Fractionated spinal anaesthesia in an achondroplastic dwarf

Sir,

A 57-year-old dwarf with achondroplasia was posted for open reduction and internal fixation with bone grafting of right tibia. He weighed 24 kg and his height was 114 cm. His blood parameters were normal. He had mild thoracic kyphosis. Echocardiography showed a non obstructive hypertrophic cardiomyopathy. Airway was also normal with normal neck movements. The anaesthetic plan was fractionated subarachnoid block (SAB). After obtaining venous access and initiating the standard monitors he was turned to right side and prepared for SAB. A volume of 2.5 mL of hyperbaric 0.5% Bupivacaine was kept ready and SAB was performed with a 25 G Quincke's needle. The drug was administered in two fractions with an interval of 90 seconds between the two injections. He was turned supine five minutes after completion of injection. After confirming the level of sensory blockade, he was draped and surgery was started. His hemodynamic variable remained stable throughout and there was no change in blood pressure or heart rate from the baseline. Surgery was completed uneventfully in three hours.

Achondroplasia is the commonest form of dwarfism.[1] Both general and regional anaesthesia are challenging in these patients. Airway management may be difficult due to large head, large tongue and narrow airway. They also may have restrictive lung disease caused by pectus excavatum and kyphoscoliosis. Neuraxial blocks are technically difficult due to kyphoscoliosis, narrow epidural space and abnormal anatomy of the vertebrae.[2] It is difficult to determine the correct dose in these patients as they have short stature and low body weight. The spread of the drug in subarachnoid space is unpredictable due to spinal stenosis, altered curvatures of spine, and narrowing of the intrathecal and epidural spaces. For this reason, titratable options like combined spinal and epidural are often considered a better choice. There are case reports of failed SAB in achondrplastic patients where lower volumes

of drug was given.[3,4] We considered administering a comparatively higher volume of drug with the fractionated technique hoping to get a better control over the ascent of the spinal drug and sympatholysis. Fractional spinal anaesthesia has been studied and found to have better hemodynamic stability and longer duration of analgesia.[5]

References

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