بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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The Efficacy of Barbed Sutures on Uterine Closure at Cesarean Section versus Conventional Sutures
(Randomized Controlled Trial)

Thesis

Submitted For Partial Fulfillment of Master Degree
In Obstetrics and Gynecology

By

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List of Abbreviations

Abb.	Full term
ABL	Allowable blood loss
ABV	Average blood volume
AH	Abdominal hysterectomy
BMI	Body mass index
CS	Cesarean section
EBV	Estimated blood volume
EDHS	Egypt Demographic and Health Survey
H_f	Final hematocrit
H_i	Initial hematocrit
TLH	Total laparoscopic hysterectomy
VCD	Vaginal cuff dehiscence

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PROTOCOL OF A THESIS FOR PARTIAL FULFILMENT OF MASTER DEGREE IN OBSTETRICS & GYNAECOLOGY

Title of the Protocol:

The Efficacy of Barbed Sutures on Uterine Closure at Cesarean Section versus Conventional Sutures; A Randomized Controlled Trial

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What is already known on this subject? And What does this study add?

Cesarean section uterine incision can be closed using the single or double-layer technique with interrupted or continuous (locked or unlocked) sutures. There is no consensus on the best technique, but we practiced the double layer continuous unlocked using conventional smooth suture (Vicryl) ***(Ceci et al., 2012).***

Barbed suture is a relatively new class of sutures. Unlike conventional smooth suture, It has barbs on its external surface. These barbs resist backward movement of the suture thread and anchor tissues without the need for knots tying at both ends of suture thread. The use of barbed suture in this study for uterine incision closure at cesarean section may be associated with shorter uterine closure time, less blood loss, decrease need for additional sutures to achieve hemostasis.

1. INTRODUCTION/ REVIEW

Cesarean section is the most commonly performed surgical procedure in obstetric practice ***(Natl et al., 2012).*** Cesarean section is associated with the risk of short term and long-term complications. Short-term complications include injury of bladder, ureter, intestine and deep venous thrombosis. Long-term complications include chronic pelvic pain, infertility, intestinal obstruction, rupture uterus and abnormal placentation in subsequent pregnancies ***(CORONIS et al., 2013).***

Previous studies revealed an association between the technique of uterine incision closure and the poor healing of the cesarean section scar and the occurrence of rupture uterus and abnormal placentation in subsequent pregnancies ***(Gyamfi et al., 2006).***

Cesarean section uterine incision can be closed using the single or double-layer technique with interrupted or continuous (locked or unlocked) sutures. There is no consensus on the best technique for uterine incision closure at cesarean section. Several studies reported that the single layer closure and locked continuous suturing of the uterine incision are associated with a higher risk of uterine rupture in subsequent pregnancies compared with double layer closure ***(Ceci et al., 2012).***

On the other hand, other studies revealed that single layer closure or

locked suturing is not associated with increased risk of rupture ***(Yasmin et al., 2011).*** A recent meta-analysis revealed that locked singled layer closure of uterine incision is associated with a five-fold increase in the risk of uterine rupture compared with double layer closure. On the other hand, unlocked singled layer closure of uterine incision is not associated with increased risk of uterine rupture compared with double layer closure ***(Roberge et al., 2011).***

There is scarcity in the literature that compared the risk of uterine rupture after uterine incision closure with interrupted or continuous sutures. It was reported that the cesarean section scar defect was larger after single layer closure of uterine incision with continuous locked suture compared with single layer closure of uterine incision with interrupted sutures ***(Ceci et al., 2012).***

The authors suggested that continuous sutures might impair the blood supply of the uterine tissues and induce more foreign body reaction and therefore interfere with proper healing of cesarean section scar.

Barbed suture is a relatively new class of sutures. Unlike conventional smooth suture, barbed suture has barbs on its external surface. These barbs resist backward movement of the suture thread and anchor tissues without the need for knots tying at both ends of suture thread ***(Fouda et al., 2016).***

In plastic surgery, the use of a barbed suture to repair soft tissues reduces the operative time with equal cosmesis scores and wound complication rates. In laparoscopic surgery, barbed suture facilitates suturing and significantly reduces suturing and operative times ***(Fouda et al., 2016).***

2. AIM/ OBJECTIVES

This study will be conducted at Ain Shams University Maternity Hospital in two groups of women at Cesarean section in which the uterine incision will be closed by two layers of continuous barbed sutures in one group and two layers of conventional smooth Vicryl sutures in the other group to compare the operative time and blood loss.

Hypothesis

The Barbed suture may be effective to decrease the time of uterine closure, blood loss and all operative time.

Null Hypothesis

The Barbed suture may not have an effect on blood loss and operative time.

Primary objective

To compare effects of barbed suture versus conventional smooth Vicryl suture as regard to operative time and blood loss.

Research question

Will barbed suture be effective to decrease the time of uterine closure and blood loss?

3. METHODOLOGY:

Type of Study:
A Randomized controlled clinical trial.

Study Setting:
At Ain Shams University Maternity Hospital**.**

Study period:
From July 2019

Study Population:
Pregnant patients undergoing transverse lower segment cesarean section for variable indications will be recruited to the study

Inclusion Criteria:

- Single intra uterine fetus
- One Previous cesarean section
- BMI 20_30

Exclusion Criteria

- Twins
- Placenta praevia
- Morbid obesity BMI > 30
- More than one previous cesarean section
- Patients refusing to participate in the study
- Patients with a bleeding tendency

- Medical disorders affecting coagulation system as chronic liver disease, coagulation factor defect, clotting factor defect
- Obstetrical conditions associated with increased blood loss as fibroid
- Any Intra operative finding increasing blood loss or operative time
- Morbid adhesion leads to extensions at uterine incision

Sampling Method:

Randomized sampling method

Randomization

The patients will be randomized to either Group A or Group B based on the below tables with random numbers assigned to each group. The random numbers are generated by online Random number Generator computer program (stattrek.com/statistics/random-number-generator).

Number	Group	Number	Group	Number	Group	Number	Group	Number	Group
1	A	23	A	45	A	67	A	89	B
2	A	24	B	46	B	68	A	90	A
3	A	25	B	47	A	69	A		
4	B	26	A	48	B	70	A		
5	B	27	A	49	A	71	B		
6	A	28	B	50	B	72	A		
7	A	29	A	51	A	73	B		
8	A	30	A	52	A	74	A		
9	B	31	B	53	B	75	A		
10	B	32	A	54	B	76	B		
11	A	33	B	55	A	77	A		
12	B	34	A	56	B	78	B		
13	B	35	A	57	B	79	B		
14	A	36	B	58	A	80	A		
15	B	37	B	59	B	81	B		
16	B	38	A	60	A	82	B		
17	B	39	B	61	A	83	B		
18	B	40	A	62	B	84	A		
19	A	41	B	63	A	85	A		
20	B	42	A	64	B	86	B		
21	A	43	A	65	A	87	A		
22	B	44	B	66	B	88	A		