Obstetric Anaesthetists' Association
Treatment of obstetric post-dural puncture headache

EXECUTIVE SUMMARY OF RECOMMENDATIONS

All women who experience dural puncture with an epidural needle or post-dural puncture headache (PDPH) after a spinal block should be reviewed daily by a member of the anaesthetic team. When a woman experiences PDPH, follow-up should continue until the headache resolves. Furthermore, any case of suspected obstetric PDPH should be referred for anaesthetic assessment and reviewed by the anaesthetic team within 24 hours. A medical history should be taken and a physical examination performed to exclude other potential causes of postnatal headache. Before hospital discharge, women who have experienced dural puncture with an epidural needle or PDPH should be given information on symptoms that require further medical assessment and on whom they should contact. Appropriate follow-up after discharge from hospital should be arranged for any woman who experiences dural puncture with an epidural needle or PDPH.

CONSERVATIVE TREATMENT

Bed rest: Although most women gain some relief from obstetric PDPH when supine, the effect may be transient. Prolonged bed rest is not recommended as it may increase the risk of thromboembolic complications.

Oral fluids: Normal hydration should be maintained but there is no evidence of benefit from excessive fluid administration.

Intravenous fluids: Intravenous fluids need only be used to prevent dehydration when adequate fluid cannot be taken orally.

Abdominal binders: There is currently insufficient evidence to recommend the use of abdominal binders.

PHARMACOLOGICAL MANAGEMENT

Simple oral analgesia: Regular oral analgesia should be offered to women with postnatal headache.

Opioid analgesia: Opioid analgesia may be offered if simple oral analgesia is ineffective but long-term therapy is not recommended.

Caffeine: There is limited evidence to support the use of caffeine. If used, treatment with caffeine should not exceed 24 h, oral therapy is preferred and doses should not exceed 300 mg with a maximum of 900 mg in 24 h. A lower maximum dose of 200 mg in 24 h should be considered for women who are breastfeeding particularly those with low birth weight or premature infants. Women receiving caffeine therapy should have their intake of caffeinated drinks monitored and the recommended daily dose should not be exceeded.

Other theophyllines: There is currently insufficient evidence to recommend the use of theophylline or aminophylline.

ACTH and analogues: There is currently insufficient evidence to recommend the use of ACTH and its analogues.

Steroids: There is currently insufficient evidence to recommend the use of hydrocortisone, dexamethasone or methylprednisolone.

Triptans: There is currently insufficient evidence to recommend the use of triptans.

Gabapentinoids: There is currently insufficient evidence to recommend the use of gabapentinoids.

Other medications: There is currently insufficient evidence to recommend the use of desmopressin, methylergonovine, ondansetron or neostigmine and atropine.

INVASIVE PROCEDURES

Acupuncture: There is currently insufficient evidence to recommend the use of acupuncture.

Greater occipital nerve blocks: There is currently insufficient evidence to recommend the use of greater occipital nerve blocks.

Sphenopalatine ganglion blocks: There is currently insufficient evidence to recommend the use of sphenopalatine ganglion blocks.

Epidural morphine: There is currently insufficient evidence to recommend the use of epidural morphine.

EPIDURAL FLUID ADMINISTRATION

Epidural crystalloids: There is currently insufficient evidence to recommend the use of epidural crystalloid infusions. Epidural saline bolus administration may improve symptoms but the effect is usually transient.

Dextran: There is currently insufficient evidence to recommend the use of epidural dextran infusion.

Hydroxyethyl starch: There is currently insufficient evidence to recommend the use of epidural hydroxyethyl starch infusion.

Gelatin: There is currently insufficient evidence to recommend the use of epidural gelatin.

Fibrin glue: There is currently insufficient evidence to recommend the use of epidural fibrin glue.

EPIDURAL BLOOD PATCH

What is the role of an epidural blood patch (EBP) in the management of obstetric PDPH? When conservative therapy is ineffective and the woman experiences difficulty performing activities of daily life and caring for her baby, an EBP should be considered.

How effective is an EBP in obstetric PDPH? Multiple factors are likely to affect the success of an EBP. Although success rates of over 90% have been reported in older observational studies, more recent evidence suggests that complete and permanent relief of symptoms following a single EBP is only likely to occur in up to one third of cases where headache follows dural puncture with an epidural needle. Complete or partial relief may be seen in 50-80%. In cases of partial or no relief, a second EBP may be performed after consideration of other causes of headache.

What is the optimum time to perform an EBP? Women should be informed that performing an EBP within 48 hours of dural puncture is associated with a reduction in its efficacy and a greater requirement for a repeat EBP. However, in severe obstetric PDPH, an EBP within 48 hours of dural puncture may be considered for symptom control although it may need to be repeated.

What investigations should be performed to aid diagnosis before performing an EBP? If the diagnosis of obstetric PDPH is strongly suspected, there is no evidence that imaging is needed before performing an EBP. If the headache changes in nature, neurological signs develop, conscious level reduces, headache is atypical in nature, or when two EBPs have been unsuccessful, urgent consideration should be given to further investigation and imaging.

What practical steps should be completed before an EBP is performed? Before performing an EBP, written information should be offered to women to aid the consent process. As an EBP is a therapeutic intervention written consent is recommended. An appropriate time should elapse before an EBP is performed for women receiving anticoagulants. Maternal systemic infection and 'red-flag' symptoms suggesting an alternative diagnosis should be excluded.

What are the risks of an EBP? ***Repeat dural puncture:*** The risk of further inadvertent dural puncture during an EBP should form part of the consent process. ***Back pain:*** Back pain during an EBP may occur in 50% of women. Twenty four hours after an EBP, over 80% of women may experience back pain. This may continue for several days but severity usually decreases over a few days with resolution for most by four weeks. There is no evidence to support increased rates of chronic back pain after an EBP. As back pain both during and after an EBP is common, and in some cases severe, it should be discussed as part of the consent process. ***Neurological complications:*** Neurological symptoms may occasionally develop after an EBP. Their exact incidence is unknown. The relationship between an EBP and neurological symptoms may not be causative. Given the severity of some neurological symptoms, their development should be discussed as part of the consent process for an EBP.

Are there risks to not performing an EBP? There is currently insufficient evidence to suggest that an EBP reduces the risk of chronic headache or back pain, cranial subdural haematoma, cerebral venous sinus thrombosis or improves outcome in cranial nerve palsy in obstetric PDPH.

At which level should an EBP be performed? The major effect of an EBP appears to be within a few segments of the site of injection. Blood injected during an EBP spreads predominantly cranially. It is therefore recommended that an EBP is performed at the same level or one space lower than that at which the original dural puncture occurred.

Is ultrasound or radiological guidance of benefit when performing an EBP? There is currently insufficient evidence to recommend the routine use of ultrasound or radiological guidance when performing an EBP.

How much blood should be injected? A volume of blood of 20 mL is recommended when performing an EBP. Injection should stop before 20 mL is injected if not tolerated by the patient.

Should blood cultures be sent when performing an EBP? There is currently insufficient evidence to recommend that blood cultures should be sent routinely when performing an EBP. There is insufficient evidence to recommend the administration of antibiotics when performing an EBP. An EBP should not be performed in the presence of maternal systemic infection.

How should a patient be managed immediately after an EBP? There is currently insufficient evidence to recommend for how long women should remain in bed following an EBP or in what precise position. It is recommended that regular observations of maternal pulse, blood pressure and temperature are recorded following an EBP.

What are the indications to perform a repeat EBP? A second EBP may be performed once other causes of headache have been excluded. Where diagnosis of obstetric PDPH is likely and an EBP has produced resolution of symptoms but headache subsequently returns, a second EBP may be offered as it is likely to be of benefit. If an EBP has produced some improvement in symptoms but headache persists, a second EBP can be considered as it may be of benefit. In cases where an EBP has no effect on headache, or if the diagnosis of obstetric PDPH is less certain, or if the nature of headache has changed, discussion with other specialties including obstetrics, neurology and neuroradiology should take place before a second EBP is performed. If two EBPs have failed to relieve symptoms, other causes of headache must be considered and involvement of other specialties is recommended before performing a third EBP. There is insufficient evidence to state the optimum timing of a repeat EBP in terms of efficacy and safety.

Does an EBP affect the success of a subsequent neuraxial technique? Evidence of an effect of an EBP on success of subsequent neuraxial blockade is equivocal. All studies that have assessed the effect have methodological flaws. Current evidence is insufficient to comment on whether an EBP affects outcome of subsequent neuraxial blockade.

How should patients who have undergone an EBP be followed up? Women who receive an EBP should be reviewed by an anaesthetist within 4 hours of the procedure. Women who are discharged home on the day of an EBP should be contacted the following day. Women who remain in hospital should be reviewed daily until discharge or until symptoms resolve. Before discharge, women should be given verbal and written advice on when to contact the hospital should their headache return or other symptoms develop. Information on obstetric PDPH and EBP should also be given to the woman's general practitioner and community midwife.

Full Guideline available at: www.oaa-anaes.ac.uk/Clinical_Guidelines

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