

## ORIGINAL ARTICLE

## OUT COME OF TRIAL OF SCAR IN PATIENTS WITH PREVIOUS CAESAREAN SECTION.

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**Background:** Patients who had one caesarean section were previously not given a trial of scar due to fear of increased morbidity. However, recently there has been a trend to give a trial of labour to patients with a previous caesarean section for a non-recurrent cause. Medical evidence indicates that 60–80% of women can achieve vaginal delivery after a previous lower segment caesarean section. Proper selection of patients for trial of scar and vigilant monitoring during labour will achieve successful maternal and perinatal outcome. The objective of our study is to establish the fact that vaginal delivery after one caesarean section has a high success rate in patients with previous one caesarean section for non-recurrent cause. **Methods:** The study was conducted in Ayub Teaching Abbottabad, Gynae-B Unit. All labouring patients, during the study period of five years, with previous one caesarean section and between 37 weeks to 41 weeks of gestation for a non-recurrent cause were included in the study. Data was recorded on special *pro forma* designed for the purpose. Patients who had previous classical caesarean section, more than one caesarean section, and previous caesarean section with severe wound infection, transverse lie and placenta previa in present pregnancy were excluded. Foetal macrosomia ( $wt > 4$  kg) and severe IUGR with compromised blood flow on Doppler in present pregnancy were also not considered suitable for the study. Patients who had any absolute contraindication for vaginal delivery were also excluded. **Results:** There were 12505 deliveries during the study period. Total vaginal deliveries were 8790 and total caesarean sections were 3715. Caesarean section rate was 29.7%. Out of these 8790 patients, 764 patients were given a trial of scar and 535 patients delivered successfully vaginally (70%). Women who presented with spontaneous onset of labour were more likely to deliver vaginally (74.8%) as compared to induction group (27.1%). **Conclusion:** Trial of vaginal birth after caesarean (VBAC) in selected cases has great importance in the present era of the rising rate of primary caesarean section.

**Keywords:** caesarean section; vaginal birth after caesarean section.

J Ayub Med Coll Abbottabad 2016;28(3):587–90

## INTRODUCTION

Rate of primary caesarean section have increased dramatically since the 1980s. Consequently, an increasing proportion of pregnant women attending for care have had a previous caesarean section and face the question of mode of delivery. In the first half of the 20<sup>th</sup> century, if patients had one caesarean section, then subsequent pregnancies were likely to be delivered in the same way. However, current medical evidence indicates that 60–80% of women can achieve vaginal delivery after a previous lower segment caesarean section. There is a generalized consensus that planned vaginal birth after caesarean (VBAC) is a clinically safe choice for the majority of women with single previous lower transverse caesarean section. Such a strategy is also supported by health economic modelling and would also at least limit any escalations of the caesarean section rate.<sup>1</sup>

In comparing elective repeat caesarean section (ERCS) with VBAC it is clear that the main maternal morbidity is encountered by women

who need an emergency caesarean section for a failed VBAC. It is therefore vital that when discussing management with a patient, the individual risks and benefits must be considered.

The incidence of uterine rupture with VBAC in a mother who has had a low transverse incision is approximately 0.2–0.5%. Unsuccessful VBAC had the highest rupture rates of 2.3%.<sup>2</sup> The Royal College of Gynaecology and Obstetrics (RCOG) Green Top Guidelines suggests that women know that the risk of rupture is 22–74/10,000 compared to almost no risk for elective repeat caesarean section.<sup>3</sup> The aim of this study was to highlight the fact that not permitting a trial of labour in women with previous caesarean section for non-recurrent case is simply not justified on the basis of fear of uterine rupture.

## MATERIAL AND METHODS

It was a cross sectional study conducted in Ayub Teaching Hospital Abbottabad, Gynae B Unit. All labouring patients coming to labour room, during the study period of five years, with previous one

caesarean section and between 37–41 weeks for a non-recurrent cause were included in the study. Data were recorded on special *pro forma* designed for the purpose. Patients who had previous classical caesarean section, more than one caesarean section, and previous caesarean section with severe wound infection, transverse lie and placenta previa in present pregnancy were excluded. Foetal macrosomia (wt>4 kg) and severe IUGR with compromised blood flow on Doppler in present pregnancy were also not considered suitable for the study. Patients who had some absolute contraindication for vaginal delivery were also excluded.

Informed consent for trial of scar was taken from the patients selected for the study. Period of gestation of these patients was between 37–41 weeks. Spontaneous labour was awaited till 41 wks. At 41 weeks patients were induced with full preparation for emergency caesarean section. Progress of labour of all patients undergoing trial of labour was recorded on a partogram.

Throughout the trial vigilant doctors were deputed to watch for lower abdominal tenderness (scar tenderness), uterine contractions, foetal heart monitoring, vaginal bleeding and general condition of the patient. During active phase of labour artificial rupture of membranes was done. In cases of ineffective uterine contractions oxytocin was used in titration to augment labour. Mode of delivery and indication of caesarean section was recorded.

The data were presented as proportions expressed as percentages. Software version 16.00

(SPSS) was used to analyse the descriptive aspects of the data.

## RESULTS

There were 12505 deliveries during the study period. Total vaginal deliveries were 8790 and total caesarean sections were 3715. Caesarean section rate was 29.7%. Out of these 8790 patients, 764 patients were given a trial of scar and 535 patients delivered successfully vaginally (70%). Indications of primary caesarean sections were mostly foetal distress (28.7%), failure to progress (22.6%), malpresentations (13%), severe preeclampsia/eclampsia (12%) and breech (10%). Success rate of vaginal delivery in patients with previous caesarean section done for failure to progress, breech presentation and foetal distress was highest, i.e., 82%, 81% and 67% respectively (Table 1).

Women who presented with spontaneous onset of labour were more likely to deliver vaginally (74.8%) as compared to induction group (27.1%) (Table-2).

Out of 764 patients who were given a trial of labour with previous caesarean section 49 patients (6.4%) had scar dehiscence (Table-3).

Indications for emergency lower segment caesarean section after failed trial of scar were failed progress of labour 39.8% scar dehiscence and tenderness 33.18% and foetal distress 26.9% (Table-4).

**Table-1: Indications for primary caesarean section versus outcome in present pregnancy**

Primary caesarean section	Trial of scar		Caesarean section	
	Number	Percentage	Vaginal Delivery	Percentage
Indications				
Foetal distress	220	28.7	149	67.7
Breech	80	10.4	65	81.2
Other malpresentations	100	13.0	64	64
Failure to progress	173	22.6	142	82
Twins	30	3.9	18	60
APH	42	5.5	12	28.5
Severe PIH/eclampsia	92	12.0	41	44.5
Other medical disorders	10	1.3	4	40
Precious pregnancy	9	1.1	3	33.3
Foetal compromise	8	1.0	2	25
<b>Total</b>	<b>764</b>	<b>100</b>	<b>535</b>	<b>226</b>

\*Three patients had rupture uterus after induction with prostaglandin who underwent laprotomy are not included in this table.

**Table-2: Pattern of labour in patients with previous caesarean section.**

Onset of labour		Vaginal delivery	Percentage	caesarean section after failed VBAC	Percentage	Laprotomy for rupture uterus	Percentage
Spontaneous	687	514	74.8	173	25.18		
Induction	77						
Prostaglandin	39	9	11.6	30	88.4	3	0.3
Syntocinon	35	12	15.5	23	84.5		
<b>Total</b>	<b>764</b>	<b>535</b>	<b>70.02</b>	<b>226</b>	<b>29.5</b>	<b>3</b>	<b>0.3</b>

**Table-3: Scar dehiscence in patients with trial of scar**

Mode of delivery		Scar dehiscence	Percentage
Vaginal delivery after spontaneous labour	514	10	1.9
Vaginal delivery after prostaglandin induction	9	2	22.2
Vaginal delivery after syntocinon induction	12	3	25
Caesarean section after failed spontaneous labour	173	17	9.8
Caesarean section after failed prostaglandin induction	30	9	30
Caesarean section after failed syntocinon induction	23	8	34.7
Laprotomy after prostaglandin induction	3		
Total	764	49	

**Table-4: Indications for emergency lower segment Caesarean section after failed trial of scar.**

Type of delivery	Number	Percentage
Failed progress of labour	90	39.82
Scar tenderness & scar dehiscence	75	33.18
Foetal distress	61	26.99
Total	226	100

## DISCUSSION

Total deliveries conducted during five years study period were 12505. The overall caesarean section rate in Ayub teaching hospital was 29.7%. This is apparently very high and unacceptable rate as compared to current caesarean section rate of 12% in UK.<sup>4</sup> The reason for such a high rate is that Ayub Teaching Hospital is the only biggest tertiary care level hospital of Hazara Division being run by the government for free treatment of patients. All the complicated, un-booked patients being managed by lady health visitors or untrained local professionals (*dai's*) and even by doctors in private sectors are referred to this hospital. Mostly patients of our area, observe veil (*pardah*) and men do not bring their partners for delivery to hospitals. Many women deliver at home however if some complication arises then they have no choice other than bringing them to hospital. Mostly patients come with a clear cut indication of caesarean section. Hence the rate of caesarean section appears raised.

The American college of obstetricians and gynaecologists (ACOG) updated their guidelines concerning vaginal delivery after previous caesarean section. The ACOG committee on obstetrics: Maternal and Foetal Medicine stated; "The concept of routine repeat caesarean birth should be replaced by a specific indication for a subsequent abdominal delivery and in the absence of a contraindication, a women with previous one caesarean delivery with a low transverse incision should be counselled and encouraged to attempt labour in her current pregnancy".<sup>5</sup>

In our study 764 patients were given a trial of labour with non-recurrent cause of previous caesarean section. The success rate of VBAC was 70.02%. The indications for primary caesarean section has a considerable impact on outcome of trial of scar. Table-1 shows the highest vaginal delivery was achieved in cases of previous caesarean section for failure to progress (82%) and breech presentation (81.2%). A study conducted by Hassan A also showed that the

highest vaginal delivery rate was achieved with malpresentation (87%) and failure to progress (74%) in cases of prior caesarean section.<sup>6</sup> Trial of labour could be given to patients with previous caesarean section for malpresentation and failure to progress because it has a high success rate for vaginal delivery and thus caesarean section rate can be lowered to some extent.

Vaginal birth after previous caesarean section is an effective tool that can serve as an alternative for emergency repeat caesarean section and assists to reduce the rate of caesarean section. Current obstetric opinion is that the lower segment caesarean section is not a contraindication for the use of oxytocin. In our study the vaginal delivery rate was significantly higher (74.8% vs 27.1%) in the spontaneous labour group compared with the induced labour group. Moreover patients induced with prostaglandin were less likely to have vaginal delivery. An inference can be drawn from table 3 for those obstetrics units where previous caesarean section are not given a trial of labour due to the risk of uterine dehiscence and uterine rupture, that patients with spontaneous onset of labour are less likely to have these said complications so they can revise their protocol for trial of labour to this particular group, as a result caesarean section rate can be reduced. A study conducted by Sims concluded that induction of labour is associated with reduced rate of successful vaginal delivery and an increased risk of serious maternal morbidity.<sup>7</sup> In our study out of 74 inductions 22 (29.7%) had scar dehiscence (Table-3) while 3 patients had ruptured uterus after induction with prostaglandins. The risk of uterine rupture for women undergoing a trial of labour after caesarean section in our study was 0.3% while Rageth<sup>8</sup> disclosed an elevated risk of uterine in patients who were given a trial of vaginal delivery, in contrast Hruban L and Melamed N in their study did not encounter rupture uterus.<sup>9,10</sup> The most useful study conducted in UK, reporting 35854 women with previous caesarean section, had a success rate of

74.2% for VBAC, while the overall risk of uterine rupture was 0.35%.<sup>11</sup>

A uterine dehiscence is defined as the disruption of the uterine muscle with intact uterine serosa.<sup>3</sup> In our study scar dehiscence was highest after failed induction (64.7%) while it was only 15% after vaginal delivery (Table-3). Hibbard in his study determined the maternal risks associated with failed attempt at vaginal birth after caesarean section compared with elective repeat caesarean section or successful vaginal birth after caesarean.<sup>12</sup> It suggested that patients who experienced failed vaginal birth experienced a higher risk of uterine disruption as compared to those who had vaginal delivery or elective repeat caesarean section.

In our study failed progress of labour (39.8%) was the commonest indication for emergency lower segment caesarean section after failed trial of labour. While scar dehiscence and scar tenderness accounted for (33.18%) patients. If we consider table-3 and table-4 for scar tenderness and scar dehiscence we come to know that actual scar dehiscence was seen in only 34 cases while the rest caesarean sections were done for scar tenderness which was a subjective finding. In a study conducted by Islam<sup>13</sup> the indications for emergency lower segment caesarean section after failed trial of scar were failed progress of labour (55%), foetal distress (42%) and scar tenderness and scar dehiscence (2.5%).

## CONCLUSION

Trial of VBAC in selected cases has great importance in the present era of the rising rate of primary caesarean sections. Induction of labour with prostaglandins increase the risk of scar dehiscence so should be avoided. Scar tenderness is a subjective finding which does not always means scar dehiscence.

## AUTHORS' CONTRIBUTION

BK: Contributed to Data collection, Material and methods, study design, results and discussion.

FD, RB and WK contributed to compilation of results and statistical review.

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