International Journal of
Regional Anaesthesia

Clinical Pearl for a Successful and Safe PNS Guided Peripheral Nerve Block

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Pre Operative Preparation

- Pre-procedural evaluation with history of antiplatelet or antithrombotic drug use.
- Assess neurological status in patient with trauma and neuropathy.
- Explain the procedure and complications.
- Possibilities of failure of the procedure, multiple injections and conversion to GA must be explained
- Obtain informed written consent.

Pre Procedure Preparation (AORA Check list)

- Perform the block in a dedicated block room or in OT.
- Confirm the site before starting the procedure.
- Block room must be equipped with monitoring devices and equipment.
- Ensure all resuscitative emergency drugs, equipment and intralipid present in the cart.
- Secure venous access before performing the procedure.
- Connect monitor for ECG, Non-invasive blood pressure (NIBP), and peripheral oxygen saturation.

Before Giving Block

- Stop Before You Block: Confirm again about patient and site of block.
- Calculate and keep drugs needed for block in labelled syringes ready before the procedure.
- Maintain asepsis throughout the procedure.
- A small dose of sedative/anxiolytic may be necessary for anxious patients. Infiltrate the injection site with lignocaine.
- Positive electrode is Red, and negative is Black (Positive is attached to patient, negative end is attached to the Needle). Machines may have different colour coding for the electrodes.
- PNS stimulation is not possible in patient receiving neuromuscular blocking agent.
- Presence of neuraxial anaesthesia doesn't affect the stimulation of intact motor unit by PNS.
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Block Procedure

- Always use insulated needle
- For superficial blocks: Use 50 mm needle, current at 1.0 mA.
- For deeper blocks: Use 100 mm needle, current at 1.5 mA
- Set PNS in 0.2 ms current duration & frequency at 2 Hz.
- End motor response (EMR) between 0.3 mA to 0.5 mA is considered safe and ideal (except lumbar plexus block where below 0.5 mA is unsafe).
- For children 25 mm needle is preferred.
- Repeated aspiration before injection of drug at 3-5 ml aliquot is a safe practice.
- Never try to inject against high resistance, use of injection pressure monitoring device is advisable.
- Keep talking to the patient while injecting the drug for early detection of the signs of the toxicity.
- Injection of Dextrose solution is preferred over sodium chloride for hydro dissection as saline will abolish muscle twitches.

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DOI: 10.13107/ijra.2021.v02i02.044 | www.ijrajournal.com |

After Procedure

• Document the procedure. Date, Time, Needle type, size, disappearance of EMR at what current, setting of the PNS before injection of the drug, injection resistance or ease of injection, tingling or numbness during or immediately after injection, vitals etc.

• Assessment of Dermatome, Myotome and osteotome at 30 minute. If all are blocked, then only we can proceed for incision and surgery

Desirable End Motor Response	
Nerve Block	**Response**
Interscalene Brachial plexus block	Any two contractions of pectoralis major, deltoid, triceps or biceps.
Supraclavicular Brachial plexus block	Finger or wrist twitches (flexion or extension)
Infraclavicular Brachial Plexus Block	Posterior cord response is desirable (Extension of wrist and fingers)
Axillary Brachial Plexus Block	Median nerve- Flexion of first three fingers Musculocutaneous nerve- Elbow flexion Radial nerve- Fingers extension Ulnar nerve- Flexion of fourth &little finger along with apposition of thumb towards little finger
Femoral Nerve Block	Dancing of patella (Twitches of quadriceps muscle)
Sciatic Nerve Block	Planter flexion or dorsi flexion
Lumbar Plexus Block	Quadriceps contraction
Ilioinguinal & Iliohypogastric Nerve Block	Lower Abdominal muscle & Inguinal region Twitches (T10-L1 territory)
Thoracic Paravertebral Block	Corresponding intercostal muscles twitches
Serratus Anterior Plane (SAP) Block	Serratus anterior muscle twitches/ Dancing of Scapula.
PEC1 Block	Pectoralis Major muscle twitches

Declaration of consent: Taken written Consent from AORA
Conflict of interest: Nil **Source of support:** None

How to cite this article: Roy R, Das H, Singh N, Giri S, Vadera H, Ponde V | Clinical Pearl For A Successful And Safe PNS Guided Peripheral Nerve Block | July-December 2021; 2(2): 143-144.