:

The aim of this research to compare between applying of amniotic membrane versus traditional dressing for pain and wound healing after cesarean.

Research hypotheses:

To fulfill the aim of this study, two research hypotheses will test:

Hypotheses 1: Amniotic membrane application is anticipated to promote wound healing after caesarean section more than traditional methods.

Hypothesis 2: Compared to traditional methods, using amniotic membrane is anticipated to reduce pain in caesarean section wounds more than

Subject & Methods Research design:

A comparative quasi-experimental research design (study /control group) was used in this study.

Setting:

The study was conduct at labor unit in Emergency Obstetric Hospital in Zagazig University Hospital ,Elaharar Hospital ,Elsharkia ,Egypt. Emergency Obstetric Hospital in Zagazig university Hospital is consist of waiting area ,nursing office, examination room ,and ultrasound room ,1st stage area is Consist of reception room , 2nd stage area is consist of Emergency Hospital three rooms of post partum care , and 3rd stages area consist of two normal labor room operations and two rooms to the care of high risk days hot 4th stage area consist of two normal labor room operations and Incubators and 5th stage area consist of two Operations rooms Emergency Obstetric Hospital in Zagazig university Hospital hot working days including Saturday Tuesday and Thursday

Sampling:

Sample type:

A purposive sample was used according to inclusion and exclusion criteria as the following:

Inclusion criteria:

1- Laboring women in full term.

2- term pregnancy (42 - 37 weeks),

3- willingness to participate in the study,

4- no complications of pregnancy (e.g., eclampsia, placenta previa, placental abruption, chorioamnionitis, polyhydramnios),

5- no history of any known disease that would affect wound healing,

6- no major bleeding or need for blood transfusion,

7- no history of preoperative rupture of membrane,

Exclusion criteria:

1-Laboring women with high risk pregnancy

2-Operation was prolonged for more than 90 minutes,

3- Patient did not refer to the hospital 8 days after surgery

4-Women weren't welling participate in the study

Sample size:

According to Emergency Obstetric Hospital in Zagazig university Hospital statistical office, 2023, Flow rate of Laborating women diagnosed with Cs were 2.080 women at the end of year 2023. Ten percent of flow rate (200 laboring women) were selected and divided into two groups at random: The control group, which consisted of 100 women who received only traditional hospital care, and the study group, which consisted of 100 women who received application of amniotic membrane on Cs wound.

Tools for data Collection:

- The data for this study was collected using four tools: Tool I: Questionnaire for structured interviews: It was developed by the researcher based on the recent related literature review and experts' opinion. It included two parts:

Part (1): Women`s demographic data such as; - age, level of education, and occupation.

Part (2): Past& Current obstetric history of women such as; - expected date of delivery,

number of pregnancy, delivery and abortion, and type of previous pregnancy and delivery

Tool II: **REEDA scale adopted from** (**Toomari, et al., 2021; Elsayed et al., 2024**): The REEDA scale is a measure used to gauge how quickly a caesarean section wound heals. Redness, edema, ecchymosis, discharge, and the approximate meeting of the two wound edges are its five constituents. On this scale, every component received a score between 0 and 3. With a score of "0," a component is not present at all, while a score of "3" indicates the presence of one of the five indications. Total score interpretation on the REEDA scale: 0 for healed, 1 to 5 for moderately healed, 6 to 10 for slightly healed, and 11 to 15 for not healed.

Tool III: Pain assessment questionnaire of laboring women include two parts:

Part 1: The behavioural pain assessment scale, which was adapted from **Payen et al. (2001),** is a qualitative measure of pain that is scored on a scale of 0 to 2 for each of the five measurement categories (face, restlessness, muscle tone, vocalisation, and consolability). Combine these. Record the overall pain rating of 10.

Part 2: Quantitative pain assessment using the visual analogue scale: Adopted from (Thong, et al., 2018): This tool was used to assess labor pain. It consists of 10-cm horizontal line. The right end is marked 0& indicates no pain at all. The left is marked 10 indicate severe intolerable pain.

Validity:

To assess the content's validity, three nursing specialists in obstetrics and gynaecological nursing examined the data collection instruments. The tools were updated in compliance with the panel's suggestions on the material's applicability and the phrases' clarity.

Reliability:

Cronbach's Alpha was used to examine the internal consistency of the study tools' reliability. The study instruments' reliability following caesarean delivery was 0.743 for the REEDA scale,.576 for the behavioural rating scale (which assesses qualitative pain), and the visual analogue scale (which assesses quantitative pain).

Administrative design:

An official written approval letter explaining the title, purpose, and setting of the study was obtained from the Dean of the Faculty of Nursing of Zagazig University to director of Emergency Obstetric Hospital in Zagazig university Hospital ,Elaharar Hospital

Ethical considerations:

Official approval to carry out the planned study was received from the Zagazig University, Egypt, Faculty of Nursing's Scientific Research Ethics Committee. In an effort to win the confidence and trust of the labouring women who were part of the study, the researcher made the goals of the investigation clear to them. Women who were in labour gave their assent to the researcher. The researcher promised to keep information private and anonymous. Women who are in labour were advised that they have the freedom to decide whether or not to participate in the study and that they can leave at any time. We will uphold ethics, values, culture, and beliefs.

Pilot study:

A pilot research evaluating the applicability, clarity, and efficiency of the tools was carried out on a sample of 10% of women (10). They were taken out of the study sample when the necessary adjustments were made and the tools were completed.

Field work:

- The six months that the actual fieldwork took place between the beginning of March 2024 and the conclusion of August 2024 were completed after receiving the necessary official clearances.

- The labouring women were interviewed from 10 a.m. to 2 p.m., three days a week.

- When the researcher visited the study setting, she introduced herself, met the medical manager of the ,Elaharar Hospital and the nursing supervisor of the setting, and gave them a full rundown of the study's aim as well as the structure of the sheets that were used to gather

the necessary data.

- The doctor manager and nursing supervisor assisted the researcher in interviewing the obstetrics department labour unit after the study's conduct was approved

- Each labouring women was informed of the study's aim before the researcher presented herself to win their trust and get their consent to take part in the research.

- Every ethical guideline was followed. The information acquired enabled the researcher to evaluate their overall health and make the necessary interventions in light of that assessment.

- In order to win the trust of the labouring women and foster a cooperative environment for their benefit, the researcher demonstrated empathy and concern.

- The surgeon made a low transverse incision on the uterus to do the caesarean section. Following the procedure, both groups' skin was repaired using 3.0 nylon threads and plastic sutures (control-study).

Study group:

- After a planned cesarean operation following an uneventful pregnancy the placenta is removed to form human amniotic membranes. Due to baby infection symptoms, labour beginning before 34 weeks of pregnancy, and membrane rupture occurring more than 12 hours before delivery, the membranes were rejected. The usage of the membranes and gift were approved in writing by the donors. A placenta can produce four to five membrane tissue segments, each measuring five centimetres in diameter.

- The placenta was washed with physiological saline and put in the collection jar containing the antimicrobial solution until it was ready, which was two hours after the caesarean birth. Fully submerged in a sterile packaging container is the membrane structure. Antibiotics and antifungals are coordinated with the amniotic membrane in a container. After that, the membranes are sliced into different sized bits, creating sections of membranous membrane tissue. The amniotic membranes were cryopreserved at -80 °C in different containers after being treated with a cryoprotective agent. In order to conduct bacteriological tests, placental rinse fluid (8–10 mL) was added to two vials containing aerobic and anaerobic organisms.

- The amniotic membrane from the placenta and the foetal chorionic membrane were carefully detached by the researchers using sterile gloves.

- After being gently cleaned with normal saline solution and the blood extracted from the membrane, it was kept chilled at room temperature (22°C) in a sterile basin until the process was completed.

- After the process, the study group's surgeon and researchers separated the amniotic membrane from regular saline solution and stitched its two layers onto the group's caesarean section incision.

- To prevent the membrane from drying out, it was first covered with sterile gauze that had been soaked with normal saline. This was followed by numerous dry gauze layers.

Control group: On the other hand, the control group was given conventional treatment, which included putting sterile, dry gauze over the wound.

- A visual analogue scale and a behavioural rating scale were used to gauge the study-control group's degree of pain four and six hours after surgery. The outcomes for the two groups were noted and contrasted.

- Seven days after surgery, the study and control groups' caesarean section wounds were assessed for healing using the REEDA scale. The outcomes for the two groups were recorded and contrasted.

- The membrane was first covered with sterile gauze moistened with regular saline to stop it from drying, and it was subsequently covered with many dry gauzes.

Control group: Conversely, the control group received standard care, which involved covering the wound with dry, sterile gauze.

- After 4 and 6 hours following surgery, the study-control group's level of pain was assessed using a behavioural rating scale and a

visual analogue scale. The results were recorded and compared between the two groups.

- The REEDA scale was used to evaluate the healing status of the caesarean section wounds in both the study and control groups seven days following surgery. The results were documented and compared between the two groups.

Statistical Analysis:

The statistical software SPSS (Statistical Package for Social Science) version 26 was used to enter and analyse the data. Graphics were created with the Excel software. The standard deviation (SD) and mean (X) were used to display quantitative data.The student t-test was used to analyse it and compare the two means.Numbers, percentages, and frequency distribution tables were used to display the qualitative data. The Paired Samples T test, Pearson correlation coefficients, and chi-square tests were applied. A p-value was obtained for each statistical test that was performed: > 0.05 indicated no statistically significant difference, <0.05 indicated one, and ≤0.001 indicated a highly significant difference

Results:

Table (1): demonstrate that 46% and 40% of studied labored women in study and control group were in age group (≥ 35 years) respectively, with mean of **42.6±2.34** years and **43.4±.1.98** years respectively, however, this difference was significant statistically (P=000**). As regards occupation more than half of study and control group were not working (58%), (52%) respectively. Concerning education, among study group, nearly one quarter of them were illiterate (22%) while more than one quarter of control group were high education (28%)

Table (2): reveals that among study group half 50 % had 3- 4 gravida, while more than one third (44%) had 3- 4 gravida in control group. Among study group (44%) of labored women delivered 3-4 times, while near half (46%) had > 4 of labored women delivered in control group.Regarding previous pregnancy, more than half of study and control group(54%,56%) were normal pregnancy. Concerning number of abortions nearly three quarters (70%) of control group had no abortions, while more than three quarter (76%) of study group had no abortions. There were significant difference between study and control groups regarding all items of obstetric history (P <0.0001for each).

Figure (1): shows that, majority of the control group 88% and nearly three quarter 73% of study group had previous CS

Table (3): highlights the degree of CS wound healing by using REEDA scale among study and control group, the figure reveals highly significant improvement in all items in the study group,the majority of laboring women had non Edema, Ecchymosis and Discharge with p.value < 0.001

Figure (2): reveals to total REEDA scale among the studied groups show that, nearly three quarters 72% of the study group had healed wound compared to 15% in the control group

Table (4): The table demonstrates that, non- labored women in study group have sever intolerable pain while control group20% have sever intolerable pain after 4 hours of CS. concerning moderate pain sensation study group have 18% compared to more than half 56% in control group. Moreover, 64% in the study group have no pain after 6 hours compared to 8% in control group with highly significant difference (P<0.000)

Table (5): demonstrates that, the majority of laboring women (88% and 90%) had no hurt in all pain assessment measurement in the study group compared to the control group after 4 and 6 hours pain assessment. The table indicates improvement in the level of pain in the study group with Mean ±SD (9.44±2.18) compared to (11.88±3.92) in the control group.

Table (6): reveals that, there was statistically significant positive correlation between total analogue score and total behavior after4 & 6 hour score in both groups (P ≤ 0.05). On the other hand, there was a statistically significant negative correlation between Total REEDA score, and total behavior after4 & 6 hour score.

Table (1): Number and percent distribution of Amniotic Membrane and Traditional Dressing groups according to their demographic characteristics n (200)

Demographic characteristics		Groups				Chi-Square test	p. value
		control group (n = 100)		Study group (n =100)			
		No.	%	No.	%		
Age	20 - 25 Years	24	24.0	20	20.0	18.022	.000**
	25 - 35 Years	36	36.0	34	34.0		
	≥ 35 Years	40	40.0	46	46.0		
	Mean ± SD	42.6±2.34		43.4±.1.98			
Occupation	Working	48	48.0	42	42.0	8.985	.001**
	Not working	52	52.0	58	58		
Education	Illiterate	12	12.0	22	22.0	42.252	.000**
	Primary education	24	24.0	28	28.0		
	Secondary education	36	36.0	26	26.0		
	High	28	28.0	24	24.0		

****(Highly statistically significant p < 0.001)**

Table (2): Number and percent distribution of studied groups according to their obstetrics history **(N=200)**

Items		Groups				X2	p.value
		Control group (n = 100)		Study group (n =100)			
		No.	%	No.	%		
Number of gravida	1-2	16	16.0	20	20.0	26.000	.000**
	3-4	44	44.0	50	50.0		
	≥4	40	40.0	30	30.0		
Number of Para	1-2	14	14.0	16	16.0	20.642	.000**
	3-4	40	40.0	44	44.0		
	>4	46	46.0	40	40.0		
previous pregnancy	Normal	56	56.0	54	54.0		
	High risk	44	44.0	46	46.0		
Number of abortion	Non	70	70.0	76	76.0	19.202	.000**
	1-2	20	20.0	18	18.0		
	>2	10	10.0	6	6.0		

****(Highly statistically significant p < 0.001)**

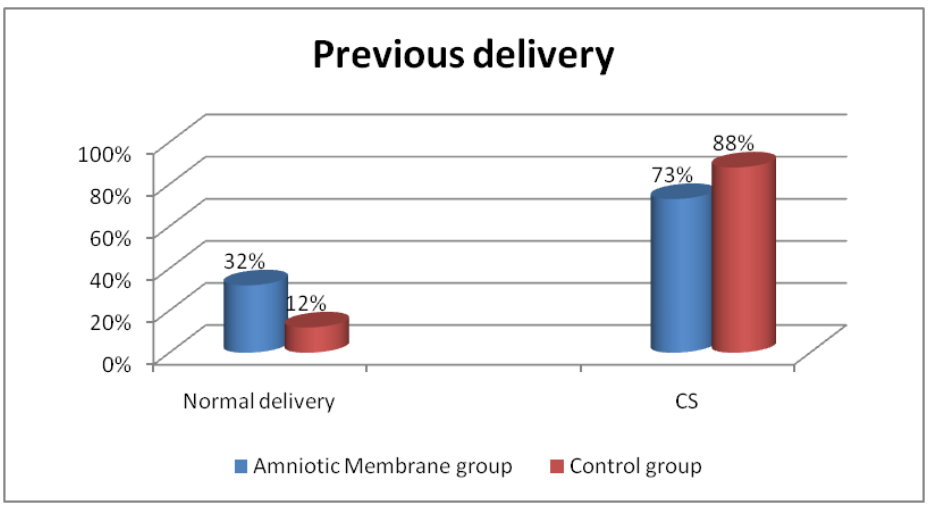

Figure (1): Distribution of the studied groups according to mode of previous delivery (n=200).

Table (3): Comparison between study and control groups regarding wound healing after 8 days(n=200).

REEDA scale after 8 days		Groups				X^2	P value
		Control group (100)		Study group (100)			
		No	%	No	%		
Redness	None	22	22.0	72	72.0	8.226	≤ 0.001
	Present	78	78.0	28	28.0		
Edema	None	70	70.0	90	90.0	5.835	≤ 0.001
	Mild	20	20.0	8	8.0		
	Moderate	10	10.0	2	2.0		
Approximation	None	60	60.0	98	98.0	6.595	≤ 0.001
	Serous	40	40.0	2	2.0		
Discharge	Closed	30	30.0	90	90	7.077	≤ 0.001
	Skin separation ≤3mm	70	70.0	10	10		
Ecchymosis	None	100	100.0	100	100.0	-	-

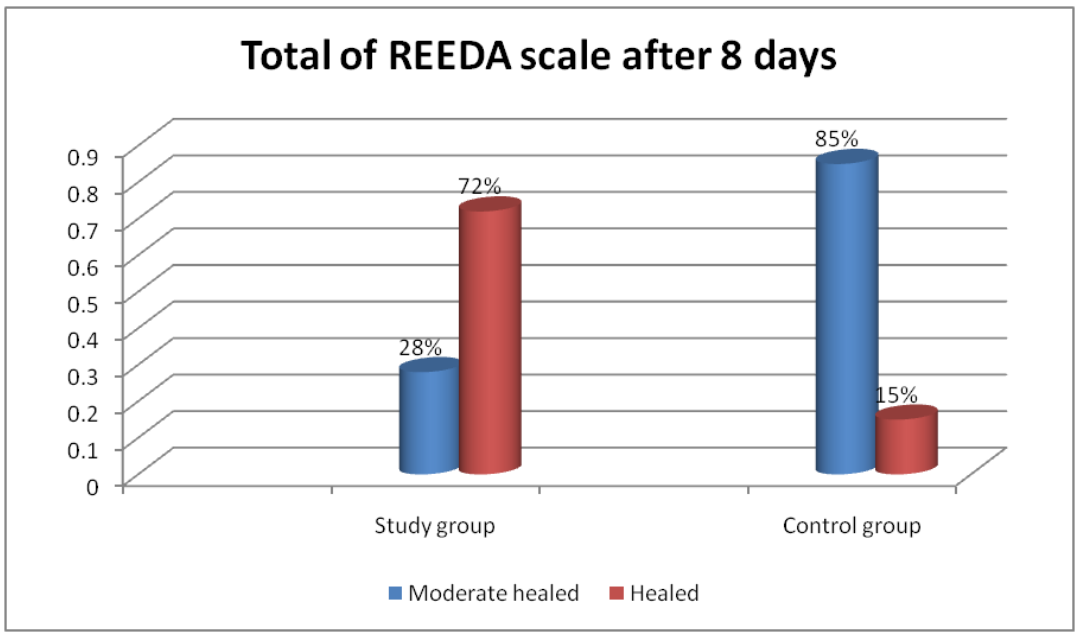

Figure (2): Total REEDA scale`s comparison among the studied groups after 8 days (n=200).

Table (4): Distribution of studied women regarding total behavioral rating scale among study and control groups. (N=200)

Pain sensation of both groups		After 4 hour		X2	P-value	After 6 hours		X2	P-avlue
		Control group	Study group			Control group	Study group		
No pain	No.	0	36	9.689	.000**	8	64	6.988	.000**
	%	0	36.0			8.0	64.0		
Mild pain (4-5)	No.	24	44			60	24		
	%	24.0	44.0			60.0	24.0		
Moderate pain(6-7)	No.	56	18			20	12		
	%	56.0	18.0			20.0	12.0		
Severe pain (8– 10)	No.	20	0			12	0		
	%	20.0	0			12.0	0		

Table (5): Comparison of total Visual analogue scale (quantitative pain assessment) among the studied groups (N=200)

Quantitative pain assessment (visual analogue scale)	groups											
	After 4 hour						After 6hours					
	Control group (n = 100)		Study gr.(n = 100)		X2	p-valu	controlgroup (n =100)		study gro(n =100)		X2	p-value
	No.	%	No	%			No.	%	No.	%		
No hurt	0	0.0	88	88.0	14.2	.004	0	0.0	90	90.0	3.07	.079*
Hurts little bit	24	24.0	12	12.0			0	0.0	10	10.0		
Hurts little more	56	56.0	0	0.0			64	64.0	0	0.0		
Hurts even more	20	20.0	0	0.0			36	36.0	0	0.0		
Mean ±SD	11.88 ± 3.92		9.44 ± 2.18		12.4	.0	11.8±3.92		9.44±2.18		12.4	.000*

Table (6): Correlation between Total REEDA score &total analogue score and total behavior after4 & 6 hour score among study and control group.(N=200)

Items			Study group			
			Total REEDA score	Total behavior after 4 hour score	Total behavior after 6 hour score	Total analogue score
Control group	**Total REEDA score**	R	0.138	0.119	0.173	0.213
		P-value	0.533	0.438	0.355	0.231
	Total behavior after 4 hour score	R	**0.26***	0.234	0.197	0.315
		P-value	.782	.198	.265	.082*
	Total behavior after 6 hour score	R	**.026***	.248	.197	.324
		P-value	.889	.187	.296	.081*
	Total analogue score	R	.117	**.020***	**.032***	.463
		P-value	.575	.607	.787	**018***

(*) Statistically significant p < 0.05

Discussion:

Cesarean section is one of the most common surgical procedures performed worldwide, occurs in one in three women in the United States, and in up to four out of five women in some regions of the world **(Ali et al., 2023).** The amnioticmembrane is the placenta's inner layer, forminga sac filled with amniotic fluid around the embryo **(Setiawan,et al., 2023).** The nursing and treating medical teams must collaborate to effectively manage wounds. Poor wound treatment is one of the leading causes ofincreased morbidity and prolonged hospital stays. Amniotic membrane dressing is the most effective for burn wounds. It was less expensive and reduced the pain and duration of wound healing, ease of availability, low cost, sterilize and improved wound healing **(Ahmed and Mohammed et al., 2023).** The epithelium in thehuman amniotic membrane protects against evaporative loss and serves as a barrier. It offersseveral advantages, including pain reduction,infection control, maintaining a moist environment to encourage healing, good wound adhesion, and ease of use **(Darwish and Attia et al., 2022).** Thus, this study was conductedto evaluate the effect of immediate nursing intervention regarding applying amniotic membrane on pain and healing of cesarean wound**.**

Regarding, demographic characteristics of two groups, the present study showed that, less than half of studied labored women in study and control group were in age group ((≥ 35 years), with mean of **42.6±2.34** years and **43.4±.1.98** year. Concerning level of education, among studygroup, nearly one quarter of them were illiterate. while more than one quarter of control group werehigh education .Regarding occupation, the findings of the present study showed that more than half of both groups control and study group were not working,

while almost of control group were working. This means that there was no statistically significant difference between study and control groups regardingdemographic characteristics.

According to obstetric history revealed that among study group half 50 % had 3- 4 gravida, while more than one third (44%) had 3- 4 gravida in control group. Among study group (44%) of labored women delivered 3-4 times, while near half (46%) had > 4 of labored women delivered in control group. Regarding previous pregnancy, more than half of study and control group(54%,56%) were normal pregnancy. Concerning number of abortions nearly three quarters (70%) of control group had no abortions, while more than three quarter (76%) of study group had no abortions, majority of the control group 88% and nearly three quarter 73% of study group had previous CS. There were significant difference between study and control groups regarding all items of obstetric history (P <0.0001).This finding supported by **(Elsayed et al., 2024)** who study " Effect of Immediate Nursing Intervention Regarding Applying Amniotic Membrane on Pain and Healing of Cesarean Wound"in Egypt and found that, there were significant difference between study and control groups regarding each item on both past and current obstetric history (P <0.001for each). On the other hand, these findings unsupported by **(Taheri et al.,2022)**an Iranian study titled " The effect of olive cream on pain and healing of caesarean section wounds: A randomized controlled clinical trial " who mentioned that no significant differences in demographic, obstetric history between the study and control . From the researcher opinion, this may be explained that; the difference could be due to location of study research.

Regarding REEDA scale the present study`s findings showed that, there was highly significant improvement in all items in the study group after 8days from applying amniotic membrane on CS wound , This finding agreed with a study of **(Setiawan et al.,2023)** that entitled as " The Benefit of Amniotic Membrane as A Surgical Wound Dressing for Post Cesarean Section" the study carried out in European and reported that the studied group was highly significant different in wound healing across the groups 24 hours after cesarean section.

Similarly, this result is consistent with the result of **(Pandey et al., 2020)** according to an Indian study that titled " Outcome of Burn wound dressing with fresh placenta-An observational study " the period of wound healing was substantially shorter ($P < 0.05$) in the examined group (17.61 ± 2.56 days) than in the control group (21.16 ± 3.45 days), According to the researcher point of opinion, this result could be caused by the growth factors and cytokines present in placental membrane which control four stages of wound healing: hemostasis, inflammation, proliferation, and remodeling.

Regarding level of pain the comparison of the control group, nearly two third in the study group reported no pain after 6 hours from applying amniotic membrane on CS wound and highly significant difference, This result was in the same line of **(Ahmed and Mohammed et al ., 2023**) who studied "Evaluation of Amniotic Membrane in the Dressing of second-degree burn" in Iraq and mentioned that comparing the control group to the study group, the highest percentage of the samples had severe pain without changing their dressing while the lowest percentage of samples reported no pain.In different with **(Umoh.,2020)** who study " Clinical and Histological Outcomes of Allogenic Amnion-Chorion Membrane in the Healing of Free Gingival Graft Donor Site " in Texas who reported that no significant differences in level of pain between the study and control groups subsequently application of amniotic membrane. As regard the researcher point of view, this could be clarified that; the difference could be caused by the site of the dressing, and the type of surgery.This current study`s finding supports the research hypothesis.

Conclusion:

The current study concluded that applying of amniotic membrane dressing in cesarean section wound improve the healing and reduce level of pain more than traditional dressing, which supports the research hypothesis

Recommendations

In the light of the present study findings, thefollowing were recommended:

1. It is advised that labouring women apply amniotic membrane as an effective

intervention in wound healing for caesarean section wounds.
2. Applying an amniotic membrane dressing is thought to be a complementary pain management strategy following CS.

Further researches:

1. Raising maternity nurses` awareness regarding the effect of amniotic membrane application to manage cesarean section wound.
2. It is recommended repeat the study on large representative probability sample.

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