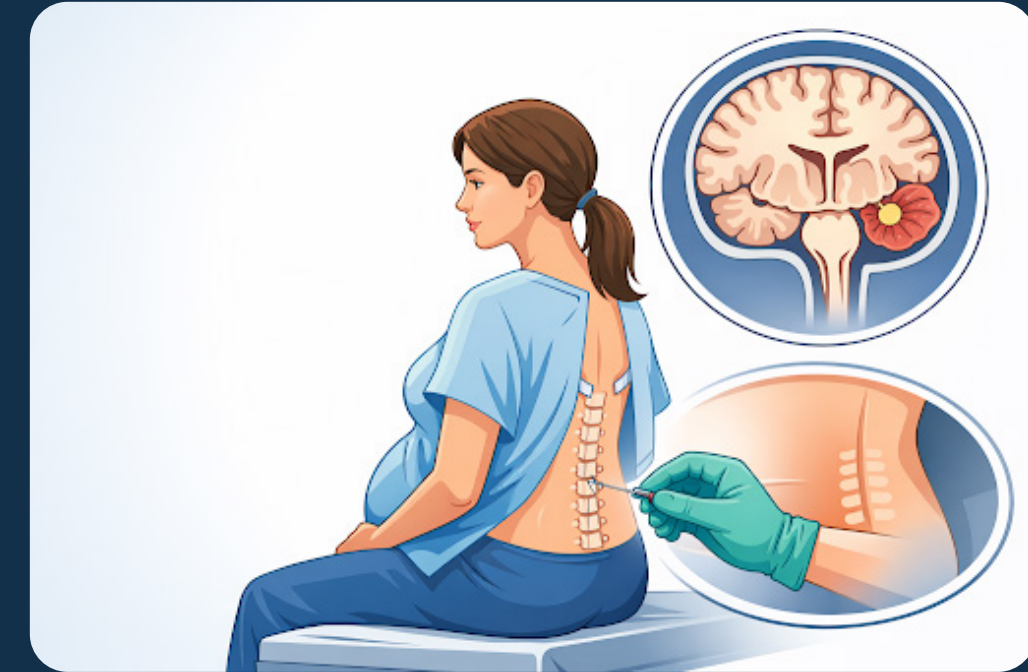
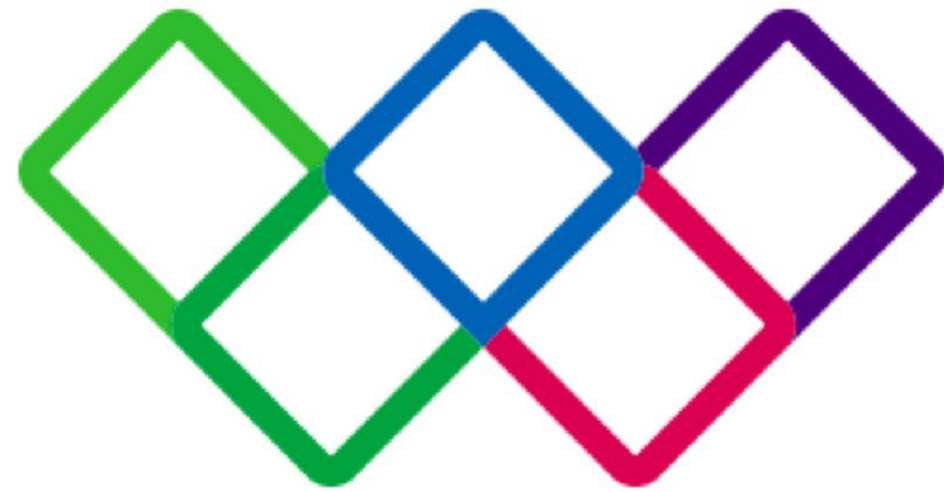




Spinal anaesthesia for caesarean delivery in a twin pregnancy with vestibular schwannoma

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Introduction

- Anaesthetic management of caesarean delivery in patients with intracranial pathology is challenging.
- Requires assessment of neurological stability, obstetric factors, and maternal comorbidities.
- Neuraxial anaesthesia may be safe in selected patients with stable tumours, no raised intracranial pressure(ICP), and clear multidisciplinary team(MDT) planning.

Case summary

- 34-year-old primigravida woman at 33+2 weeks gestation.
- Dichorionic diamniotic twin pregnancy presenting with threatened preterm labour.
- Known Koos grade 2 right vestibular schwannoma, diagnosed 18 months ago.
- Presenting symptoms of headache, vertigo, tinnitus, imbalance, right-sided hearing loss and facial weakness.
- MRI at diagnosis: Stable right cerebellopontine angle/internal auditory canal lesion (14mm x 11mm x 9mm) with no hydrocephalus or raised ICP.
- Under regular follow-up by neurosurgical team.

Past medical history

- Postural orthostatic tachycardia syndrome
- Anaemia (Haemoglobin 83g/l)
- Hypermobile Ehlers–Danlos syndrome (Type 3)
- Bronchial asthma
- Mast cell activation syndrome
- Gastrooesophageal reflux disease

Anaesthetic concerns

- Persistently symptomatic intracranial tumour - Risk of rising ICP
- Anaemia - Increased risk of postpartum haemorrhage(PPH)
- Twin pregnancy - Increased physiological and anatomical complexity
- Prolonged procedure anticipated - Twin pregnancy and previous abdominal surgery
- Emergency surgery - Fetal distress
- Significant parental anxiety - Brain tumour, preterm labour, and fetal anomalies (Twin 1: open spina bifida with Chiari II malformation; Twin 2: fetal growth restriction)

MDT planning

- Multidisciplinary team: Obstetric anaesthetist, neurologist, neurosurgeon, obstetrician and neonatologist
- Preoperative evaluation confirmed neurological stability with no radiological evidence of raised ICP or obstructive hydrocephalus.
- Detailed discussion of the risks and benefits of neuraxial versus general anaesthesia(GA), considering the stable intracranial lesion, twin pregnancy, comorbidities and anticipated obstetric challenges.
- Consensus to perform caesarean delivery under a central neuraxial block.

Anaesthetic management

- Single-shot spinal technique
- Performed by an experienced senior anaesthetist
- Pre-procedural neuraxial ultrasound used for anatomical Identification
- 27G Whitacre pencil-point needle employed
- Backup plan in place for neuro-protective GA

Discussion

- **Thorough assessment:** Confirm stable neuroimaging and exclude hydrocephalus or raised ICP before proceeding.
- **Patient involvement:** Include the patient in the MDT discussion regarding anaesthetic choices and timing of delivery.
- **Multidisciplinary involvement:** Ensure decisions involve senior obstetric anaesthetists, neurosurgeons, obstetricians and neonatologists.
- **Choice of single-shot spinal:** Selected over epidural to provide reliable surgical anaesthesia while minimising cerebrospinal fluid leakage and the associated risks of intracranial hypotension and harmful pressure shifts.
- **Risk mitigation:** Use an experienced senior anaesthetist, pre-procedural neuraxial ultrasound, a 27G pencil-point needle to minimise dural trauma and CSF loss.

Conclusion

- Single-shot spinal anaesthesia is safe in selected neuro-obstetric patient when imaging shows no hydrocephalus or ICP and MDT consensus is achieved.
- Careful preoperative planning, patient involvement and senior specialist input are crucial to selecting the optimal technique.
- A spinal block with a narrow gauge needle performed by an experienced operator with a backup plan for GA minimised risk and yielded a favourable maternal and neurological outcome.

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