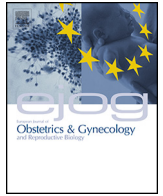




Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Full length article

The occurrence and severity of intra-abdominal adhesions in cases of pregnancies complicated by placenta accreta: A case control study



Gali Garmi^{a,b}, Shabtai Romano^{a,b}, Hadas Rubin^a, Eyal Rom^a, Sivan Suarez-Easton^a, Raed Salim^{a,b,*}

^a Department of Obstetrics and Gynecology, Emek Medical Center, Afula, Israel

^b Rappaport Faculty of Medicine, Technion, Haifa, Israel

ARTICLE INFO

Article history:

Received 5 April 2018

Received in revised form 30 May 2018

Accepted 4 June 2018

Available online xxx

Keywords:

Cesarean delivery

Intra-abdominal adhesions

Placenta accreta

ABSTRACT

Objective: To examine the occurrence of intra-abdominal adhesions (IAA) among women with placenta accreta (PA).

Study design: Case control study conducted at a single teaching hospital on data from January 2004 to December 2016. The cases included women who underwent a cesarean hysterectomy due to PA and had a pathological confirmation of accretion. The controls were matched for delivery date and number of cesarean deliveries (CDs) at a ratio of 1:4. IAA were categorized as “none”, “filmy”, or “dense”. The outcome measures were rate of IAA. In order to detect a 25% difference in overall IAA between the groups, with alpha of 0.05 and 80% power, a sample size of 165 women was needed.

Results: Overall, 165 women (33 and 132 in the case and control groups, respectively) were included. Except for maternal age, there were no statistically significant differences between the groups in demographic and obstetric variables. Overall IAA rate was 30.3% and 47.7% in the case and control groups, respectively (RR: 0.64; 95% CI: 0.37–1.10, $p = 0.04$). Rate of dense adhesions was 15.2% and 32.6% in the case and control groups, respectively (RR: 0.47, 95% CI: 0.20–1.08; $p = 0.03$). After adjustment for maternal age, there was a significantly lower rate of overall IAA (RR = 0.39; 95% CI: 0.17–0.93; $p = 0.02$) and dense adhesions (RR = 0.30; 95% CI: 0.11–0.87; $p = 0.02$) among the cases.

Conclusion: The incidence and severity of IAA following CDs are low, among women who develop PA.

© 2018 Elsevier B.V. All rights reserved.

Introduction

Placenta accreta is a devastating pregnancy complication that may lead to substantial and actual life-threatening hemorrhage [1]. There is a recognized association between prior cesarean deliveries and the development of placenta accreta, and the occurrence increases with the number of previous cesarean deliveries [2].

Cesarean delivery is considered a risk factor for intra-abdominal adhesions formation [3]. Intra-abdominal adhesions may lead to bowel obstruction or injury, long-lasting pelvic pain, and occasionally difficult repeat surgery [4–6].

Uterine scar decidualization and intra-abdominal adhesions formation are both considered tissue healing processes [7–10]. A poorly-healed cesarean scar may lead to insufficient decidualization, which results in trophoblast invading the uterine muscle

layers and development of accretion. [8,11]. Matsubara reported according to his experience the phenomenon of rare coexistence of intra-abdominal adhesions and placenta accreta [10].

We aimed in the current study to examine the occurrence of intra-abdominal adhesions among women with placenta accreta. According to the above mentioned data, we hypothesized that the incidence of intra-abdominal adhesions will be lower among women with placenta accreta compared to a matched group of women undergoing repeat cesarean delivery without placenta accreta.

Material and methods

Case control study conducted at a single teaching hospital using data collected between January 2004, and December 2016. Pregnant women with at least one cesarean delivery who were delivered by a repeat cesarean delivery were included in the study cohort group. The case group included women who underwent a cesarean hysterectomy due to placenta accreta and had a pathological confirmation of accretion. Women with placenta

* Corresponding author at: Department of Obstetrics and Gynecology, Emek Medical Center, Afula, 18101, Israel.

E-mail address: salim_ra@clalit.org.il (R. Salim).

accreta who were managed conservatively without pathological confirmation of accretion were excluded. The control group was randomly selected and matched for date (year) of delivery and number of previous cesarean deliveries at a ratio of 1:4.

Women in both groups were located through International Classification of Diseases Ninth Revision codes and the computerized medical records at admission and discharge. Data was abstracted from labor, surgery, and pathology reports of each individual case and was checked manually for validation. Abstracted data included number of previous cesareans, any other intra-abdominal diseases or surgeries such as myomectomy or appendectomy, endometriosis, Familial Mediterranean Fever, and use of absorbable adhesion barriers in previous cesareans.

All surgeons at our institution are required to document the location and severity of adhesions in the related customized portion of the post-surgical report. This part of the computerized surgical report is standardized and categorizes intra-abdominal adhesions as “none”, “filmy”, or “dense” at these locations: bowel to uterus, omentum to fascia or to anterior abdominal muscles, omentum to uterus, and fascia or anterior abdominal muscles to uterus.

The outcome measures were rate and severity of intra-abdominal adhesions. We hypothesized that intra-abdominal adhesions rate would be lower in cases of defective healing, i.e., in cases of placenta accreta. Accordingly, in computing the sample size needed we chose a one-sided hypothesis (Ho: adhesion in group 1 \geq group 2 vs. Ha: adhesion in group 1 < group 2) using a sampling rate of 1: 4 (cases: controls). The incidence of any intra-abdominal adhesions following cesarean deliveries is about 50%. [9,10,12]. In order to detect a decrease from 50% to 25% in intra-abdominal adhesions among the control and the case groups, respectively, we thus calculated that a sample size of 165 (33 in group 1 and 132 in group 2) would be necessary with alpha (one sided) of 0.05 and 80% power.

The study was approved by the local institutional review board, Emek Medical Center, Afula, Israel (registration number 0033-17-EMC) on May 21, 2017.

Statistical analysis

Group differences were tested via Student *t*-tests or Mann-Whitney tests in the case of non-normally distributed data for the continuous demographic and obstetric data. Chi-square tests or Fisher exact tests were used to test for group differences in the categorical demographic and obstetric data, and relative risk and 95% CI were computed. Chi-square tests or Fisher exact tests were used to test for group differences in the outcome data and relative risk was computed. When no outcome occurred, 0.5 was added to each cell before computing the relative risk and 95% CI. Group differences in the continuous outcomes were compared via Student *t*-tests. Chi-square tests or Fisher exact tests were used to test for group differences in the adhesion outcome data and relative risk was computed. One tailed tests were used for the adhesion data in order to reflect our hypothesis that adherence would be lower in group 1 compared to group 2. Generalized linear models with Log link were used to adjust the adhesion data for maternal age. Significance was considered to be $p < 0.05$.

Results

Overall, 33 consecutive women in the case group during the study period were found eligible and were included in the analysis. The control group consisted of 132 women matched for date of delivery and number of previous cesarean deliveries.

Table 1 presents the demographic and obstetric characteristics of both groups. Women in the case group were significantly older

than the controls (37.0 vs. 33.8 years, $p = 0.001$). In addition, women in the case group delivered earlier than the controls (34.7 vs. 38.3 weeks, $p = 0.001$), owing mainly to indicated late preterm delivery of women with placenta accreta according to our local protocol. Otherwise, there were no statistically significant differences between the groups in demographic and obstetric variables including maternal diseases, prior abdominal surgeries, and number of prior cesarean deliveries (Table 1).

The rate of overall intra-abdominal adhesions was lower in the case compared to the control groups (30.3% and 47.7%, respectively, RR: 0.64; 95% CI: 0.37–1.10, $p = 0.04$). When dense-only adhesions were assessed, the rate was 15.2% (50.2% of overall adhesions) and 32.6% (68.3% of overall adhesions) in the case and control groups, respectively (RR: 0.47, 95% CI: 0.20–1.08; $p = 0.03$) (Table 2). After adjustment for maternal age, there was a significantly lower rate of overall intra-abdominal adhesions (RR = 0.39; 95% CI: 0.17–0.93; $p = 0.02$) and dense intra-abdominal adhesions (RR = 0.30; 95% CI: 0.11–0.87; $p = 0.02$) among the case group. There were no cases of intestinal injuries in both groups and none of the cases required gastrointestinal surgeon specialists' active involvement.

Comment

The findings of the current study suggest that women with placenta accreta might have fewer overall intra-abdominal adhesions and particularly fewer dense adhesions compared to women with similar number of prior cesarean deliveries without placenta accreta.

The current study has strengths and limitations. The data were generated retrospectively and not from a prospective study. However, we used a standardized computerized adhesions assessment sheet that had been filled out by surgeons as part of the surgical report immediately after a cesarean delivery. Furthermore, in order to eliminate the option of false positive diagnosis of accretion, all cases that were included in the case group had a pathological confirmation of accretion. Additionally, the fact that the study was conducted at a single institution is probably a distinct advantage since same surgical techniques and scoring system were applied.

Consistent with the findings of others, we found a similar overall rate of intra-abdominal adhesions after cesarean delivery among the controls. [9,10,12]. Additionally, comparable rates of dense-only adhesions were reported previously following repeat cesarean delivery, [10,12,13], including a prior same institution report that showed 63% dense-only adhesions of overall adhesions in women without placenta accreta [9].

Performing cesarean delivery with or without hysterectomy in women with placenta accreta is always challenging. Additionally, since placenta accreta usually occurs in women with multiple prior cesareans, it is expected that intra-abdominal adhesions will essentially coexist. Intra-abdominal adhesions, when they exist, make the surgery more challenging. The above is contrary to the results of the current study. The rare coexistence of placenta accreta and intra-abdominal adhesions was described for the first time in 2012, according to Matsubara's report [10]. His observation from three decades in a tertiary obstetric center that placenta accreta rarely accompanies intra-abdominal adhesions, was based on his clinical experience only. We searched the PubMed English language literature from inception through December 2017 using the MeSH headings that included combinations of the terms "cesarean", "adhesions", "accreta", ["invasive placentation", OR "invasive placenta"] and "morbid adherent placenta" and found the current study to be the only study to examine the co-existence of placenta accreta and intra-abdominal adhesions.

The mechanism is unclear. Decreased wound healing may, at least partly, explain the infrequent co-existence. Wound healing

Download English Version:

<https://daneshyari.com/en/article/8777940>

Download Persian Version:

<https://daneshyari.com/article/8777940>

[Daneshyari.com](https://daneshyari.com)