Definition
For the purpose of this policy the abbreviation PNB refers to Peripheral Nerve Block.

1. PURPOSE

1.1 To provide safe effective pain management utilizing PNB analgesia.

1.2 To provide a consistent method of assessing and caring for patients receiving PNB analgesia.

1.3 To safely remove PNB catheters.

2. POLICY

2.1 Registered Nurses/Graduate Nurses identified by their manager will be certified in this Special Nursing Procedure to care for patients receiving PNB analgesia. This includes patient monitoring, adjustment of rate, mode, changing infusion bags, and removal of PNB catheters with a written anaesthesiologist/designate order.

2.2 The anaesthesiologist will be responsible for all orders regarding PNB initiation, dosage adjustments, maintenance, discontinuation and adjunctive analgesics, anti-nauseants, and sedatives (form #102973).

2.3 Continuous PNBs will be run through an infusion pump targeted for PNB use initiated in PACU.

2.4 Oxygen, suction, and resuscitative equipment must be readily available.

2.5 The patient must have a patent IV.
3. **PROCEDURE**

3.1 *The Anaesthesiologist will:*

3.1.1 For Single Injection PNB
- Inject medication to establish patient’s sensory block

3.1.2 For Continuous PNB
- Insert PNB catheter and inject initial dose to establish patient’s sensory block.
- Secure the catheter in place.
- Hang initial medication bag and initiate infusion.
- Label the PNB tubing with ‘PLEXUS’ label provided in insertion kit.
- Administer single/top-up doses of anaesthetic as required.

3.2 *The Registered/Graduate Nurse will:*

3.2.1 Ensure patient has an IV established and maintained.

3.2.2 Monitor the patient’s vital signs, including SpO2, sedation level, pain score, sensation scale, and motor function as per protocol (see Appendix A).

3.2.3 Assess and immediately report signs and symptoms of systemic toxicity/allergic reaction/adverse effects (See Appendix A) to the Anaesthesiologist.

3.2.4 Change premixed medication infusion bags.

3.2.5 Perform independent double checks for changing bags, mode and rate of infusion as per the “High Alert Medications – Identification, Double Check and Labeling policy #7311-60-004 located in the SHR Regional Policy Manual.

3.3 *Care of the Blocked Limb (See Appendix B).*

3.4 *Care of the Peripheral Nerve Block (PNB) injection/insertion site (See Appendix A).*

3.4.1 Observe site for redness, excessive bruising, swelling and infection (i.e. pain, warmth, discharge).

3.4.2 If catheter in situ:
- Check dressing over insertion site q4h, with each injection (by anaesthesiologist), and pm.
- Do not remove the primary dressing.
- Observe for a wet dressing indicating leakage of blood or medication. If dressing saturated, notify anaesthesiologist.
- Reinforce tape around dressing if necessary.
- Ensure catheter is always securely taped.
- Be cautious when moving or turning the patient so the catheter is not dislodged.
- Check catheter tubing and pump connection for disconnection or kinking.
- If the catheter becomes disconnected, call the anaesthesiologist immediately.

**Note:** Cover ends with a male/female adapter (SKU #40095) to keep ends as sterile as possible.
- No tub bath or shower while catheter in situ.
3.5 Monitoring and Assessing Documentation (See Appendix A).

3.6 Removing Peripheral Nerve Block (PNB) Catheters.

3.6.1 Supplies:
- Clean gloves
- 2 x 2 gauze
- Sterile semi-permeable dressing (e.g. 4-sided Elastoplast).
- If tip / site is to be cultured: Dressing tray, sterile scissors, sterile specimen container, culturette swab (SKU #10078), requisition and labels

3.6.2 Perform hand hygiene.

3.6.3 Position patient so that catheter site is easily accessible.

3.6.4 Turn off infusion pump.

3.6.5 Place sterile field to receive catheter if tip culture is ordered.

3.6.6 Glove.

3.6.7 Remove dressing and tape (if any).  
**Note:** Catheter may come out with dressing

3.6.8 Gently withdraw catheter steadily and place on sterile field if tip is to be sent for C&S  
**Note:** If unable to remove the catheter or there is any resistance upon removing catheter, stop and notify anaesthesiologist immediately.

3.6.9 Assess the catheter site for unusual bleeding, bruising, swelling, or redness.  
**Note:** If evidence of infection, obtain swab for C & S from the site and notify physician.

3.6.10 After catheter removal swab site with Chlorhexidine 2% or Chlorhexidine 2%/70% alcohol and apply an occlusive dressing.

3.6.11 Check catheter tip to ensure it is intact. If not intact notify the anesthesiologist immediately.  
- If the PNB catheter is suspected as a source of infection: Use sterile scissors to remove 5 cm from the distal end of catheter and place in sterile container and label specimen container at bedside.

3.6.12 Recheck site one hour following catheter removal for any persistent fluid leakage, localized bleeding, expansion of bruising or hematoma. If present notify the anesthesiologist immediately.

3.6.13 Remove sterile semi-permeable dressing (e.g. 4-sided Elastoplast) in 24 hours.
3.6.14 Document the:
- Date and time of removal
- Condition of insertion site
- Condition of catheter tip
- If any bleeding, fluid drainage, hematoma at catheter site present
- Whether tip / site was cultured
- Patient response to procedure
- Complications and intervention

3.7 Report to the anesthesiologist if:
- There is alteration to sensation or movement during or following removal.
- If persistent fluid leakage, localized bleeding or expansion of bruising or hematoma is noted.
- If sensory block is not resolved within 24 hours after catheter removal.

4. REFERENCES


Pain (Acute): Regional Blocks (Peripheral Nerve/Plexus) Nursing policy. Ottawa Hospital.

Pasero, C. Perineural local anesthetic infusion. AJ N 104(7) 89-92.


Appendix A

FREQUENCY OF MONITORING

<table>
<thead>
<tr>
<th>SINGLE INJECTION</th>
<th>INFUSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1h x 4</td>
<td>Q1h x 4</td>
</tr>
<tr>
<td>Q4h x 24hrs or until discharge</td>
<td>Q4h x duration of infusion</td>
</tr>
<tr>
<td></td>
<td>Q4h x 24hrs once infusion is discontinued</td>
</tr>
</tbody>
</table>

MONITORING AND DOCUMENTING PROTOCOL

Assessment of need and use of adjunct medication
BP, P, RR, SpO2

<table>
<thead>
<tr>
<th>Pain Scale</th>
<th>Sedation Scale</th>
<th>Motor Function</th>
<th>Sensation Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No pain</td>
<td>2 No weakness</td>
<td>2 Normal - no block</td>
</tr>
<tr>
<td>0</td>
<td>Alert</td>
<td>1 Some weakness of legs/feet</td>
<td>1 Partial sensation</td>
</tr>
<tr>
<td>1</td>
<td>Sometimes drowsy</td>
<td>0 Unable to move legs/feet</td>
<td>0 Complete numbness</td>
</tr>
<tr>
<td>2</td>
<td>Frequently drowsy, easy to arouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Worst Pain</td>
<td>3 Somnolent, difficult to Arouse</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: DOCUMENT ALL REQUIRED MONITORING ON APPROPRIATE DOCUMENTATION RECORD.

REPORT IMMEDIATELY TO ANAESTHETIST:
- Signs and Symptoms of anaesthetic toxicity (see table below)
- Abnormal loss of movement or limb numbness
- Disconnection of catheter from tubing

CNS Signs & Symptoms of Anaesthetic Toxicity
- Metallic taste in mouth
- Numbness / tingling of lips
- Tinnitus
- Confusion
- Slurred / garbled speech
- Tremors
- Seizures
- Drowsiness
- Unresponsiveness

CVS Signs & Symptoms of Anaesthetic Toxicity
- Irregular heart beat
- Bradycardia / Tachycardia
- Hypo / Hypertension
- Cardiac Arrest

Other Adverse Effects and Potential Problems
- Blood in tubing
- Catheter occlusion
- Leakage at site
- Saturated Dressing
- Uncontrolled pain
- Hematoma / infection at site
- Migration of catheter tip
- Hives
- Unilateral ptosis
- Excessive paresthesia
- Respiratory depression / compromise
- Pneumothorax / hemothorax
Care of the limb

- Move blocked limb cautiously but as often as possible to avoid prolonged pressure on the blocked limb
- Provide skin care and maintain limb alignment
- Avoid contact of the blocked limb with hot or cold objects

Upper extremity PNB

- Keep limb in sling
- Protect elbow with a pillow placed under the arm (prevent ulnar nerve injury)

Lower extremity PNB

- Keep limb padded and on a pillow (prevent injury to peroneal nerve)
- Assess quad function prior to mobilizing
- Ensure 2 persons assist to transfer
- Ensure patient avoids walking on blocked leg until sensation return