

## A patient with acute abducens nerve palsy for lower segment caesarean section

Sir,

A full term 32-year-old parturient with Gradenigo's syndrome was scheduled for a lower segment caesarean section (LSCS). She had isolated left abducens nerve (AN) palsy due to apical petrositis diagnosed on magnetic resonance imaging.

She had complaints of severe headache on and off associated with vomiting for 7 days and diplopia involving left eye for 4 days. She was haemodynamically stable and pregnancy induced hypertension was ruled out. She was on systemic antibiotics and acetaminophen 650 mg 8<sup>th</sup> hourly and had received counselling about the disease. Elective LSCS was planned as it was precious pregnancy for the couple. On preanaesthesia check-up, she was found to have no other systemic illness and no contraindication for regional anaesthesia. Her coagulation parameters were normal. Her routine investigations (complete blood picture, urea, creatinine, and serum electrolytes) were within the normal limits. Surgery was completed under general anaesthesia with Sellick's manoeuvre, using thiopentone, succinylcholine, and oxygen, nitrous oxide, fentanyl, and vecuronium maintenance on controlled ventilation. She improved clinically after 5 weeks.

Gradenigo's syndrome comprises a triad of suppurative otitis media, pain along distribution of trigeminal nerve and AN palsy. The causes are apical petrositis due to suppurative otitis media and extradural inflammation at petrous apex involving trigeminal ganglion and AN. If untreated, it can lead to meningitis, intracranial abscess, prevertebral/parapharyngeal abscess, spread to sympathetic plexus and involve IX, X, XI cranial nerves (CNs) (Vernett's syndrome).<sup>[1]</sup>

All CNs, with the exception of I, IX, X can be affected following dural puncture. VI CN palsy is more common owing to its long intracranial course, which leads to traction and stretching of the nerve due to cerebrospinal fluid loss. Cain *et al.* conducted a systematic literature review of AN palsy due to dural puncture and found that there were 28 patients with temporary and permanent AN palsy (a total of 17 case reports and 5 case series).<sup>[2]</sup> The procedures, which

lead to AN palsy were lumbar puncture (LP), spinal anaesthesia, intrathecal catheterisation and shunting. The palsy was attributed to traction and local ischaemia due to intracranial hypotension. Vial *et al.* reported AN palsy leading to diplopia in a parturient who underwent LSCS under spinal anaesthesia presenting with neck pain, diplopia and postural headache, which didn't subside with two epidural blood patches.<sup>[3]</sup> Recovery took 8 months. Follens *et al.* in their study have reported a combined IV and VI CN palsy following LP.<sup>[4]</sup> The patient required surgical correction for secondary diplopia subsequently. They also mentioned that the incidence of AN palsy after LP is around 1 in 400. Kose *et al.* reported a case in which a 38-year-old male underwent corrective surgery for left hallux valgus deformity under spinal anaesthesia and developed bilateral strabismus and bilateral AN palsy with diplopia.<sup>[5]</sup> Diplopia resolved after 9 weeks and strabismus after 6 months.

Regional anaesthesia is considered the safest modality of anaesthesia for a parturient scheduled for LSCS if there are no contraindications. However, Afolabi and Lesi in their review found no evidence to show that regional anaesthesia is superior to general anaesthesia in terms of maternal or neonatal outcomes.<sup>[6]</sup>

AN palsy is an unusual and distressing complication of dural puncture.

It is impossible to predict in which patient this problem may occur following dura puncture. We avoided spinal anaesthesia in this patient as the patient had palsy related to Gradenigo's syndrome already, for medico-legal reasons, even though there is no evidence that the risk is more in such patients.

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