

Epidural Anaesthesia in Labour

Clinical Guideline

V2.0

1. Aim/Purpose of this Guideline

To give guidance to obstetric anaesthetists, obstetricians and midwives on when an epidural can be offered in labour. To give guidance to obstetric anaesthetists on the process of administering an epidural in labour.

2. The Guidance

2.1. Epidural analgesia

All women requesting an epidural for pain relief in labour will be assessed by an anaesthetist for suitability prior to commencing the procedure.

A 24 hour epidural service is available. The time from the anaesthetist being informed of the request for an epidural until they are able to attend the woman should not normally exceed 30 minutes. This should be within an hour except in exceptional circumstances. Reasons for delay should be documented.

2.1.1. Absolute contraindications

- Declined by woman
- Inadequate midwifery staffing or training
- No CTG or inadequate monitoring of fetus
- Local infection at proposed site of insertion
- Raised intra cranial pressure
- Uncorrected hypovolaemia
- Coagulopathy
- Anticoagulant therapy
- Spina bifida occulta (unless magnetic resonance imaging (MRI) scan shows normal anatomy)

2.1.2. Relative contraindications

- Significant cardiac disease
- Some neurological disorders (see neurological disorders summary sheet for basic advice)
- Some anatomical deformities, surgery or injuries to woman's back
- Sepsis
- Suspicious or pathological CTG which has not had obstetric review

2.1.3. Conditions where epidural analgesia is more likely to be indicated

- Pre eclampsia
- Prolonged labour
- Multiple gestation
- Anticipated instrumental delivery
- Cardiac and respiratory disease
- Obesity

2.1.4. Sepsis and epidural analgesia

Epidural abscess formation is a rare but serious complication of epidural analgesia. Abscess formation complicates around 0.2–3.7 per 100,000 obstetric epidurals, while bacterial meningitis appears commoner after spinal and combined spinal-epidural techniques, with an incidence not exceeding 1.5 in 10,000. For further information on sepsis see RCHT guideline Sepsis:

Recognition and Management of Antenatal and Postnatal Sepsis – Clinical Guideline

2.1.5. Risk factors include

- Compromised immunity: Diabetes mellitus (the major risk factor), malignancy, pregnancy, HIV infection, alcoholism/ cirrhosis and immunosuppressive therapy (including cortico-steroids).
- Disruption of the vertebral canal: trauma and instrumentation may lead to a haematoma which provides ideal conditions for bacterial growth.
- A source of infection: usually haematogenous, but local spread is possible.
- The decision to site an epidural or spinal requires a balance of risk and benefit. Quantifying risk is difficult as white cell count increases in pregnancy and labour and there is little correlation between white cell count and bacteraemia. Always have a high index of suspicion.
- An absolute contraindication: infection at site of insertion, septic shock. Relative contraindication: pyrexia over 38°C in presence of known focus of infection

2.2. Epidural procedure

2.2.1. Pre-procedural checks

Midwives role (New 2018)

- Ensure midwife is trained in epidural management (on-line training booked on ESR)
- Provide the Obstetric Anaesthetist Association (OAA) fact sheet of risks (available in foreign languages) and document discussions and consent. See www.labourpains.com
- **Cannulate and commence fluid**
- Ensure at least 20 minutes of normal CTG has been obtained and **continue monitoring**
- Check blood test results if coagulopathy suspected
- SBARD communication to anaesthetist
- Commence fluid balance chart
- Record a pre-insertion heart rate, blood pressure, temperature and Fetal Heart Rate (FHR)

Anaesthetist role

- Take a history and confirm there are no contraindications
- Obtain verbal consent)
- Platelets should be greater than 80,000
- International Normalised Ration (INR) should be 1.4 or lower
- Check thromboprophylaxis state
- Prophylactic Low molecular Weight Heparin (LMWH) should be given more than 12hrs ago
- Therapeutic LMWH should be given more than 24h ago
- For the obese woman careful consideration should be given to larger doses of LMWH
- See the Association of Anaesthetists of Great Britain and Ireland (AAGBI) guideline 'Regional anaesthesia and patients with abnormalities of coagulation' as there is a spectrum of risk

2.2.2. IV access

- Insert a 14G (orange) or 16G (grey) cannula and ensure it is patent
- Have a crystalloid infusion available

2.2.3. Patient positioning

- Sitting or lateral
- Examine insertion site before scrubbing up

2.2.4. Skin preparation

- Use 0.5% chlorhexidine spray
- Spray the back and allow to dry before skin palpation or puncture
- Keep chlorhexidine well away from drugs and equipment to be used and change gloves if contaminated (see AAGBI Safety guideline: skin antisepsis for central neuraxial blockade)
- If patient allergic use an 10% povidone iodine solution

2.2.5. Aseptic technique

- Use thorough hand washing with surgical scrub solution
- Barrier measures should be applied including: hat, face mask, gown, sterile gloves and use of sterile drape
- Consider eye protection

2.2.6. Insertion technique

- In the lumbar region
- Infiltrate needle path with lidocaine
- Site epidural catheter with technique of your choice using normal saline for loss of resistance if possible
- Long Touhy needles 12cm and 14cm are available for obese women
- Leave 4-5cm catheter in space (consider leaving more in obese women)
- Aspirate catheter as an aid to confirm no Cerebral Spinal fluid (CSF) or blood
- Attach the anti-bacterial filter as all injections must be through this
- Secure with appropriate dressing
- The catheter should be clearly labelled as 'epidural line'

2.2.7. Consider asking for advice or help if:

- A dural tap is performed. (A consultant anaesthetist should be informed within 24 hours).
- If you cannot successfully site the epidural within 20 minutes
- If the patient is becoming distressed

2.2.8. Safe disposal of sharps

- Safely dispose of sharps in appropriate container

2.2.9. Initial test dose

- "Every dose is a test dose"
- Ensure maternal and fetal monitoring
- 10-12.5mg Bupivacaine constitutes a test of intrathecal catheter placement

- 10ml epidural mix 0.1% Bupivacaine + 2mcg/ml fentanyl or 4ml 0.25% Bupivacaine or 3ml 2% Lidocaine
- Allow at least 5 minutes to pass before ensuring blood pressure is stable and giving further drug
- There should be no significant loss of power in legs
- If catheter is intrathecal see RCHT guideline for 'Management of Accidental Dural Puncture'

2.2.10. Intravenous (IV) placement

- Be aware of signs of local anaesthetic toxicity these may include: Light headedness, circumoral tingling, tinnitus, odd taste in mouth, seizures, cardiovascular collapse
- If you suspect an IV catheter do not use it, call for senior help, consider re-siting epidural.
- Refer to AAGBI guideline 'Management of Severe Local Anaesthetic Toxicity'

2.2.11. Initial epidural dose

- After test dose give therapeutic dose
- Total of 15-20ml of epidural mix (0.1% Bupivacaine + 2mcg/ml fentanyl) to establish block i.e. 10ml for test plus further 10ml
- Measure and record maternal heart rate (HR), blood pressure (BP) and FHR at 5 minute intervals for first 15 min then half hourly
- Assess and record the sensory level of the block hourly
- The anaesthetist should be immediately available for review of women and management of initial complications for at least 20 minutes after initial dose

2.2.12. Maintenance epidural doses

- 20ml epidural mix dose can be repeated at hourly intervals as required using the pre-filled syringes (New 2018)
- These can be given by appropriately trained midwives in accordance to local policy
- An appropriate position should be adopted
- Vital signs monitoring and block level assessment should continue as for initial dose

2.2.13. Documentation

- Document epidural insertion data in maternal notes using 'yellow epidural sticker'
- Complete EUROKING entry under Obstetric Anaesthetic procedure and ensure follow up is added (New 2018)
- Prescribe intravenous fluids on the appropriate chart
- Prescribe epidural doses on the electronic drug chart

2.2.14. On-going care

The anaesthetist must attend the patient if the midwife is concerned about the epidural. Problems may include: hypotension, high or low block level, inadequate analgesia, filter disconnections, blood in the catheter.

2.3. Removal of epidural catheters

- Ensure timing is appropriate with regard to thromboprophylaxis and that coagulation parameters are within normal range
- Remove dressing and carefully withdraw catheter ensuring it is intact
- Check catheter and its integrity with a second person and document in records
- Notify the anaesthetist if it is not intact and retain catheter for inspection
- If there is anything unusual about the insertion site alert the anaesthetist
- Once the epidural has been removed the woman must be informed that she must not attempt to get out of bed unaided, even if she has the feeling coming back to her legs. The decision to mobilising her rests with her midwife.

2.4. Follow up

- All women and neonates suitable for a 6 hour discharge are able to continue with early discharged as planned following epidural insertion and removal
- All women should receive information about when and how to seek help if complications should arise
- All women will need to have voided normally before discharge
- Complaints that should be reported to the anaesthetist immediately include
 - Severe headache
 - Severe backache
 - Progressive numbness or weakness in the legs more than 3 hours following removal of an epidural catheter
- All women who remain as inpatients will be followed up by the duty anaesthetist within 24 hours and this documented in records
- Women who have complications arising from epidural analgesia are followed up while inpatients, when appropriate refer to a consultant for follow up

2.5. Troubleshooting and complications

2.5.1. Accidental dural puncture

- See RCHT guideline 'Dural Puncture in obstetric patients – Clinical Guideline for management of accidental puncture'

2.5.2. Hypotension

- Position woman in left lateral
- Give oxygen
- Speed up Intravenous fluid
- Give a small dose of a vasopressor until BP restored (e.g. ephedrine 6mg)
- Check block level
- Look for other causes of hypotension e.g. haemorrhage, sepsis.

2.5.3. Inadequate analgesia

- Check the insertion site and block level
- If NO Block consider a bolus of epidural mix or 0.25% Bupivacaine. Consider re-siting early if clearly not working.
- If LOW block not enough volume in epidural space so bolus 5 ml epidural mix until adequate level achieved
- If MISSED segment lay woman onto affected side and bolus 5ml down catheter. If this fails consider pulling back epidural catheter 1cm and repeating bolus. Use epidural mix or 0.25% Bupivacaine. Consider a bolus of fentanyl e.g. 50-100mcg or clonidine e.g. 50-75mcg. Offer to resite if problem persists.
- If perineal/sacral pain (often OP presentation of baby) consider a sitting bolus top up of 0.25% Bupivacaine 5-10ml

2.5.4. Bloody tap

- If there is blood from Tuohy needle after removal of stylet reinsert in different interspace
- If blood through catheter then withdraw 1cm and then flush with Saline until no further blood appears on aspiration, if sufficient catheter remains in space proceed cautiously with test dose.
- If blood is still seen resite epidural at a different interspace
- LMWH should not be given for 12 hours following a bloody tap through needle

2.5.5. High block

- If block above T6 stop top ups and restart once block recess to T10
- A subdural block may give a high block. It may spread unexpectedly high over 20-30 mins and occasionally to cervical dermatomes in a patchy distribution. It can precipitate nasal stuffiness and Horner's syndrome while blood pressure is maintained. Management is re siting of epidural catheter

2.5.6. Total spinal

- Signs include: high sensory level, bradycardia, hypotension, respiratory inadequacy and loss of consciousness
- Call for help
- Reassure and talk to woman
- Left lateral position, 100% oxygen, may need to assist ventilation with BMV
- Treat respiratory compromise with RSI GA and IPPV. Maintain anaesthesia and ventilation until local anaesthetic has worn off
- Treat hypotension with fluid and vasopressors
- Treat bradycardia with an anti-muscarinic agent e.g. Atropine or Glycopyrolate
- Consider delivery of the baby so involve obstetrician early

2.5.7. Catheter disconnection

- The epidural catheter should be re-sited due to infection risk
- A clear dressing around the filter and catheter point may prevent this

2.6. Use of epidural for operative procedures

An epidural may be topped up for instrumental delivery, caesarean section, manual removal of placenta and tear repairs

- Establish current block level
- Ensure sitting or wedged left lateral position
- Top up in increments with 0.5% Bupivacaine or preservative free 2% Lidocaine to achieve desired block e.g. 20ml 0.5% Bupivacaine to achieve T4 for caesarean section
- The block may be enhanced by adding fentanyl 50-100mcg
- Only use epidural if it has been working well, perform spinal if in any doubt
- For extended post op analgesia add preservative free morphine 2mg or Diamorphine 3mg post delivery

2.7 Epidurals sited before established labour (New 2018)

- In view of potential complications associated with prolonged use, an epidural should only be sited prior to established labour;
 - after alternative pain relief options have been considered
 - discussion at senior anaesthetic and obstetric level
 - careful discussion with the woman
- Require careful monitoring as they could be in-situ for an extended time frame
- Increased risk of misplacement
- Increased period of immobility
- Pay particular attention to IV fluid regimen and monitor fluid balance closely

3. Monitoring compliance and effectiveness

Element to be monitored	<ul style="list-style-type: none"> • 100% of women receiving an epidural have had at least 20 minutes of normal CTG or an Obstetric review if non-reassuring or abnormal • A woman is seen within 30 minutes of a request for an epidural, if this is not achieved the reasons why are documented in the woman's notes
Lead	Obstetric Anaesthetist Lead Consultant
Tool	Compliance Monitoring Tool
Frequency	This should be monitored every 2 years
Reporting arrangements	The audit results will be received at the Maternity Patient Safety Forum and Clinical Audit Meeting
Acting on recommendations and Lead(s)	If deficiencies are identified, an action plan will be developed and monitored through the group
Change in practice and lessons to be shared	As per the action plan

4. Equality and Diversity

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

4.6. *Equality Impact Assessment*

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Epidural Anaesthesia in Labour Clinical Guideline v2.0		
Date Issued/Approved:	17 th May 2018		
Date Valid From:	17 th May 2018		
Date Valid To:	17 th May 2021		
Directorate / Department responsible (author/owner):	Rebecca Brooks Obstetric Anaesthetist Obs & Gynae Directorate		
Contact details:	01872-250000		
Brief summary of contents	To give guidance to obstetric anaesthetists, obstetricians and midwives on when an epidural can be offered and the process of administering an epidural in labour.		
Suggested Keywords:	Analgesia, dural, epidural, labour, sepsis, spinal, pain, tap, anaphylaxis		
Target Audience	RCHT ✓	CPFT	KCCG
Executive Director responsible for Policy:	Medical Director		
Date revised:	3 rd May 2018		
This document replaces (exact title of previous version):	EPIDURAL ANAESTHESIA IN LABOUR – CLINICAL GUIDELINE V1.1		
Approval route (names of committees)/consultation:	Maternity Guideline Group Obs & Gynae Directorate Divisional Board for noting		
Divisional Manager confirming approval processes	Tunde Adewopo		
Name and Post Title of additional signatories	Not Required		
Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings	{Original Copy Signed}		
	Name: Caroline Amukusana		
Signature of Executive Director giving approval	{Original Copy Signed}		
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only

Document Library Folder/Sub Folder	Clinical/Midwifery and Obstetrics
Links to key external standards	None
Related Documents:	<ul style="list-style-type: none"> • AAGBI/ OAA Guidelines for obstetric anaesthetic services (2013) • OAA epidural information card (www.oaa-anaes.ac.uk) • Nice Guidelines CG190 Intrapartum care (2014) • AAGBI Best practice in the management of epidural analgesia in the hospital setting 92010) • The 3rd National audit project (NAP3) Royal College of Anaesthetists • Sepsis in obstetrics and the role of the anaesthetist • D.N. Lucas, a P.N. Robinson, a M.R. Nelb • Department of Anaesthesia, Northwick Park Hospital, Harrow, UK b Department of Anaesthesia, The Hillingdon Hospital, Uxbridge, UK
Training Need Identified?	No

Version Control Table

Date	Version No	Summary of Changes	Changes Made by (Name and Job Title)
10 Jun 10	V1.0	Initial issue	Rebecca Brooks Obstetric Anaesthetist
21 st May 2015	V1.1	Merged guidelines: Septic Patient – Insertion of Epidurals and Spinal Anaesthesia & Epidural Analgesia in Labour Now includes guidance on epidural insertion in the septic patient	Rebecca Brookes Obstetric Anaesthetic
17 th May 2018	V2.0	Full review 2.2, 2.2.12, 2.2.13, 2.7 updated. See new 2018	Rebecca Brooks and Helen King. Obstetric Anaesthetists

All or part of this document can be released under the Freedom of Information Act 2000

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

This assessment will need to be completed in stages to allow for adequate consultation with the relevant groups.

Name of Name of the strategy / policy /proposal / service function to be assessed Epidural Anaesthesia in Labour Clinical Guideline v2.0						
Directorate and service area: Obs & Gynae Directorate			Is this a new or existing Policy ? Existing			
Name of individual completing assessment: Sarah-Jane Pedler			Telephone: 01872-255019			
1. <i>Policy Aim*</i> <i>Who is the strategy / policy / proposal / service function aimed at?</i>		To give guidance to obstetric anaesthetists, obstetricians and midwives on when an epidural can be offered and guidance on the process of administrating an epidural in labour.				
2. <i>Policy Objectives*</i>		Safe administration of epidural analgesia in labour, improved maternal experience and maternal outcome.				
3. <i>Policy – intended Outcomes*</i>		Safe administration of epidural analgesia in labour, improved maternal experience and maternal outcome.				
4. <i>*How will you measure the outcome?</i>		Audit				
5. Who is intended to benefit from the <i>policy</i> ?		All women who are considering or having and epidural in labour				
6a Who did you consult with		Workforce	Patients	Local groups	External organisations	Other
		X				
b). Please identify the groups who have been consulted about this procedure.		Please record specific names of groups Maternity Guideline Group Obs & Gynae Directorate Divisional Board for approval				
What was the outcome of the consultation?		Guideline agreed				

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.				
Are there concerns that the policy could have differential impact on:				
Equality Strands:	Yes	No	Unsure	Rationale for Assessment / Existing Evidence
Age		X		All women considering or having an epidural in labour
Sex (male, female, trans-gender / gender reassignment)		X		All women considering or having an epidural in labour
Race / Ethnic communities /groups		X		All women considering or having an epidural in labour
Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.		X		All women considering or having an epidural in labour
Religion / other beliefs		X		All women considering or having an epidural in labour
Marriage and Civil partnership		X		All women considering or having an epidural in labour
Pregnancy and maternity		X		This will have a beneficial act on women who choose to have an epidural
Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian		X		All women considering or having an epidural in labour
You will need to continue to a full Equality Impact Assessment if the following have been highlighted: <ul style="list-style-type: none"> You have ticked "Yes" in any column above and No consultation or evidence of there being consultation- this <u>excludes</u> any <i>policies</i> 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.				
No areas indicated				

Signature of policy developer / lead manager / director Rebecca Brooks Obstetric Anaesthetist		Date of completion and submission 17th May 2018
Names and signatures of members carrying out the Screening Assessment	1. Sarah-Jane Pedler 2. Human Rights, Equality & Inclusion Lead	

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa,
Truro, Cornwall, TR1 3HD

This EIA will not be uploaded to the Trust website without the signature of the Human Rights, Equality & Inclusion Lead.

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

Signed Sarah-Jane Pedler

Date 17th May 2018