

## Post-spinal headache in a parturient - look beyond post-dural puncture headache

Sir,

A primigravida who had an uneventful lower segment caesarean section (LSCS) under spinal anaesthesia at our hospital presented with severe headache on the 8<sup>th</sup> post-operative day. Spinal anaesthesia had been administered using a 27-gauge spinal needle in the first pass. There was no episode of intraoperative hypotension and she had received adequate hydration post-operatively. She was referred to us to rule out post-dural puncture headache (PDPH). She was ambulant and had severe headache in the supine position, which was relieved partially in the sitting position. There were no signs of meningeal irritation, but the left lateral movement of her neck was restricted. Blood pressure was 150/90 mm Hg in the right upper limb, and other vital parameters were within normal limits. Since the features were inconsistent with PDPH (in which headache aggravates in sitting position but is relieved in supine position), we sought a neurologist's opinion. Magnetic resonance imaging of the brain showed evidence of subarachnoid haemorrhage (SAH) (Fischer grade 2) in cerebral sulci [Figure 1]. Computed tomography angiography showed an aneurysm between the left internal carotid artery and anterior communicating artery measuring about 2 mm and the venous phase showed hypoplasia of the anterior and a small region of the posterior aspect of the superior sagittal sinus [Figures 2 and 3].

Interventional neurology and neurosurgical opinion were sought; it was opined that the cause for SAH may be cortical venous thrombosis (CVT). No intervention was advised for the aneurysm; treatment of CVT (using heparin or antiplatelet agents) was avoided due to coexisting aneurysm. She received paracetamol 1 g and tramadol 50 mg intravenously for analgesia and mannitol and steroids for neuroprotection. She improved with these medications and was discharged after 4 days.

Aetiologies of postpartum headache can be multifactorial. It may be as benign as tension headache, or it may be a manifestation of serious disorder such as CVT, posterior reversible encephalopathy syndrome, SAH, intracranial tumours, meningitis, sinusitis, cerebral infarction and many others.<sup>[1]</sup> Following spinal anaesthesia, any headache is initially suspected to be PDPH and the anaesthesiologists as perioperative physicians should establish a proper diagnosis.

SAH is a rare cause of severe headache in the postpartum period. It could have been due to the CVT caused by venous hypertension and subsequent rupture of dilated thin subarachnoid cortical veins.<sup>[2]</sup> The presence of SAH in the cerebral sulci favours a diagnosis of CVT.<sup>[3]</sup> Although lumbar puncture may be considered as one of the pre-disposing factors to CVT; it is unlikely to be the cause in our case because she remained asymptomatic for the first 7 days following spinal anaesthesia.<sup>[4]</sup> Hypercoagulable state in the early postpartum period might have pre-disposed to the development of CVT.

Safety of regional anaesthesia in the presence of aneurysm is controversial. Our patient was

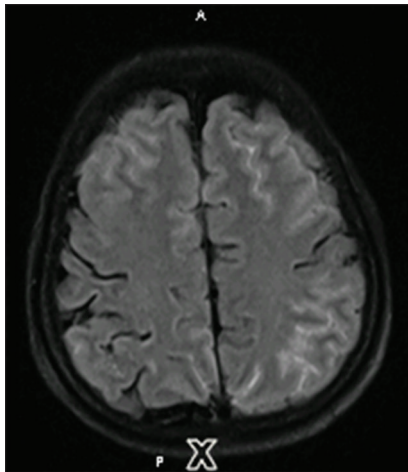


Figure 1: Subarachnoid haemorrhage in magnetic resonance imaging

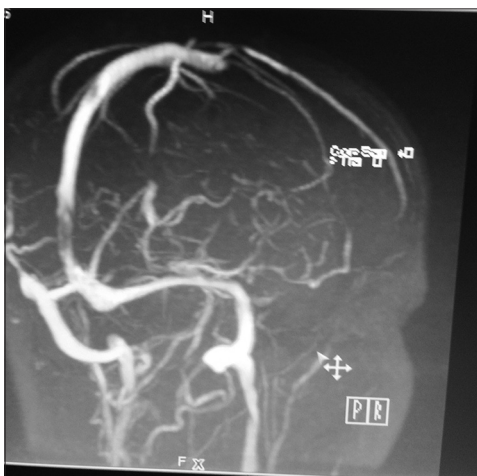


Figure 2 : Hypoplasia of the anterior sagittal sinus



Figure 3: Aneurysm seen on computed tomography angiography

asymptomatic pre-operatively and hence, the decision to administer spinal anaesthesia. However, fall in intracranial pressure after the dural puncture may alter the cerebral transmural pressure, inducing aneurysmal rupture. Carefully performed epidural anaesthesia avoiding dural puncture is considered safer under such circumstances.<sup>[5]</sup> General anaesthesia is reserved for emergency cases with foetal distress; care should

be taken about maintaining optimal haemodynamic parameters throughout the surgery.

If headache is atypical as in our case or if it presents as PDPH but later becomes continuous, diffuse, losing its postural nature, persists despite treatment, further investigations should be performed to reach a logical conclusion. Treatment options present certain dilemma and a multidisciplinary team approach is suggested.

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**Conflicts of interest**

There are no conflicts of interest.

**Anitha Prashanth, Murali Chakravarthy<sup>1</sup>**

Department of Anaesthesia, Fortis Hospitals, <sup>1</sup>Department of Anaesthesia, Critical Care and Pain Relief, Central Infection Prevention and Control Committee, Fortis Hospitals, Bengaluru, Karnataka, India

**Address for correspondence:**

Dr. Anitha Prashanth,  
No. 1661, 38<sup>th</sup> Cross, East End 'A' Main, 9<sup>th</sup> Block, Jayanagar,  
Bengaluru, Karnataka, India.  
E-mail: anithaprashanth16@gmail.com

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