

**Epidural analgesia for a vaginal birth after caesarean section: A case report**

Okojie NQ, Imarengiaye CO.

*Obstetric unit, Department of Anaesthesiology, University of Benin Teaching Hospital, Benin City, Edo state.***Abstract**

The use of epidural for vagina birth after caesarean section is contentious even in established Labour and Delivery Units because of concerns regarding maternal and fetal wellbeing following the occurrence of a uterine rupture as epidural analgesia may obscure the pain following such. Epidural analgesia has remained the major option for the management of pain in labour. Recently, there has been anecdotal evidence of increase in the use of epidural in labour and consequently brought to the fore a wide variety of case-mix on the floor. We report a case of labour epidural analgesia for vaginal birth after caesarean section (VBAC). The Parturient was a 28 year old booked G2P1+0, gestational age 37weeks in latent phase of labour. She had a previous caesarean section done for fetal distress and a lower uterine incision was used for the delivery of the fetus.

Epidural analgesia was requested by the parturient and this was established in the sitting position using a size 18g Tuohy needle observing unit protocol. It was then activated with 8ml of 0.125% plain bupivacaine and then 5ml after 2 minutes. We ensured safety by ensuring close monitoring of the fetus using a cardiotocography and also of the parturient using a multiparameter monitor. At 4hours 40 minutes after admission, she had an unassisted vaginal delivery of a live 2.75kg male neonate with an Apgar score of 8 in 1 minute and 9 in 5. Baby was healthy and normal and the third stage of labour was managed using 10 international units of intravenous oxytocin and 20IU oxytocin in intravenous fluid 5% dextrose water.

Conclusion: Women for VBAC should not be denied epidural labour analgesia. Monitoring gadgets and recruiting more manpower should be advocated especially in emerging Labour and Delivery Units and engender resource-constrained environment.

Keywords: Epidural analgesia, VBAC, Caesarean section.

Introduction

Epidural analgesia has remained the major option for the management of pain in labour. The epidural analgesia on demand is at its infantile stages in many hospitals in Nigeria. The utilization of labour analgesia is often requested by health professionals and other parturients on the high social economic status in our Labour and Delivery Unit. Recently, there has been anecdotal evidence of increase in the use of epidural in labour¹. This increase has brought to the fore a wide variety of case-mix on the floor. We report a case of labour epidural analgesia for vaginal birth after caesarean section (VBAC). The

use of epidural for VBAC is contentious even in established Labour and Delivery Units because of concerns regarding maternal and fetal wellbeing in labour. This report is intended to highlight the peculiarities of labour epidural analgesia for VBAC especially in emerging Labour and Delivery Units and engender further utilization even in resource-constrained environment like Nigeria.

Case report

We report the case of a 28 year old booked G2P1+0, Gestational age 37weeks. She was admitted from the antenatal clinic with complaints of labour pains of 3hours. There was no history of bleeding per vaginam or liquor drainage. She booked the pregnancy at 17 weeks and had 8 uneventful

Corresponding Author: Dr. Okojie NQ

*Obstetric unit, Department of Anaesthesiology,
University of Benin Teaching Hospital, Benin City, Edo state.
E-mail: nikeguzi@yhoo.co.uk*

antenatal visits. The booking blood pressure (BP) was 110/70mmHg and remained between 100-110/60-70mmHg throughout pregnancy. All routine investigations were within normal range. She had a previous caesarean section done for fetal distress and a lower uterine incision was used for the delivery of the fetus.

The physical examination revealed a conscious and alert woman, oriented in time, place and person, anicteric, not pale, afebrile, not dehydrated, no pedal oedema. Pulse rate was 78bpm, regular and good volume and the BP was 100/60mmHg (supine).

Abdomen was uniformly enlarged, symphysiofundal height was 37cm, having 2 in 10 contractions with a foetal heart rate of 150bpm heard with a Sonicaid®.

Vaginal examination revealed a central and soft cervix that was 3 cm dilated and an intact membrane.

An assessment of latent phase labour in a woman with 1 previous caesarean section (CS) was made. Decision for her to undergo a trial of labour was taken and was subsequently admitted to the labour ward. PCV was 37%. She was commenced on intramuscular pentazocine and promethazine 30mg and 12.5mg stat respectively as per Obstetric Unit protocol. A cardiotocographic monitoring was commenced and a multiparameter monitor was also attached for monitoring of her blood pressure, pulse rate and oxygen saturation. She was to be reviewed in the next 4 hours and consults sent to the anaesthetists and paediatricians on duty in the event of an emergency CS.

She however requested for an epidural labour analgesia. A consult was sent to the anaesthetists in the labour ward theatre to establish this.

At review by the anaesthetists, the history was essentially as noted above. Previous CS was done under subarachnoid block (SAB), no anaesthetic complications were recorded. There was no inter-current medical illness.

Pulse was 80bpm, regular and good volume, BP was 110/80mmHg, heart sounds 1 and 2 only.

Respiratory rate 14cpm, not dyspnoeic. Breath sounds were vesicular. According to the American Society of Anaesthesiologists she was ascribed ASA II and also noted to be in the latent phase of labour. She however had requested for an epidural and risks and benefits were discussed with her.

An epidural was subsequently established under strict asepsis. Epidural analgesia was established with an 18G Tuohy needle. A test dose of 3ml of 2% lidocaine with adrenaline was given. Bromage score at this point was 0, sensory loss was at T10. Pulse and BP remained same. It was then activated with aliquots of 5ml of 0.125% plain bupivacaine and then 5ml after 2 minutes. Bromage score was 0 and sensory loss was at T8. Top-up with 5ml of 0.125% every 30minutes after test aspiration and vital signs check was subsequently ordered. Time to the first comfortable contraction was noted as 12 minutes. Top ups of 5ml aliquots was then given every 30-40minutes.

Two hours later, she was stable and cervical dilatation was 7cm. An assessment of spontaneous active phase labour in a lady with one previous CS was made and monitoring continued.

At 4hours 40 minutes after admission, she had an unassisted vaginal delivery of a live 2.75kg male neonate with an Apgar score of 8 in 1 minute and 9 in 5 minutes. Baby was healthy and normal and the third stage of labour was managed using 5 international units of intravenous oxytocin and 20IU oxytocin in intravenous fluid 5% dextrose water to run over 5 hours.

Mother and child were admitted into the maternity ward. Two days later, PCV was 35%, pulse was 80bpm, BP – 110/80mmHg, uterus 18 week size, well contracted with normal lochia on vaginal examination. Mother and baby were discharged home to be seen in the post natal clinic 6 weeks later. A review at the post natal clinic was uneventful.

Discussion

Vaginal birth after caesarean section (VBAC) is an acceptable and preferred option for delivery in a woman with one prior lower segment caesarean section (CS) and in the absence of an obvious contraindication to vaginal delivery.² Major indications for a VBAC would include a non-reoccurring indication for the previous caesarean section and spontaneous onset of labour with show of good progress in the absence of contraindications to vaginal delivery. Most women will prefer VBAC after a primary CS and this is more likely among younger, less educated and women of middle and low socioeconomic status, while CS is preferred by the older and highly educated women.³ In our patient, VBAC was the preferred option as there was

no contraindication and this is the usual protocol in our setting.

Concerns persist that a trial of labour may increase the risk of maternal complications as compared to an elective caesarean section. These include uterine rupture which is a serious complication that could lead to hysterectomy, urologic injuries, blood transfusions, maternal and neonatal deaths.⁴

Labour analgesia may be achieved by the use of non pharmacological and pharmacological methods. These include massages, transcutaneous electrical nerve stimulation, parenteral opioids, and neuraxial local anaesthetics and opioids. Epidural remains the gold standard for labour analgesia however perception and demand for epidural analgesia is still low as a result of many factors such as level of education, low socioeconomic status and low level of education among parturients.⁵ Combined spinal epidural [CSE] may also be used. In a study 16% of cases had CSE for labour analgesia as against 54% who had epidural analgesia.⁶ Our patient is a medical practitioner and hence demanded for labour epidural analgesia. However, she expressed concerns regarding the epidural analgesia masking the pain of a uterine rupture and increased risk for instrumental delivery and caesarean section. These fears were allayed with the robust discussion on the risks benefits of epidural for women having a VBAC.

Epidurals using lower concentrations of local anaesthetics have been reported not to increase the rate of caesarean section and instrumental deliveries in a meta analysis.⁷ It was noted that there was no significant difference in the caesarean sections rates between women who had epidural and those who had parenteral opioids. In a review of fourteen VBACS, a greater proportion of women with epidurals reported abdominal pain than women without epidurals and only 22% of those who ruptured reported abdominal pain.⁸ Hence pain was not a reliable sign of uterine rupture but fetal heart irregularities. Fetal distress is the most common and reliable sign of uterine rupture.⁹ Our patient had a CTG and a multiparameter monitor attached to her to ensure maternal and fetal monitoring for fetal heart rate variability. Her vital signs and the fetal

heart rate were stable till delivery.

In our centre, fear of uterine rupture and lack of monitoring gadgets and low manpower had hindered the use of epidural for VBAC. In a poor resource setting, use of epidurals is rare due to the aforementioned factors and this is further hindered when the woman has a previous caesarean section. Adequate pain relief may also encourage more women to choose trial of labour.¹⁰ A functional epidural catheter can facilitate transition to surgical anesthesia if time allows to facilitate caesarean delivery or uterine exploration if this becomes necessary.

The use of concentrated local anesthetics(e.g., 2% lidocaine, 2–3% 2-chloroprocaine) during labour may mask the breakthrough pain of uterine rupture, but epidural analgesia rarely masks the signs and symptoms of uterine rupture when diluted concentrations of local anesthetic with or without opioids are administered.^{9,10} Breakthrough or varying pain during trial of labour may be indicative of uterine rupture and should be evaluated carefully.

In the use of epidural for VBAC, it is therefore suggested that strict monitoring of fetal heart rate using a CTG is best practice to ensure prompt detection of fetal heart rate irregularities.

In conclusion, women for VBAC should not be denied epidural labour analgesia for fear of masking of pain due to uterine rupture. Instead, adequate intrapartum maternal and fetal monitoring should be emphasized. This may improve the overall outcome of the birthing experience for the new mother.

References:

1. Imarengiaye CO, Olagbuji BN, Ezeanochie E, Akhideno II. Clinical correlates of epidural labour Analgesia in Nigeria. *Nigerian Postgrad Med J* 2013;20: 214-217.
2. Mozurkewich EL, Hutton EK (2000). Elective repeat cesarean delivery versus trial of labor: a meta-analysis of the literature from 1989 to 1999. *Am. J. Obstet. Gynecol.* 183:1187.
3. Babagana Bako, Ado Danazumi Geidam, Vaginal birth or repeat caesarean section: women's preferred mode of delivery after a

- primary caesarean section in Maiduguri, Nigeria
International Journal of Medicine and Medical Sciences Vol. 6(11), pp. 230-235, November 2014
4. Ragoth JC, Juzi C, Grossenbacher H. Delivery after previous cesarean: a risk evaluation. *Obstet Gynecol* 1999;93:332-337
 5. Okojie NQ, Isa EC. Perception of epidural analgesia for labour among pregnant women in a Nigerian tertiary hospital setting. *J. West Afr Coll Surg.* 2014. Oct-Dec; 4(4): 142-162.
 6. Patrick VH, Luc H. A survey of obstetric anaesthesia practice. *Acta Anaesthesiologica Belgica* Feb.2006.57: 29-37
 7. Liu EH, Sia AT. Rates of caesarean section and instrumental vaginal delivery in nulliparous women after low concentration epidural infusions or opioid analgesia: systematic review *BMJ*, doi:10.1136/bmj.38097.590810.7C (published 28 May 2004):1-6
 8. Johnson Calvin , Oriol Nancy. The Role of epidural anaesthesia in trial of labour. *Regional Anaesthesia* Nov 1990.vol 15(6).
 9. Eden RD, Parker RT, Gall SA: Rupture of the pregnant uterus: A 53-year review. *Obstet Gynecol* 1986; 68:671–4
 10. Sakala EP, Kaye S, Murray RD, Munson LJ: Epidural analgesia: Effect on the likelihood of a successful trial of labor after cesarean section. *J Reprod Med* 1990;35:886–90.