Autonomic Dysreflexia in Labour: Management of a Parturient with an Incomplete C5/6 Spinal Cord Injury

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Introduction

Spinal cord injury (SCI) in pregnancy is rare, with an estimated prevalence of fewer than 1:50,000 pregnancies, yet poses some of the most complex challenges in obstetric anaesthesia. Women with high cervical lesions (at or above T6) are particularly vulnerable to **autonomic dysreflexia (AD)** — a potentially life-threatening emergency in which noxious stimuli below the level of the lesion trigger an unopposed sympathetic response, resulting in severe paroxysmal hypertension, reflex bradycardia, and risk of intracranial haemorrhage and cardiac arrest. (1)

Labour and delivery are among the most potent triggers of AD, as uterine contractions and cervical dilatation generate strong visceral afferent stimuli. Without reliable analgesia on board, the risk of AD crisis during labour is estimated to be as high as 85% in susceptible patients. (2)

It is also imperative to keep in mind complex psychosocial needs and heightened anxiety around medical procedures which require sensitivity and empathy around their care.

We report the anaesthetic management of a primigravida with an incomplete C5/6 spinal cord injury sustained as a result of domestic violence, highlighting the planning, intrapartum strategies, and postpartum considerations to ensure safe delivery while minimizing the risk of AD.

**Written consent has been obtained from the patient for presentation and publication*

Case Report and Anaesthetic Management

Patient Background

- Tetraplegic with residual motor and sensory deficits
- Neuropathic bladder
- Bowel impairment
- Mild respiratory impairment
- History AD 17 years ago, treated with sublingual nifedipine
- Advanced maternal age
- Large fibroids
- Recurrent UTIs
- Heterozygous prothrombin gene mutation with previous VTE on prophylactic LMWH

Potential Triggers for AD in Labour

Category	Stimuli
Uterine	Strong contractions, labour pain, uterine manipulations
Cervical	Cervical dilatation, vaginal examinations, episiotomy
Bladder	Urinary retention, catheter manipulation, UTIs
Bowel	Faecal impaction, constipation, enemas, rectal exams
Skin/Soft tissue	Pressure sores, tight straps, minor wounds

Anaesthetic Management

Combined spinal–epidural (CSE) sited at start of induction, before significant uterine contractions

Considerations: Anticoagulation timing, low respiratory reserve, current UTI, positioning challenges (spinal asymmetry, limited self-mobilisation).

We administered a low-dose CSE with 1 ml of 0.125% bupivacaine with 15 mcg fentanyl to maintain haemodynamic stability. It was also important to the patient to have minimal motor blockade from a psychological perspective, which was achieved with the low dose CSE. Further analgesia was provided by patient led top-ups with 0.125% bupivacaine and 2 mcg/ml fentanyl.

She had an assisted vaginal delivery under effective neuraxial analgesia with no AD crises.

Discussion

This case highlights the critical importance of a structured, anticipatory approach to managing parturients with high cervical SCI:

Early neuraxial analgesia

Siting the CSE at the start of induction — before significant contractions — was the cornerstone of AD prevention. Low-dose technique preserved cardiovascular stability while providing effective blockade.

Recognition of AD triggers

Systematic identification of all potential triggers (uterine, cervical, bladder, bowel, skin) enabled proactive avoidance and a clear escalation plan with nifedipine rescue.

Multidisciplinary planning

Coordinated input from obstetric anaesthetists, obstetricians, spinal injury specialists, midwives, and physiotherapists was essential to address the interplay of respiratory, thrombotic, urological, and positioning challenges.

Trauma-informed care

Sensitivity to the psychosocial context — SCI secondary to domestic violence — required thoughtful communication, continuity of care, and attention to the patient's autonomy and emotional wellbeing.

Conclusion

With anticipatory multidisciplinary planning, early neuraxial blockade, and trauma-informed care, safe vaginal delivery can be achieved in women with high cervical SCI.

References

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2. Kang AH. Traumatic spinal cord injury. Clin Obstet Gynecol. 2005; 48: 67-72