

Outcome of Trial of Labour in Patients with Previous one Lower Segment Caesarean Section

AMBREEN MUMTAZ, BUSHRA FIRDOUS

ABSTRACT

Objectives: To determine the outcome of trial of labour in patients with previous one lower segment caesarean section.

Material and methods: This study was conducted in the department of obstetric and gynaecology of Alkhidmat Teaching Hospital Mansoorah Lahore from January 2006 to December 2009. During this period, total of 257 patients were given trial of labour. Detailed history, examinations and investigations were carried out. Inclusion criteria include lower transverse caesarean section for non-recurrent cause or imprecisely labeled CPD (cephalopelvic disproportion) not proved clinically or on X-ray pelvimetry with 37 weeks completed or above.

Results: During the study period 352 patients were admitted with the history of one previous caesarean section, 257 (73%) patients were selected for trial of labour. Out of 257 patients, 176 (68.4%) patients were delivered vaginally and 81 (31.5%) patients failed in trial of labour and were delivered by caesarean section. There were three cases of scar dehiscence but one was complete ruptured uterus resulting in neonata

Key words: Labour, C-section, lower segment

INTRODUCTION

In the first half of the 20th century, the caesarean section became a viable obstetric option and the elective repeat caesarean section became an established practice. Caesarean birth has been reported throughout medical history, but has become technically refined and safe in the past 50 years or so. There is a dramatic rise in the caesarean section over the past 30 years¹.

Chile and Brazil have the highest caesarean section rate in the world (40% and 37%)². In USA and Canada, high caesarean section rate of 25% and 20% respectively is considered a major health problem and they are trying to reduce it³.

Current medical evidence indicates that 60 -80% of women with previous one caesarean section can be successfully delivered vaginally. Careful case selection for trial of scar and close observation during labour will achieve successful maternal and perinatal outcome⁴ and a shorter hospital stay⁵.

Patients who had one previous caesarean section but had previously delivered vaginally have more chances of successful vaginal delivery than others. Patients' who experience failed vaginal birth after caesarean section have higher risk of uterine disruption and infectious morbidity compared with patients who have successful vaginal birth after caesarean section. If the indication for previous

caesarean section was bad obstetric history or chorioamnionitis little can be achieved from trial of scar. If the previous caesarean section was carried out for cephalopelvic disproportion, there was one-third chance of successful vaginal delivery.⁶

This study was conducted to find out the outcome of term pregnancy in women with previous one caesarean section in our setup.

MATERIAL AND METHODS

This prospective study was conducted in the Obstetric and Gynaecology department of Alkhidmat Teaching Hospital Mansoorah Lahore from January 2006 to December 2009.

During this period, total of 352 patients were admitted with the history of one previous caesarean section for any cause with 37 completed weeks of gestation and above. Out of those 257 patients were selected for trial of labour.

Inclusion criteria involved one low transverse caesarean section from non-recurrent cause or imprecisely labeled cephalopelvic disproportion (CPD) not proven clinically or on X-ray pelvimetry, singleton pregnancy with cephalic presentation and no absolute contraindication to normal delivery in present pregnancy. Patients having gestation less than 37 weeks, more than one caesarean section and uterine scar due to other causes were excluded from the study.

Department of Obstetric and Gynaecology Alkhidmat teaching hospital Mansoorah Lahore
Correspondence to Dr. Ambreen Mumtaz

The study included all booked and un-booked patients fulfilling the inclusion criteria, although more than 80% were booked patients. Detailed history, examinations, baseline investigations and ultrasonography were carried out. Booked patients had regular antenatal checkup. At 37 weeks of gestation, pelvic adequacy was assessed.

Spontaneous labour was awaited till 40 weeks. After 40 weeks, induction of labour was done. The patients were counseled about the possibility of repeat caesarean section during the course of trial. During labour, continuous maternal and fetal monitoring in the form of maternal blood pressure, pulse-record, fetal heart sounds record (every 30 minutes in early first stage of labour and every 15 minutes in late first stage of labour and before and after every contraction in second stage) was done. Syntocinon was administered if required by infusion at the rate of 12mu/min, but increased according to the strength and frequency of contraction. Partogram was maintained and analgesic given by intramuscular route and epidural analgesia was also offered to the patients. The trial of scar terminated after six hours of active labour if delivery was not imminent.

During post-natal period patient was kept under observation due to the risk of post-partum hemorrhage and neonatal well being was also observed. The outcome measures were mode of delivery, needs of assistance in case of vaginal delivery and associated maternal and fetal complications with either mode of delivery.

RESULTS

During the study period total numbers of deliveries were, 3772. The normal vaginal deliveries were 3011 and patients who underwent caesarean section were 761. The caesarean section rate was 20.1%. The numbers of patients with history of one previous caesarean section were 352. Out of those 257 (73%) patients were given trial of labour and 95 patients were excluded from this study.

Out of 257 patients, 176 (68.4%) patients had successful vaginal delivery and 81 (31.5%) patients failed in trial of scar and were delivered by caesarean section. Out of 176 patients, 152 had uncomplicated vaginal delivery, 19 patients were delivered by vacuum extraction and 5 patients were applied forceps. In the study group about 70.8% of patients had spontaneous onset of labour and 29% of patients needed induction of labour. Induction of labour was done with foley's catheter, prostaglandin E2 pessaries and syntocinon, augmentation of labour was done with syntocinon when needed. The rate of caesarean section is higher in the group of patients

who needed induction of labour. Maternal complications were noticed in the form of post-partum haemorrhage, wound infection, febrile complications and scar dehiscence. The incidences of complications were more in cases of emergency caesarean section than vaginal birth. The incidence of scar dehiscence in all trial of labour patients was 1.16%. Out of them one was complete ruptured uterus resulting in neonatal death.

Table-1 Outcome of trial of scar (n=257)

	No. of patients
Successful trial of scar	176 (68.4%)
Spontaneous vaginal delivery	152 (59.2%)
Vacuum delivery	19 (7.4%)
Forceps delivery	5 (1.94%)
Failed trial of scar (repeat C-section)	81 (31.5%)

Table 2: Mode of labour in trial of scar patient (n=257)

Type of labour	No. of patients	VBAC*	Emergency C-section
Spontaneous	182 (70.8%)	131 (71.9%)	51 (28%)
Induced	75 (29.1%)	45 (60%)	30 (40%)

* Vaginal Birth after Caesarean

Table 3: Method of induction of labour (n=75)

Methods	=n	%age
Prostaglandin E2	41	54.6
Foley's Catheter	29	38.6
Syntocinon	5	6.7

Table-4: Indication for emergency C-section (n=81)

Indication	=n	%age
Failure to Progress	36	44.4
Fetal Distress	21	25.9
Failure of Induction	19	23.4
Ante partum haemorrhage	1	1.2
Scar Tenderness	4	4.9%

Table-5: Maternal Complication

Type of Complications	Complications	
	Vaginal Delivery (n=176)	Emergency C-Section (n=81)
Puerperal pyrexia (endometritis)	4	6
Post Partum Haemorrhage	3	4
Wound Sepsis	-	7
Gaped Episiotomy	5	
Scar Dehiscence	-	3
Other Infection	4	5

Table-5:Fetal Outcome

Apgar Score	VBAC (n=176)	Emergency C- Section (n=81)
>8	132 (75%)	49 (60%)
6-8	41 (23.2%)	28 (34%)
<6	3 (1.7%)	4 (4.9%)
NND	-	1 (1.2%)

DISCUSSION

The rising rate of caesarean section is posing a problem to the obstetrician and it can only be solved by reducing the primary caesarean section rate and by reducing the repeat caesarean section incidence. The reluctance in the part of obstetrician in permitting a trial of labour is the risk of uterine rupture with threat of damage to mother and fetus and possible subsequent litigation. Secondly many obstetricians consider caesarean section as a safe and convenient procedure as compared to vaginal delivery. In private sector economic incentive is also one of the important factor in increasing the caesarean section rate.

Despite remarkable improvement in safety, caesarean section has eight fold higher mortality; 8-12 times higher morbidity and higher incidence of complication than vaginal delivery.

In our study 352 patients presented with history of one previous caesarean section and out of those 257 (73%) of patients were given trial of labour, this figure is comparable to many studies in Pakistan⁸ and abroad. A prospective study in Karachi shows that 67% were selected for trial of scar. In a similar study in Liverpool Hospital, New South Wales, 73.3% of patients underwent a trial of labour¹².

This trial of labour was successful in 68.5% (176 patients) of cases and failed in 31.5% of the cases. This result is also comparable to many studies in Pakistan⁹⁻¹¹ as well as from developed countries¹²⁻¹³ which reported a success of 60% while⁹ another has reported a success of 81%.

Women admitted in spontaneous labour with good bishop score at the time of admission and no outside interference have a successful vaginal delivery as was noticed in other studies.¹⁴ In our study 182 (70.8%) of patients presented with spontaneous labour whereas 75 (29.2%) patients needed induction of labour. Out of 182 patients who presented with spontaneous labour, 71.9% patients delivered vaginally and 28% patients underwent emergency caesarean section. Whereas out of 75 patients who underwent induction of labour 60% of patients delivered vaginally and 40% patients were delivered by caesarean section so the caesarean section rate is higher in the induction group and this figure is comparable to the national study⁴. In our study we used both chemical (prostaglandin E2 pessaries, syntocinon) and mechanical (extra-amniotic Foley's catheter) methods for induction of labour. Out of 75 patients those with poor bishop score, 41 patients were induced with prostaglandin E2 and 29 patients were induced with Foley's catheter. As far as ripening is concerned, there is

little role for syntocinon, so only 5 patients with good bishop score were induced with syntocinon.

The use of prostaglandin for cervical ripening in women with previous caesarean section is also a controversial issue. There are reports of uterine rupture and complete wound dehiscence with its use even in the absence of previous surgery so vigilance is important. One patient in our study in the induction group with prostaglandin had the complication of scar dehiscence so vigilant monitoring is required in such patients.

Augmentation of labour with syntocinon during trial of scar is also controversial.¹⁶, because study published in American Journal reported a significant association between syntocinon use and scar dehiscence whereas some studies indicate the safety of syntocinon if used in judicious manner.¹⁷ In our study we had no complication in this group.

Epidural analgesia and injectable analgesics were given by intramuscular route. There is no evidence in support of view that analgesics including epidural can mask the sign and symptoms of rupture of uterus. So it can be safely given to the trial of scar patients provided standard protocols are maintained.

Maternal complications were noted in the form of post-partem haemorrhage, wound infection, fever and scar dehiscence. In our study the overall scar dehiscence rate in all trial of labour patients was 1.16% and out of 3 scar dehiscence cases one case was of complete ruptured uterus (0.4%) which is comparable to an international study and it is also comparable to analysis made by Enken of 6 eligible studies, these data reveal uterine dehiscence rate of 1.5% of elective repeat caesarean section and 1.7% for women undergoing trial of labour. The incidence of rupture of uterus in developing countries is reported as 0.23% i.e. 1:24511 deliveries which is also comparable to our study. Scar tenderness was previously meant for idea of scar integrity but studies have now revealed that it has no positive co-relation with the scar's condition. Similar is the observation in this study, scar tenderness was the indication of emergency caesarean section in 4 patients but intraoperative findings revealed an intact scar.

The incidence of complications were more in emergency caesarean section than vaginal birth, wound infection was the commonest complication in emergency caesarean section. There was no maternal mortality but one case of neonatal death in patient who had ruptured uterus. The fetal outcome in cases vaginal delivery was encouraging as 75% of the babies were born with Apgar score of 8 and only 3 babies had an Apgar score less than 6, but all were successfully resuscitated. But in cases of emergency Caesarean section the babies born with the Apgar

score of 8 were 60 % and 4 babies were born with the Apgar score less than 6 and out of them, 3 were resuscitated, but 1 baby couldn't be resuscitated.

CONCLUSION

The policy of VBAC is a contribution towards bringing down caesarean section rate and also save any future caesarean as currently two caesarean sections is an indication for elective repeat caesarean section.

There is no doubt that trial of scar is a relatively safe procedure but it is not risk free and should not be undertaken in a casual fashion. Each delivery method has its own advantages and disadvantages. It is ultimately the responsibility of obstetrician to ensure that delivery plan is appropriate for the individual patient.

REFERENCES

1. Nozon FC, Placek PF Taffel SM. Comparison of national caesarean section rate. N Eng J Med 1987; 316: 386-9
2. Murray SF, Serani Pradences F. Caesarean birth trend in Chile. 1986-1984. Birth 1997; 24:258-63
3. Menard MK. Caesarean delivery rate in US in 1990's controversies in labour management. Obsel Gynecol Clin North Am 1989; 26(2):275-86.
4. Hassan A. Trial of scar and vaginal birth after caesarean section. T Ayub Medical College Abbottabad 2-005; 17; 57-61.
5. Tan PC, subramanium RN, Omar SZ, Aust-NZ Tournal obstetric Gynaecol 2007 Res.; 47(1) :31-6.
6. Mehr-un-Nisa, Hasan L, Trend of vaginal delivery after one previous caesarean section in a tertiary care hospital. Pakistan J Med. Res 2004;43:60-4.
7. American College of Obstetricians and Gynaecologists Committee. Opinion guidelines for vaginal delivery after a previous caesarean birth committee on obstetric maternal and fetal medicine, Washington DC:- American College of Obstetrician and Gynaecology -1988 (publication no.54)
8. Shaheen F. Vaginal birth after caesarean section: a three year study. Pak J Obsteric Gynaecol 1997 10(3) :18-21.
9. Tariq RA. Vaginal delivery after previous caesarean section. J. Coll Physicians Pakistan. 1995:5:176-81.
10. Robert LJ, Beardsworth SA, Treq G. Labour following xaesarean section: current practicein UK Br J Obstetric and Gynaecol 1994;101:153-5.
11. Tanveer F. Shah G. Obstetric outcome after one caesarean section. J Obsteric Gynaecol Res 1997; 23(4): 34-6.
12. Lorell R. Vaginal delivery after caesarean section. Aust-NZJ obstetric gynaecol. 1996:36:4-8.
13. Nagina RS. Factors determining route of delivery following one caesarean section J coll Physicians Pakistan 1999 9:20-3.
14. Collart TM. Davies JA. kalesman KM. Outcome of a second pregnancy after a previous elective caesarean section. Br J Obsteric Gynaecol. 1990:1140-3
15. Rana F, Caesarean section in obstetrics and perinatal care. 1st edition. Islamabad :SAF Publications 1998:1342-76.
16. Farmer Rm, Kiirschbaun J. Potter D. Uterine rupture during trial of labour after previous caesarean section. Am J Obstel Gynaecol 1991.165:996-1001.
17. Horenstein Jm. Englinton GS. Tahilamang MP. Boucher M.Phelam JP. Oxytocinon use during a trial of labour in patients with previous caesarean section. J Reprod Med 1984:29:26-30.
18. ibbard JU Ismail Ma, Wang Y, Te C, Karrison T. Failed vaginal birth after a caesarean section, how risky is it? I. Maternal morbidity. Am J Obstet Gynaecol. 2001 Jun; 184(7): 1365-71, discussion 1371-3.