RESEARCH PAPER.

MATERNAL AND NEONATAL COMPLICATIONS WITH PROLONGED SECOND STAGE OF LABOUR

Lawrence Christy Raj Rohan[1]

[1]Senior registrar (Obstetrics and Gynaecology) - Base Hospital, Bundaberg, Queensland, Australia
Corresponding Author: Lawrence Christy Raj Rohan email: lcrrohan@gmail.com

Abstract

Prolonged second stage of labour is inability of a woman to proceed with childbirth after the fully dilatation of cervix. Prolonged second stage rate is 7.17%. Significant number of postpartum haemorrhage (36%) and NICU admission (22%). Prolonged second stage was associated with highly successful vaginal delivery rates (84% vs 72.17%), but with increased maternal and neonatal morbidity, if proceeded with spontaneous vaginal birth. Duration of second stage is not associated with obstetric anal sphincter injury. Prolonged second stage is not associated with persistent urinary incontinence. Benefits of increased vaginal delivery should be weighed against potential increases in maternal and neonatal risks with prolonged second stage. It is possible to observe prolonged duration of labour with normal vaginal deliveries in a considerable number. But if it is possible to achieve uncomplicated normal vaginal delivery, there will be a smaller number of maternal and neonatal complications. These findings further emphasize the importance of maintaining a close monitoring procedure.

Introduction

Prolonged second stage of labour is the inability of a woman to proceed with childbirth after the fully dilatation of cervix. Prolonged second stage of labour is defined as if birth is not imminent in: Nulliparous woman after two hours of active second stage and multiparous woman after one hour of active second stage. With the regional anaesthesia, nulliparous woman after three hours of active second stage and multiparous woman after two hours of active second stage. Failure to progress can take place during two different phases; the latent phase and active phase of labour. The latent phase of labour can be emotionally tiring and cause fatigue, but it typically does not result in further problems. The active phase of labour, on the other hand, if prolonged, can result in long term complications.

It is important that the vital signs of mother and fetus are being monitored so preventive measures can be taken if prolonged second stage of labour begins. Women experiencing prolonged second stage of labour should be under supervision of senior staff and timely intervention. Prolonged second stage of labour is determined based on the

information that is being collected regarding the strength and time between contractions. Electronic foetal monitoring is used to track the fetal heart rate. If either devices indicate that vital signs are off and prolonged second stage of labour is beginning, it is important that the medical team begin discussing treatment and alternative options for delivery.

Prolonged second stage of labour can result from a variety of different issues; fetal malpresentation, issues with uterine contractions, and cephalopelvic disproportion. Both fetal malpresentation and cephalopelvic disproportion may result in obstructed labour. The cause of prolonged second stage of labour will determine the medical intervention that needs to take place. Medical professionals can either engage in preventive measures or turn to surgical methods of removing the fetus. If not handled properly or immediately treated, both the mother and the fetus can suffer a variety of long-term complications, the most serious of which is death. There is no "quick fix" to prolonged second stage of labour, but there are preventive measures that can be taken, such as oxytocin infusions. In order to properly and safely deliver the baby, doctors will often intervene in child birth and conduct assisted vaginal delivery through the use of forceps or a vacuum extractor, or perform a caesarean section.

Methodology

Descriptive cross-sectional analysis was conducted among 50 deliveries in a selected maternity care center in Australia from January 2018 to October 2018. Full term singleton deliveries were included. Information was collected from the hospital data records in the labour room. Interviewer administered data extraction sheet was used as study instrument. Data analysis was facilitated by Excel 2016 and SPSS version 25.0.

Results

Majority of the study participants were primi mothers and they underwent normal vaginal delivery without epidural anaesthesia (Table 1). Mean age of the participants was 28. 23 Years (SD= 3.78 years) and majority of participants were less than 35 years of age (Table 2). Mean BMI of the mothers was 26 kg/m^2 and majority of the participants were less than 30 kg/m^2 (Table 3). Majority of participants were underwent spontaneous normal vaginal delivery without complications (Table 4). Most common complication among study participants was post-partum hemorrhage (Table 5).

Prolonged second stage rate is 7.17%. Significant number of postpartum haemorrhage (36%) and NICU admission (22%). Prolonged second stage was associated with highly successful vaginal delivery rates (84% vs 72.17%), but with increases maternal and neonatal morbidity. If spontaneous vaginal birth. Duration of second stage is not associated with obstetric anal sphincter injury. Prolonged second stage is not associated with persistent urinary incontinence. Benefits of increased vaginal delivery should be weighed against potential increases in maternal and neonatal risks with prolonged second stage (Figure 1 & 2).

Table 1 : Mode of delivery by Parity and Epidural status.

Mode of delivery	Nulliparous with epidural	Nulliparous without epidural	Multiparous with epidural	Multiparous without epidural	Total
Vaginal delivery	03 (6%)	09 (18%)	01 (2%)	11 (22%)	24 (48%)
Assisted Vaginal delivery	04 (8%)	10 (20%)	02 (4%)	02 (4%)	18 (36%)
Caesarean section	04 (8%)	03 (6%)	00	01 (2%)	08 (16%)
Total	**11 (22%)**	**22 (44%)**	**03 (6%)**	**14 (28%)**	**50 (100%)**

Table 2 :Maternal age by parity and epidural

Age	Nulliparous with epidural	Nulliparous without epidural	Multiparous with epidural	Multiparous without epidural	Total
< 35 years	11 (22%)	20 (40%)	03 (6%)	10 (20%)	44 (88%)
>35 years	00	02 (4%)	00	04 (8%)	06 (12%)
Total	11 (22%)	22 (44%)	03 (6%)	14 (28%)	50 (100%)

Table 3: Maternal BMI by parity and epidural

BMI	Nulliparous with epidural	Nulliparous without epidural	Multiparous with epidural	Multiparous without epidural	Total
< 30 kg/m^2	08 (16%)	18 (36%)	03 (6%)	10 (20%)	39 (78%)
30 – 39.9 kg/m^2	03 (6%)	03 (6%)	00	02 (4%)	08 (16%)
40 & above	00	01 (2%)	00	02 (4%)	03 (6%)
Total	11 (22%)	22 (44%)	03 (6%)	14 (28%)	50 (100%)

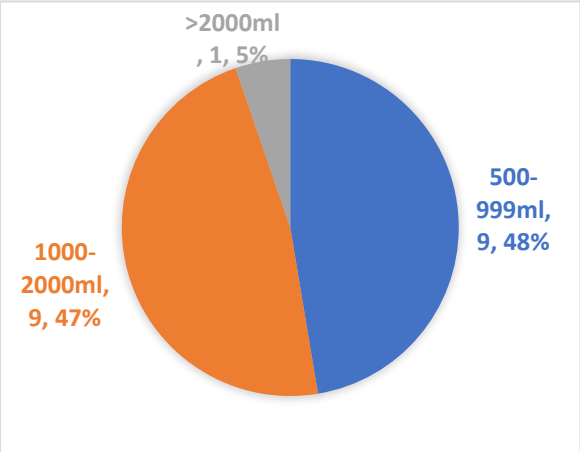
Table 4: Distribution of Maternal, Obstetric and Neonatal Complications associated with parity and epidural Anaesthesia

Variable	Nulliparous with epidural	Nulliparous without epidural	Multiparous with epidural	Multiparous without epidural
Diabetes – Gestational	00	01	00	01
Diabetes – Pregestational	00	01	00	00
Hypertensive disorder	00	00	00	01
Induction of labour	06	08	00	04
Spontaneous onset of labour	05	14	03	10
Oxytocin	06	04	02	01
Gestational age at delivery - weeks	40+3	39+6	40+3	39+2
Newborn birth weight – grams	3904	3680	4025	3591

Table 5: Distribution of maternal complications associated with parity and epidural

Maternal complications	Nulliparous with epidural	Nulliparous without epidural	Multiparous with epidural	Multiparous without epidural
Postpartum haemorrhage	04	08	01	06
ICU admission	00	00	00	01
Chorioamnionitis	00	01	00	00
Wound infection	00	01	00	00
Episiotomy	05	09	03	04
3^{rd}/ 4^{th} degree perineal laceration	00	01	00	00
Transfusion	01	00	00	03
Shoulder dystocia	00	00	01	01
Total	10(20%)	20(40%)	05(10%)	15(30%)

Figure 1: Distribution of high estimated blood Loss among participants



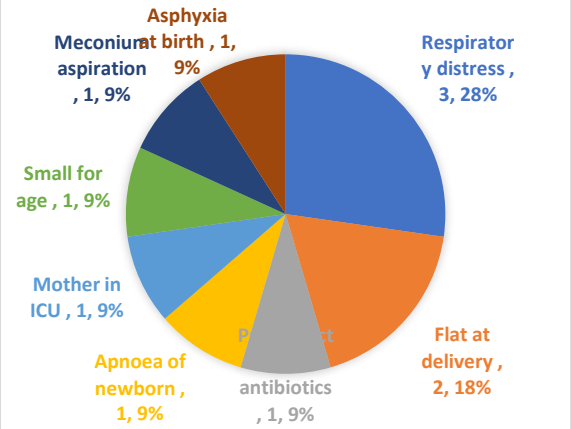


Figure 2: Reason for Admissions to Neonatal intensive care units

Discussion

Fetal complications and maternal exhaustion are expected results of prolonged duration of labour. Among new borns complications associated with prolonged second stage of labour include foetal distress, meconium aspiration and birth asphyxia. But according to the present study findings, above mentioned complications are not associated with prolonged second stage of labour in a significant incidence.

Even with prolonged duration of labour, less number of complications are observed when delivery of baby is completed without external assistance. It is observed that monitoring labour process by close monitoring is an extremely effective intervention. Considerable number of new borns (22%) were admitted to Neonatal Intensive Care Units (NICU). Reasons for NICU admissions were not available in the study, it was not possible decide whether prolonged labour duration is directly associated with NICU admission or not. However, many maternal haemorrhage incidences were observed with prolonged second stage of labour. But it was not possible to detect long-term complications such as anal sphincter injuries or persistent urinary incontinence presenting with prolonged second stage of labour incidents.

Conclusions

It is possible to observe prolonged duration of labour with normal vaginal deliveries in a considerable number. But if it is possible to achieve uncomplicated normal vaginal delivery, there will be a smaller number of maternal and neonatal complications. These findings further emphasize the importance of maintaining a close monitoring procedure.

Reference

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