Delayed and Extensive Spinal Block Following Epidural Anaesthesia

The Editor,

Sir,

Total spinal anaesthesia, with concomitant symptoms of hypotension and hypoventilation, is a rare but life-threatening complication of epidural block, which is usually abrupt. Here, we reported an unexpected case of delayed and extensive spinal block following epidural anaesthesia.

A 61-year-old male patient, previously "healthy", diagnosed with benign prostatic hyperplasia, was scheduled for transurethral resection of the prostate. An epidural catheter was uneventfully inserted at the L3-L4 interspace, and a test dose of 4 mL, 2% lidocaine and 0.5% ropivacaine were administered, respectively, after negative aspiration of CSF or blood. Ten minutes later, the sensory block level reached to T10, the patient was then passively placed in the lithotomy position, and the operation started. About 30 minutes after initial epidural injection, with significant decreases in haemodynamic parameters (blood pressure decreased from 106-137/62-78 mmHg to 55/37 mmHg and heart rate decreased from 64–82 bpm to 50 bpm) and pulse oxygen saturation (from 100% to 71%), the symptoms of dyspnoea, nausea and arm weakness were experienced by the patient. Vasopressor support and oxygen therapy were immediately given to keep the vital signs stable. Bladder rupture and/or water intoxication were excluded, and the physical examination revealed an extensive spinal block at C4. Another 2 cm of the epidural catheter migrated inside and cerebrospinal fluid was obtained through the epidural catheter. The patient refused to take a magnetic resonance imaging to identify the catheter position. At three hours after the epidural injection, the sensory block level decreased to T10 and the catheter was then extracted intact. The patient kept consciousness throughout the event and no late complications followed.

Flexibility is minimal with the catheter tip, and the catheter could act as a short "stylet" if excessive force were applied upon the catheter. Meanwhile a change in position may facilitate the dura perforation of the catheter tip, it has been shown that changing position might cause catheter inward movement of 0.5–4 cm (1). A minor scratch injury may be induced by direct injury or turning the direction of the epidural needle (2). Once dura mater was impaired, the local anaesthetic agents gradually and consequently infiltrated the subbarachnoid space, and late and extensive spinal block occurred (3). However, the exact mechanism involved in this very patient is not determined. This event stresses the necessity of continuous monitoring of catheter position and sensory block level during epidural anaesthesia.

AUTHORS' NOTE

Liangrong Wang conceived and planned the work that led to the paper; wrote the paper, reviewed successive versions and took part in the revision process and approved the final version. Lida Jin: reviewed successive versions and took part in the revision process and approved the final version. Xiangqing Xiong approved the final version. Lina Lin interpreted the evidence it presents; took part in the revision process and approved the final version.

Keywords: Complications, epidural anesthesia, total spinal anaesthesia

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