

CONSIDERATIONS:

1. Epidural and intrathecal are routes of medication administration used most commonly for pain management. Catheters can be placed by a neurosurgeon or anesthesiologist into either of these spaces.
2. The intrathecal space surrounds the spinal cord. The epidural space surrounds the intrathecal space and the two are separated by a membrane called the dura mater.
3. Epidural or intrathecal administration of pain medication, generally, has a longer duration of action, requires lower doses of medication and results in lower incidence of side effects than intravenous administration. A bolus of epidural morphine sulfate analgesia may last for more than 20 hours.
4. Epidural or intrathecal access can be achieved using one of several different devices. Examples are: implanted ports with attached catheters, tunneled catheters similar to central venous catheters, and implanted continuous infusion systems, e.g., infusaid pump and intrathecal infusion lines. Implanted epidural/intrathecal ports are similar to central venous ports, i.e., MediPort, Port-a-Cath.
5. Epidural or intrathecal catheters are for both temporary and long-term use. Temporary catheters are directly placed in the epidural space and are most often used until a long-term catheter can be placed. Temporary catheters should be monitored closely for potential catheter tip migration; Long-term catheters may be placed in the epidural/intrathecal space and tunneled through the subcutaneous tissue to an exit site usually on the anterior aspect of the patient or connected to an implanted port surgically placed under the skin.
6. Complications of this type of pain management therapy include, but are not limited to: paresthesia, pruritus, nausea, vomiting, urinary retention, respiratory depression, excessive drowsiness, confusion, hypotension, and respiratory arrest. Catheter complications may include infection, dislodgement and leaking. Complications should be documented and reported to the physician immediately.
7. Initial doses of intraspinal pain medication should be given in the hospital or physician's office. The patient should be stable on the same medication regimen for 24 hours in a controlled setting prior to acceptance for home therapy.
8. Narcan may be ordered by the physician to reduce possible overdose symptoms.
9. Any medication given must be in a sterile, preservative-free saline solution.
10. Alcohol is contraindicated for injection port/needleless connector cleaning because of the potential for migration of alcohol into the epidural space and possible nerve damage.
11. All procedures involving the use or access of an epidural/intrathecal line are to be done using strict aseptic technique.
12. Routine dressing changes for a short term catheter are not recommended. For long term catheters a transparent semipermeable membrane (TSM) dressing should be changed every 7 days, and whenever the dressing becomes wet or incompletely adherent. If gauze is used under the transparent dressing, it is considered a gauze dressing and should be changed every 48 hours.
13. Tape catheter securely to the patient's skin beyond the dressing to prevent accidental dislodgement.
14. Continuous intraspinal infusions shall be administered via an electronic infusion device (pump).
15. Continuous infusions should only be considered when there is assurance of continued proper catheter positioning (e.g., sutures, tunneled catheter or port). DO NOT administer any medication if there is any concern or doubt regarding catheter placement.
16. The nurse can measure the external portion of the catheter with each visit to verify catheter placement.
17. For continuous infusions, the tubing will be changed:
 - a. When replacing the medication cassette
 - b. Whenever the integrity of the dosed system is violated
 - c. Weekly, if the system remains closed and cassette does not require changing sooner
18. All medications to be administered through epidural or intrathecal catheters should be labeled for use via those routes i.e., "Epidural/Intrathecal – No IV Access". (Intrathecal narcotic doses are 10 times less than epidural doses).
19. A 0.2 micron filter without surfactant, particulate retentive, and air eliminating should be utilized for medication administration.
20. The routine aspiration of an intraspinal catheter is not recommended.
21. The nurse should check catheter placement by gentle aspiration with a sterile syringe:
 - a. Before administering a bolus dose of medication
 - b. When patient is experiencing inadequate pain control or over-sedation. If an epidural catheter is properly positioned, no CSF fluid or blood will be aspirated. If an intrathecal catheter is properly positioned, observe for the presence of CSF
22. Aspiration of clear fluid from an epidural catheter may indicate migration into the intrathecal space. Bloody aspirate may indicate displacement into the

vascular system. In either case, DO NOT administer the bolus epidural medication and notify physician.

23. If blood is present with aspiration from an intrathecal catheter, DO NOT administer bolus intrathecal medication and notify the physician.
24. Epidural or intrathecal catheters do not require routine flushing. After intermittent drug delivery, flush with preservative-free saline as directed by physician order. A physician's order is required to flush the catheter.
25. The nurse caring for the patient and administering epidural/intrathecal therapy is expected to be knowledgeable about the medication, expected therapeutic effects, recommended dose range, side effects, toxic symptoms, management of the catheter, catheter complications, and equipment/pumps used to deliver medication.
26. An education program for self-administration will be initiated, where appropriate and as ordered by the physician.
27. The following procedures are guides and not intended to supersede physician orders or manufacturer recommendations

EQUIPMENT:

Nonsterile gloves
Sterile gloves
Mask
CVC dressing change kit with TSM dressing
Antimicrobial applicators
Sterile tape measure
Antimicrobial dressing, if ordered
Impervious trash bag

PROCEDURE:

1. Adhere to Standard Precautions.
2. Identify patient and explain the procedure and purpose to the patient/caregiver.
3. Assemble the equipment on a clean surface close to the patient.
4. Place patient in comfortable position, making sure that site is accessible.
5. Ensure adequate lighting.
6. Don mask.
7. Open and place supplies on a sterile field.
8. Don nonsterile gloves.
9. Remove old dressing being careful not to dislodge catheter.
10. Assess exit site for redness, drainage, swelling, or pain.
11. Remove gloves, perform hand hygiene and don sterile gloves.
12. Measure external catheter with tape measure.
13. Cleanse the skin with antimicrobial applicator per manufacturer's directions. Allow to air dry.

14. Place antimicrobial dressing around insertion site if ordered.
15. Apply TSM dressing, centering it over the catheter exit site.
16. If appropriate, replace old injection port/needless connector and 0.2 micron filter using aseptic technique.
17. Anchor catheter to skin with tape, beyond the dressing, to prevent accidental dislodgement.

Bolus Administration via Catheter with Implanted Port

EQUIPMENT:

Medication
Nonsterile gloves
Sterile gloves
Antimicrobial applicator (wipe/swab/disk/ampule)
Syringes
0.2 micron filter needle
Non-coring needle with attached extension tubing and injection port/needleless connector
Sterile, preservative-free normal saline – 10 mL vial
Safety needles, 25-gauge or needle less adaptor, if appropriate
2 x 2 gauze sponge, sterile
Tape
Mask
Sharps container
Impervious trash bag

PROCEDURE:

1. Adhere to Standard Precautions.
2. Identify patient and explain the procedure and purpose to the patient/caregiver.
3. Assemble the equipment on a clean surface close to the patient.
4. Place patient in comfortable position, making sure that site is accessible.
5. Ensure adequate lighting.
6. Locate the septum of the port by palpating the outer perimeter of the port.
7. Don mask, open and place supplies onto a sterile field.
8. Don one sterile glove. Prepare medication as ordered by physician using a 0.2 micron filter. Prepare saline syringe with 2 mL preservative-free saline.
9. Don second sterile glove.
10. Using aseptic technique, fill extension tubing, injection port and non-coring needle with normal saline.
11. Clean area over portal septum with antimicrobial applicator according to manufacturer's instructions for skin antisepsis. Allow to air dry. Alcohol/alcohol-based products are contraindicated, do not use.

12. Stabilize port. Using a perpendicular angle, insert non-coring needle into septum until the back of the port is felt. Once port is accessed, do not tilt or rock the needle as this may cause damage to the septum.
13. Attach medication syringe to the needleless connector on the extension set of the port, if appropriate. Insert the medication syringe with safety needle or needleless adaptor into the injection port, if appropriate. Aspirate for spinal fluid. Administer the medication slowly using steady pressure; remove syringe.
14. If flush ordered by physician, clean needleless connector/injection port with antimicrobial applicator. Allow to air dry. Attach/insert saline syringe as appropriate onto/into needleless connector/injection port. Inject 1 - 3 mL preservative free saline into the injection port. Remove syringe.
15. Remove non-coring needle from port while stabilizing port on either side. Apply pressure with sterile 2 x 2 gauze and apply dressing as needed
16. Discard soiled supplies in appropriate containers.

Continuous Infusion via Catheter with External Connector

EQUIPMENT:

Medication cassette with tubing
Gloves
Antimicrobial applicator (wipe/swab/disk/ampule)
Needleless adaptor, if appropriate
0.2 micron filter
IV pump
Tape
Mask
Puncture-proof container
Impervious trash bag

PROCEDURE:

1. Adhere to Standard Precautions.
2. Identify patient and explain the procedure and purpose to the patient/caregiver.
3. Assemble the equipment on a clean surface close to the patient.
4. Place patient in comfortable position, making sure that site is accessible.
5. Ensure adequate lighting.
6. Don mask.
7. Open supplies and place on sterile field.
8. Connect cassette to infusion device (pump) according to manufacturer's instructions. Attach 0.2 micron filter to tubing, if not already inline.
9. Verify program on infusion device (pump) against prescribed order.
10. Open all tubing clamps.
11. Prime cassette tubing and filter with solution.

12. Apply gloves.
13. Clean injection port/needleless connector with antimicrobial applicator. Allow to air dry. Alcohol is contraindicated, do not use.
14. Attach pump tubing to needleless connector/injection port at end of catheter. Tape all connections securely to prevent disconnection.
15. Start infusion.
16. Discard soiled supplies in appropriate containers.

AFTER CARE:

1. Document in patient record:
 - a. Medication administered dosage, time, rate, and method, i.e., bolus or continuous infusion
 - b. Aspiration, if done and results
 - c. Appearance of catheter site and external length of catheter
 - d. Patient's response to procedure, pain level per scale, patient reported adequacy of pain relief, side effects and management
 - e. Education/instructions given to patient/caregiver including purpose of therapy and procedures, medication and side effects, handling and storage of medication, operation and troubleshooting of pump, signs and symptoms of complications, and contact and emergency phone numbers
 - f. Communication with physician

REFERENCE:

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