

Pregnancy Rates after Laproscopic Adhesiolysis of Post Caesarean Adhesions

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ABSTRACT

Background: although cesarean delivery is a relatively simple procedure, it is associated with some long-term sequelae such as peritoneal adhesions that may result in infertility, chronic pelvic pain, or bowel obstruction.

Objective: it was to evaluate the efficacy of laproscopic adhesiolysis for post caesarean adhesions evidenced by the pregnancy rates.

Patients and Methods: this study was a single armed clinical trial study, which was done at Obstetrics and Gynecology Department of Tanta University Hospital in the period from October 2017 to March 2018. Fifty patients with secondary infertility after previous caesarean delivery were included. Three patients dropped off follow up.

Results: pregnancy rate in studied patients, 22 (47%) patients got pregnant, while 25 (53%) patients had no pregnancy

Conclusions: there is high incidence of pelvic adhesions in patients with an unexplained secondary infertility following a caesarean delivery, which is mainly periadnexial type. There is a significant increase in pregnancy rate after laproscopic adhesiolysis.

Keywords: Caesarean section, Adhesions, Laproscopy, Pregnancy.

INTRODUCTION

There has been an increase in the rate of Caesarean deliveries over the last 25 years in most developing countries ⁽¹⁾. For example, in Egypt, according to the latest data, more than half of women give birth to CS by making little difference between urban and rural areas. Several possible causes of high CS rates have been reported repeatedly in studies from many countries such as fear of pain; concerns about postnatal vaginal adjustments; the mistaken belief that CS is safer for the child ⁽¹⁾.

Although cesarean delivery is a relatively simple procedure, it is associated with some long-term sequelae such as peritoneal adhesions, that may result in infertility, chronic pelvic pain, or bowel obstruction and may increase the technical difficulty of subsequent abdominal or pelvic surgery⁽²⁾.

Adhesions formation after caesarean section may be related to operative technique, genetic predisposition, inflammation, ischemia and/or infection. Adhesions formation after caesarean section may change not only uterine position and mobility but also its functional anatomy leading to secondary infertility⁽³⁾.

Operative procedures, such as lysis of adhesions, tuboplasty and salpingectomy for hydro - salpinx or pyosalpinx at the time of laparoscopy can enhance conception ⁽⁴⁾.

Severe adnexal adhesions are associated with worsening pregnancy rates, and treatment of adnexal adhesions appears to improve pregnancy rates. Among infertile women with adnexal adhesions, successful pregnancies were shown to be lower in women with untreated adhesions than in those who underwent adhesiolysis (16%–45% after 24 months) ⁽⁵⁾.

An early study looked at pregnancy rates after adhesiolysis and showed a wide range from 38% to 57%. That study followed patients for 2 years assessed

the effectiveness in pregnancy rates of microsurgery and operative laparoscopy in adhesiolysis. Adhesions were found to be the sole infertility factor in 15% of the patients ⁽⁵⁾.

AIM OF THE WORK

The aim of this study is to evaluate the efficacy of laproscopic adhesiolysis for post caesarean adhesions evidenced by the pregnancy rates.

PATIENTS AND METHODS

This is a single armed clinical trail study which was done at Obstetrics and Gynecology Department of Tanta University Hospital in the period from October 2017 to March 2018. It includes fifty patients (three patients were dropped from follow-up) with secondary infertility after previous caesarean delivery according to inclusion & exclusion criteria.

Inclusion criteria: Age up to 35 years. Patients with prior CS delivery suffering from secondary infertility with suspicious clinical and/or imaging (ultrasound and hystrosalpingiographic finding) pointing to the possibility of post caesarean section adhesions e.g.: Fixed RVF uterus, Immobile adnexial mass by clinical examination. c- Ovarian or uterine displacement in ultrasound examination. - Ovarian or uterine displacement in ultrasound examination. HSG may show (abnormal tubal course, abnormal dye loculation in the pelvis and halo effect of the dye around the tube).

Exclusion criteria: Causes of infertility other than post caesarean adhesions e.g. (male, uterine, ovarian factors). History of abdominal or pelvic operation other than caesarean section. History of previous laparoscopic surgery. Endometriosis. Contraindication to laproscopic surgery e.g. patients with severe respiratory morbidity or decompensated heart disease.

Ethical approval and written informed consent:

An approval of the study was obtained from Al-Azhar University academic and ethical committee. Every patient signed an informed written consent for acceptance of the operation.

Methods:

All cases will be subjected to the following:

- 1- Written informed consent, the consent will be approved by the medical ethical committee of Tanta University Hospital.
- 2- Full history taking.
- 3- Full general examination.
- 4- Abdominal examination:
- 5- Investigating:
 - a- Preoperative routine checkup.
 - b- Complete diagnostic work-up of infertility.

Post-operative evaluation and follow-up:

All patients were given a signed medical report explaining all of the findings and the plan of the follow-up.

All patients had given the standard postoperative care and followed up postoperatively at 1, 3, and 6 months after surgery. Outcomes of the study to be checked had been primary outcomes as success of adhesiolysis to restore the normal pelvic anatomy, any postoperative complications, and secondary outcomes as occurrence of pregnancy.

Participants were contacted by telephone and asked about the occurrence of pregnancy. Women who got pregnant were asked whether pregnancy was achieved spontaneously, through induction of ovulation, or through ART? Three patients were dropped out of the follow up after the laparoscopic adhesiolysis.

Pregnancy rate (PR) had been calculated at six months. Pregnancy is checked by serum pregnancy test, by urine pregnancy test or by ultrasound.

Participants who didn't get pregnant were invited to attend the fertility clinic to discuss further steps like the need for ART.

Statistical analysis

Recorded data were analyzed using the statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

The following tests were done:

- Independent-samples t-test of significance was used when comparing between two means.
- Chi-square (x²) test of significance was used in order to compare proportions between two qualitative parameters.
- The confidence interval was set to 95% and the margin of error accepted was set to 5%. The p-value was considered significant as the following:

- Probability (P-value)

- P-value <0.05 was considered significant.
- P-value <0.001 was considered as highly significant.
- P-value >0.05 was considered insignificant.

RESULTS

The current study was conducted on 50 patients with secondary infertility after previous caesarean delivery, in which the mean age of the studied cases were 29.06 and the mean duration of infertility was 3.48 ± 0.99 years with minimum duration of 2 years and maximum duration of 6 years. Moreover, there was 32 patients (64%) had previous 1 CS while 18 patients (36%) had 2 CS, from whom 28 patients (56%) were delivered in general hospitals, and 22 patients (44%) were delivered in private hospitals, from them 28 (56%) were urgent and 22 (44%) were elective.

Table (1): Patient demographic data

Variable		Studied patients N = (50)
Age (years)	Mean	29.06
	±SD	3.02
	Min	22
	Max	35
Parity	Para 1	29 (58%)
	Para 2	19 (38%)
	Para 3	2 (4%)
Previous CS	1 CS	32 (64%)
	2 CS	18 (36%)
Duration of infertility (years)	Mean	3.48
	±SD	0.99
	Min	2
	Max	6
Site of previous CS	General	28 (56%)
	Private	22 (44%)
Type of CS	Elective	22 (44%)
	Urgent	28 (56%)
Post CS complications	No complications	35 (70%)
	Fever	5 (10%)
	Post-partum hemorrhage	2 (4%)
	Wound complication	8 (16%)

Table (2): Description of pregnancy rate in studied patients

Variable		Studied patients N = (47)
Pregnancy rate	Get pregnant	22 (47%)
	No pregnancy	25 (53%)

This table shows the pregnancy rate in studied patients. 22 patients (47%) got pregnant while 25 patients (53%) had no pregnancy.

Table (3): Correlation between ugly scar and adhesions

Variables		Adhesions (N = 34)	No adhesions (N = 16)	p-value
Ugly scar	No	25 (73.5%)	16 (100%)	0.02*
	Yes	9 (26.5%)	0 (0%)	

*: p-value < 0.05 is considered significant.

This table shows statistically significant difference (p-value < 0.05) between ugly scar and adhesions.

Table (4): Correlation between post CS complications and adhesions

Variables		Adhesions (N = 34)	No adhesions (N = 16)	p-value
Post CS Complications	No	24 (70.7%)	11 (68.7%)	0.03*
	Fever	1 (2.9%)	4 (25%)	
	Post-partum hemorrhage	1 (2.9%)	1 (6.3%)	
	Wound complications	8 (23.5%)	0 (0%)	

*: p-value < 0.05 is considered significant.

This table shows statistically significant difference (p-value < 0.05) between post CS complications and adhesions.

Table (5): The correlation between pregnancy rate and types of adhesions

Type of adhesions	Filmy	Dense	Frozen Pelvis
Pregnancy Rate	14 (88%)	2 (22%)	0 (0%)

DISCUSSION

There has been an increased rate of cesarean deliveries over the last 25 years in most of the developing countries (1). Consequent adhesions are a common complication that may result in infertility, chronic pelvic pain, or bowel obstruction and may increase the technical difficulty of subsequent abdominal or pelvic surgery (2). Moreover, Tub-operitoneal adhesions which caused by previous cesarean section are responsible for about 30-40% of cases of female infertility(6).

The current study was conducted on 50 patients with secondary infertility after previous caesarean delivery, in which the mean age of the

studied cases were 29.06 and the mean duration of infertility was 3.48 ± 0.99 years with minimum duration of 2 years and maximum duration of 6 years. Moreover, there was 32 patients (64%) had previous 1 CS while 18 patients (36%) had 2 CS, from whom 28 patients (56%) were delivered in general hospitals, and 22 patients (44%) were delivered in private hospitals, from them 28 (56%) were urgent and 22 (44%) were elective.

In our study, ugly scar was present in 9 patients (18%) while 41 patients (82%) had no ugly scar and (26.5%) of the studied patient with adhesions so there were correlation between ugly scar and adhesions. Recently, some authors suggested abdominal scar characteristics as a possible predictor for severity of intra-abdominal adhesions proposing the similarities in healing of skin and peritoneum. In 2 similar studies published by Salim *et al.*(7) and Kahyaoglu *et al.* (8), depressed abdominal scars were reported as being associated with intra-abdominal adhesions.

Stocker *et al.* (9), using more detailed scoring methods, suggested that patients with a palpable scar were most likely to have pelvic adhesions.

The laparoscopic assessment of the study group showed that there were no adhesions in 16 patients (32%) while 34 patients (68%) showed presence of adhesions, from which filmy adhesions were the most by 70.6% (24 patients), followed by dense adhesions (20.6%) that was in 7 patients, then 3 patients (8.8%) showed frozen pelvis.

That result was on the same track with Emaduldin *et al.* (10), in which there were 250 women who had a previous neither abdominal nor vaginal operation before or after the first CS delivery, and subsequent laparoscopy showed various type of adhesions (mild, moderate and sever) affected the patients.

The consequent pregnancy rate after our study was 22 patients (47%), while 25 patients (53%) had no pregnancy.

That was confirmed by Emaduldin, *et al.*(10), as the pregnancy rate after laparoscopic tuboplasty. Of the 97 women followed up after laparoscopic tuboplasty, 35 women (36%) got pregnant with 33 (94.2%) of them being intrauterine, while 2 (5.7%) of them were extrauterine pregnancies.

And that results was confirmed by Gomel *et al.* (11) who performed Lysis of peri adnexal adhesions (salpingo-ovariolysis) by laparoscopy on 92 infertile patients who subsequently have been followed for at least 9 months. Of the total of 92 patients, 57 (62%) achieved at least one intrauterine pregnancy, 54 (58.7%) had one or more full-term pregnancies, and 5 patients (5.4%) had ectopic pregnancies.

Milingos *et al.* (12) who assessed the effectiveness in pregnancy rates of microsurgery

and operative laparoscopy in adhesiolysis. Adhesions were found to be the sole infertility factor in 15% of our patients. One hundred and ninety infertile patients with periadnexal adhesions as the only cause of their infertility were treated by microsurgery (86) or operative laparoscopy (104) and were followed up for 24 months. In 271 (37%) of the 733 patients, laparoscopy revealed the occurrence of different kind of adhesions. In 37%, 22%, 18.5%, and 22.5% of the cases, these adhesions were classified as minimal, mild, moderate, and severe, respectively. The pregnancy rates achieved in patients with mild adhesions (54.5%) were statistically higher than those in patients with severe disease (30%).

CONCLUSION

Our study showed high the incidence of pelvic adhesions in patients with an unexplained secondary infertility following a caesarean delivery which is mainly periadnexial type. There is a significant increase in pregnancy rate after laproscopic adhesiolysis. So, the results of this small trial are sufficiently recommond to use the use of laparoscopy to evaluate these patients, to help in their diagnosis and management, and to justify further more large trials to assess patients with an unexplained secondary infertility following a caesarean delivery.

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