Rectus Sheath Catheters for the Management of Pain Following Laparotomy Clinical Guideline

V3.0

May 2019
Summary

Rectus Sheath Catheters sited
Bolus 1.5ml/kg over 1 min and then continue as per protocol

Bolus 10-20mls of 0.25% Bupivacaine via each catheter every 6-8 hours as prescribed.
Remove catheters between day 3 to 5 and cover with an occlusive dressing for 24 hours.

Monitor for local anaesthetic toxicity and treat accordingly

Mild:
Restlessness/confusion,
Light headedness,
Numbness of tongue and lips (lip smacking),
Tinnitus,
Double/blurred vision.

Treatment
Stop infusion,
Inform medical team, pain team/anaesthetist
Attach ECG monitoring
Maintain oxygenation and BP
Continue to monitor

Moderate
Heaviness of limbs
Muscular twitching
Convulsions

Severe
Cardiac arrhythmias
Hypotension
Respiratory or cardiac arrest

Treatment
As for mild, plus:
Fast bleep 4444 for medical team/anaesthetist or 2222 for cardiac arrest.
Maintain airway and give high flow oxygen
Collect intra-lipid from theatre recovery/Eden ward. Administer as per protocol.
Treat hypotension with IV fluids
Treat convulsions with diazepam
Cardiac arrest - CPR

Staff Nurse Training
Complete online training for: Peripheral nerve catheter for the administration of local anaesthetic (including rectus sheath catheters)
Attend new users pump training and administration of local anaesthetic practice.
Complete supervised practice.
1. **Aim/Purpose of this Guideline**

1.1. Clinical nursing guidelines for the use of rectus sheath catheters for the management of pain following laparotomy.

1.2. **Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation**

The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can’t rely on Opt out, it must be Opt in.

DPA18 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the DPA18 please see the ‘information use framework policy’, or contact the Information Governance Team rch-tr.infogov@nhs.net

2. **The Guidance**

2.1. Catheters inserted into the sheath of the Rectus Abdominis muscle can be used to provide analgesia following abdominal surgery.

2.1.1. The catheters are inserted during surgery; usually two catheters are used on either side of the incision.

2.1.2. A ‘Lock-it’ dressing should be used to secure the catheter.

2.1.3. Catheters should be labeled ‘Rectus Sheath Catheters’, along with date and time of insertion.

2.2 **Professional responsibility**

2.2.1. Boluses should be delivered by doctors competent in the use of rectus sheath catheters and in the treatment of local anaesthetic toxicity.

2.2.2. Qualified nurses who are competent in the administration of IV drugs and have attained competency for the administration of local anaesthetic via a peripheral nerve catheter including rectus sheath catheters, may also administer a bolus via the rectus sheath catheter.

2.3 **Support mechanism**

For advice between the hours of 0830 – 1630 contact Pain Specialist Nurse via bleep. Out of these hours contact the on-call anaesthetist.
2.4 Prescription

2.4.1 All prescriptions are the responsibility of an anaesthetist/doctor.

2.4.2 10 – 20ml of 0.25% bupivacaine via each catheter should be prescribed regularly 6 hourly, for up to five days (but this can be reviewed at that time).

2.5 Injecting a bolus via the rectus sheath catheter

2.5.1 Prepare drug for administration according to prescription, following Trust’s infection control guidelines.

2.5.2 Check patient’s wrist band against drug chart. Check for allergies.

2.5.3 Ensure the patient has patent IV access.

2.5.4 Check the site for signs of migration, leakage and infection. Do not inject if there are concerns re: migration or infection – contact the patient’s surgical team, Pain specialist nurse or anaesthetist.

2.5.5 Non-sterile gloves must be worn and the injection carried out using an aseptic non-touch technique as per infection control guidelines.

2.5.6 Ensure a filter is in situ.

2.5.7 Wipe the cap with an alcohol and chlorhexidine swab. Allow this to dry for 30 seconds. During administration, ask the patient to inform you of any double vision, tinnitus, numb mouth or metallic taste.

2.5.8 Attach the syringe and aspirate for blood using a low force for 30 seconds. If fresh blood is withdrawn, do not administer the bolus. Although some blood staining of aspirated fluid is acceptable. Inform the surgical team, Pain specialist nurse or anaesthetist regarding any problems.

2.5.9 If no blood is aspirated, inject 5ml of 0.25% bupivacaine (levobupivacaine) over 2-3 minutes.

2.5.10 Wait 3-5 minutes.

2.5.11 If the patient exhibits no side effects, inject the remainder of the 0.25% bupivacaine (levobupivacaine) over 5 minutes.

2.5.12 Repeat steps 2.5.4 to 2.5.11 for the second catheter, waiting 3-5 minutes after each injection, observing throughout for any signs of local anaesthetic toxicity.

2.5.13 Sign prescription chart.
2.6 Potential complications

2.6.1 Local anaesthetic toxicity can occur, especially if there is rapid absorption into the blood stream, or if inadvertently administered intravenously. **This is very rare but it is important that the signs are recognised.**

2.6.2 Signs of toxicity:
- **Mild**
  Restlessness/confusion
  Light headedness
  Numbness of tongue and lips (lip smacking),
  Tinnitus
  Double vision
  Blurred vision
- **Moderate**
  Heaviness of limbs
  Muscular twitching
  Convulsions
- **Severe**
  Cardiac arrhythmias
  Hypotension Respiratory arrest Cardiac arrest

2.6.3 Treatment of toxicity:

If symptoms are mild;
- Stop local anaesthetic infusion and inform medical team
- Attach ECG and monitors
- Maintain oxygenation and BP
- Consult with Pain Team or on call anaesthetist
- Continue to observe closely

If symptoms are moderate or severe:
- Stop local anaesthetic infusion
- Attach ECG and monitors
- Phone for help immediately – fast bleep 4444 medical team / anaesthetist or cardiac arrest 2222
- Maintain airway and give high flow oxygen.
- Hypotension will be treated with IV fluids
- Convulsions will be treated with diazepam
- Commence CPR if in cardiac arrest
- Collect Lipid Rescue Box from the nearest recovery area or Eden ward if patient is in local anaesthetic induced cardiac arrest.
- Treatment will require intravenous Intralipid 20% (from the lipid rescue box). The initial dose is 1.5ml/kg over 1 minute, followed by an intravenous infusion of 15ml/kg over 1 hour.

  For a 70kg adult this means 100mls over 1 minute followed by
1000mls over 1 hour.

- Refer to The Association of Anaesthetists of Great Britain and Ireland safety guideline ‘Management of Severe Local Anaesthetic Toxicity’.

2.6.4 Difficulty injecting through the catheter or leakage at the site – ask the surgical team or Pain specialist nurse to review.

2.6.5 Local infection at the catheter site – ask surgical team or Pain specialist nurse to review. It is likely that the catheter will have to be removed.

2.7. Removal of catheter

2.7.1. The catheters must be removed on day 5 or sooner if infection or leakage occurs. This can be reviewed at the time (if felt necessary) and the catheters left in for a maximum of 7 days.

2.7.2. Remove the dressing, using ANTT. Apply gentle traction to the catheter, this should be enough to remove it. If there is any resistance inform the surgical team. The catheters should only be removed by a trained member of staff.

2.7.3. Ensure the blue tip is intact on the end of the catheter – document in patient’s nursing evaluation.

2.7.4. Send the tip for MC&S if infection is suspected.

2.7.5. Cover with a non-occlusive dressing.

2.7.6. Remove the dressing after 24 hours.

3. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Adherence to the guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Acute pain team</td>
</tr>
<tr>
<td>Tool</td>
<td>The patient will be reviewed daily by acute pain team or on call anaesthetist and adherence to the guideline will be recorded on the acute pain form (CHA2602) and in the medical notes. DATIX reports will be investigated.</td>
</tr>
<tr>
<td>Frequency</td>
<td>The pain forms will be audited yearly.</td>
</tr>
<tr>
<td>Reporting arrangements and Lead(s)</td>
<td>The audit is reported to the Acute pain lead consultant and the anaesthetic governance lead.</td>
</tr>
<tr>
<td>Change in practice and Change in practice</td>
<td>Required changes to practice will be identified and actioned within 1 month.</td>
</tr>
</tbody>
</table>
Lessons to be shared
A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

4. **Equality and Diversity**

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion & Human Rights Policy' or the [Equality and Diversity website](#).

4.2. **Equality Impact Assessment**

The Initial Equality Impact Assessment Screening Form is at Appendix 2.
### Appendix 1. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Rectus Sheath Catheters for the Management of Pain Following Laparotomy Clinical Guideline V3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>24/4/19</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>May 2019</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>May 2022</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Sarah Medlicott, Pain specialist nurse</td>
</tr>
<tr>
<td>Contact details:</td>
<td>01872 252792</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>Guidelines for nursing staff caring for patients with rectus sheath catheters following laparotomy.</td>
</tr>
<tr>
<td>Suggested Keywords:</td>
<td>Rectus sheath catheters</td>
</tr>
<tr>
<td>Target Audience</td>
<td>RCHT</td>
</tr>
<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>20/02/2019</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>Clinical guideline for the use of rectus sheath catheters for the management of pain following laparotomy V2.0</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Acute pain team</td>
</tr>
<tr>
<td>Divisional Manager confirming approval processes</td>
<td>Roberta Fuller, Care Group General Manager</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>Not Required.</td>
</tr>
<tr>
<td>Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Name: Dr Keith Mitchell</td>
<td></td>
</tr>
<tr>
<td>Signature of Executive Director giving approval</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Publication Location (refer to Policy on Policies – Approvals and)</td>
<td>Internet &amp; Intranet</td>
</tr>
<tr>
<td>Ratification):</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Document Library Folder/Sub Folder</td>
<td>Clinical/pain</td>
</tr>
<tr>
<td><strong>Links to key external standards</strong></td>
<td>The Association of Anaesthetists of Great Britain and Ireland safety guideline ‘Management of Severe Local Anaesthetic Toxicity’ <a href="https://www.aagbi.org/sites/default/files/la_toxicity_2010_0.pdf">https://www.aagbi.org/sites/default/files/la_toxicity_2010_0.pdf</a></td>
</tr>
</tbody>
</table>
| **Training Need Identified?** | Yes.  
- Registered Nurse must be competent in the administration of IV drugs.  
- Completion of the 3 elements of the training package: Online theory: Peripheral Nerve Catheter for Administration of Local Anaesthetics (including Rectus Sheath Catheters)  
Attendance at a theory review, simulated RSC top up and new users pump training,  
Carry out a witnessed supervised practice |

### Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2012</td>
<td>V1.0</td>
<td>Initial Issue</td>
<td>Jayne Thomas, Pain Specialist Nurse</td>
</tr>
</tbody>
</table>
| November 2015 | V2.0       | 2.3.1- Bleep number removed  
2.5 - Levobupivacaine added as will be alternative drug.  
2.6.3 - Eden ward added and Poldark ward removed. | Jayne Thomas Pain specialist nurse.                      |
| April 2019 | V3.0 | Some general rewording  
Addition of the new online training package as an identified training need.  
Removal of the requirement to be competent in Epidurals as a training need secondary to the new training package specifically for local anaesthetic management. | Sarah Medlicott  
Pain specialist nurse |

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This document is to be retained for 10 years from the date of expiry.
This document is only valid on the day of printing

Controlled Document
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### Appendix 2. Initial Equality Impact Assessment Form

Rectus Sheath Catheters for the Management of Pain Following Laparotomy  
Clinical Guideline V3.0

<table>
<thead>
<tr>
<th>Directorate and service area:</th>
<th>Is this a new or existing Policy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetics/pain</td>
<td>Existing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of individual completing assessment:</th>
<th>Telephone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah Medlicott</td>
<td>01872 252792</td>
</tr>
</tbody>
</table>

| 1. Policy Aim                          | Nursing guidelines for the care of a patient with rectus sheath catheters following laparotomy. |
| 2. Policy Objectives*                  | To maintain safe standards of the delivery of this method of pain control. |
| 3. Policy – intended Outcomes*         | Patients with rectus sheath catheters are cared for safely and effectively.  
                                         | Side effects identified and dealt with safely.  
                                         | Requirement for training identified. |

| 4. *How will you measure the outcome? | Regular audit.  
                                         | Review of patients by acute pain team.  
                                         | Monitoring of DATIX reports. |

| 5. Who is intended to benefit from the policy? | Patients and staff |

<table>
<thead>
<tr>
<th>6a Who did you consult with</th>
<th>Workforce</th>
<th>Patients</th>
<th>Local groups</th>
<th>External organisations</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>Acute and chronic pain nurses and consultants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| What was the outcome of the consultation? | Any recommendations discussed and the guideline amended as appropriate |
7. The Impact

Please complete the following table. If you are unsure/don’t know if there is a negative impact you need to repeat the consultation step.

<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (male, female, trans-gender/gender reassignment)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race / Ethnic communities /groups</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion / other beliefs</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marriage and Civil partnership</td>
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<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Pregnancy and maternity</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
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<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation- this excludes any policies which have been identified as not requiring consultation. or
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended. Yes No X

9. If you are not recommending a Full Impact assessment please explain why.

This is replacing an existing policy which did not require a full impact assessment.
This EIA will not be uploaded to the Trust website without the approval of the Policy Review Group.

A summary of the results will be published on the Trust’s web site.