Liverpool Women's NHS Foundation Trust

OBSTETRIC INADVERTENT DURAL PUNCTURE DURING EPIDURAL GUIDELINE

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Version	6.1
Grade of Change	No Change
Summary of Changes	N/A

Document Type	Clinical Guideline
Coverage	Anaesthetics; Maternity

Designation of Guideline Sponsor	Consultant Anaesthetist
Responsible Committee	Anaesthetic Clinical Meeting

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Contents

1 Guideline Statement.

The Critical Care Directorate has compiled this guideline document as an accurate aid to staff involved in the care of patients receiving epidural analgesia.
That staff are competent to recognise the signs and symptoms of Dural tap and initiate the appropriate treatment (see management of PDPH guideline).

2 Guideline objectives

2.1 To ensure that all staff involved in the care of patients receiving epidural analgesia, have received adequate training and are deemed competent in the care of these patient's.

2.2 To ensure that this training encompasses known complications and side-effects of epidural analgesia, signs, symptoms and clinical management of dural tap.

2.3 That following assessment, staff refers patients with suspected dural- tap to anaesthetics for specialist care and for anaesthetist to initiate appropriate treatment in a timely manner.

2.4 To continue to monitor patient's for improvement until complication has resolved.

3 Scope of the Guideline

This guideline applies to all staff involved in the care of patients receiving epidural analgesia, on Delivery Suite at Liverpool Women's Foundation Trust.

4 Monitoring.

It is the responsibility of the lead obstetric anaesthetic consultant as part of the department of anaesthesia LWH to monitor and audit compliance with this guideline once a year (minimum)

5 Professional Responsibilities

It is the responsibility of all staff involved in the care of patients receiving epidural analgesia, on Delivery Suite at Liverpool Women's Foundation Trust,
to be aware of their obligations and responsibilities to affect safe clinical care and timely recognition and treatment of possible complications i.e. Dural tap with up to date documentation and a written follow up care plan in the patient's records.

6 Management of Dural Tap.

6.1 Recognition is important !

6.1.1 Obvious - free flow or drops of clear warm fluid from needle or catheter. Check for temperature on the gloved hand.

6.1.2 **Exaggerated effect** of test dose or 1st top-up, with or without CSF leakage occurred **extensive sensory or motor block** - analgesia above T4.

6.2 Procedure

6.2.1 Catheter should be sited in the intrathecal space[1,2] preferably. If this is not possible, attempt epidural in an adjacent space very carefully and site catheter.

6.2.2 Inform duty consultant anaesthetist directly.

6.2.3 Consider the patient's fluid balance status and give early 500mls Plasmalyte Soln. IV over 30 minutes, and be prepared to manage hypotension.

6.2.4 Cautiously conduct the spinal/epidural to establish good analgesia.
An anaesthetist must perform all top-ups, clinician boluses and intrathecal catheter infusion rate changes.

6.2.5 Dedicated intrathecal infusion pump
(Cadd Solis with epidural giving set and standard 0.1% levobupivicaine/ fentanyl 2mcg/ml solution as per familiar use with epidural infusion set up)

-Infusion pump is to be found in anaesthetic office. There is only one device specific to intrathecal use and contains no other associated infusion/ PIEB programs.
- Bag volume 250
- Infusion rate 0 -3 ml/hr
- Clinician bolus up to 2ml
- NO PCEA function.

1) **Clearly** LABEL the intrathecal catheter and tell the patient and midwife that the anaesthetist **ONLY** must do all top ups/ clinician boluses and pump infusion rate changes
   Top up doses will be **up to 2ml of 0.1% levobupivacaine/ fentanyl 2mcg/ml** via the intrathecal pump (as per 'clinician bolus' option in tasks menu).
   Remain in room for **10 minutes** with vasopressor/atropine to hand. BP every 5 minutes.
2) **This is a titrate to effect method** (meaning using block height to cold sensation as measurement) **of labour analgesia, done with the anaesthetist in attendance.**
3) Once T8 to T6 block to cold is established commence the infusion at 1.5ml/hr of standard epidural solution
4) Review at one hour

5) Inform midwife to call anaesthetist in any routine circumstance, and if the block to cold is measured at a level higher than T5 dermatome (confirmation of level with midwife may be helpful).
6) Any non-anaesthetic staff are permitted to stop the infusion. All other interventions are anaesthetist only as above.
7) Explain to the mother, midwife and obstetrician and reassure all of them.
8) If the intrathecal catheter has been working well in labour and a caesarean.section is required, stop the infusion and titrate 0.5ml of 0.5% plain bupivacaine to the required level of the block. Add 300mcg of diamorphine aseptically to this and flush with 1ml of normal saline..
9) If the intrathecal catheter has NOT been working well in labour and a caesarean section is required and a regional technique is appropriate, remove it and perform a spinal.
10) Document plan in the patient's record and on labour suite board.
11) If she labours beyond your shift, handover to next registrar.
12) After delivery catheter is removed as normal.
13) Fragmin as normal after 6 hours.
14) Ensure regular follow up.

6.2.6 The event does not provide indication for elective forceps delivery.

6.3 Post Delivery Management

6.3.1 Strict aseptic technique, catheter must be removed**,** before leaving Delivery Suite.

6.3.2 Bed rest 24 hours. Give Fragmin as per protocol.

6.3.3 Prescribe simple analgesics – Paracetamol and dihydrocodeine, and laxatives to avoid straining and bedpan. NSAIDS can be used after 6 hours.

6.3.4 Ensure adequate fluid intake – 3,000 ml / day orally.

6.3.5 Review patient daily until discharge.

6.3.6 Consider and discuss blood patching with the supervising consultant if severe persistent or debilitating headache. Fragmin and Diclofenac (voltarol) should be withheld on the day the blood patch is done.

6.4 Documentation and follow up

6.4.1 Inadvertent dural taps recognised at the time of the procedure must be recorded as an epidural complication on K2.
6.4.2 The dural tap and management of subsequent complications must be fully documented in the patient's record.

6.4.3 A dural tap is an Adverse Clinical Event (ACE) and an ACE form must be completed for each dural tap diagnosed at the time of epidural insertion or subsequently with onset of complications such as headache or high block.

6.4.3 The clinician responsible should have an informal discussion with a senior anaesthetist, which should be documented on the ACE form.

6.4.4 All patients with dural taps should be seen during routine daily follow-ups. The patient's condition should be documented in the case notes and in the ACE form.

6.4.5 All patients will be offered a follow up appointment in the obstetric anaesthetic clinic..

6.4.6 Patients who have failed to attend the clinic will be contacted by telephone within 3 months and their condition documented on the ACE form.

7 Consultation and Ratification

This guideline was written by Philip Barclay and reviewed by Dr Patrick, Dr Chevannes and Dr.Entwistle. Forwarded to the Anaesthetic Department and intranet for consultation and subsequent ratification.

8 Training

The Management of Dural Tap will be included in induction days and epidural updates for midwives (to attend annually) and be assessed as competent.

9 Auditable Standards

This guideline will be audited annually as part a specific Dural Tap audit, and any recommendations and changes in practice will be monitored by the department of anaesthesia during business meetings.

10 Equality and Diversity.

A proforma has been completed for this guideline to ensure there is no differential impact for people on account of age, race, disability , gender, religion or sexual orientation

11 References

1. Turnbull D K Shepherd D B Post-dural puncture headache: pathogenesis, prevention and treatment Br J Anaesth 2003; **91 (5)**: 718-29
2. Dennehy KC, Rosaeg OP. Intrathecal catheter insertion during labour reduces the risk of post-dural puncture headache. Can J Anaesth. 1998 Jan;45(1):42-5
3. Management of intrathecal catheters in the obstetric patient BJA - D. Moaveni Published:April 01, 2020 | VOLUME 20, ISSUE 7, P216-219, JULY 01, 2020

12 Intranet Classification

Tags (separated by ;)	Dural tap; inadvertent;

13 Version Control Sheet

Version	Date	Author	Status	Comment
1	2002	Consultant anaesthetist	archived	Created
2	2007	Consultant Anaesthetist	archived	Reviewed and updated
3	2010	D Patrick	archived	Reviewed and updated
4	2015	C Chevannes & D Patrick	archived	Reviewed and updated
5	2018	Consultant Anaesthetist	archived	minor update
6	2021	Consultant Anaesthetist	archive	Major update
6.1	2024	Consultant Anaesthetist	current	No changes