

1. A 28-year-old male patient is admitted to the hospital after his hand was caught in the fan blades of a tractor. He is extremely anxious that the thumb of his left hand was almost completely severed through the thenar eminence and is "hanging by a thread of tissue". He does not have any other sequela. In addition to monitored anesthesia care (MAC)/sedation, which of the following block techniques would be the best option for both anaesthesia and analgesia management in this case?

- A) Nerve stimulator-guided single injection interscalene brachial plexus block
 - B) Ultrasound-guided axillary brachial plexus block and catheter placement
 - C) Ultrasound-guided infraclavicular brachial plexus block and catheter placement
 - D) Ultrasound-guided median nerve block and NSAID/paracetamol/opioid
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2. Which one is correct while using neurostimulation/peripheral nerve stimulation guidance?

- A) The motor response at current below 0.2 mA is accepted for block performances
 - B) The positive polarity is more effective to depolarize the nerve membrane
 - C) Pulse width is a time duration for which the current is applied_
 - D) Chronaxie is the minimum current of indefinite duration to depolarize a nerve
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3. Which one of the following is true when "a prospective randomized study" is considered?

- A) Evaluate and summarize published research studies that address a particular subject
 - B) Observe a defined population at a single point of time or a time interval
 - C) Search the relation of a factor to the disease by comparing diseased and control cases
 - D) Distribute enrolled participants into two or more study groups for a controlled trial
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4. Duration of a *plexus block* can be prolonged with which one of the following maneuvers?

- A) Adding dexamethasone to a local anaesthetic
 - B) Using lower concentration of a local anaesthetic
 - C) Using lower volume of a local anaesthetic
 - D) Adding morphine to a local anaesthetic
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5. Considering the lumbo-sacral plexus and its several branches, which one of the following statements is true?

- A) The common peroneal nerve is a purely sensory nerve
- B) The iliohypogastric nerve derives from the anterior branch of L1 and sometimes T12
- C) The obturator nerve originates from the posterior divisions of L2-L4 spinal roots
- D) The posterior femoral cutaneous nerve always accompanies the sciatic nerve

ANSWERS

- 1) C
- 2) C
- 3) D
- 4) A
- 5) B

- 1) To manage anaesthesia and analgesia in a hand trauma patient; US-guided supraclavicular, infraclavicular and axillary brachial plexus blocks can be the ideal effective and safe options. Continuous local anaesthetic infusion/bolus through the catheter would provide better acute pain management for a longer time. Infraclavicular blocks are especially preferred for catheter placements because of their deep infraclavicular brachial plexus location and reduced risk of catheter dislodgement.

- 2) The nerve-stimulator motor response at current between 0.2 and 0.5 mA is accepted for block performances.

The negative polarity is more effective to depolarize the nerve membrane.

Chronaxie is the minimum time required for an electric current double the strength of the rheobase to stimulate a muscle or a neuron. Rheobase is the lowest intensity with indefinite pulse duration which just stimulated muscles or nerves.

- 3) Meta-analysis: Evaluate and summarize published research studies that address a particular subject.

Cross sectional study: Observe a defined population at a single point of time or a time interval.

Case-control study: Search the relation of a factor to the disease by comparing diseased and control cases.

- 4) Adding commonly preferred adjuvants such as dexamethasone, dexmedetomidine, clonidine and buprenorphine to a local anaesthetic prolongs the duration. Using lower concentration and/or volume of a local anaesthetic would delay the onset time and lower the intensity of the block. Morphine as an adjuvant to a local anaesthetic for peripheral nerve/plexus block performances is not a common option.

- 5) The common peroneal nerve does not only have a sensorial but also a motor component. The obturator nerve originates from the anterior divisions of L2-L4 spinal roots. The posterior femoral cutaneous nerve accompanies the sciatic nerve only at proximal levels close to sacral plexus, gluteal and sometimes subgluteal area. It cannot be accepted as blocked everytime whenever sciatic nerve is blocked. The iliohypogastric nerve mainly derives from the anterior branch of L1 and might sometimes also receive contribution from T12.