

Evaluation of Uterine Scar on Repeat Second Cesarean Section in Patients with Previous Cesarean Section

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ABSTRACT

To evaluate the safety and integrity of uterine scar at repeat cesarean section in patients with previous one cesarean section (C/S). A prospective study was Carried out in a tertiary care, obstetric unit over a period of one year, 2010. All pregnant mothers who underwent cesarean section either emergency or elective with history of previous one cesarean sections were included in this study. The variables noted were age, parity, socioeconomic status, residential area, location of previous cesarean section, previous wound infection and associated complaints. Data was analyzed on SPSS 11 Operative findings during cesarean sections were recorded in terms of thinning of scar, dehiscence or rupture. One hundred and twenty cesarean section patients were included in the study. Out of all patients, extreme thinning of scar was noted in 28 (23.33%) patients. Four patients (3.33%) had scar dehiscence, only 3 (2.5%) patients with scar dehiscence had associated complaint of scar tenderness, while 17 (14.16%) of 120 cases of scar thinning were having scar tenderness. All 4 cases of scar dehiscence had their previous c/s at peripheral hospitals. No patient underwent hysterectomy and all patients with scar dehiscence had successful repair. Our findings shows relatively inadequate scar thickness rate but at the same time relatively acceptable scar dehiscence rate. Thus it seems to be a safe approach to make trial of labour after meticulous scrutinization and individualization.

Key Words: Previous Scar Uterus, Safety, Scar Dehiscence

Introduction

Cesarean Sections (c/s) delivery is a surgical operation to deliver a baby through an incision in the uterus. It is the most common surgical obstetric intervention and its rate varies internationally from 10-25%. The main indication for cesarean section has become repeat cesarean section. During the second half of 20th century, a cesarean section implied that all subsequent pregnancies were very likely to be delivered in the same way. This policy was the result from the fear of catastrophic uterine scar rupture of classical cesarean section, which persisted even after its replacement with lower segment cesarean section (LSCS) without the same basis¹. Documentation that the rate of uterine rupture is

only marginally increased among women undergoing a trial of labor² than among those undergrant an elective repeat cesarean section (0.4% vs 0.2% OR= 2.1), with a significant decrease in need for transfusion (OR= 0.57) or hysterectomy (OR= 0.39), has led authorities to encourage vaginal birth after cesarean³. A group of investigators concluded⁴ that among women with a previously scarred uterus, induction of labour is associated with an increased risk of uterine rupture compared with spontaneous labor (2.3% vs 0.7% p= 0.001).

Current medical evidence indicate that 60-80% of women can achieve a vaginal delivery following a previous lower uterine segment cesarean delivery. When vaginal birth after cesarean

(VBAC) becomes successful, it is associated with less morbidity than repeat cesarean birth. However, when VBAC fails due to uterine rupture, severe consequences ensue. Repeat elective cesarean section avoids scar dehiscence /rupture and perineal trauma remarkably, but at cost of increased bleeding, thromboembolism, prolonged recovery and increased risk of placenta praevia and accreta in subsequent pregnancies.

The subject of the delivery of a woman after a previous one cesarean section remains controversial⁵. The complexity of confounding variables and the differing clinical practices make it difficult to apply general obstetric knowledge to the case of individual patients. Thats why more study of uterine scar on repeat cesarean section patients are needed. This study was conducted to evaluate the safety and integrity of scar in patients with previous one cesarean sections without labour.

Materials and Methods

This study was conducted at IBN SINA Medical college hospital, Kallayanpur Dhaka from January 2010 to December 2010. All the pregnant patients who underwent repeat cesarean section for any indication were analyzed. It included all the pregnant ladies and referred cases admitted either through emergency or out patients department registered, Non registered Out Patient Department (OPD).

The patients, notes were examined for details of patients including identification data, presenting complaints, coexistent risk factors and operation notes details (for scar thickness). Uterine rupture was defined as an intraoperative finding of fetal parts within the abdominal cavity. Dehiscence was defined as a window in the lower segment with either membranes bulging or parts of the baby visualized through it. Thinned out scar was defined as a papery thin lower uterine segment, with thickness less than 3 mm. Type of repair was noted. All informations were transferred to a data sheet and the data was analyzed.

Table I: Sociodemographic Data (N-32)

Variables		No. of patients	Percentage (%)
Age (years)	< 20	-	-
	21-30	56	46.66
	31-40	64	53.33
	> 40	-	-
Parity	G ≥ 2 P ₁	67	55.83
	G ≥ 2 P ₁	53	44.16
Sociodemographic status	Poor	17	14.16
	Middle	75	62.5
	Upper	28	23.33

Table II: Residential area N= 120

Area	No.	% age
Dhaka	24	71.8%
Periphery	9	28.12%

Table III: Operative findings N= 120

Findings	No.	% age
Thinned out	28	23.33%
Scar dehiscence	4	3.33%

Table IV: Coexistent risk factors N= 120

Risk factors	No. of patients	% age
Scar tenderness	17	14.16
Hypertension	8	6.66
Posdate pregnancy	3	2.5
Bad obstetric history	2	1.66
Rupture of Amniotic membranes	2	1.66

Table V: Place of previous surgery N= 120

Place	No. of patients	% age
Medical college hospital	40	33.33
Local private hospital	55	45.83
Remote peripheral hospital	25	20.83

Results

During the study period a total of 570 deliveries took place and 380 (more than 50%) cesarean sections were performed, out of which 120 were repeat cesarean sections (31.57%). 54% patients belong to the age group of 21--30 years whereas teenagers were 46%. Age, parity and socioeconomic status, shown is table I. Residential area is shown is Table II. There were a total of 4 cases of complete and partial scar dehiscence (3.33%).

Scar thinning was found is 28 cases (Table III).

Discussion

In all these cases the scar problem occurred at term before labour and at the previous old scar. Out of 4, 3 cases of scar dehiscence were associated with preoperative scar tenderness (Table IV) which 17 of 120 cases (14.16%) of scar thinning were having positive scar tenderness. This could probably due to stretching of a scar tissue. This study confirmed that inadequate scar thickness and dehiscence is a relatively common finding even if cesarean sections performed in absence of uterine contraction. The risk of scar dehiscence was 3.33% and that of thin scar was 23.33%. It is observed that if all the patients with history of previous one cesarean section would have been subjected to a trial of labour, the scar dehiscence would be much higher than actual calculation.

A meta analysis of observational and comparative studies examing maternal and fetal morbidity and mortality following trial of labour compared with women undergoing repeat caesarian section, showed the combined scar dehiscence and rupture rates for lower segment scars were 1.8% for all trials of labour, 1.9% for women undergoing repeat cesarean section without negligible labour (almost difference) and 3.3% for women who underwent emergency cesarean section during a trial of labour⁶. Successful VBAC group will have significantly lower scar problems as majority of these women will not undergo scar examination and small asymptomatic dehiscence will be noted. Moreover there were no differences in prenatal death rates. The absolute risk of hysterectomy was 05%.

A prospective observational analytical study was conducted at the Medical University of South Carolina to determine the impact of labour induction for VBAC. The Study concluded that induction of labour in women attempting vaginal birth after cesarean is associated with a significantly reduced rate of successful vaginal delivery and in increased risk of serious maternal morbidity⁷. The risk of major maternal complication has been reported to be almost twice as likely in women who underwent a trial of labour than in women who whose an elective cesarean section.

Rageth et al discosed an elevated risk of utrine rupture in patients who had a history of cesarean delivery and were undergoing a trial of labour versus elective repeat cesarean⁸. In the alternative to date, the overall risk of utrine rupture for women undergoing a trial of labour after cesarean delivery has been reported to be between 0.2% and 0.1%. Naef at el retrospectively received the delivery outcomes of 262 women with lower vertical uterine incisions over a 10 year period, fifty four percent experienced a trial of labour with 83% having a successful vaginal delivery rate. The uterine rupture rate was 1.1% in the trial of labour group versus nil in the elective repeat cesarean group. No serious adverse sequel were observed following uterine rupture⁹. Although the rates of utrine rupture and neonatal asphyxia were slightly higher in women who attempted a VBAC than in women underwent an elective cesarean section, obstetricians should offer the option of trial of labour since more than one-half of the women with a previous caesarian delivery might have successful vaginal deliveries. In addition the VABC related maternal mortality rate does not reportedly differ between women undergoing a trial of labour and women undergoing an elective repeat cesarean section¹⁰.

Another study was conducted by Hibbard et al to determine the maternal risk associated with failed attempted at vaginal birth after cesarean compared with elective repeat cesarean delivery or successful vaginal birth after cesarean. It suggest that patients who experienced failed vaginal delivery after cesarean delivery have higher risks of uterine disruption and infections morbidity compared with patient who have successful vaginal birth after cesarean or elective repeat cesarean delivery¹¹. Hence all the patients with a history of cesarean delivery should be observed closely for progression of labour.

The dehiscence rate of a lower segment of transverse uterine scar is 2% to 4%, but a vertical scar is higher. Therefore, the strongest predictor of the safety of labour after previous cesarean is the location of previous uterine scar¹².

One limitation of our study is the absence of previous operative records of patient with previous cesarean section. It may be that lower transverse incision could have extended laterally into the side walls of the uterus or a T incision performed during a prior cesarean delivery without appropriate warning of the patient or poor documentation in the operative report. Other potential variable includes different surgeons with different competence level, multiple surgical techniques (catgut versus vicryl), postoperative complications (fever, wound sepsis), time interval between first cesarean section and next delivery, size of the fetus and morbid maternal obesity^{13,14}. If all these variable accounted for in final calculations, the overall scar complication will be much reduced.

Conclusion

Though the risk of dehiscence is 3.3% in our study yet VBAC should be encouraged. Successful VBAC has less maternal and fetal complications as compared to the emergency/repeat cesarean section group. In the management of patients with previous cesarean section regular and intensive antenatal surveillance is required. Careful observation throughout labour in a well equipped unit is necessary. Thus proper counselling for trial of labour and evaluation of the cases of women with prior cesarean section has been considered a key method of reducing cesarean section rate .There is no doubt that a trial of labour is a relatively safe procedure, but it is not risk free, Therefore patient evaluation prior to trial of scar, careful observation through labour in a well equipped unit with a round clock services for emergency and availability of expertise is the backbone for successful trial of scar.

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