Section: Paediatrics

Original Research Article

TO DETERMINE THE ROLE OF ACTIVE MANAGEMENT OF LABOUR IN PATIENTS UNDERGOING TRIAL OF LABOUR IN OUR EXPERIENCE

Vanaja Reddy[1], Adarsh Reddy[2], G. Archana Reddy[3], Nimmala Niveditha Reddy[4]

[1]Associate Professor, Department of Obstetrics and Gynaecology, Government Medical College, Nizamabad, Telangana, India.
[2]Assistant Professor, Department of Ophthalmology, Government Medical College Adilabad, Telangana, India
[3]Senior resident, Department of Opthalmology, Sarojini Devi eye Hospital/Osmania Medical College, Hyderabad, Telangana.
[4]Senior Resident, Department of Paediatrics, SVS Medical College, Mahbubnagar, Telangana, India.

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Corresponding Author:
Dr. Nimmala Niveditha Reddy,
Email: nivedithanimmala2@gmail.com

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Abstract

Background: To determine the role of active management of labour in patients undergoing trial of labour in decreasing the total duration of labour , rate of cervical dilatation and prediction of successful vaginal delivery. **Materials and Methods:** This prospective study comprise those cases admitted with History of one low transverse caesarean section. Single ton pregnancies at term with Vertex presentation without any associated complications. **Result:** 100 cases of post caesarean pregnancies were studies. The indication for previous section together with the type of operation are analysed. In 14 cases trial had to be terminated for foetal distress, failure to progress and threatened rupture. The incidence of repeat section after one previous caesarean section is 35.38% and that of trial vaginal delivery is 31.36%in our study. Successful trial vaginal delivery for non-recurrent indication with active management of 86%. Repeat section was done in 2 previous section cases in recurrent causes and failed trial vaginal delivery. There was I case of scar dehiscence in present series There was no maternal mortality or perinatal mortality. Minimal maternal morbidity was found. Intra natal and post-natal courses was mostly uneventful. Four weeks follow up of cases of VBAC showed no morbidity. **Conclusion:** Use of Syntocinon drip for induction or augmentation is not a contraindication when the integrity of scar is good and it reduces the duration of 1 st and 2nd stages of labour.

INTRODUCTION

The high incidence of classical caesarean section, the lack of blood banking and inadequate means of foetal monitoring made his edict a wise theme for the times. For many years, the scarred uterus was believed to contraindicate labour, out of fear of uterine rupture. Newer means of antenatal and intrapartum foetal monitoring, ever increasing indications for primary caesarean section and the new consumerism in present obstetric practice prompted us to take another look at the clinical dictum. WHO recommendations published in 2007.

3 advocated use of the full active management package, while acknowledging the absence of evidence for the effectiveness of some individual components.[1,2] Estimation of the relative contribution of each of the components could help to determine the most effective way to use the intervention at different levels of health care or by health-care workers with different skills.[3,4] Some evidence suggests that the uterotonic component can be effective on its own. However, the contribution of controlled cord traction is largely unknown. This prospective study was undertaken to determine the role of active management of labour in patients undergoing trial of labour in decreasing the total duration of labour, rate of cervical dilatation and prediction of successful vaginal delivery.

MATERIALS AND METHODS

This prospective study comprise those cases admitted in our hospital from January 2001 to December 2001 with History of one low transverse caesarean section.

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Single ton pregnancies at term with Vertex presentation without any associated complications.

Patients in this series were followed carefully in antenatal clinic. Attempts were made to get the following information as Parity, Indication of previous section, Place where surgery was done, Person who has done the surgery, Type of Section (i) Classical (ii) Lower segment, Post-operative complications a s fever, wound sepsis, day of discharge and any blood transfusion in post-operative period.

Whether the section w a s Emergency or Elective, Perinatal outcome of the baby.

(Data concerning the outcome of the first subsequent delivery were gathered from delivery notes and patients charts in cases where ever available). Careful evaluation of each patient was done and a thorough clinical examination was done. Criteria for selection of patients for VBAC: Previous one lower segment section, Cases done in an institution where integrity of the scar is not doubtful, Non-recurrent indication, No other associated medical complications, Estimated weight of the babies was between 2-3.5 Kgs, Babies> 3 .5 Kgs or <2 Kgs were not included in the study. Well-being of the foetus estimated by antepartum foetal monitoring. Adequacy of the pelvis ensured. The Basic lab investigations were done and Ultrasonography for Gestational age Estimated foetal weight. Placental localization and maturity Foetal well-being and the condition of cervix - Bishops scoring done. A Score of 6 or less indicate poor inducibility. 100 cases were selected for the study and were subjected to a trial of vaginal delivery when all the above conditions were fulfilled. Medium soft anterior Cases where the Bishop score is less than 6 were induced criteria for induction of labour included a n obstetric indication for delivery and the absence of regular contractions. Under strict supervision Oxytocin drip was used for induction. Those with full term pregnancy were induced on the day of EDC with stripping of membranes and Oxytocin induction. Those who set into spontaneous labour were augmented with amniotomy and oxytocin at 3 Cm dilatation and cervix fully effaced. In all patients the possibility of concurrent sterilization in the event of a repeat operation was discussed and consent obtained in relevant cases. The patients' blood was grouped and compatible blood was kept in readiness. In anticipation of surgery at short notice oral feeding was withheld. A careful record of uterine contractions, foetal heart rate, maternal pulse rate every 15 minutes were done periodic assessment of the progress of labour was made and a partogram was charted.

Criteria for induction of labour included an obstetric indication for delivery, the absence of regular contractions, and pre-treatment dilatation <3 cm whereas labour augmentation required dilatation 3 cm regular uterine activity, and no cervical change during the preceding 1 hour.

1st stage: I.V. line secured with an intracath for ready use in case of need. Small amounts of liquids were given in latent phase. Patient was encouraged to be ambulant.

Inj. Promethazine 25mg IM or Inj. Tramadol 50mg IM given to allay anxiety and for analgesia. Inj. Ampicillin 500mg IM given at membrane rupture patient is encouraged to lie down in left lateral position when active phase started. Patients were kept NBM monitoring done regularly to assess uterine action/frequency and cervical changes. ARM was done at 3cm colour noted 2units of syntocynon in 500ml R.L was started in all cases. Additional dose of 2-3 units was added to the drip according to the uterine action and progress of labour.

Maternal monitoring was done every 15 minutes as per the chart. Hourly Cervix dilatation and descent of presenting part to mark the partogram. Partograms were maintained for all cases.

2nd Stage: Patient shifted to labour board perineum cleaned with antiseptic lotion. Bladder catheterized to keep the bladder empty as not to cause pressure on the scar to know the urine output and colour of urine. To facilitate application of forceps. Generous mediolateral episiotomy given after local infiltration with 1% xylocaine.

When the head is on the perineum and sagittal suture is in Anterio-posterior diameter, outlet forceps was applied to cut short 2 stage of labour thereby decreasing the duration of pressure on the scar. Baby delivery was done and handed over to the paediatrician after preliminary resuscitation.

3rd stage: Placenta removed by traction, counter traction method. IV Methergine given for all patients after checking B.P. 10 units of syntocynin diluted in 500 ml of R L was started to achieve good uterine retraction. Integrity of scar in all cases checked by doing gentle examination with the hand passed into uterine cavity. Amount of Blood loss noted.

Episiotomy sutured with catgut. Patient was kept in labour ward for few hours to note vital data any bleeding PV etc and then shifted to postnatal ward. All cases were checked in postnatal ward till the time of discharge for any complaints or morbidity.

RESULTS

Total number of deliveries in the for period 2029 cases ended up in caesarean section giving an incidence of caesarean section of 23.9%. Out of these 64.6% were primary sections 35.38 were repeat sections with VBAC rate of 31.36%.

Table 1: Number of cases in Hospital statistics

Statistics	Number	Percentage
Total number of deliveries in the hospital	8476	
Total number of Caesarean sections	2029	23.9%

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Total number of elective Caesarean sections	629	31%
Total number of emergency Caesarean sections	1400	69%
Number of primary sections	1311	64.9%
Number of repeat section	718	35.38%
1 Previous sections	622	30.6%
2 Previous section	96	4.73%
Number of cases with history of one previous caesarean section delivered vaginally	322	31.36%

100 cases with history of one previous caesarean section with non-recurrent indication were selected for study and manged actively.

Table 2: Indication for their previous caesarean section

	Number
PROM	39
Fetal distress	2
Malpresentations	26
Past dates	8
Prolonged labour	6
Relative CPD	7
APH-placenta previa	1
Placental abruption	1
Severe PIH and eclampsia	10

Out of 100 cases only 6 cases had history of vaginal delivery before previous section.

Table 3: Cases selected for induction and augmentation with 1 previous caesarean section

Induction with 1 previous caesarean section	**Number of cases**	**Success rate**
Number of cases taken up for induction	28	Success rate 64.29%
Number of cases delivered vaginally	18	
Number of cases taken up for caesarean section	10	
Augmentation with 1 previous caesarean section		
Number of cases taken up for augmentation	28	Success rate 94.4%
Number of cases delivered vaginally	18	
Number of cases taken up for caesarean section	10	

Out of 100 cases, 28 cases were induced with Oxytocin, 18 cases were delivered vaginally and 10 cases ended up in caesarean section giving a success rate of 64.29%. 72 cases were augmented with Oxytocin, out of 68 delivered vaginally and 4 cases ended up in caesarean section giving a success rate of 94.4%.

Table 4: Indication of caesarean section in present group selected for VBAC

Indication of caesarean section in present group selected for VBAC	**Number of cases**
Foetal distress	4
Prolonged latent phase	6
Cervical dystocia	1
Inco-ordinate uterine action	1
Threatened rupture	2
unexplained maternal tachycardia	1
scare tenderness	1
Maternal morbidity in cases of vaginal delivery	
Retained placenta	1
Cervical tear	1
Atonic PPH	1
Extension of Episiotomy wound	2
1 scare dehiscence	1

Indication of repeat sections in 14 cases originally scheduled for trial vaginal delivery and for the above reasons had to end up in repeat section.

Out of the 86 cases successfully delivered vaginally, 40 cases were assisted with forceps and the rest 46 cases delivered normally.

In one case, manual removal of placenta was done under GA as the placenta was not expelled even after administering oxytocin. One case of atonic PPH was controlled with 20 units syntocynon and methergine. Laparotomy and rent repair were done for one case of scar dehiscence.

Blood transfusion was required for 2 cases, for one case of PPH and another for Laparotomy patient.

Maternal mortality- Nil

Perinatal Mortality- Nil.

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Post-natal morbidity – 3 cases had raised temperature in post-natal period. Vaginal swab was taken and urine c/s was done. Fever was controlled with antimalarials and antibiotics.
All cases established lactation within 24 hrs. Permanent sterilization was advised for all.
Those who have not gone for sterilization were discharged on 3rd postnatal day.
All cases were followed for 4 weeks. Follow up was uneventful.
Maximum number of cases were in the age group of 20-25 years and second largest between 26-30 years. 94% of study patients were second gravida s with 1 previous caesarean section.

Active stage	**Number of cases**	**Percentages**
Duration in hours		
1 hr	12	14%
2 hr	4	48%
3 hrs	25	29%
4 hrs	4	5%
5 hr	3	3%
6 hrs or more	1	1%

Maximum number achieved complete dilatation in 2 hrs second larger group achieved dilatation in 3 hours.

Duration of 1 st stage	**Number of cases**
6 hrs	48
8 hrs	40
10 hrs	6
>12 hrs	6
Duration of second stage	
<20 min	29
20 min	21
30 min	33
40 min	3
Duration of third stage	
5 min	29
10 min	33
15 min	23
>15 min	1

Total duration of latent phase i.e. from onset of labour pains to 3 cm dilatation. Maximum number of cases were delivered with 30 minutes. In most of the cases placenta was expelled within 10 minutes
Rate of cervical dilatation in centimetres/hr.

Rate cm/hr	**Number of cases**
Oxytocin augmented	
1.16 cm/hr	1
1.4 cm/hr	3
1.75 cm/hr	4
2.3 cm/hr	25
3.5 cm/hr	41
7 cm/hr	12
Total	86
Non augmented	
< 1 cm	4
1 cm/hr	4
1.25 cm/hr	8
1.5 cm/hr	12
1.75 cm/hr	20
2 cm/hr	6
2.3 cm/hr	6
Total	60

In maximum number of cases, rate of cervical dilatation with syntocinon has been 3.5 cm/hr, next being 2.3 cm/hr. In 12 cases cervix dilated completely within one hour. In non-augmented cases rate of dilatation was slow compared to augmented ones. This clearly shows the advantage of augmentation by increasing the rate of dilatation, decreased the time taken for labour thus decreasing strain over the scar.
Rate of dilatation in cases which ended up in section.

After trial of labour	**Number of cases**	**Rate of dilatation cm/hr**
Failed induction	6	No response even after 12 hours of induction
Cervical dystocia	1	No response to oxytocin even after 3 hrs of augumentation at 3 cm
Fetal distress	4	<0.5 cm/hr in 1 st 2 hrs ARM was done meconium stained
Threatened rupture	2	<0.7 cm/hr
In coordinate action	1	No response of cervical dilatation

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DISCUSSION

During the last decade there is a rise in caesarean section rate for various indications like APH, Breech, Severe PIH, foetal distress etc. Though with the introduction of antibiotics, safer anaesthetics and blood transfusion facilities. Caesarean section has become relatively safe, the higher rates of morbidity, increased cost of caesarean section, elective abdominal delivery is considerably more expensive than vaginal delivery. Hospital charges are also greater for abdominal procedures due to length of stay and anaesthesia. Hence to decrease this increased rate of caesarean section and morbidity associated with caesarean section, there is a need to consider for a trial of vaginal delivery in cases of non-recurrent indication for previous caesarean section. In non-recurrent cause when the present pregnancy is expected to end in natural delivery, operative interference is sometimes required for unfavourable behaviour of the scar or cervix. It is difficult to determine what the proper caesarean rate is for a particular institution with the referral of high risk obstetric patients to the institution from peripheral centres. It must be considered that an increase in the primary caesarean section rate for a period of time will result in an increase in the repeat section rate in succeeding years, even though the primary section rate may have decreased. The incidence of caesarean section in our experience had risen in the last one & half decades from 8.17% to 23.9%. There is a steady increase in the repeat caesarean section rate. In our hospital out of 2029 caesarean pregnancies 718 were repeat sections. The incidence of repeat caesarean section is 35.38% including 2 pr section cases. Out of 100 cases selected 6 cases had history of vaginal delivery before previous section and ended in vaginal delivery successfully. A successful vaginal delivery after previous caesarean section does not guarantee against future dehiscence of the scar, but the risk of rupture decreases dramatically in subsequent VBACS. Overall rate in total cases of post-caesarean deliveries - 31.36% which correlated with the results of various authors as shown.[5,6]

Successful VBAC in the selected cases is 86%. In the present series with active management, trial vaginal delivery was successful in 86% cases. The remaining 14% cases ended up in emergency repeat section. Out of the 28 cases induced with syntocynin 64%% ended up in caesarean section and the rest had successful vaginal delivery. Out of the 72 cases augmented with syntocynin 5%% cases ended up in caesarean section mostly due to foetal distress, threatened rupture and unsatisfactory progress of labour. Those cases which ended up in vaginal delivery had good response to oxytocin drip in 2 hours. Those which have ended up in caesarean section did not show any response to oxytocin. Four patients who underwent caesarean section for CPD were selected for trial of Vaginal delivery as pelvis was thought to be adequate for vaginal delivery and they had vaginal delivery without any complications.

Of the 6 cases of previous section done for prolonged labour due to inertia were delivered vaginally. These suggest that probably these cases were interfered early and could not have a proper trial of labour and the clinical impression of disproportion was erroneous or unrecognized malposition like occupito posterior position or big baby might have complicated the issue. The rate of cervical dilatation for these cases who are augmented with syntocinin and who were not given syntocinon as 86% of the cases have shown rapid dilatation and delivered within 2-3 hours after syntocinon where as 52% of the patients delivered 4-5 hours without augmentation. Those cases which have ended up in section had minimal dilatation of cervix after syntocynon i.e. < 0.5 cm/hr in most of the cases.

With this change in recommendations, the annual incidence of vaginal birth after caesarean increased from 5/100 (5%) in 1985 to 28.3/100 (28.3%) in 1996.[7] At an individual level, successful vaginal birth after cesarean is associated with a lower risk of maternal morbidity and fewer complications in future pregnancies; at a population level, VBAC is associated with an overall decrease in cesarean delivery.[8,9] However, neither elective repeat cesarean delivery (ERCD) nor TOLAC is without risks. With increasing number of TOLAC, there were also reports of uterine scar dehiscence or rupture and associated maternal and/or neonatal morbidity and mortality.[10-12] In the next decade, there was a steep decline in the frequency of VBAC down to an incidence of 8.5/100 (8.5%) in 2006,[13] likely caused by concern for perinatal morbidity and associated medical-legal liability.

The recent Practice Bulletin by the American College of Obstetricians and Gynecologists (ACOG) on Vaginal Birth After Previous Cesarean Delivery recommended that “most women with one previous cesarean delivery with a low transverse incision are candidates for and should be counseled about VBAC and offered TOLAC.”[14] Despite this, the option of TOLAC is no longer available in one-third of hospitals and clinicians are less inclined to offer TOLAC.[15,16] System-level changes, along with better identification of candidates of TOLAC, would likely be required to increase the VBAC rate.

In summary, oxytocin induction or augmentation during trial of labour is effective in a majority of patients and is recommended, in response to standard obstetric indications. Furthermore, early cervical dilatation during augmentation of labour has predictive value regarding route of delivery.

CONCLUSION

Present study demonstrates the safety of allowing women who have had previous caesarean section to go into labour to determine whether they can be delivered vaginally in non-recurrent cases. These

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labours can be safely induced or accelerated by Oxytocin drip.

A trial vaginal delivery after prior caesarean delivery results in a clear decrease in the caesarean section rate and its attendant complications. An increasing number of vaginal deliveries among patients previously delivered by caesarean section may be expected to reduce medical costs substantially. A trial vaginal delivery is associated with lower risk of death and less significant morbidity for both mother and foetus.

Maternal and perinatal mortality can be lowered by careful supervision of post caesarean pregnancies and labour and right decision regarding its outcome. Every case should be judged individually for proper management irrespective of recurrent or non-recurrent indication for previous section. Use of Syntocinon drip for induction or augmentation is not a contraindication when the integrity of scar is good and it reduces the duration of 1st and 2nd stages of labour.

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