

Peripheral nerve block in a patient with amyotrophic lateral sclerosis

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Received: 12 May 2011 / Accepted: 13 October 2011 / Published online: 1 November 2011
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To the Editor:

We have used lumbar plexus and sciatic nerve blocks in an ALS patient with a collum femoris fracture. The patient was 55-year-old female who had been followed-up for the past 1.5 years for ALS with bulbar onset and upper and lower motor neuron involvement. On physical examination, jaw opening was limited, the patient was dysphonic, and, because of dysphagia, a nasogastric tube was inserted. Preoperative ALS severity score was 17 (speech, 5: frequent repeating required; swallowing, 4: supplemental tube feeding; lower extremity and walking, 4: able to support weight; upper extremity dressing and hygiene, 4: attendant assists patient) [1]. Her ALSSS score the first month postoperatively was 13.

The anatomical reference points were marked for lumbar plexus and sciatic nerve blocks by the posterior approach (Winnie's technique). An 8-cm, 17-gauge Touhy needle (Arrow, USA) was inserted and attached to a nerve stimulator (Stimuplex HNS 11, BBraun). When twitch of the quadriceps muscle and patella at 0.5 mA current was observed, a 60-cm stimulating peripheral nerve catheter (Stimucath, Arrow, International PA, USA) was placed by the lumbar plexus. A mixture of local anesthetics comprising 15 ml 0.25% levobupivacaine (Chirocaine 0.5%, Abbott, Turkey) + 10 ml 1% prilocaine (Citanest 2%, Astra Zeneca, Turkey) was administered to the lumbar plexus via the catheter, monitoring the nerve motor response. Then, a 21-gauge, 100 mm long Stimuplex needle (Stimuplex A, BBraun, Germany) was inserted to the

sciatic nerve sheet. A 0.5 mA current was given by nerve stimulator (Stimuplex HNS 11, BBraun) until plantar flexion was observed then a mixture of 10 ml 0.25% levobupivacaine and 10 ml 1% prilocaine was injected.

At 20 min of the procedure, motor block score using the bromage scale was 3, and at 25 min the sensory level (T10) was determined by pin-prick and cold tests.

At the fourth hour postoperatively the motor block resolved. Follow-up control visit at 3 months showed no neurological progression in terms of ALS.

In neurological diseases such as ALS, regional techniques are relatively contraindicated because of mechanical trauma induced by needle or catheter, nerve ischemia as a result of supplementation of vasoconstrictor agents, and toxic effects of local anesthetics. However, more recently, researchers argue that regional techniques may be used in patients with neurological disease on the basis of risk–benefit analysis [2].

In ALS, peripheral nerve blocks have advantages over other anesthesia techniques in terms of prevention of respiratory failure due to weakness of the respiratory muscles, protection of the laryngeal reflexes, and maintaining of the hemodynamic stability [3].

Lumbar plexus and sciatic nerve blocks have disadvantages attributable to being technically challenging, late onset of anesthesia compared with neuraxial anesthesia, insufficient anesthesia, and toxicity due to use of more local anesthetic than for neuraxial anesthesia.

In conclusion, we suggest that peripheral nerve blocks can be chosen as an alternative technique to neuraxial blocks and general anesthesia in ALS patients undergoing surgery on their extremities. Although we performed peripheral nerve block with a stimulating nerve catheter, ultrasound-guided nerve block with nerve stimulation could be best for regional anesthesia in ALS patients.

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