

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ رَبِّ اشْرَحْ لِي صَدْرِي، وَيَسِّرْ لِي
أَمْرِي، وَاجْعَلْ عَقَدَةً مِنْ لِسَانِي،
يَفْقَهُوا قَوْلِي

صَدَقَ اللَّهُ الْعَظِيمُ

سُورَةُ طه (آلَةُ رُفْعٍ) (٢٥-٢٨)



EXTRA-ABDOMINAL VERSUS INTRA-ABDOMINAL REPAIR OF THE UTERINE INCISION AT CESAREAN SECTION AS REGARDING BLOOD LOSS AND DURATION OF OPERATION



Presented by

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Introduction



- Cesarean delivery now is a common operation, and the number of cesarean deliveries is increasing worldwide.
- The World Health Organization (WHO) estimates the rate of cesarean sections at between 10% and 15% of all births in developed countries.



- Many variations in surgical techniques for cesarean delivery have been proposed, aimed at reducing surgical time, making the surgery easier and more efficient, lowering costs, decreasing the risk of adverse effects and postoperative morbidity, as well as length of hospital stay.

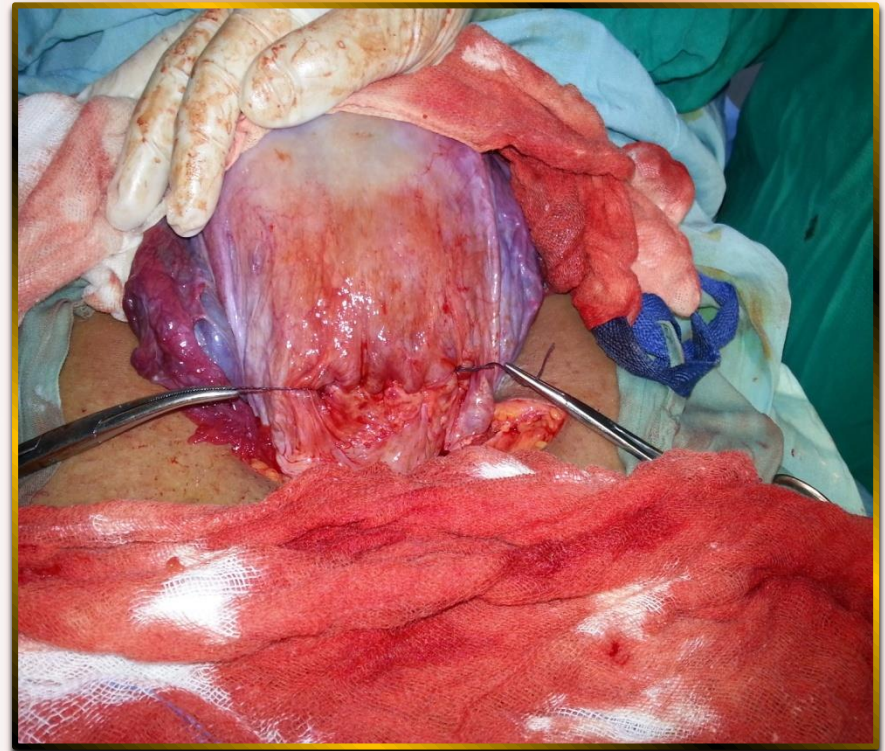


- One of the more frequent issues regarding cesarean technique is the manner by which uterine repair is conducted after delivery of the infant(s) and placenta. Two techniques are well described:

The uterus can either be repaired in situ within the peritoneal cavity (intra-abdominal repair)

Temporarily exteriorized onto the mother's abdomen to allow uterine repair (extra-abdominal repair)

INTRODUCTION





Aim of the work

**THE
AIM
OF
THIS
WORK
WAS**

TO

Compare extra-abdominal and intra-abdominal repair of the uterine incision during cesarean delivery regarding the blood loss and duration of the operation.



Patients & Methods

Study design

**This study was a prospective
randomized clinical trial.**



Study populations

PATIENTS & METHODS

The study included **200** pregnant women attending Al-Hussein University Hospital and Bab-Al-Shearia Hospital during the period from May 2015 to November 2015.



- The patients were chosen according to the following criteria:

Inclusion criteria

**Cesarean
section
whether
elective or
emergency.**

**Gestational
age: ≥ 37 weeks**

**Singleton
pregnancy**

**Vertex
presentation**

Exclusion criteria

Any bleeding
disorder
bleeding

Abnormal
placentation e.g.
placenta

Uterine
leiomyomata.

Eventful and
complicated cesarean
delivery (e.g. uterine
artery injury, excessive
intra-operative
hemorrhage).

Randomization

Group I

100 women
with intra-
abdominal
repair of the
uterine incision.



Group II

100 women with
extra-abdominal
repair of the
uterine incision.

Methods of the study

Preoperative

patients were subjected to the following:

1 History Taking

- ▶▶ Gravidity, parity and assessment of gestational age by period of amenorrhea.
- ▶▶ Any general, medical condition as hypertension and diabetes mellitus (DM).
- ▶▶ History of blood diseases causing bleeding tendency (e.g. purpura) was excluded.
- ▶▶ History of drug medication during this pregnancy was also taken.
- ▶▶ Surgical history of any pelvic operations.
- ▶▶ Indications for the previous CS if present.

2

*General
examination*

Vitals signs, height, weight and BMI.

3

*Obstetric
examination*

1

4

*Ultrasound
examination*
Detect gestational age
and fetal presentation and lie

2

1

Assessment of gestational age

2

Assessment of fetal weight

Anesthesia

- All cesarean sections for patients of both groups were performed under spinal anesthesia.

Sterilization

- Sterilization of surgically prepared area with povidone iodine (Betadine).

Opening of the skin and the subcutaneous tissue

- Opening of the skin and the subcutaneous tissue through pfannenstiel incision and the fascia was incised along the whole length of the incision.

The rectus muscles

- The rectus muscles were separated from each other and from the underlying transversalis fascia and peritoneum.

Opening of the peritoneum

- Opening of the peritoneum carefully after tenting of peritoneal fold between 2 hemostats.

Uterine incision

- ▶ Lower segment c-shaped incision was done in all cases, after dissection of visceral peritoneum and the bladder was held downward by an assistant with a bladder retractor.
- ▶ While continuous suction, c-shaped uterine incision was done and the amniotic membranes were incised.



Delivery of the fetus

- The retractors were removed and the baby was delivered by scooping of the head.

Delivery of the placenta

- As soon as the fetus was delivered and the intravenous uterotonics were administered, the placenta was separated using the controlled cord traction.

Repair of the uterus

- According to our study groups, the uterus was either repaired in situ or exteriorized for repair.
- A two layers closure of the uterine wall was done in all cases, in such a manner, the cut edges were evenly and completely coapted and hemorrhage was controlled.

Abdominal wall closure

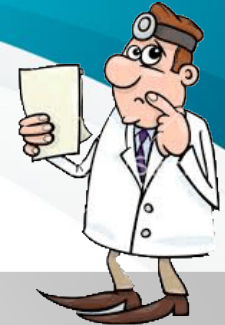
- The paracolic gutters were emptied of blood and amniotic fluid through laparotomy packs the uterus was re-examined and compressed to express any blood within it. As soon as the sponges, laparotomy packs and instruments count was found to be correct, the abdominal wall was closed in layers.



- **Visceral, parietal peritoneum and the rectus muscles were re-approximated.**
- **The rectus sheath was closed by continuous non-locked absorbable sutures using Vicryl 1 suture in order to decrease the incidence of postoperative wound dehiscence and incisional hernia.**

- Routine closure of the subcutaneous tissue space was no done, unless the woman had more than 2 cm subcutaneous fat.
- Skin edges were then approximated with running subcuticular proline suture.





- The differences in hemoglobin levels and hematocrit values before performing the cesarean delivery and 24 hours postoperative were calculated and used to estimate in affection of the technique used in repair of the uterine incision in terms of blood loss.
- The duration of repair of the uterine incision was calculated using a stopwatch.

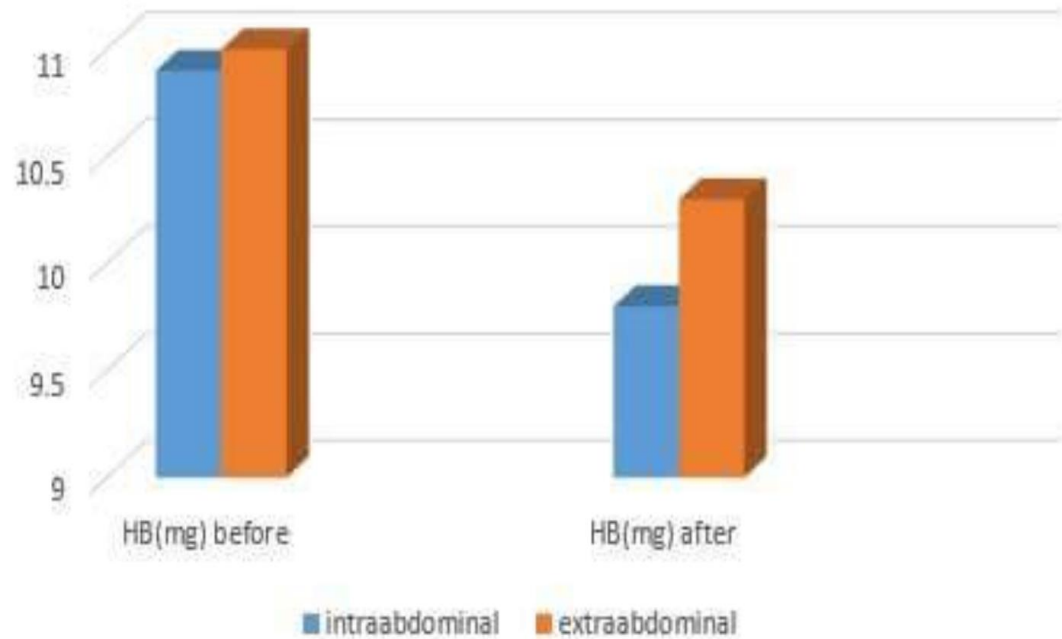
Results

Comparison between intra-abdominal and extra-abdominal groups regarding the hemoglobin level (gm/dl) before and after the operation

HB (gm/dl)	Intra -abd group (N = 100)		Extra -abd group (N = 100)		t	P
	Mean \pm SD	Range	Mean \pm SD	Range		
Before	10.9 \pm 1.24	8.5-13.9	10.93 \pm 1.12	8.8-13.9	0.231	0.817
After	9.78 \pm 1.24	7.1-13.0	10.4 \pm 1.15	7.8 \pm 13.3	5.864	0.001**



Hemoglobin level (gm/dl) before and after the operation in intra-abdominal and extra-abdominal groups

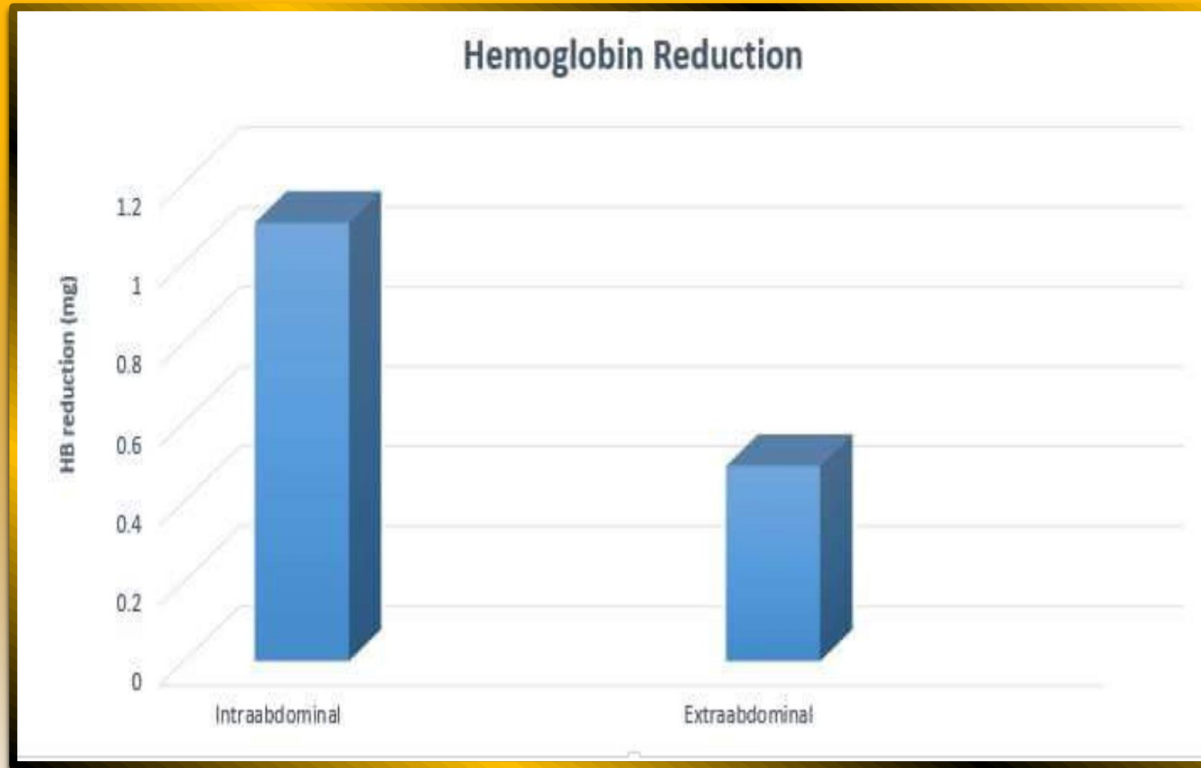


Comparison between hemoglobin reduction (gm/dl) after the operation in intra-abdominal and extra-abdominal groups

	Intra-abd group (N=100)	Extra-abd group (N=100)	Z	P
HB reduction	1.13±0.66	0.53±0.32	11.402	0.001**



Hemoglobin reduction after the operation in intra-abdominal and extra-abdominal groups



Comparison between intra-abdominal and extra-abdominal groups regarding the hematocrit % before and after the operation

HCT%	Intra -abd group (N = 100)		Extra -abd group (N = 100)		t	P
	Mean \pm SD	Range	Mean \pm SD	Range		
Before	32.39 \pm 3.32	23.5-40.0	32.31 \pm 2.93	25.3-39.7	0.279	0.781
After	28.8 \pm 3.26	20.6-37.7	30.36 \pm 3.04	23.8 \pm 37.8	5.516	0.001**



Hematocrit % before and after the operation in intra-abdominal and extra-abdominal groups

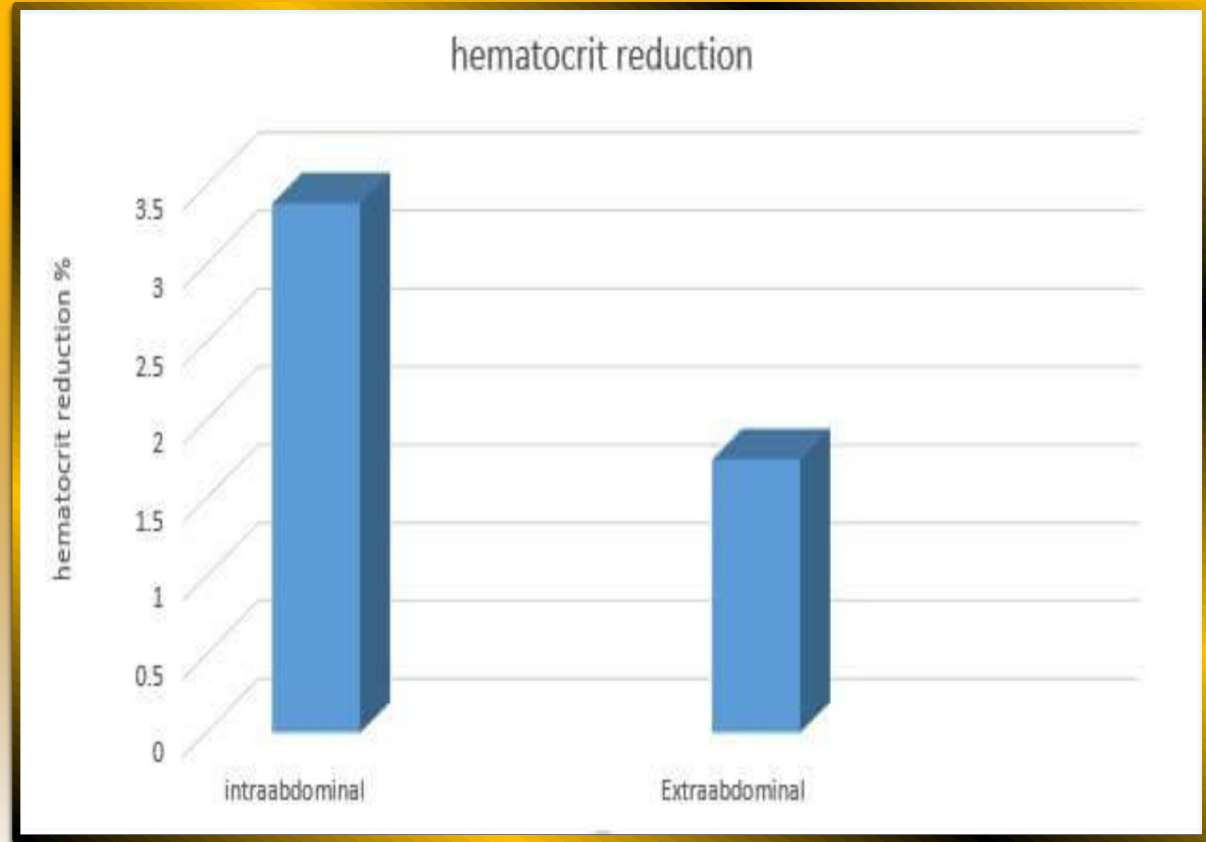


Comparison between Hematocrit reduction after the operation in intra-abdominal and extra-abdominal groups

	Intra-abd group (N=100)	Extra-abd group (N=100)	t	P
Hematocrit reduction	3.59±2.16	1.95±1.54	9.74	0.001**



Hematocrit reduction after the operation in intra-abdominal and extra-abdominal groups

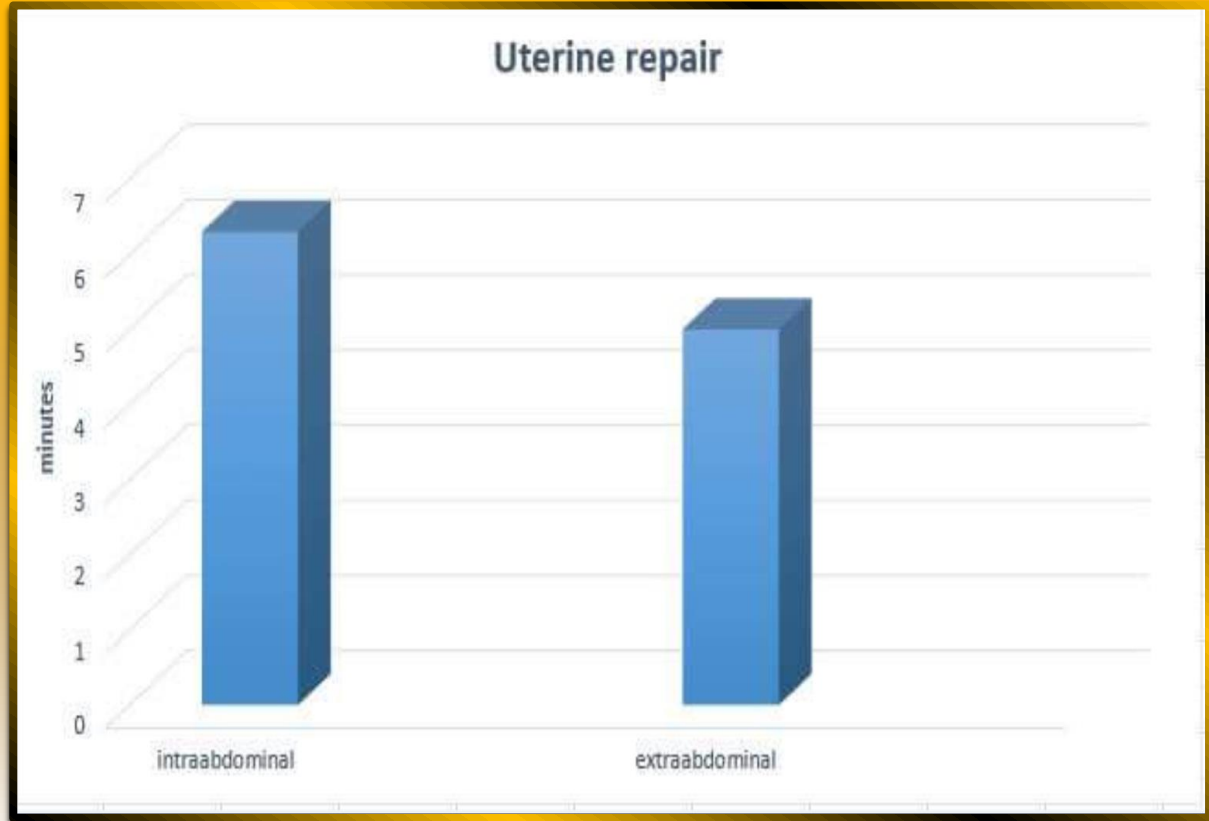


Comparison between intra-abdominal and extra-abdominal groups regarding the duration of uterine repair (minutes)

Duration of uterine repair (minutes)	Intra -abd group (N = 100)		Extra -abd group (N = 100)		t	P
	Mean \pm SD	Range	Mean \pm SD	Range		
	6.53 \pm 0.81	5-8	5.25 \pm 0.92	4-7		
					16.437	0.001**



Comparison between intra-abdominal and extra-abdominal groups regarding the duration of uterine repair



Conclusions

- The results of this study showed that extra-abdominal repair of the uterine incision was better than the intra-abdominal repair to decrease the operative blood loss and decrease the postoperative drop in the hemoglobin level and the hematocrit value of the patients and also the extra-abdominal repair of the uterine incision was less time consuming than intra-abdominal repair.





Recommendations

Whenever there is no fixed protocol of operative procedure for CS in the related hospital, extra-abdominal repair of uterine incision is preferred.



Further studies are required to investigate the difference between intra-abdominal and extra-abdominal repair of the uterine incision.





thank you!