Management of Inadvertent Dural Puncture and Post Dural Puncture Headache in Obstetrics

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5	01/07/2021	Dr Jeremy Corfe	Reviewed, minor changes only.
6	18/8/2024	Dr Jeremy Corfe	Updated to include evidence and recommendations from recent international consensus guideline. Updated to new Trust template

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
None	Not applicable

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

This clinical guideline has been developed on behalf of the anaesthetic division who have agreed the final content.

The following were consulted during the development of this document:
Obstetric Anaesthetists employed by the Norfolk and Norwich University Hospitals NHS Foundation Trust.

Monitoring and Review of Procedural Document

The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

Relationship of this document to other procedural documents

This document is a clinical guideline applicable Norfolk and Norwich University Hospitals NHS Foundation Trust; please refer to local Trust's procedural documents for further guidance, as noted in Section 4.

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1. Introduction

1.1. Rationale

The incidence of dural tap in women having an epidural for labour analgesia is approximately 1%. Of these women, up to 75% will go on to develop a post dural puncture headache[1]. This is associated with increased maternal morbidity, prolonged hospital stay, and can impair the mother's ability to care for her child.

There is a paucity of large randomised controlled trials looking at post dural puncture headaches and their management. Evidence based guidance is lacking, and what guidance there is, is generally consensus based. This guideline has been updated following publication in 2023 of guidance by the American Society of Regional Anesthesia and Pain Medicine (ASRAPM) with multinational input[13].

1.2. Objective

The objective of this guideline is to ensure good practice in the management of inadvertent dural puncture and its sequelae. This includes:

- Recognising that inadvertent dural puncture has occurred.
- Subsequent safe management of epidural or spinal analgesia and anaesthesia.
- Patient information and follow up.
- Treatment of post dural puncture headache.

1.3. Scope

For use by Anaesthetists, Midwives and Obstetricians caring for women who have had an inadvertent dural puncture during epidural insertion for labour analgesia on Delivery Suite. For use by the same staff groups for management of Post Dural Puncture Headache (from epidural or spinals) on Delivery Suite or Blakeney Ward.

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
ASRAPM	American Society of Regional Anesthesia and Pain Medicine
BJA	British Journal of Anaesthesia
CTG	Cardiotocograph
CSF	Cerebrospinal fluid
EBP	Epidural blood patch
GONB	Greater occipital nerve blocks
PCA	Patient Controlled Analgesia
PCEA	Patient Controlled Epidural Analgesia
PDPH	Post Dural Puncture Headache

2. Responsibilities

2.1. Anaesthetists

- Include the risk of inadvertent dural puncture when consenting the patient for either an epidural or a spinal.
- Recognise that an inadvertent dural puncture has occurred either at the time of insertion or following the initial epidural test dose.
- Inform the patient, the Midwife caring for the patient and the Delivery Suite Coordinator that a dural tap has occurred. It should be noted on the patient whiteboard at the top desk.
- If an intra-thecal catheter is used then the Anaesthetist must ensure it is clearly labelled and not attached to a pump.
- The Anaesthetist is responsible for all intrathecal catheter top ups and flushing the catheter after each top up.
- If the epidural is resited, the Anaesthetist is responsible ensuring the correct epidural program (A) is used and for monitoring the epidural for the first 2 doses.
- In either case, the Anaesthetist must review regularly and support the midwife looking after the patient.
- Give the patient a copy of the patient information leaflet Headache after Epidural or Spinal Anaesthetic (Trust Doc ID 10813).
- Add the patient details to the follow up system and obtain a telephone number that the patient can be called on for follow up after they have been discharged.
- Handover any intrathecal catheters or epidural resites at shift changeover to the new duty Anaesthetist.
- Review the patient daily whilst an inpatient and by phone after discharge.
- Consent and perform blood patch if indicated. Document procedure and give clear post procedure instructions to the patient and Midwives caring for her.
- Ensure details of any patient who has a blood patch are emailed to the anaesthetic secretaries so that a follow up phone call for 2 weeks can be arranged and a letter sent to the patient's GP.

2.2. Midwives

- Monitor the patient for excessive motor block and alert the Anaesthetist to the possibility of a inadvertent dural puncture.
- Perform and document regular epidural block monitoring as per guidelines (Epidural Analgesia in Labour Trust Doc ID 1305)
- Stop the pump and request an urgent anaesthetic review if there are any concerns with high block or excessive motor block.
- Request an anaesthetic review if the block is inadequate or there are any other concerns.

2.3. Delivery Suite Co-Ordinator

- Ensure that it is documented on the top desk whiteboard that an intrathecal catheter or epidural after dural puncture is being used.
- Ensure that this information is handed over to all Midwives at shift change and if necessary prompt the Anaesthetist to do so at the medical handover.
- Consider calling the 4th On Anaesthetist to review the patient if the Obstetric Anaesthetist is stuck in theatre.

3. Processes to be followed

3.1. Recognising inadvertent dural puncture

Dural puncture may be recognised at the time of insertion by an obvious free flow of warm liquid through the epidural needle. However, dural puncture is often not recognised until after the catheter has been inserted. An intrathecal catheter may be recognised by aspiration of clear fluid. This should be tested for glucose and protein by using a urine reagent stick. A small syringe should be used as this is more sensitive. Inadvertent dural puncture may also be suspected by the absence of a falling meniscus or failure of the siphon test.

These tests are not infallible, and an intrathecal catheter may not be recognised until an initial bolus of local anaesthetic is given. In this instance onset of analgesia will be rapid. There may also be dense motor block of the legs, symptomatic hypotension, breathlessness, arm weakness and unconsciousness.

Dense rapid onset motor block **does not** occur with normal labour epidurals and should prompt immediate anaesthetic review to exclude an intrathecal catheter.

3.2. Management of inadvertent dural puncture

If dural puncture is recognised prior to insertion of the epidural catheter there are two options for managing labour analgesia: the catheter can be inserted intrathecally, or the needle can be removed and the epidural re-sited at a different space.

3.3. Intrathecal catheter

Inserting an intrathecal catheter will allow rapid onset of analgesia, avoid the risk of further dural puncture and the possibility of a high block in the presence of a dural tear. Several studies have shown weak evidence that the incidence and severity of post dural puncture headache may be reduced if an intrathecal catheter is used[2-6]. The ASRAPM guidance states that evidence is insufficient to confirm this. They also state that an intrathecal catheter maybe considered to provide anaesthesia/analgesia. This decision must consider potential risks associated with intrathecal catheters[13].

Consideration should be given to workload and anaesthetic availability when siting an intrathecal catheter. It may be more appropriate to re-site the epidural particularly if the patient is only in early labour. This is particularly relevant at night or at weekends when the on-call anaesthetist is single handed and may not be able to leave theatre to perform frequent top ups.

The catheter should be carefully threaded through the dura leaving no more than 3cm in the subarachnoid space. If unable to pass the catheter then the Tuohy needle should be withdrawn slightly and continued flow of cerebrospinal fluid (CSF) confirmed before re-attempting insertion. If still unable to thread the catheter or if pain or paraesthesia occurs then the procedure should be abandoned and the epidural re-sited at another lumbar interspace.

Analgesia should be initiated by using 2-3mL from an ampoule of 0.1% Bupivacaine with 2 micrograms/mL Fentanyl. This should be given via the epidural filter using a small syringe (2 or 5mL) to ensure accurate dosing. Remember that the epidural filter will add dead space of approximately 1ml. If analgesia is inadequate after 10 minutes a further 1-2mL of the pre-prepared mix can be given.

Alternatively, 2mL of 0.25% Bupivacaine, 25 micrograms of Fentanyl and 2.5mL of 0.9% Sodium Chloride can be drawn up in a 5ml syringe under sterile conditions. This will give 5mL of 0.1% Bupivacaine with 5 micrograms/mL Fentanyl. Aliquots of 1-2mL of this mixture can be given every 10 minutes until adequate analgesia is achieved.

Each bolus should be followed by a flush of 2ml of sterile saline. The filter dead space must not be left primed with local anaesthetic as this may lead to confusion and larger doses may be given inadvertently.

Subsequent top ups can be given when further analgesia is requested by the patient. Again, these should either be 1-2mL from a pre-prepared ampoule or of the alternate mixture described above. If analgesia is inadequate further 1-2mL doses can be given every 10 minutes until analgesia is obtained.

Cardiotocograph (CTG) monitoring should be performed and maternal blood pressure and heart rate should be recorded every 5 minutes for 20 minutes after each top up.

Multiple dosing from the same bag or ampoule is not supported. A fresh bag or ampoule should be used each time. This also applies to the alternative mix which should be made up fresh each time. Tachyphylaxis may occur and larger doses than expected may be required more often to obtain adequate analgesia especially in the later stages of labour[7]. **All top ups must be given by an anaesthetist.**

Anaesthesia for caesarean section or other procedures can be given by cautious administration of 0.5 to 1mL boluses of 0.5% hyperbaric bupivacaine. **Again, tachyphylaxis can occur and more than expected may be required.** Diamorphine 300mcg OR Fentanyl 15 micrograms with preservative free intrathecal Morphine 100 micrograms can also be given once the block is established. The catheter must be removed at the end of surgery. If you are unhappy with this technique or if the intrathecal catheter has not been behaving as expected in labour, then remove the catheter and perform a single shot spinal as you would normally.

The catheter must be clearly labelled with a sticker stating, “Spinal catheter – anaesthetist only top ups”. A large piece of Mefix can be used for this. The Midwife caring for the patient and the Delivery Suite Coordinator must both be informed. It

should also be noted on the patient information white board. All Midwives should be informed at the midwifery shift changeover. The relieving duty Anaesthetist must be informed at handover. The patient should be told that a dural puncture has occurred and should be reassured. The Headache after Epidural or Spinal Anaesthetic patient information leaflet (Trust Docs ID: 10813) should be given to the patient. It should be documented in full in the notes and on the computer database to ensure follow up.

It is the responsibility of the Anaesthetist who inserted the catheter to ensure that all relevant people are aware that it is an intrathecal catheter.

3.4. Epidural re-site

The epidural should be resited at another lumbar interspace by an experienced anaesthetist. If another dural puncture occurs, then use an intrathecal catheter as described above. Do not have further attempts at siting an epidural. If unable to thread the catheter into the subarachnoid space, then alternative methods of analgesia will need to be used, such as a Remifentanil Patient Controlled Analgesia (PCA). This should be discussed with the on-call Consultant.

Once the epidural has been resited then a test dose followed by the first dose should be administered by the Anaesthetist. The amount of local anaesthetic required to establish a block may be significantly less in the presence of a hole in the dura. The first 2 top ups should be supervised by the anaesthetist in case of high block. Once the Anaesthetist is satisfied that it is safe to do so subsequent boluses may be given by the attending midwife. It must be explained to the midwife that there is a risk of high block and she should be aware of indicators such as dense motor block and hypotension.

Initially program A (10ml bolus, no intermittent mandatory bolus) should be used. Infusions, intermittent mandatory boluses and Patient Controlled Epidural Analgesia (PCEA) may lead to high block and should not be used initially. Boluses must initially be given by the midwife looking after the patient or the anaesthetist. If the epidural has been safely used for some time with no obvious translocation of local anaesthetic or overly high or dense block, then PCEA may be started. Regular block level and motor block assessments should be made as normal and if there are any concerns then the anaesthetist should be called to review and PCEA suspended.

Again, it is important to communicate that a dural tap has occurred to the Midwife looking after the patient, the Coordinator, to any subsequent Anaesthetists at hand over and to the patient. It should also be documented on the patient information white board that a dural tap has occurred. The Headache after Epidural or Spinal Anaesthetic patient information leaflet (Trust Docs ID: 10813) should be given to the patient.

In either instance if there is no headache during labour then an elective assisted delivery is not necessary and pushing should be encouraged. If a headache is present or the second stage is prolonged, then assisted delivery should be considered. However, evidence for this is weak.

Dural punctures are a relatively common complication of epidurals. It is important for our records and for patient follow up that any inadvertent dural punctures (suspected

or confirmed) and blood patches are well documented on the computer audit system. Please record whether the catheter was left in situ or if the epidural was re-sited.

There is no evidence to support bed rest, prophylactic blood patch or drug administration, epidural or intrathecal saline to prevent or reduce the severity of post dural puncture headache[13].

3.5. Characteristics, differential diagnoses and risks for post dural puncture headache

A post dural puncture headache (PDPH) will usually occur within the first 5 days. It is commonly distributed over the frontal and occipital areas radiating to the neck and shoulders (manifested as neck stiffness). It is exacerbated by an upright posture and relieved by lying flat. Other symptoms may include nausea, tinnitus, subjective hearing loss, diplopia and vertigo[1]. If there is no postural element and there is focal neurology then alternate diagnoses should be considered and a neurologist should be consulted.

Differential diagnoses include: migraine, tension headache, cranial vascular disorders, subarachnoid haemorrhage, subdural haematoma, intracerebral haemorrhage, cerebral venous sinus thrombosis (CVST), cerebral ischaemia, arterial dissection, posterior reversible encephalopathy syndrome (PRES), reversible cerebral vasoconstrictive syndrome (RCVS), pituitary apoplexy, benign intracranial hypertension, spontaneous intracranial hypotension, space occupying lesions, pneumocephalus, sepsis, meningitis, sinusitis, and hypertensive disorders of pregnancy[14].

Factors associated with increased rates of post dural puncture headache include younger age, female sex, and pre-existing history of headache. Raised Body Mass Index (BMI) may increase the risk of inadvertent dural puncture but may also decrease the incidence of PDPH; however, evidence for this is conflicting. Procedural factors associated with increased risk of PDPH include cutting tipped (Quincke) spinal needles, increasing needle diameter, multiple attempts and operator inexperience. Evidence suggests that use of air or saline for loss of resistance, continuous or intermittent needle advancement, and level of insertion do not alter the risk for inadvertent dural tap. Lateral decubitus positioning for insertion is associated with a decreased risk of PDPH[13].

3.6. Management of post dural puncture headache (PDPH)

The patient should be encouraged to drink plenty and keep well hydrated; intravenous fluids should be prescribed if this is not possible. There is limited evidence to support the use of caffeine in the treatment of PDPH[11]. It may be offered in the first 24 hours of symptoms with a maximum dose of 900mg per day; or 200mg if breast feeding[13].

Simple analgesia should be prescribed – Paracetamol, Diclofenac or Ibuprofen. If opiate analgesia is required, then regular laxatives should also be prescribed. Codeine must not be given to breast feeding mothers. Oramorph and Dihydrocodeine are acceptable alternatives in breast feeding mothers, but they should be given at the lowest effective dose and for as short a duration as possible[12].

All babies should be monitored for signs of adverse opiate effects regardless of maternal dose.

Evidence does not support the use of other pharmacological agents, acupuncture, sphenopalatine ganglion blocks, epidural opiates, saline or glue.

Greater occipital nerve blocks (GONB) have been shown to relieve symptoms in PDPH following spinal anaesthesia; however, 25% of patients go on to require an epidural blood patch. Efficacy in PDPH after dural puncture with wider gauge Tuohy needles has not been proven. The ASRAPM guidance recommends that GONB may be offered to patients with PDPH following spinal anaesthesia with a 22Gu or narrower needle. At the Norfolk and Norwich University Hospitals NHS Foundation Trust, the ability to perform GONB is not widely available and so practically it is not a technique that can be offered. It could be considered in situation where an epidural blood patch is contraindicated or refused.

If the patient is requesting to be discharged and still has a headache then they must be given instructions on who to contact and what to do if the headache worsens. These are contained within the Headache after Epidural or Spinal Anaesthetic patient information leaflet (Trust Docs ID: 10813).

3.7. Performing an Epidural Blood Patch (EBP)

A delayed epidural blood patch (EBP) should be offered when PDPH is refractory to conservative management and impairs activities of daily living; or in the presence of PDPH with severe neurological symptoms (eg hearing loss, cranial neuropathies)13. Epidural blood patch after 24 hours is successful in up to 75 – 85% of patients, a further 18% will experience partial relief[6,9]. A prospective multicentre study published in the British Journal of Anaesthesia (BJA) in 2022 found a statistically significant reduction in failure of EBP if performed more than 48 hours after dural puncture OR 0.37 (95% CI 0.18-0.77)[15]. Ideally EBP should be performed after 48 hours and not before 24 hours postpartum and anaesthesia has worn off. If EBP is to be performed before 48 hours, then patients should be counselled about higher rates of failure and the need for a second EBP[13]. Additional factors associated with higher rates of failure include history of Migraine and accidental dural puncture occurring at a higher level (L1-L3)[15].

The patient should have the procedure explained to them and informed consent obtained which must be documented clearly on a standard consent form. This should include failure, repeat dural puncture, backache commonly lasting for several days but sometimes longer, nerve damage, and infection (abscess). Arachnoiditis is a theoretical risk as blood in the epidural space has been linked with it, but the exact risk is unknown and it is very rare.

If there are any signs of systemic infection, coagulopathy or patient refusal, then a blood patch should not be performed. There is no evidence to support pre or concurrent taking of blood cultures[13]. Hospital guidance relating to Low Molecular Weight heparin administration must be followed. The decision to perform an epidural blood patch should be made by the duty Obstetric Consultant Anaesthetist. It should be performed in obstetric theatre by a senior Anaesthetist with the aid of another doctor and an Operating Department Practitioner (ODP).

The patient should ideally be positioned in the lateral position and IV access secured. Both anaesthetists should follow strict aseptic precautions and be gowned and masked. The epidural space should be located at the level of or one space below the original site at which the dural puncture occurred1. Air should not be used to confirm correct placement as even small amounts (2ml) can cause pneumocephalus associated headache.

Once the space is located then up to 20mL of the patient's blood10, taken aseptically by the second operator, should be injected through the Tuohy needle. This should be done slowly over about 1 minute. If pain occurs, then stop injecting. Higher volumes (up to 30ml) of blood do not appear increase the success of EBP and are associated with higher rates of discomfort and pain during injection[13].

The patient should lie supine for 2-3 hours after which they can gently mobilise. They should be advised to avoid lifting and any other activities that may cause a Valsalva like effect over the next few days. Laxatives should be prescribed. If the headache regresses, then they may be discharged. They should be given advice on whom to contact if the headache returns or if they develop any other worrying symptoms or neurology. Red flag symptoms requiring urgent review include incontinence, difficulty passing urine, loss of sensation or weakness in the back or legs, severe back pain. Patients should contact the duty anaesthetist on Delivery Suite who will be able to advise on further management or arrange for them to attend to be reviewed.

If the headache does not resolve or recurs and is not manageable with simple analgesia, then a second blood patch may be considered. If the headache has changed in nature, then alternative diagnoses must be considered, and a Neurology referral should be made. A Neurology referral should also be made if the headache persists after a second EBP.

All patients who receive an EBP or who have had a severe headache should be followed up by phone on a daily basis until symptoms have resolved or are deemed acceptable by the patient. Ensure that the patient has received a copy of the Headache after Epidural or Spinal Anaesthetic patient information leaflet (Trust Docs ID: 10813) with details of who to contact if there are any problems. Make sure a current telephone number is recorded on the obstetric anaesthesia audit system to allow phone follow up.

A follow up phone call after 2-3 weeks will be made from the high-risk Obstetric Anaesthesia clinics. A copy of the letter in Appendix B should also be sent to the patient's GP. Please email Bethany Jackson with the patient's details to arrange a telephone follow up and for the letter to be sent out. Please copy Dr Monica Morosan and Jo Walker into the email.

4. Related Documents

Headache after Epidural or Spinal Anaesthetic patient information leaflet (Trust Docs ID: 10813)

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6. Monitoring Compliance

Compliance with the process will be monitored through the following:

Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee /dept	Frequency of monitoring
Neurological monitoring with labour epidural as per guidance	Review of epidural observation chart on follow-up	Obstetric Anaesthetist Group	Dept of Anaesthesia	Annual (as part of audit of Trust doc 1305)
Rate of Epidural blood patch	Review of ORSOS	Obstetric Anaesthetist Group	Dept of Anaesthesia	Annual (as part of audit of Trust doc 1305)
Any complications arising from intrathecal catheters, epidural after IDP and epidural blood patches	Individual Datix reviews	Obstetric Anaesthetist Group	Dept of Anaesthesia	As and when reported
Audit of blood patches, technique, documentation and follow up	Notes review	Obstetric Anaesthetist Group	Dept of Anaesthesia	Every 3 years

The audit results are to be discussed at relevant governance meetings (Anaesthesia and Maternity) to review the results and recommendations for further action. Anaesthetic and Maternity governance teams will ensure that the actions and recommendations are suitable and sufficient.

7. Equality Impact Assessment (EIA)

Type of function or policy	Existing

Division	Women's and Children's	**Department**	Maternity
Name of person completing form	Dr Jeremy Corfe	**Date**	18/8/24

Equality Area	**Potential Negative Impact**	**Impact Positive Impact**	**Which groups are affected**	**Full Impact Assessment Required YES/NO**
Race	No	No	N/A	No
Pregnancy & Maternity	No	No	N/A	No
Disability	No	No	N/A	No
Religion and beliefs	No	No	N/A	No
Sex	No	No	N/A	No
Gender reassignment	No	No	N/A	No
Sexual Orientation	No	No	N/A	No
Age	No	No	N/A	No
Marriage & Civil Partnership	No	No	N/A	No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?		No impact		

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.

Appendix 1 - Headache after Epidural or Spinal Anaesthetic Patient Information Leaflet

This is an example of the patient information leaflet for Headache after Epidural or Spinal Anaesthetic (Trust Docs ID: 10813).

Department of Anaesthesia

Headache after Epidural or Spinal Anaesthetic: Information for patients

Headaches may occur normally after childbirth. This leaflet describes a special sort of headache that can occur after having an epidural or a spinal anaesthetic.

After having an epidural you have a 1 in 100 chance of developing a "post dural puncture headache". This risk is reduced to 1 in 200 after a spinal as a smaller needle is used. The headache typically occurs after 24 hours but may occur up to a week later.

What type of headache occurs?

The headache can be severe, is felt at the front or back of the head, is worse on sitting or standing and improves when lying down. In addition you may experience neck pain, nausea or vomiting and a dislike of bright lights. Some patients describe it as being like a bad migraine.

What causes the headache?

Your brain and spinal cord are surrounded by Cerebro-Spinal Fluid (CSF) contained within in a bag which is called the dura.

When an epidural is sited, a needle is used to inject local anaesthetic just outside the dura. In some patients the needle can accidentally pass through the dura. The risk of this happening increases in larger patients, patients with spinal abnormalities (e.g. Scoliosis) and when epidurals are placed during active labour.

When a spinal is given, a fine needle is deliberately inserted through the dura to inject local anaesthetic into the CSF. A much smaller needle is used so if a headache does develop it is less likely to be severe.

If too much fluid leaks through the hole in the dura, the pressure of the remaining fluid around your brain decreases. If you sit up, the pressure is reduced even more. This low pressure causes the typical headache.

What can relieve the headache?

Simple measures

The hole in the dura usually closes within a few weeks but can take longer. Lying flat and taking simple painkillers such as Paracetamol or Ibuprofen may help. If you are not breast feeding you may also be able to take Codeine. Drink plenty of fluid – tea, coffee or cola (caffeinated drinks) may be particularly helpful. Avoid lifting and straining.

A severe post dural puncture headache may not settle with the above treatment and may require an 'epidural blood patch'.

Epidural Blood Patch

Having a blood patch is like having an epidural and takes about 30 minutes. The anaesthetist will take blood from a vein in your arm and inject it near the hole in the Dura where it will clot and usually plug the hole.

In 70-80% of patients the blood patch will cure the headache. Most patients feel a significant relief of symptoms soon after the injection. Blood patches have been shown to more effective if performed after 48 hours; because of this we do not do them within 24 hours of your initial epidural or spinal anaesthetic.

After a blood patch we recommend that you lie flat for 3 hours and do not lift anything heavy for at least two days. You may need someone at home with you to help with your daily activities. You can eat and drink on the day of the procedure, and you do not need to stop breastfeeding.

What are the problems associated with a blood patch?

In some patients the blood patch may be only partially successful or may not work at all. If you still have a headache after 24 to 48 hours your doctor may advise you to have a second blood patch. It is rare to need more than two blood patches - your anaesthetist will discuss this with you.

The most common complications include bruising in the area where the anaesthetist put the needle into your back and temporary backache which lasts a few days. Epidurals have been shown not to cause long-term backache.

There is a chance (1 in 100) of the needle creating another hole in the Dura similar to the one that caused the post-dural puncture headache in the first place. This would make the headache worse.

Other complications may occur, but they are very rare. Nerve damage (numbness or weakness in your legs) may be caused by insertion of the needle (1 in 13,000). Infection or bleeding into your back are very rare but serious complications. We will not perform a blood patch within 12 hours of you having a blood thinning injection or if you have any signs of infection.

If you experience problems with passing urine, or loss of sensation or weakness in your back or legs, or severe back pain then you must contact the on-call anaesthetist on Delivery Suite immediately. The number you should call is 01603 287328

After discharge we will phone you at home to make sure you are ok. If you subsequently have problems or wish to speak to an anaesthetist about anything, please call the number above.

We have produced this leaflet to give you general information about the headache that may develop after your spinal or epidural injection and what treatment may be offered to you. If you need more advice on post-dural puncture headaches or epidural blood patches, please speak to your anaesthetist when he or she comes to assess you.

Further information

For more information, please contact the Department of Anaesthesia, Norfolk & Norwich University Hospital, Colney Lane, Norwich NR4 7UY. Tel: 01603 287086 or the Delivery Suite on 01603 287328.

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communication for all

Appendix 2 – Letter to patient's GP

Anaesthetic Department
Centre Block, Level 4
Norfolk and Norwich University Hospital
Colney Lane
Norwich
NR4 7UY

Dear Colleague

Re

Your patient recently had an epidural or a spinal sited during childbirth and unfortunately developed a post dural puncture headache. This has been treated with an epidural blood patch.

Common complications of this procedure include failure with recurrence of the headache, localized bruising and temporary backache. Rare but serious complications include nerve damage, infection or bleeding within the spine.

Please contact the on call Obstetric Anaesthetist via the hospital switchboard if you have any concerns or queries. Your patient should have received the attached patient information leaflet.

We will provide follow up by phone for the first few days and then at approximately 2 weeks.

Yours faithfully

Dr Jeremy Corfe
Consultant Anaesthetist