Wound Infusion Catheters for Post-operative Pain - Full Clinical Guideline

Reference no.: CG-PM/2014/020

1. Introduction

Guidelines on the use of continuous wound infusion catheters using elastomeric pumps for post-operative pain control – UROLOGY

Wound soaking catheters are specialised multi holed catheters that are placed intra-operatively. The catheters allow infusion of local anaesthetic along the length of wound enhancing post-operative pain relief.

2. Aim and Purpose

Aim

1) To improve post-operative pain control
2) To reduce opioid consumption/requirements
3) Decrease length of stay

Scope

Patients undergoing radical prostatectomy and laparoscopically assisted nephrectomy/ nephroureterectomy surgery.

3. Definitions

1) Elastomeric pump – an infusion device that uses an elastic balloon to deliver a continuous flow rate of local anaesthetic
2) Wound catheter – a catheter specifically designed for wound infusion of local anaesthetic
3) ERAS – Enhanced recovery after surgery
4) NSAID – Non-steroidal analgesics
5) PRN – as required
6) APS – Acute Pain Service

4. Guideline

Method

1) A 270 mL pump (5.0 mL/hr) elastomeric pump will be used.
2) The pump will be pre-filled with Bupivicaine 0.25%, and the line primed prior to connection.
3) The maximum safe dose of Bupivicaine 0.25% for the patients weight will be injected into the transversus abdominis plane by the anaesthetist at the beginning of surgery if possible/appropriate.
4) The wound catheter should be 8cm for laparoscopic nephrectomy, 8cm for prostatectomy and 16cm for lap nephroureterectomy.
5) The wound catheter will be inserted at the end of the operation, after priming with 5ml of 0.25% bupivacaine.
6) The catheter will be placed over the peritoneum, under the rectus sheath.
7) The catheter will be secured to the skin using steristrips and a transparent occlusive dressing. Ensure flow restrictor taped directly to the skin.
8) The pump will be attached and started by the anaesthetist or the recovery staff once the wound is dressed.

9) Bupivicaine stickers will be placed every 20 cm along the tubing connecting the pump to the wound catheter.
10) The pump and line will be labelled using the stickers provided in the pack
11) The local anaesthetic will be prescribed on ICM using the general anaesthetic order set (local anaesthetic prescription section)
12) All patients will be given pre-emptive paracetamol and NSAID loading, and regular postoperative paracetamol and tramadol unless contraindicated (as per ERAS).
13) All patients will have intrathecal diamorphine intra-operatively unless contraindicated (as per ERAS).
14) All patients will have a subcutaneous cannula sited and will be prescribed PRN subcutaneous morphine as per guidelines.

Post operatively

1) Patients will be managed on the ward, unless co-morbidities or intra-operative complications dictate a higher level of care.
2) If the catheter becomes dislodged or disconnected then the wound catheter should be removed and the entire system discarded. **DO NOT RE-ATTACH THE CATHETER TO THE PUMP**
3) The infusion will last at least 48hrs. The catheter should then be removed and the entire system discarded as clinical waste. On removal of the catheter(s), ensure the radio-opaque tip is seen. If it is not present – keep the catheter and contact the Acute Pain Team (during office hours) or the patient's surgical team to discuss as there may be a remnant left in the wound
4) If pain control is difficult and the catheter has been removed for whatever reason then contact the APS in normal hours or anaesthetic T1 after hours and on weekends.
5) The APS will collect all data for audit. Please inform them when you have placed a wound catheter.

Monitoring for signs of local anaesthetic toxicity

- shortness of breath, chest discomfort
- Tingling around mouth +/- lips
- Numbness of tongue
- Tinnitus or visual disturbances
- Convulsions
- Respiratory arrest or cardiac arrest

Actions

- Stop infusion immediately
- Patient alert and orientated – call Acute Pain Team, or on- call anaesthetist out of hours and ensure alternative analgesia is available. Observe closely
- Drowsy / Sedated – call ward doctor or on call anaesthetist, administer Oxygen via Hudson mask. Consider airway support
- Cardiac and/or Respiratory arrest – call cardiac arrest team

Removal

- The continuous infusion catheter should be removed by the nursing staff, when the infusion is empty - this could be up to 54 hrs.

5. References

1. A randomized trial of Bupivicaine pain pumps to eliminate the need for patient controlled analgesia pumps in primary laparoscopic Roux-en-Y gastric bypass.
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2. Use of the ON-Q pain management system is associated with decreased postoperative analgesic requirement: double blind randomized placebo pilot study. Journal of the American College of Surgeons, {J-Am-Coll-Surg}, Feb 2006, vol. 202, no. 2, p. 297-305, ISSN: 1072-7515.

3. Efficacy of continuous wound catheters delivering local anesthetic for postoperative analgesia: a quantitative and qualitative systematic review of randomized controlled trials. Journal of the American College of Surgeons, {J-Am-Coll-Surg}, Dec 2006 (epub: 25 Oct 2006), vol. 203, no. 6, p. 914-32, 67 refs, ISSN: 1072-7515.
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6. Documentation Control

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