## POSTPARTUM MANAGEMENT OF DURAL PUNCTURE

<table>
<thead>
<tr>
<th>For use in: (Clinical Area)</th>
<th>Anaesthesia and Maternity Department</th>
</tr>
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<tbody>
<tr>
<td>For use by: (Staff Group)</td>
<td>Anaesthetist, Obstetric Doctors and Midwives</td>
</tr>
<tr>
<td>Distributed to:</td>
<td>All staff in the Anaesthesia and Maternity Department</td>
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<td>Author/s:</td>
<td>Original Author: D Meldrum, Obstetric Consultant Anaesthetist</td>
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<td></td>
<td>Reviewed by: Henry Nash Anaesthetic Registrar</td>
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MAT0145 Postpartum Management of Dural Puncture, June 2016

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PREVIOUS DOCUMENT

First issued | April 1992
Reference No  | MAT 0145
Present version number | Version 4
Supersedes | Postpartum Management of Dural Puncture, December 2012
Changes implemented:
- Format changed for ease of use
- Updated in view of new evidence
- Updated references
POSTPARTUM MANAGEMENT OF DURAL PUNCTURE

1. INTRODUCTION

If the dura mater is inadvertently punctured during insertion of an epidural this is known as a dural puncture. If the dural puncture is made by the Tuohy needle, this is usually very apparent when the cerebrospinal fluid escapes. It may be less obvious if the dura is accidentally punctured by the epidural catheter and if the epidural has an unexpectedly high block level, there should be a high index of suspicion for a dural puncture.

The incidence of accidental dural puncture is around 1.5% with post dural puncture headache being seen in 50-75% of these cases, with an increased risk from vaginal delivery. However the actual incidence is hard to detect, even when studied prospectively due to the difficulty in confirming the diagnosis.

During a spinal anaesthesia the dura is intentionally breached. In this situation post dural puncture headache is less likely due to the use of finer needles. The incidence with 25G pencil-point needles, as most commonly used in our practice, is thought to be around 0.5-1%. However, even though much finer needles are used, some women may still experience headaches.

The headache is caused by a loss of cerebrospinal fluid through the defect in the dura. This may cause pain due to traction on the intracranial structures associated with a loss of CSF volume, or by compensatory vasodilation in response to the falling intracranial pressure.

70% of cases of PDPH will resolve spontaneously within 7 days, but in a minority of patients the headache can persist for months or even years. While the headache is normally self-limiting, there is a risk of rare serious complications such as cranial nerve injury and subdural haematoma.

Every woman who has had regional anaesthesia should be reviewed by an anaesthetist in order to ascertain complications, including post dural puncture headache.

1.1 Purpose of Guideline

This guideline aims to explain the features of a post dural puncture headache and its clinical management.

2. FEATURES OF A POST DURAL PUNCTURE HEADACHE

- There is a distinct postural aspect, with increased pain when the woman sits and stands, usually with an onset within 3 days of the procedure.
- Pain may be frontal or circumferential. There may also be neck pain or stiffness.
- Nausea and vomiting may occur.
- There may be a degree of photophobia.
• Cranial nerve palsies – VI nerve is most commonly affected, which may present with diplopia or gaze palsy, but vertigo, tinnitus and deafness have also been described.

• The woman feels unwell and is unable to care for her baby.

3. POSTPARTUM MANAGEMENT OF HEADACHE

If a woman has a headache post-delivery a consultant anaesthetist should be informed and these women reviewed daily by an anaesthetist until the headache has resolved.

Other causes of headache should be excluded, such as those associated with:

- Non-specific headache / stress / migraine
- Pre eclampsia
- Subarachnoid haemorrhage
- Meningitis
- Cortical vein thrombosis
- Cerebral tumour
- Subdural haematoma

• Obtain an accurate history from the woman. A full examination should be carried out including blood pressure, temperature, urinalysis and neurological examination.

• If the diagnosis of post dural puncture headache is made, there are a number of suggested conservative management options:

  1. Hydration has been frequently recommended. There is a lack of convincing evidence to suggest either prophylactic or therapeutic benefit, but dehydration should be avoided and the symptoms put these patients at a high risk of this.

  2. Caffeine may improve the headache and patients may be encouraged to drink coffee, tea or other caffeinated beverages. This may also avoid dehydration.

  3. Regular oral analgesics should be prescribed, such as Paracetamol, ibuprofen or moderate opiates, unless contraindicated.

• Some evidence suggests that bed rest may mask the symptoms and diagnosis of PDPH, so this should be advocated with caution.

• Prescribe a regular laxative to avoid straining during bowel action.

4. EPIDURAL BLOOD PATCH

Epidural blood patch is a widely used treatment to manage a persistent, incapacitating dural puncture headache; it is the definitive treatment of choice. It causes an immediate increase in pressure in the epidural space, which may give rapid symptomatic relief, then is purported to help seal the dural puncture and prevent the recurrence of symptoms.
There is controversy as to when the procedure should be performed, but it is commonly done at least 24 hours following dural puncture, as this has a better success rate. The use of prophylactic blood patching has been suggested, but this remains controversial so it is not currently recommended.

- Two anaesthetists are required for the procedure, one of whom should be a consultant.
- Ensure the woman is apyrexial and there are no signs of systemic infection (check full blood count and CRP prior to procedure).
- Gain consent and inform women of the following. Supply them with the patient information leaflet on headache following spinal/epidural:
  - There is always the risk of a further dural puncture. (1:100)
  - They may feel a sensation of fullness in the back on injection of the blood. They may have back pain for a few days following the procedure
  - Occasionally they may experience tinnitus.
  - Quoted rates of success range from 48 – 70%, with 30% of women requiring a second patch. Some women may have a transient improvement, but subsequently have a recurrence of headache.
  - No woman should receive more than three blood patches.
  - Long term or serious complications are rare, but include back pain, nerve damage and infective complications
- The procedure requires two operators and a fully aseptic technique by both.
- Women should be asked to adopt the lateral position – it may be uncomfortable and distressing to the patient to sit them up with a postural headache.
- The level of injection should be at the site of the previous epidural or at one space higher or lower.
- Twenty mls of blood is withdrawn from an arm vein by the second operator after the epidural space has been confirmed by the first.
- The blood is slowly injected into the epidural space. Stop injecting if the woman feels significant discomfort. A further attempt at injection can be made if the discomfort subsides.
- The woman should lie flat for 2 hours post blood patch, then slowly mobilise.
- It has historically been recommended that blood cultures be taken at the same time as the blood patch is performed to allow early identification of the causative organism in the event of an infective complication. Conversely, the positive microbiological yield in apyrexial patients would be expected to be lower, and perhaps lower than that of false positives from contaminants. A UK survey found that less than half of centres took cultures routinely, therefore we do not routinely insist on obtaining blood cultures unless the patient has obvious signs of systemic infection.
- The woman is reviewed daily by an anaesthetist until discharged home.
• She should be warned against heavy lifting or housework for one week. Laxatives may be helpful to avoid straining during bowel action.

• If any problems recur once discharged home, the midwives should contact the on call anaesthetist.

5. REFERENCES


Arevalo-Rodriguez I et al. Body position and intake of fluids for preventing headache after a lumbar puncture. The Cochrane Database of Systematic Reviews. 7 Mar 2016

Basurto Ona X, Osorio D, Bonfill Cosp X. Drugs for treating headache after a lumbar puncture. The Cochrane Database of Systematic Reviews. 15 Jul 2015

Scavone BM. Timing of epidural blood patch: clearing up the confusion. Anaesthesia. 2015 Feb;70(2):119-21


6. ASSOCIATED DOCUMENTS

None
7. **MONITORING / AUDIT STANDARDS**

Euroking E3 obstetric anaesthetic database monitoring of post dural puncture headache and epidural blood patch rate

<table>
<thead>
<tr>
<th>Responsibility of:</th>
<th>Lead Obstetric Anaesthetist</th>
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<tr>
<td>Standard to be assessed:</td>
<td>Assessed against nationally and internationally accepted rates of post dural puncture headache after spinal and epidural analgesia</td>
</tr>
<tr>
<td>Frequency and method of monitoring:</td>
<td>Post dural puncture headache rate will be monitored yearly</td>
</tr>
<tr>
<td>Reviewed</td>
<td>Data will be reviewed in an obstetric anaesthesia forum, either during audit or labour ward forum</td>
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8. **AUDIT STANDARDS**

**MAT0145 Postpartum Management of Dural Puncture, June 2016**

<table>
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<tr>
<th>STANDARDS</th>
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<tr>
<td>Post dural puncture headache rate after epidural placement nationally is about 1%</td>
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<tr>
<td>Post dural puncture headache rate after spinal nationally is about 0.2%</td>
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