

# The Outcome of Labour in Primigravida with Term Gestation and Unengaged Head at Onset of Labour

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**Abstract:** Background: Primigravida are potential group at risk for unengaged head. monitoring of labour is done in these patients and comparison on mode of delivery was done. Method: It is prospective interventional study; carried at dhiraj hospital. 100 primigravida patients were observed. Result: In the present study out of 100 women, in 65.00% of women had Normal Vaginal Delivery where as remaining 35.00% women required LSCS. Conclusion: Proper monitoring if done in primigravida in labour rate of operative interference can be cut down.

**Keywords:** Primigravida, Onset of Labour.

## 1. Introduction

Primigravida are the group at risk. As Ian Donald has said that "Primigravida is a dark and untrained horse and potential for child bearing is determined by the outcome of labour"

Labour is onset of regular uterine contraction followed by progressive cervical dilatation, effacement and descent of presenting part. Engagement is the first step in the mechanism of labour of a primigravida. Those with unengaged head at onset of labour are considered to be at high risk, potential candidate for an operative delivery.<sup>1</sup>

In the last decade, the rising rate of LSCS is under critical review. One of the main reasons of this escalation, is direct LSCS of primigravida, with unengaged fetal head at term, which is a frequently encountered finding in obstetric practice.<sup>2</sup>

It has been a traditional concept in obstetrics, that engagement occurs before 38 weeks in primi and that engagement before the onset of labour, increase the chance of safe vaginal delivery and non-engagement before the onset of labour, due to underlying cause, decrease the chance of vaginal delivery.<sup>3</sup> However, with good contractions, in most of cases, head engaged in due course of time, & vaginal delivery was a happy outcome.

However, controversy still exists over the significance of the fetal head level in early labour, whether it bears any relation with mode of delivery.<sup>4</sup>

## 2. Mechanism of Engagement

Def.-- When the maximum Transverse diameter of foetal head cross over the plane of the pelvic inlet, the head is Engaged.

There are two transverse diameters on the foetal skull– Bi-temporal –7.0 cms & Bi parietal diameter– 9.5 cms.

As the head at term, engages in the Transverse diameter of Inlet (diameter of engagement), it being the longest diameter on inlet (engaging diameter being Occipitofrontal—A-P longest distance of head), the Biparietal diameter pass along the A-P diameter of inlet, which is the shortest diameter on inlet.

As a result, the maximum transverse diameter on foetal head, needs to negotiate the minimum diameter on inlet, for the head to engage, & thus start the process of labour. A very important & meaningful happening, as a forecast of successful vaginal delivery.

The whole process is crucial for, not only the onset, but also the culmination of labour.

## 3. Conditions Related to Unengaged Head

### Maternal conditions:

- 1) Contracted pelvis—or a narrow inlet
- 2) C. P. D
- 3) Placenta praevia- grade III & IV, & post. Praevia
- 4) Polyhydramnios
- 5) Any mass in lower segment
- 6) High Inclination pelvis

### Foetal conditions:

- 1) Deflexed head - commonest reason
- 2) Prematurity
- 3) Twin pregnancy
- 4) Hydrocephalus
- 5) Anencephaly

In obstetrics, station refers to descent of fetal presenting part (most commonly head) in pelvis; 0 station means the head is at the middle of the pelvis, at ischial spine level. This is called anengaged head. Primigravida with unengaged foetal head at term, should be regarded as high risk cases. It is seen that nulliparous women with floating head demonstrate higher rates of caesarean section than those with dipping or engaged head in early labor.

Lack of engagement at the onset of labour, although a statistical risk factor for dystocia, should not be assumed to necessarily predict, fetopelvic disproportion. This is especially true for parous women, because the head typically descends later in labor. The labour that is unduly prolonged, is likely to give to one or more of three types of distress namely fetal, maternal or 'obstetrician distress.

It is necessary to monitor the foetal head level periodically during labour, as it helps doctor to evaluate how labor is progressing. Other parameters that we take into account, include cervical dilatation, how much the cervix has enlarged for baby to pass through, and cervical effacement, or how thin the cervix has become to promote delivery.

Over time, if baby isn't progressing towards pelvic outlet down the pelvic cavity, doctor needs to re-evaluate the labour factors, to consider other options for a delivery, if necessary by cesarean section.

Our study was aimed to know the outcome labour, in cases with unengaged head at term and at onset of labour in primigravida and to evaluate its effect on the mode of delivery and fetal outcome.

#### 4. Aims and Objectives

##### Aim

To study the outcome of pregnancy in primigravida patients with unengaged head at term.

##### Objectives

To study the course of labour, need for intervention, and fetal outcome, in primigravida with unengaged head, at term gestation, at onset of labour

##### Study Population

A total of 100 patients were enrolled in this study, who were attending our ANC, or are admitted in the labour room, over a period of last six months.

##### Inclusion Criteria

- 1) Primigravida
- 2) Full term gestation
- 3) live singleton pregnancy
- 4) vertex presentation

##### Exclusion Criteria

- 1) Multigravida
- 2) Primigravida with engaged head

- 3) Non vertex presentation
- 4) Multiple gestation
- 5) Major degree of C.P.D.
- 6) PROM
- 7) All high risk cases, with medical problems like anemia, heart disease, PIH.

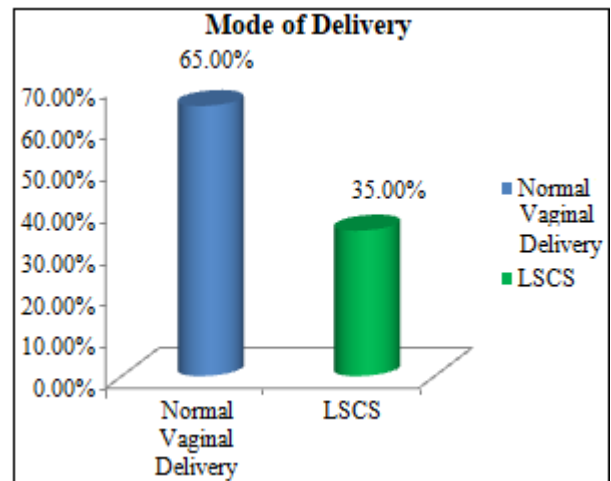
**Table 1: Mean Age**

Parameter	Mean	SD
Age	24.50	3.59
Birth Weight	2.89	0.47

In the present study, we have enrolled total 100 women, who fulfilled the selection criteria of the study. Mean age of the enrolled participants was 24.50±3.59 years where as mean birth weight of new born was 2.89±0.47 kg.

**Table 2: Mode of Delivery**

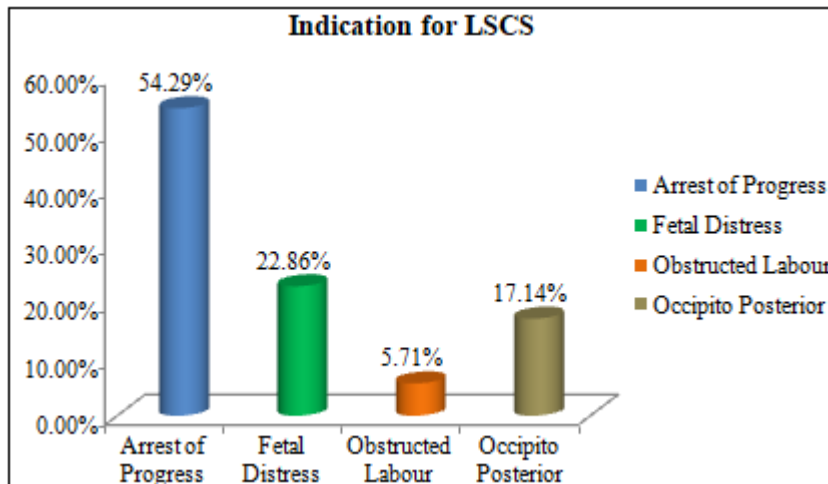
Mode of Delivery	N	%
Normal Vaginal Delivery	65	65.00%
LSCS	35	35.00%



In the present study out of 100 women, in 65.00% of women had Normal Vaginal Delivery where as remaining 35.00% women required LSCS.

**Table 3: Indication for LSCS**

Indication for LSCS	N	%
Arrest of Progress	19	54.29%
Fetal Distress	08	22.86%
Obstructed Labour	02	05.71%
Occipito Posterior	06	17.14%

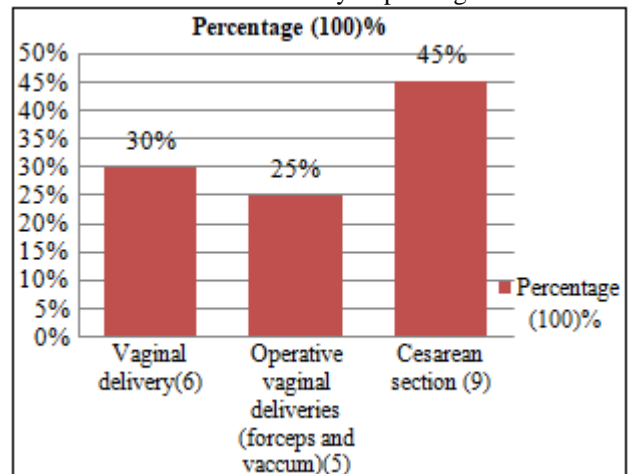


**Causes of Arrest of Labour, as diagnosed on re-assessment**

- PROLONGED LABOUR IN FIRST STAGE :**  
 Minor degree cephalopelvic disproportion, in these patients pelvis reassessment was done and patient was taken for c-section.  
 Malposition(occipito posterior)  
 Instead of taking patient for c-section, patients were given trial for normal delivery. First stage of labour was monitored for extended period,& with all maternal & foetal parameters remaining normal, and successful normal delivery was the outcome.
- PROLONGED LABOUR IN SECOND STAGE :**  
 Maternal exhaustion was the result of prolonged second stage of labour. The patient was helped by reducing the second stage of labour, appropriate operative vaginal delivery was conducted. .
- Full bladder was seen in 4 cases in which 2 patients delivered normally after catheterization ,and in 2 patients repeated filling of bladder suggesting of obstructed labour,  
 They were delivered by an L.S.C.S..

Mode of delivery in prolonged labour (20)	Percentage (100)%
Vaginal delivery(6)	30%
Operative vaginal deliveries (forceps and vaccum)(5)	25%
Cesarean section (9)	45%

**Table 4: Mode of delivery in prolonged labour.**

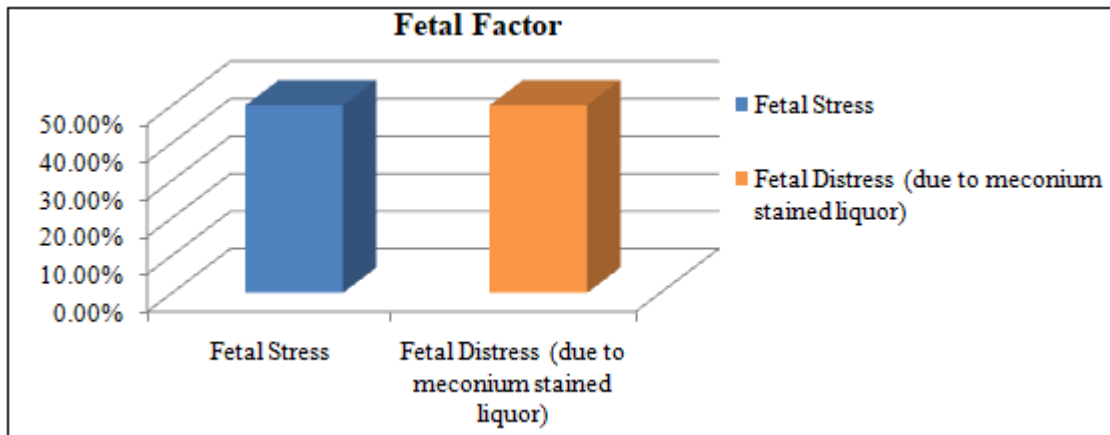


**Table for prolonged labour**

Total 20 patients were observed to have prolonged labour . Augmentation were tried in selected cases. Monitoring of patients was done with help of partogram .And timely intervention was done. 6 patients delivered normally and in two patients forceps was applied and in three patients vaccum delivery was conducted , remaining 9 required LSCS, as augmentation failed to effect a progress.

**Table 5: Fetal Factor for a C.S. delivery**

Fetal Factor	N	%
Fetal Stress( tachycardia)	4	50.00%
FetalDistress(Tachycardia with meconium stained liquor)	4	50.00%

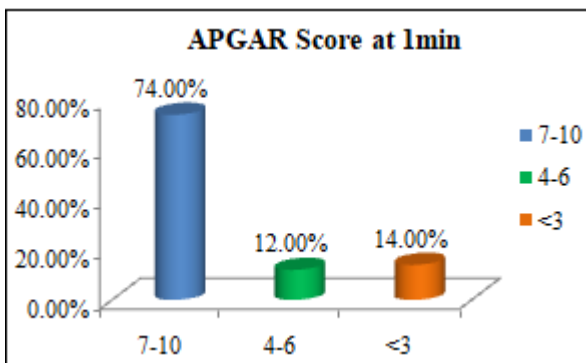


Graph 5: Causes of Fetal Factor

From the above table and graph it can be concluded that Arrest of Progress was the primary indication for the LSCS, causing Fetal Distress in (22.86%) cases, Occipito Posterior (17.14%) and Obstructed Labour (5.71%), with undiagnosed underlying reason.

Table 6: APGAR Score at 1min

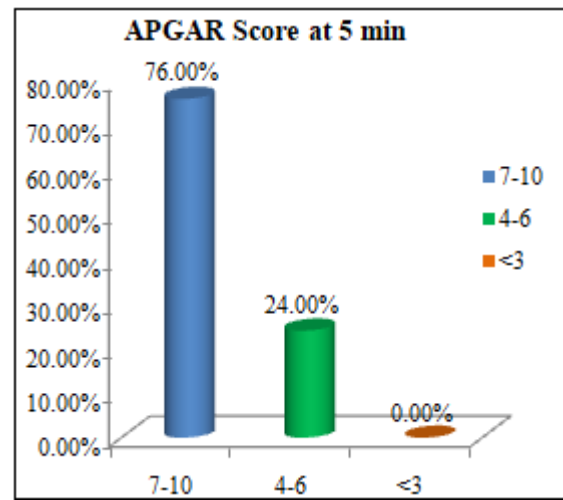
APGAR Score	N	%
7-10	74	74.00%
4-6	12	12.00%
<3	14	14.00%



In present study 74.00% of new born having APGAR score 7-10 @ 1min followed by < 3 (14.00%) and 4-6 (12.00%)

Table 7: APGAR Score at 5min

APGAR Score	N	%	NICU Admission
7-10	76	76.00%	1
4-6	24	24.00%	4
<3	00	00.00%	0



In present study 76.00% of new born having APGAR score 7-10 @ 5min and remaining had 4-6 (24.00%) . We also concluded that 5% of new born required NICU admission whereas 1 new born had APGAR Score more than 7, four new born had APGAR Score in between 4 to 6.

This was a limited degree of morbidity, as all the new borns recovered well, & were returned to mother for further care, without any residual problem or limitation.

**Morbidity Associated with C-Section**

For 35 cases who underwent c section, more morbidity was associated, compared to that of vagina delivery. Patient had to stay for longer period in hospital, suffered more pain, and two patients required resuturing due to wound infections.

**5. Discussion**

Primigravida, are the group at risk. Primigravida at term gestation with unengaged fetal head with spontaneous onset of labour, is not an indication of elective LSCS, and vaginal delivery is possible with close intra-natal monitoring with good perinatal outcome. It was very common reason for a longer duration of labour, increasing maternal morbidity, and escalating the requirement for interference during labour. Incidence for operative vaginal delivery, and a C.S. delivery increase.

One fact observed was that, commonest indication for cesarean section was mainly due to arrest disorders,

resulting in various maternal & foetal presentations, as mentioned above.

Vaginal delivery is the main aim for the delivery of fetus. On adequate monitoring the cases can be avoided to undergo c-section. With good observation post operative morbidity was reduced.

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