Dural Puncture - Management of headache

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Key Amendments

Date	Amendments	Approved by

BEST PRACTICE POINTS

An epidural blood patch should be considered in a patient with a persisting moderate / severe headache following definite or suspected dural puncture.
The headache should be typical of a post dural puncture headache, which is relieved by lying flat.

If the diagnosis is in doubt there should be discussion with a radiologist and/or neurologist to consider MRI/CT of the head and spine to exclude other causes of headache.
Preferably 48 hours should have elapsed since the dural tap.
The patient must be apyrexial (<37.5 Celsius).
The patient should be fully informed of the risks and benefits associated with epidural blood patch.

The procedure should be performed by two anaesthetists, one of whom should be a consultant or senior SpR (see 'Technique').
The most senior anaesthetist should perform the epidural itself.
Full aseptic precautions must be taken.
Patients must remain flat for a minimum of 2 hours after the procedure.
All patients should be followed up after 3 – 4 hours and again the following day (by telephone if at home).
Background:

An epidural blood patch using autologous blood, is thought to work acutely by exerting a mass effect within the epidural space, raising CSF pressure, and then by effectively 'patching' the dural tear, reducing CSF leakage and allowing regeneration of CSF within the subarachnoid space. However, the majority of clot resolution occurs by 7hrs. Success rates vary from 56% - 98% depending on the study. Overall success rates are probably in the region of 50% complete relief after 1 blood patch, and 75% complete relief after 1 or 2 EBPs. A significant remainder will have partial relief.

Indications:
A post dural puncture headache is usually benign and self -limiting. However, untreated it may last weeks or even months. In addition, a few cases of subdural haematoma have been reported. Therefore, any patient with a postural headache, after known or suspected dural tap, and in whom other causes of headache have been excluded, may be considered for an EBP.

Contraindications:

- Patient with signs of bacteraemia (e.g. temp > 37.5 Celsius and raised white cell count / C-reactive protein).
- Infection at or near the site of proposed injection.
- Coagulopathies.
- Patient refusal.

Timing:
The evidence for prophylactic blood patch is contradictory and should not be performed. Local anaesthetic in the epidural space may be anticoagulant and reduce the efficacy of the EBP. Delaying an epidural blood patch for 48 hours after the dural tap has been associated with a higher success rate and is to be recommended.

Complications:
The main complications are:
>10%:

- Backache. Backache tends to occur in 20-35% of patients and usually lasts 48hrs, although it has been described up to 27 days. This is probably due to the pressure effect of the blood and the tracking of the injected blood into the subcutaneous tissues.
- Failure to work or recurrence of PDPH

~ 1%:

- Repeat dural tap

Rare:

- Nerve damage (temporary ~ 1:1000, permanent ~ 1: 13000)

Other rare but serious complications, limited to the occasional case reports, include:

- Epidural abcess
- Lumbovertebral syndrome
- Arachnoiditis
- Acute meningeal irritation
- Deterioration of mental status and seizures
- Subdural haematoma
- Acute exacerbation of PDPH
- Transient bradycardia.

The practice of taking blood cultures at the time of EBP or giving prophylactic antibiotics is controversial and not performed in over 50% of units in the UK. Blood is not routinely taken for cross match in this Trust

TECHNIQUE:

Ensure that the headache is typical of a post dural puncture headache, and exclude other causes.

Preferably wait 48hrs from the time of the dural tap.

Ensure the patients temperature < 37.5 degrees Celsius.

Ensure the patient has not received anticoagulant drugs

Obtain full informed consent – in particular:

Success rate approximately 50% after 1 patch rising to 75% after 2.

Risk of repeat dural puncture

Risk of backache – 20 to 35% will have backache lasting at least 48hrs

Risk of infection

Procedure to be carried out in theatre or the anaesthetic room.

2 anaesthetists (at least 1 consultant or senior SpR)

Record temp, pulse, BP, monitor SpO_2 and insert an iv cannula.

Ideally place the patient left lateral

Full aseptic precautions for both operators

Insert Tuohy needle into the epidural space one space below or at the level of the original dural tap (blood tends to travel cephalad to a greater extent than caudad, even in the sitting position)

2nd operator to take 20mls blood, pass to 1st operator; inject slowly into the epidural space. Stop injecting if pain occurs, restarting once pain has subsided. Aim to inject as much of the 20mls as possible (success rates may be higher with higher volumes)

Flush the Tuohy needle with 0.5mls of Saline, and reinsert the stylet before withdrawing the Tuohy; this reduces the trail of blood in the subcutaneous tissues and may reduce backache and bruising afterwards.

Turn the patient on their back and maintain supine for a minimum of 2 hours, gradually sitting up over the following 2 hours. Remaining flat for at least 2 hours increases the efficacy of the blood patch.. The patient may then mobilise.
The patient should be given a post epidural information leaflet. A template letter for the GP on bluespier should be completed and sent electronically.

Anaesthetist to use the PDPH follow up form. When patients discharged arrange follow up appointment in anaesthetic clinic.

Follow up:
Advise the patient to avoid heavy lifting, or straining at stool (prescribe a laxative if necessary) for 2 days.

Advise the patient to contact the resident obstetric anaesthetist (Bleep 701) if headache returns, backache does not resolve or becomes much worse, or neurological symptoms develop e.g. motor, bladder or bowel dysfunction.

If headache persists, a second blood patch should be considered but only after consultation with Consultant Anaesthetist. Persisting headaches should be treated with a high level of suspicion and arrangements for a CT scan considered to exclude an alternative neurological cause.

Review the patient after 3-4 hours, and the following day (by telephone if at home). Document any follow up including phone calls on the PDPH form.