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Case Report

Factors Related to Maternal Dissatisfaction During Labour: A Case Report of the Delayed Epidural for Labour Analgesia

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Abstract

Background: The childbirth experience is deeply affected by the critical issue of maternal dissatisfaction during labour. This case report analyses multiple factors that lead to dissatisfaction during childbirth with specific attention to the consequences of delayed epidural analgesia.

Case Presentation: This case report involves a 28-year-old woman with her first pregnancy who experienced premature membrane rupture at 39 weeks gestation. Through multiple antenatal visits, healthcare providers failed to document any discussions about pain management choices. The obstetric team-initiated oxytocin induction for the patient after admission to the labour ward as her labour was progressing too slowly. She asked for epidural analgesia when her pain increased but received it later because of multiple factors such as procedural problems and inadequate education on pain relief options. The first epidural insertion faced complications from catheter dislodgement which required a second attempt that proved successful.

Discussion: The case demonstrates the multifaceted nature of epidural analgesia delivery which involves both prompt administration difficulties and patient education challenges. Research suggests that when mothers experience delayed pain relief combined with inadequate information about pain relief options and their delivery methods, satisfaction levels decline. The patient's experience was negatively impacted by insufficient antenatal education on pain management which resulted in heightened anxiety and dissatisfaction.

Conclusion: Proactive informative communication with pain relief options during childbirth directly leads to improved satisfaction with mothers and their labour experience. Active efforts to engage and educate antenatally and prompt anaesthetic procedures during labour are critical to fulfill patient needs and improve their childbirth experience. We advocate for the first line use of epidural analgesia in an attempt to tackle these elements which allows for substantial reductions in maternal dissatisfaction with labour pain management.

Keywords: Labour Analgesia; Antenatal Education; Epidural Dislodgement; Epidural Analgesia; Maternal Dissatisfaction; Patient Education

Case Presentation

The purpose of this case report is to advocate for the initial use of epidural/combined spinal epidural approach as gold standard analgesia for the labouring patient as opposed to a step-wise graded analgesic plan to improve maternal satisfaction during labour as well as decrease the risk factors for difficult/failed insertion and multiple attempts.

This case examines a Gravida 1 Para 0, 28-year-old female BMI 30 with no medical or surgical history presented with premature rupture of membranes at 39 weeks 3 days.

She was seen in antenatal clinic and was screened to have routine low-risk pregnancy care. During her antenatal course she attended 8 clinic appointments with the midwives for routine antenatal screening and care. There has been no documented discussion regarding pain relief options during her antenatal clinic appointments nor during her initial admission note when she presented to the labour ward following term prelabour spontaneous rupture of membranes.

After failing to progress with labour, she was induced with oxytocin at 9am with contractions ramping up over the two hours. At this stage, the patient described pain increasing in the back and lower abdomen at the midwives discussed analgesia options. As labour was progressing and pain was building up nitrous oxide/oxygen blend was increased to 70:30 at 1pm and working with some beneficial effect.

At 4pm, after consistent contractions and elevated pain levels, 200mcg of fentanyl was given subcutaneously to minimal effect. 15min shortly after anaesthetics was notified as patient had asked for an epidural with the initial epidural attempt occurring at 4:45 pm.

Initial insertion with 18-gauge Tuohy needle had loss of resistance at 7 cm in the L4/5 level with initial test dose of 3 mls 0.125% Bupivacaine given. On proceeding to secure the device, patient attempted to mobilise, and inadvertent dislodgement of the epidural catheter occurred and was found to be at 6 cm. The catheter was abandoned and one further attempt to insert at the level above proved to be successful at similar depth with loss of resistance and catheter was withdrawn to 12 cm and secured with dressings. With the remaining loading dose of 10 mls of 0.125% bupivacaine given in divided dose of 5 mls each in 5 min intervals, to achieve a block height at the umbilicus. A ropivacaine infusion of 0.2% with 2mcg/ml fentanyl was then started at 8 mls/hr with a range of 8-16ml/hr with PRN top-ups.

Complete cervical os dilation occurred at 7pm and following a prolonged 2nd stage, patient delivered vacuum assisted with zero issues. Post delivery the epidural catheter was removed and by the following morning complete motor and sensory function had returned.

Discussion

Epidural analgesia is considered a gold standard in labour analgesia, however, has a varying range of utilisation in high income countries: 11% for the UK to 64% in the USA [1].

Epidurals are conventionally inserted by using a Tuohy needle via a loss of resistance technique as the needle advances through the ligamentum flavum and enters the epidural space, a potential space. Identification when one is in the epidural space is technically challenging and even when inserted without difficulty, missed segments and unilateral block can result in inadequate analgesia in up to one in eight women [2]. Epidural analgesia is associated with a risk of complications and adverse events as with any procedure, such as post-dural puncture headache, local anaesthetic toxicity, epidural haematoma/abscess formation.

Informed consent plays a vital role in respecting patient autonomy and as well as self-determination. This provides an opportunity and engages patients with needed information to understandingly choose to have a procedure, free of coercion. Essential elements of such a consent for women requesting labour epidurals include a description of the procedure, the risks, benefits of the procedure, any alternative treatments for labour analgesia and their associated risks and benefits and expected outcome and effect of labour epidural [3].

The discussion of epidural risks and benefits should be initially discussed as part of the delivery plan as pain and analgesic agents during labour have a potential to influence the ability to provide informed consent. Recall has been shown to be improved if information is provided to the patient antenatally and that ideally all obstetric care providers should aim to provide access to clear and concise information [4,5]. This could be an area of

improvement for anaesthetists as a survey conducted in a public tertiary hospital in Western Australia showed fewer than 20% of parturients attended information classes [6]. With a majority of women obtaining information from friends, family or midwifes, with anaesthetists as a rare source of information [6,7].

Siddiqui., *et al*. [8] demonstrates that in early labour there is no impairment of intellectual functions such as registration, attention, recall and other cognitive function. However, the exhausted women at the end of labour can be a challenging and complex situation to navigate with informed consent, which can often be compounded by the effect of exogenous oxytocin intensifying contractions.

Certain cultural views of explicit objections to labour epidural analgesia as demonstrated by midwifery professor Dr Dennis Walsh outlined in his paper published in 2009 are still prevalent today [9]. This is evident as a recent study in 2019 by Yurashevich., *et al*. demonstrated strong associations with maternal dissatisfaction at 24-48 hours post-partum being pain intensity during either first or second stage of labour, and a delay of more than 15 minutes for the attendance of an anaesthetist after request [10].

A Cochrane review conducted by Sng., *et al*. [11] demonstrated that early vs late epidural initiation did not show any difference in risk of caesarean section, instrumental birth, duration of second stage of labour, naloxone administration to infant, meconium-stained amniotic fluid, use of oxytocin augmentation, maternal hypotension, maternal fever, malposition at delivery and malposition at vaginal delivery, umbilical artery pH or venous pH, Apgar scores at one and five minutes.

In our case, the lack of education about analgesic options prior to labour may have contributed towards a delayed epidural for the primiparous woman. Despite the utilisation of other analgesic techniques such as nitrous oxide and intramuscular opioids, adequate analgesia was not established until an epidural was inserted. Due to the hesitation to utilise epidural analgesia as a first option, this resulted in a less than ideal scenario for epidural insertion during strong frequent contractions. This can be technically difficult, and in our case, this led to dislodgement secondary to body movements despite initial successful placement.

Secondary migration of catheter after initial successful placement can occur with factors that contribute to the displacement of epidural catheters including obesity, cerebrospinal fluid oscillations, changes in epidural pressure and body movements [12]. During normal patient movement, epidural catheters can be displaced by centimetres. The ideal epidural catheter insertion length should be at least 4 cm into the epidural space as well as having patients assume the sitting upright position prior to securing the catheter to the skin [13].

In cases where catheter migration has occurred and the placement of an epidural catheter is unclear but remains in the epidural space, there should be no attempt made to further advance the catheter blindly. Aspiration and a provocation test dose would be given to detect intrathecal or intravascular catheter placement. The optimal pharmacological strategy for test dosing is unclear, however a combination of lignocaine (to detect intrathecal placement) and adrenaline (to detect intravascular placement) has been historically used [14].

It is of note that even if a non-significant increase in heart rate of <15% and lack of establishment of a dense motor block does not guarantee efficacy of the epidural catheter.

In our case the catheter had clearly migrated out of the epidural space as we had loss of resistance at 7 cm, and the epidural catheter depth had retracted to 6 cm. Where the catheter has migrated out of the epidural space, removal of catheter and reinsertion is recommended.

Labour pain is a highly individualised experience and a complex process with multiple physiological and psychosocial factors. Whilst usually the most intensive acute pain a woman will ever experience, unlike other acute pain conditions, this process is a physiological process rather than pathological.

There is an antenatal expectation from 4% of primiparous woman and 14% of multiparous woman that they believe that they will not require any pain relief during labour, however the truth is that 52% of women require pain relief intrapartum [15]. Dickson., *et al*. also noted maternal satisfaction with analgesia was significantly high with epidural vs non epidural analgesic techniques [16]. Makela., *et al*. Also demonstrated a 1.5-fold risk of dissatisfaction among induction of labour parturients vs spontaneous labour parturients and a 4-fold risk of negative birth experience after vacuum extraction [17].

The factors identified in literature that leads to maternal dissatisfaction included delayed timing of pain relief, insufficient education with regards to pain treatment options during labour, vacuum extraction as mode of delivery, induction of labour, obesity, primiparity and advanced age.

The strongest impact on maternal dissatisfaction amongst induction of labour parturients demonstrated by Makela., *et al*. was delayed timing of pain relief during labour, whilst epidural analgesia protected them from a negative experience of pain relief [17].

In this case report the factors we've identified that lead to maternal dissatisfaction include delayed timing of pain relief during labour, lack of intrapartum analgesia education, induction of labour as well as vacuum extraction mode of delivery.

Antenatally there was a lack of antepartum analgesia education despite multiple antenatal visits, indicating the importance of the role of midwives in educating patients about analgesic options as many low-risk pregnancies do not see an obstetrician or anaesthetist.

The lack of patient education, local midwife practice trending towards avoidance of epidural analgesia and failed initial insertion led to a delay to adequate analgesia with epidural technique.

Conclusion

This case report supports the need to utilise epidural/combined spinal epidural analgesia techniques as first line to establish adequate analgesia for the labouring patient and minimise the risk of complications and to improve maternal satisfaction.

Clear communication, early discussion, and access to clear and information toward analgesic options in labour plays a significant role in providing informed consent to our patients.

Factors protecting women from labour dissatisfaction include clear information, adequate timing, and good pain relief. It is clear analgesia expectations from both primiparous, and multiparous women are not congruent with the reality of analgesia requirements intrapartum, highlighting the importance of all caregivers, especially midwives for antenatal education which will improving the birth experience.

Vigilance of catheter migration and identifying the factors that lead to migration aims to prevent inadvertent infusion into the intravascular and subcutaneous space.

Early identification and prompt response to parturients whom request epidural analgesia i.e. prior to induction of labour can decrease the risk of difficult insertion as well as increase maternal satisfaction.

Bibliography

1. Seijmonsbergen-Schermers AE., *et al*. "Variations in use of childbirth interventions in 13 high-income countries: a multinational cross-sectional study". *PLoS Medicine* 17 (2020): e1003103.

2. Halliday L., *et al*. "Epidural analgesia in labor: A narrative review". *International Journal of Gynecology & Obstetrics*, 159.2 (2022): 356-364.

3. Saunders TA., *et al*. "Informed consent for labor epidurals: a survey of Society for Obstetric Anesthesia and Perinatology anesthesiologists from the United States". *International Journal of Obstetric Anesthesia* 15.2 (2006a): 98-103.

4. Gerancher JC., *et al*. "An evaluation of informed consent prior to epidural analgesia for labor and delivery". *International Journal of Obstetric Anesthesia* 9 (2000): 168-173.

5. Swan HD and Borshoff DC. "Informed consent—recall of risk information following epidural analgesia in labour". *Anaesthesia Intensive Care* 22 (1994): 139-141.

6. Paech MJ and Gurrin LC. "A survey of parturients using epidural analgesia during labour: considerations relevant to antenatal educators". *Australian and New Zealand Journal of Obstetrics and Gynaecology* 39 (1999): 21-25.

7. Angle PJ., *et al*. "Factors influencing use of neuraxial labour analgesia (abstract)". *Anesthesiology* 100.1 (2004): SOAP A7.

8. Siddiqui MN., *et al*. "Does labor pain and labor epidural analgesia impair decision making capabilities of parturients". *Internet Journal of Anesthesiology* 10.1 (2005).

9. Walsh D. "Pain and epidural use in normal childbirth". *Evidence Based Midwifery* 7.3 (2009): 89-93.

10. Yurashevich M., *et al*. "Determinants of women's dissatisfaction with anaesthesia care in labour and delivery". *Anaesthesia* 74.9 (2019): 1112-1120.

11. Sng BL., *et al*. "Early versus late initiation of epidural analgesia for labour". *Cochrane Database of Systematic Reviews* 10 (2014).

12. Eide PK and Sorteberg W. "Simultaneous measurements of intracranial pressure parameters in the epidural space and in brain parenchyma in patients with hydrocephalus". *Journal of Neurosurgery* 113.6 (2010): 1317-1325.

13. Hamilton CL., *et al*. "Changes in the position of epidural catheters associated with patient movement". *Anesthesiology* 86.4 (1997): 778-784.

14. Hermanides J., *et al*. "Failed epidural: Causes and management". *British Journal of Anaesthesia* 109.2 (2012): 144-154.

15. Ranta P., *et al*. "Maternal expectations and experiences of labour pain — options of 1091 Finnish parturients". *Acta Anaesthesiologica Scandinavica* 39.1 (1995): 60-66.

16. Dickinson JE., *et al*. "Maternal satisfaction with childbirth and intrapartum analgesia in nulliparous labour". *Australian and New Zealand Journal of Obstetrics and Gynaecology* 43.6 (2003): 463-468.

17. Mäkelä K., *et al*. "Satisfaction and dissatisfaction with pain relief and birth experience among induced and spontaneous-onset labours ending in vaginal birth: A prospective cohort study". *European Journal of Obstetrics & Gynecology and Reproductive Biology: X* 18 (2023): 100185.