

Long length spinal needle in obese patients

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Abstract

Sir:

A 40 year old, 171cm, 162kg morbidly obese male (BMI 55.4) suffering from obstructive sleep apnoea, type II diabetes mellitus and hypertension presented to us for drainage of perianal abscess. The patient firmly refused general anaesthesia because he feared that the combination of his size and obstructive sleep apnoea would place him at increased risk for perioperative complications. Spinal anaesthesia was planned for this patient. The patient had an earlier history of failed spinal block for the same procedure due to inability to locate the subarachnoid space.

In the operating room, the patient was placed in a sitting position and instructed to fully flex his back. On examination, the iliac crest could be identified, but spinous processes could not be easily palpated. After preparing the patient's back with povidone iodine and sterile drapping, a skin wheal, with 2% lignocaine was raised. A 25G, 3.5inch(8.75 cm) Quinckes needle was inserted in the midline, at the level of the superior border of the iliac crest. The intrathecal space could not be located even after numerous attempts. It was then decided to attempt the subarachnoid block with a long length spinal needle. A 22 gauge, 7.00 inch(17.5cm) needle was then introduced in the midline in the L3-L4 interspace and the subarachnoid space was successfully located. 0.5% hyperbaric bupivacaine 1.0ml and 25µg fentanyl was injected into the subarachnoid space. A satisfactory block was obtained and the patient underwent uneventful abscess drainage.

Regional anaesthesia is often technically more challenging in obese patients. The major challenges of regional anaesthesia in obesity are related to identifying appropriate landmarks, positioning the patient prior to and after performing the block and using a needle of sufficient length.

Fluoroscopy and ultrasound localization of the space are the latest techniques in locating the subarachnoid space.

Literature search revealed that Abe et al³ have devised a formula for predicting the required lumbar puncture depth, which can aid in the selection of an appropriate sized spinal needle.

$$\text{Lumbar puncture depth (cm)} = 1 + 17 \text{ weight (kg)} / \text{Height (cm)}$$

When we apply this formula in our patient, the depth of the spinal space is at 17.10 cm. Awareness of this formula would have aided us in selecting a longer spinal needle in the first attempt itself.

Eidelman et al⁴ have reported a case of technically difficult spinal anaesthesia in a morbidly obese woman, which was successfully performed using 17.78cm long 22G Quincke's needle under fluoroscopy.

As lumbar puncture is a procedure widely used in anaesthesia in emergency and elective procedures, we suggest the use of long length spinal needle in place of the conventional length needle to increase the success rate of lumbar puncture in obese patients.

References

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