

Rate of Vaginal Delivery among Primigravida with Floating Head at Onset of Labor and Fetal Outcome

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Abstract: Background: The criteria for diagnosing labor arrest disorders in the first and second stage of labor remains controversial. It is generally accepted that high fetal station in primigravidas in labor near term may indicate a threat to the normal progress of labor because of feto-pelvic disproportion or obstruction of the fetal passage by tumor or the placenta. The different causes of high fetal head are as follows: Cephalo pelvic disproportion, fetal malposition (deflexed head brow presentation occipito-posterior position), large fetal size, placenta previa, cord around fetal neck and uterine fibroid, inaccurate calculation of Expected date of delivery, full bladder may prevent the fetal head from entering the pelvis and therefore should be emptied before examination, polyhydramnios, multiple pregnancy, pendulous abdomen. In some cases there is no discernable cause of high fetal head. Careful clinical monitoring is needed to ensure that contractions do not exceed one every two minutes, or fetal hypoxia may result from restriction of the maternal afferent placental blood flow. A wide range of pain management methods are used by women during childbirth. Commonly, these include non-pharmacological interventions as immersion in water, relaxation techniques (yoga, music, audio), acupuncture, manual methods (massage, reflexology), transcutaneous electrical nerve stimulation (TENS). And pharmacological interventions (inhaled analgesia, opioids, non-opioid drugs, local anesthetic nerve blocks, epidural and intra-theal injections of local anesthetics or opioids, or both). **Aim of The Work:** The aim of this study is to determine the rate of vaginal deliveries in primigravida with floating head at onset of labor and early neonatal outcome. **Patients and Methods:** This study was conducted on 250 primigravidae with unengaged fetal head presented at term in active labor in the period between April 2016 and October 2017. Any solid indication for cesarean section whether in the mother or the fetus was excluded. These cases were given a full trial of labor and the progress of each was recorded on a partogram. The mode of delivery, the duration of labor (first and second stage), the weight of the new born and the Apgar score were all recorded. Also maternal morbidity and mortality were recorded. Epidural anesthesia was given to the patients on demand and the effect of it on the mode of delivery, the duration of the first and second stage and the Apgar score was reported. **Results:** we found that most of the patients included in the study delivered vaginally (82%) while only 18% delivered by cesarean section. The primigravida with unengaged fetal head at onset of labor, although at risk for C.S. most of them would deliver vaginally if they were given a full trial of labor and watched carefully. The length of the first and second stage of labor might be prolonged slightly in these patients. The need for oxytocin augmentation is also increased in these patients. The Apgar score at 1 minute and 5 minutes are also decreased in the new-born of these primigravidae. There were no differences in maternal morbidity among the primigravidas presented with unengaged fetal head and those presented with engaged fetal heads. The use of epidural anesthesia doesn't affect the rate of C.S. although it may lengthen the duration of the first and second stage of labor. In addition to that; Apgar score is not affected by the use of epidural. **Conclusions:** The primigravida with unengaged fetal head at onset of labor, although at risk for C.S. most of them will deliver vaginally they are given a full trial of labor and watched carefully.

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Keyword: Rate; Vaginal Delivery; Primigravida; Floating Head; Onset; Labor; Fetal Outcome

1. Introduction:

Labor is an important event with unique experience exclusively in a woman's life, which gives her the greatest satisfaction by delivering her own child, the wonder creation of master craftsman (*Mahendra and Prameela, 2014; Shaikh and Shaikh, 2014; Mahajan et al., 2016*).

Labor is the onset of regular uterine contractions followed by progressive cervical dilatation, effacement and descent of presenting part (*Mahendra and Prameela, 2014*).

In this twenty-first century, there are two routes of birth; one is caesarean section or the other is vaginally through the birth canal. Once upon a time,

there was no alternative to vaginal birth, except death. But now, women do have a choice that has been provided by the wonders of modern technology and that alternative of vaginal birth is Caesarean section (*Jisun and Kabir, 2014*).

In the last two decades, the rising rate of lower segment caesarean section (LSCS) is under critical review. One of the main reasons of this escalation is direct LSCS of primigravidas with non-engaged fetal head at term, which is a frequently encountered finding in obstetric practice (*El-Nassery et al., 2013*).

Fetal head is said to be engaged when its widest diameter has fit into the pelvic inlet. It had been a traditional conception in obstetrics that engagement of fetal head occurs by 38 weeks gestation in primigravida. In majority, engagement occurs between 38 and 42 weeks or even during the first stage of labor (*Mahendra and Prameela, 2014; Shaikh and Shaikh, 2014*).

There are various factors influencing a woman's choice of mode of birth. Demographic factors and an individual's expectation of childbirth have a bearing on her decision-making process. Others are previous birth experience, potential complications arising from the mode of birth, and concerns over the health and safety of mother and baby (*Loke et al., 2015*).

The criteria for diagnosing labor arrest disorders in the first and second stage of labor remains controversial (*Dresang and Leeman, 2012*). It is generally accepted that high fetal station in primigravidas in labor near term may indicate a threat to the normal progress of labor because of fetopelvic disproportion or obstruction of the fetal passage by tumor or the placenta (*Mahajan et al., 2016*).

Prediction of mode of delivery, particularly identification of pregnant women at risk for Cesarean delivery, has the potential to improve pregnancy outcomes and women's satisfaction with their childbirth experience. Early identification of these women, before onset of labor, would be optimal, as emergency Cesarean section during labor has been shown to be associated with an increased risk for maternal and/or fetal complications when compared with elective Cesarean delivery (*Levy et al., 2012*).

Non engagement at the onset of active phase of labor is a predictor of the risk of caesarean section. Surgical interventions are quite high. Latent phase is prolonged and duration of first stage increased from 12-14 hours due to improper adaptation of fetal head, high station and misdirection of uterine expulsive forces (*Kurshid and Sadiq, 2012*).

Friedman and Sachtleben, (1976), stated that in primigravidas with high head, latent phase is increased and mean duration of labor was 14.4 hrs. The rate of caesarean sections in such cases was 36%

as compared to overall 15% incidence of caesarean sections (*Mahajan et al., 2016*).

Aim of the Work:

The aim of this study is to determine the rate of vaginal deliveries in primigravida with floating head at onset of labor and early neonatal outcome.

2. Patients and Methods

This prospective study was conducted on (250) primigravidas presented to the Obstetric Emergency Unit of Al-Azhar University Hospital, in active labor with unengaged fetal head during labor.

Full history was taken from each patient including the personal gynecological and obstetric history, medical and surgical history was also taken to exclude systemic diseases.

Vital signs were measured, Investigations including complete blood picture, and coagulation profile in case the patient required the use of epidural anesthesia for painless labor. Ultrasound were done to assess the expected date of delivery.

Vaginal examination was done and cervical dilatation and effacement were determined on admission.

Labor was assessed using the partogram in every patient. Fetal heart rate was monitored for each primigravida during the labor period.

The labor outcome was assessed. In cases delivered vaginally, the duration of the first and second stage of labor were reported. The indications of Cesarean section were also reported if the termination was by cesarean section. The Apgar score at 1 and 5 minutes were recorded. Fetal weight was measured and recorded in grams.

The statistical methods

Data were statistically described in terms of mean±SD (Standard deviation), and range, or frequencies (number of cases) and percentages when appropriate. Comparison of numerical variables between the study groups was done using Student t-test for independent samples. For comparing categorical data, Chi-square (χ^2) test was performed. Exact test was used instead when the expected frequency is less than 5. p values less than 0.05 was considered statistically significant. All statistical calculations were done using computer programs SPSS (Statistical Package for the Social Science; SPSS Inc., Chicago, IL, USA) version 15 for Microsoft Windows.

3. Results:

Demographic data of patients

Observation of the age in study group reveals the mean age is 22.5±3.38 years. The minimum was 18 years old and the maximum was 35 years old.

The body mass index of our study ranged between 20.7-38.28 with a mean value of BMI of 27.96 ± 3.066 and during this study the majority of women were obese with a mean BMI of 33.2 ± 2.38 .

This table shows that the gestational age ranged between a minimum of 37 weeks and a maximum of 40 weeks. The mean gestational age was 39.19 ± 1.07 weeks.

Data during the delivery

1. Liquor AFI:

The amniotic fluid index of our cases ranged between 4-20 cm with a mean value of BMI of 9.88 ± 1.979 cm.

2. Labor Duration:

The labor duration that ranged between a minimum of half an hour and a maximum of 16.5 hours. The mean duration was 6.366 ± 2.955 hours. The majority of women had prolonged stages of labor with a mean period of 6.552 ± 1.88 hours.

3. Timing of engagement:

The timing of head engagement in our study since admission. It ranged between 1 hour after admission, as a minimum duration and 15 hours after admission as a maximum duration. The mean timing of head engagement was 5.51 ± 2.76 hours.

4. First stage of labor:

The first stage of labor of the primigravidae in our study. It ranged between 0.58 hours as a minimum duration and 14.5 hours as a maximum duration. The mean duration of the first stage was 5.98 ± 2.65 hours.

5. Second stage Duration:

The duration of the second stage of the primigravidae in our study. It ranges between 10 minutes as a minimum duration and 150 minutes as a maximum duration. The mean duration of the second stage was 36.96 ± 23.93 min.

Parameters of head during delivery

1. Station: The fetal head on admission. All were non-engaged. The -3 station represented 16 cases (6.4%), the -2 station represented 43.2 of cases (108 cases) while -1 station present in 126 cases (50.4%).

2. Head position: the majority (57.6%) was in LOA (left occipito-anterior).

Anatomical Maternal parameters

1. Shape of pelvis:

In our study, 88.4% (221/250) of our females have gynecoid pelvis while 11.6% (29/250) have android pelvis.

2. Pelvic outlet:

In our study, 80.4% (201/250) of our females have adequate pelvic outlet while 19.6% (49/250) have borderline pelvic outlet.

3. Perineal Length:

The perineal length in females of our study. It ranged between 2 cm as a minimum and 5 cm as a maximum with a mean of 3.17 ± 0.653 cm.

Parameters of delivery forces

1. Strain degree: 40.8% was excellent, 36.0% was good, 3.6% fair and 1.6% poor.

2. Augmentation: The need for augmentation in our study and the number of units of oxytocin used for **augmentation**. Augmentation needed in 181 cases (72.4%) of the pregnant women, 70% of them needed 5 units of oxytocin while 2.4% needed 10 units of oxytocin for augmentation.

3. Fundal Pressure: This table demonstrates that we perform fundal pressure in 110 women (44%) of the women who delivered vaginally while we didn't perform fundal pressure in 140 case (56%) this include 95 (38%) women delivered vaginally and 45 (18%) women delivered by CS.

4. Epidural: Thirty five women of our cases (14%) received epidural analgesia while 215 (86%) didn't receive epidural analgesia during the process of labor.

5. The use of forceps: In our study, we need to use the forceps successfully to deliver the baby in 8 cases (3.2%) while 197 (78.8%) delivered without the need to use forceps.

6. Mode of delivery: The mode of delivery of women in our study. 205 women of our study (82%) delivered vaginally while 45 women (18%) underwent delivery using caesarean section.

7. Indication of Caesarean Section: The number and percent of different indication of caesarean section in our study; 20% of cases underwent CS were due to arrest of progress, 68.8% for fetal distress while 11.2% of cases were due to obstructed labor.

Episiotomy: 203 cases (81.2%) had positive episiotomy. 35 cases (14%) was lateral and 168 (86.0%) was mediolateral.

Episiotomy was performed in 203 (82%) cases of vaginal delivery in our study; in 35 of them we perform lateral episiotomy (14%) while we perform mediolateral episiotomy in 168 (86%).

Complications:

The number and percent of maternal complications. They included complete perineal tear in 8 cases (3.2%), incomplete perineal tear in 5 cases (2.0%) and vaginal tears in 21 cases (8%).

Fetal data

1. Estimated and actual fetal weight:

The estimated fetal weight of the newborn baby in our study ranged between 2.3-3.8 kg with a mean weight of 3.08 ± 0.27 kg while the actual fetal weight range between 2.0-4.3 kg with a mean weight of 3.15 ± 0.36 kg.

2. Apgar score:

The APGAR score at 1 minute, which ranged between 0-10 with a mean of 6.17±1.88 and that APGAR score at 5 minute that ranged between 1-10 with a mean value of 8.37±1.26.

3. Resuscitation: Smooth was found in 229 cases (91.6%) and vigorous in 21 cases (8.4%).

4. Neonatal Intensive Care Unit admission (NICU):

Twenty-one of babies of our study need to be admitted to the neonatal intensive care unit (8.4%) while most of the babies 229 (91.6%) pass the post-delivery period smoothly without admission to the NICU.

Table 1: Correlation between the fetal head position and head station in all non-engaged cases.

Position		Station			
		-3	-2	-1	Total
LOA (Left occipito-anterior)	Count	9	54	81	144
	% within Station	56.25%	46.55%	64.29%	57.6%
LOP (Left occipito-posterior)	Count	0	0	3	3
	% within Station	0.0%	0.0%	2.37%	1.2%
LOT (Left occipito-transverse)	Count	0	9	0	9
	% within Station	0.0%	7.67%	0.0%	3.6%
ROA (Right occipito-anterior)	Count	2	12	21	35
	% within Station	12.50%	10.34%	16.67%	14%
ROP (Right occipito-posterior)	Count	5	24	21	50
	% within Station	31.25	20.68%	16.67%	20%
ROT (Right occipito-transverse)	Count	0	9	0	9
	% within Station	0%	7.76%	0.0%	3.6%
Significance		P = 0.01			

The table and graph above showed the correlation between the fetal head position and station, we found that the number and percent of primigravidae with fetal head in any station is more in the left occipito anterior than Right occipito anterior.

Also, the number and percent of primigravidae with fetal head in any station is more in the Right occipito posterior than Left occipito posterior. Lastly, the number and percent of primigravidae with fetal head in any station are equal.

Table 2: Correlation between the shape of pelvis and head station in non-engaged cases.

Shape of the pelvis		Station			
		-3	-2	-1	Total
Gynecoid	Count	14	90	117	221
	% within station	87.5%	83.33%	92.24%	88.4%
Android	Count	2	18	9	29
	% within station	12.5%	16.67%	7.76%	11.6%
Significance		P = 0.049			

The table above showed the correlation between the shape of the female pelvis and head station we found that the more the pelvis is towards the android shape the more will be the head high in station and the

more it is towards gynecoid the more will be the head low in station; that is to say there is a good positive correlation between the gynecoid pelvis and the head station and engagement.

Table 3: Correlation between the pelvic outlet and head station in non-engaged cases of our study

Pelvic outlet		Station			
		-3	-2	-1	Total
Adequate	Count	11	85	111	207
	% within station	68.75%	78.7%	88.1%	82.8%
Borderline	Count	5	23	15	43
	% within station	31.25%	21.3%	11.9%	17.8%
Significance		P = 0.068			

The table above showed the correlation between the pelvic outlet and head station in non-engaged cases of our study we found that the more the pelvic outlet is adequate the more the head low in station and

the more the pelvic outlet is borderline the more the head is high in station; that is to say there is a good positive correlation between adequate pelvic outlet and the head station and engagement..

Table 4: Correlation between the mode of delivery and head station in non-engaged cases of our study

Mode of delivery		Station			
		-3	-2	-1	Total
C.S	Count	3	23	21	45
	% within station	18.75%	21.3%	16.67%	18%
Vaginal	Count	13	85	105	205
	% within station	81.25%	78.7%	83.33%	82%
Significance		P = 0.70			

The above table showed the correlation between the mode of delivery and the fetal head station we found a good positive correlation between the station and the incidence of caesarean section, that is to say the more the head is high in station the more will be

the incidence of caesarean section. Also, there is a negative correlation between the high station and the incidence of vaginal delivery, this means the more the head is high in station the less will be the chance of deliver vaginally.

Table 5: Correlation between the pelvic outlet and maternal complications in non-engaged cases of our study.

Pelvic outlet		Maternal complications		
		Yes	No	Total
Adequate	Count	52	155	207
	% within station	66.66%	90.12%	82.8%
Borderline	Count	26	17	43
	% within station	33.34%	9.88%	17.2%
Significance		P = 0.146		

The above table showed the correlation between the pelvic outlet and maternal complications in non-engaged cases of our study; the more the pelvic outlet is adequate the less the maternal complications which is a negative correlation between adequacy of pelvic outlet and maternal complications. Also, there is a positive correlation between the high station and the incidence of maternal complication, this means that the more the head is high in station the more the incidence of maternal complications.

4. Discussion:

Labor is the onset of regular uterine contractions followed by progressive cervical dilatation, effacement and descent of presenting part. Fetal head is said to be engaged when its widest diameter has fit into the pelvic inlet (*Mahajan et al., 2016*).

Agrawal and his colleagues, (2015), in their study reported that the gestational age of their cases ranged between 37-40 week which was in agreement with Current study (*Agrawal et al., 2015*).

Mahendra and Prameela, (2014), in their study included primigravidae with gestational age 38-42 gestational age which was contradicting with Current results "more gestational age than Current study" (*Mahendra and Prameela, 2014*).

Also, *Madaan and his colleagues*, (2015), in their study included primigravidae with gestational age ranged between 36 to 38 weeks at the time of enrollment which is also in contradict with Current study "gestational age less than Current study" (*Madaan et al., 2015*).

The amniotic fluid index (AFI) of Current cases ranged between 4-20 cm with a mean value of 9.88 ± 1.979 cm.

Madaan and his colleagues, (2015), in their study found that the mean AFI was maximum, between 34-36 weeks i.e., 13.1 cm, after which, it gradually decreased to 9.08 cm beyond 40 weeks. Mean AFI of patients with <40 weeks of gestation gradually decreased from 12.2-8.0 cm after 42 weeks implies significant relationship between post-term pregnancy and AFI which was in agreement with Current results (*Madaan et al., 2015*).

Morris and his colleagues, (2014), recommend in their study any intervention in the presence of borderline AFI (5.1 cm to 8 cm) in the third trimester. Sonographic assessment of fetal biometry may be a consideration because fetal growth retardation (FGR) can be associated with decreased amniotic fluid volume (AFV) and this runs in line with Current results (*Morris et al., 2014*).

The majority of our cases showed prolonged stages of labor 6.552 ± 1.88 hours (ranged between 0.5-16.5 hours).

In Current study the head takes 1-15 hours to be engaged from the onset of admission with a mean of 5.51 ± 2.76 hours. In contrary to Current study, **Mahajan and colleagues**, (2016), in their study showed that the non engagement of the head most commonly due to deflexed head in 42 (28%) women, Cephalopelvic disproportion (CPD) in 20 (13.34%), loop of the cord around the neck in 9 (6%), placenta previa in 8 (5.33%) whereas no cause could be identified in 60 (40%) (**Mahajan et al., 2016**).

The stages of labor in Current study were prolonged whether the first stage which ranged 0.58-14.5 hours with a mean of 5.98 hours or the second stage which ranged between 10-150 minutes with a mean of 36.96 min. In agree with our results; Mahendra and Prameela, (2014), showed in their study that the average duration of 1st stage of labor was 13 hour and 13 min ranged between 19-10.5 hour, and increased with increase with the level of the head (station -3, -2, -1). Also, average duration of second stage was 37 min (**Mahendra and Prameela, 2014**).

Also, El-Nassery and coworkers, (2013), showed in their study that the length of the first stage ranged from 1.5 hour to 14.5 hours (mean 5.98 hour). Duration of the second stage ranged from 30 minutes to 150 minutes with a mean of 46.69 minutes and this agree with Current results (**El-Nassery et al., 2013**).

Sudhir and Mishra, (2016), showed in their study of 120 cases that the Length of 1st stage of labor ranged from 7.5-10.75 hrs and the duration of 2nd stage of labor ranged from 50-110 min which was in agreement with Current results (**Sudhir and Mishra, 2016**).

Most of cases of our study showed a head about to be engaged (station -1) (50.4%) and a minority were highly non-engaged (station -3) (6.4%).

Khurshid and Sadiq, (2012), found that the causes of high head station was Deflexed head, Cephalopelvic disproportion, Premature rupture of membranes, Placenta praevia, Loops of cord around the neck, Hydramnios, Hydrocephalus, Prematurity, No etiological factor found and this disagree with Current results (**Khurshid and Sadiq, 2012**).

In Current study, the most common presenting part of the vertex was LOA (left occipito-anterior) (57.6%) followed by ROP (right occipito-posterior) (20%) while the least presenting part was LOP (left occipito-posterior) (1.2%) with no specific correlation between a specific type of presentation and head station.

Simkin, (2010) in his study and RCM, (2012), also found that the Occipito-Anterior position is ideal for birth, and the position is usually 'Left Occiput

Anterior (LOA) occasionally the baby may be Right Occiput Anterior (ROA) (**Simkin, 2010; RCM, 2012**).

The perineal length in females of Current study ranged between 2-5 cm with a mean of 3.17 ± 0.653 cm.

Lan and his colleagues, (2017), found in their study that the mean perineal body length among these primigravid women averaged 3.7 cm, with a range of 2.3-5.0 cm, and among these women, the rate of third- and fourth-degree lacerations was 3.9%. They also found that both the duration of second stage of labor and perineal body length were found to have significant while it was independently associated with third- and fourth-degree lacerations, which was in agreement of Current results (**Lane et al., 2017**).

Farghaly and his colleagues, (2017), found in their study The duration of the second stage among their deliveries was longer in those with perineal length ≥ 4 cm. which also in agreement with Current results (Farghaly et al., 2017). While Deering and coworkers in a previous study showed that there was no significant difference in the duration of second stage of labor between those with perineal length shorter and longer than 3.5 cm which was contradict with Current results (**Deering et al., 2004**).

In Current study, the use of oxytocin for augmenting the uterine contraction was used in 72.4% of our cases in 70% of them we use 5 IU of oxytocin while in 2.4% of cases we used 10 IU of oxytocin. In Mahajan and colleagues study, (2016), found that 90% of their cases needed augmentation by administered oxytocin (**Mahajan et al., 2016**). Also, **El-Nassery and coworkers**, (2013), agree with these results and found in their study that oxytocin needed to augment delivery in 72% of their study (**El-Nassery et al., 2013**).

In Current study we use fundal pressure in 44% of cases to help in vaginal deliver. In addition, we need to use the forceps to deliver 3.2% of cases which was used successfully.

Sudhir and Mishra, (2016), use forceps in 11.66% of cases of their study to deliver their cases which disagree with our study (**Sudhir and Mishra, 2016**).

In Current study we administer epidural analgesia in (14%) to relieve pain during the process of labor. **El-Nassery and coworkers**, (2013), agree with these results and found in their study that epidural analgesia needed to be administered in 14% of their cases to relieve pains during delivery (**El-Nassery et al., 2013**).

In Current study (82%) of cases delivered spontaneously through vagina while 18% of cases we need to shift to CS mostly due to fetal distress (68.8%), arrested progress of labor (20%) of obstructed labor (11.2%). And there is a positive

correlation between the head station and the incidence of caesarean section, that is to say the more the head is high in station the more will be the incidence of caesarean section. In the study of **Mahendra and Prameela**, (2014), 53% had normal vaginal delivery, 20% instrumental delivery and 26.9% delivered by CS. There was need to resort to forceps/ventose or LSCS in nearly half of the cases and this disagree with Current study (**Mahendra and Prameela, 2014**).

In Current study the indications for CS were arrest of progress in (20%), fetal distress (68.8%) and obstructed labor in (11.2%). In agreement with Current study, **Mahajan and colleagues**, (2016), found that the cause of CS were arrest progress, fetal distress, and deep transverse arrest but disagree with Current study that they need CS in 36% of their cases (**Mahajan et al., 2016**). In addition to this, **El-Nassery and coworkers**, (2013), in their study found that vaginal delivery was achieved in 79.3% of patients whereas cesarean section was performed to 31 patients (20.7%). Indications of cesarean section were arrest progress, fetal distress and obstructed labor which agree with Current results (**El-Nassery et al., 2013**).

Shaikh and colleagues, (2014), in their study found that Vaginal delivery occurred in (59%) and CS in (41%) and found that the most common cause of un-engaged head was deflexed head in (28%) women, Cephalopelvic disproportion (CPD) in (18%), loop of the cord around the neck in (4%), placenta previa (anterior) in (4%), and hydrocephalus in (1%) while no cause could be identified in (45%) and these results disagree with Current results (**Shaikh et al., 2014**).

Sudhir and Mishra, (2016), found in their study that 48.3% of their cases delivered vaginally, 35% delivered by CS, 11.66% delivered by the aid of forceps and 5% of cases delivered with the aid of ventouse this was in contrary with Current results study (**Sudhir and Mishra, 2016**).

In Current study spontaneous vaginal delivery occurred in (82%) of cases and we needed to do episiotomy in (81.2%) most of them were mediolateral episiotomy (in 86% of cases we use it) while it was lateral episiotomy in little cases (14%). **El-Nassery and coworkers**, (2013), in their study showed that 78.9% of their cases needed to have episiotomy during vaginal deliver which agree with Current results (**El-Nassery et al., 2013**).

In Current study we encountered complications in 13.6% of cases most of them were vaginal tears (8.4%), complete perineal tear in 3.2% and partial perineal tear in 2% of cases. In this way there is a positive correlation between the rate of maternal complications and the adequacy of pelvic outlet. Regarding maternal outcome, **Mahajan and their colleagues**, (2016), in their study reported a rate of

complications more than Current study (22%) and included postpartum haemorrhage (PPH) occurred in 16 (10.67%) women, perineal tear in 5 (3.33%), wound infection in 8 (5.33%), cervical tear in 2 (1.33%) and prolonged hospital stay in 2 (1.33%) cases (**Mahajan et al., 2016**).

Sheikh and his colleagues, (2014), found in their study that maternal outcome after delivery showed postpartum haemorrhage (PPH) occurred in 10% of women, perineal tear in 2% and wound infection in 7% which disagree with Current results (**Shaikh et al., 2014**).

The mean estimated fetal weight in Current study was within the normal ranged for age "ranged 2.3-3.8 kg with a mean weight of 3.08 ± 0.27 kg". this is in agree with **Mehandra and Prameela**, (2014), who found that the average birth weight was 2.37 kg ranged from 2.5-4.5 kg (**Mahendra and Prameela, 2014**).

The APGAR score at 1 minute, which ranged between 0-10 with a mean of 6.17 ± 1.88 and that APGAR score at 5 minute that ranged between 1-10 with a mean value of 8.37 ± 1.26 which was within the normal range.

Mahajan and colleagues, (2016), showed in their study that Apgar score at 5 minute was between 3-10 in in cases of the study this was in agreement of Current study (**Mahajan et al., 2016**).

Also, El-Nassery and coworkers, (2013), in their study found that APGAR score at 1 minute and at 5 minutes ranged between 1-10 and the need for admission to NICU was needed in 5.3% of their cases which is inagree with Current results (**El-Nassery et al., 2013**).

Sheikh and his colleagues, (2014), found in their study that fetal outcome as regards Apgar score at 5 minute was 7- 10 in 75%, 4-6 in 20%, 3 and below in 5% neonates and 10% of neonates required admission to NICU which was in agree with Current results (**Shaikh et al., 2014**).

Sudhir and Mishra, (2016), found in their study that showed in their study that Apgar score at 5 minute was below 3-10 in in cases of the study this was in agreement of Current study (**Sudhir and Mishra, 2016**).

The resuscitative course of most of the babies (91.6%) passed smooth while 8.4% of babies the course pass vigorous and needed to be admitted to the NICU.

In agreement with Current study, **Mahajan and colleagues**, (2016), showed in their study that 9.33% of their cases (babies) needed to be admitted to the NICU (**Mahajan et al., 2016**).

Conclusion:

From our study we can conclude that:

- Not all primigravidas presented with engaged fetal head.
- The primigravida with unengaged fetal head at onset of labor, although at risk for C.S. most of them will deliver vaginally they are given a full trial of labor and watched carefully.
- The length of the first and second stage of labor might be prolonged slightly in these patients.
- The need for oxytocin augmentation is also increased in these patients.
- The Apgar score at 1 minute and 5 minutes are also decreased in the new-born of these primigravidas.
- There were no differences in maternal morbidity among the primigravidas presented with unengaged fetal head and those presented with engaged fetal heads.
- The use of epidural anesthesia doesn't affect the rate of C.S. although it may lengthen the duration of the first and second stage of labor and the Apgar score is not affected by the use of epidural.

Recommendation:

It is to be recommended that that:

- Primigravidas, healthy females with unengaged fetal head of a full-term singleton gestation without maternal or fetal condition, if they given the chance with augmentation they will deliver normally in most cases.
- The study should be done on a large scale of cases in different countries and races.

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