

# Postpunkční cefalea - up to date

Pavλίna Nosková

**XXVI.**

**kongres České společnosti anesteziologie,  
resuscitace a intenzivní medicíny**

2.-4. 10. 2019

Brno – Výstaviště (pavilon E)



VFN PRAHA

# **PDPH** (postdural puncture headache)

## **definice I** International Headache Society 2018

- **Bolest hlavy, která vznikne během 5 dnů v souvislosti s durální punkcí následkem úniku mozkomíšního moku**
- **Je obvykle doprovázena ztuhnutím šíje a případně subjektivními sluchovými obtížemi**
- **Vymizí spontánně během 2 týdnů nebo po uzavření defektu dury mater autologní krevní zátkou**

Doktore,  
paní A.N. měla **epidurál k porodu** a  
stěžuje si na bolesti hlavy



No tak zavolejte  
anesteziologa



Doktore,  
paní A.K. měla **sekci**  
**ve spinále** a stěžuje si na bolesti  
hlavy



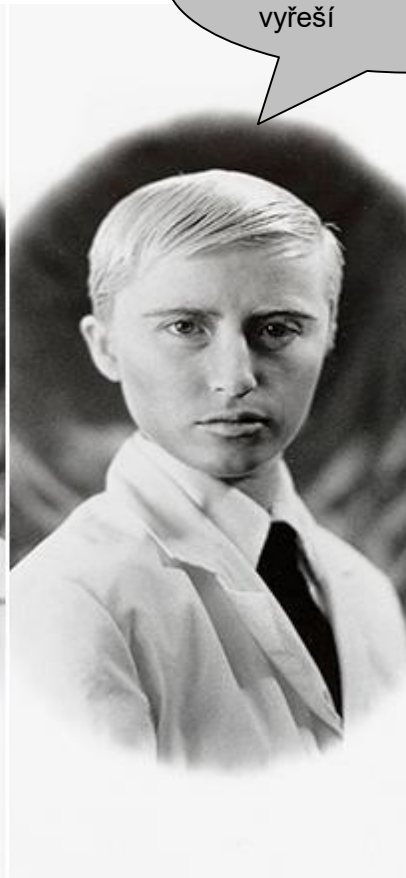
No tak zavolejte  
anesteziologa



Doktore,  
paní A.K. **spontánně rodila bez epidurálu** a stěžuje si na bolesti hlavy



No tak zavolejte  
anesteziologa, ten to  
vyřeší



**39%**

**PACIENTEK V PORODNICTVÍ  
SI STĚŽUJE  
NA BOLEST HLAVY**

**TROMBÓZA**

**HEMATOM**

**TUMOR**

**INFEKCE CNS**

**MIGRÉNA**

**VAS Cp**

**HYPERTENZNÍ KRIZE**

**PREEKLAMPSIE**



**PSYCHICKÉ A HORMONÁLNÍ ZMĚNY**

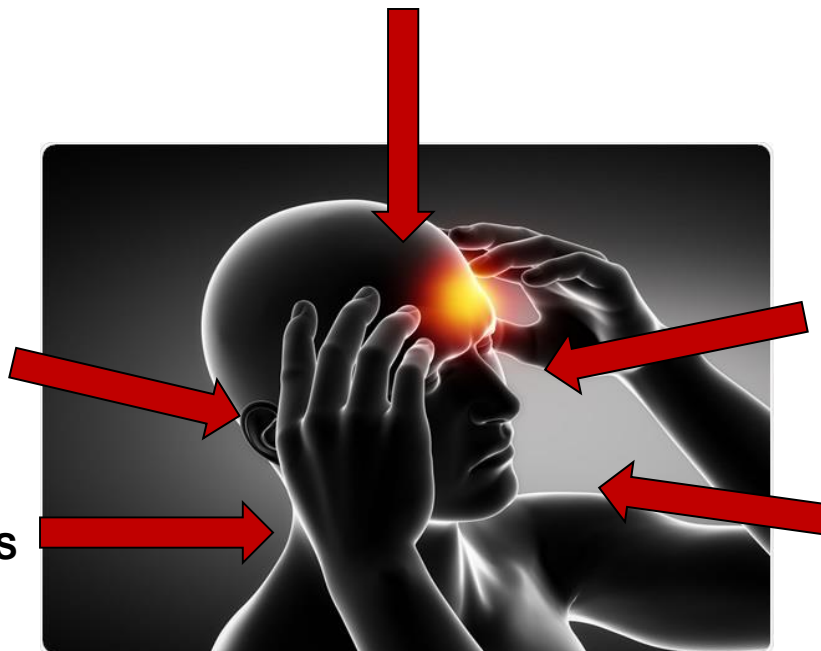
**PDPH**

## **PDPH - definice II** International Headache Society

- Klinické projevy PDPH **zhoršující se** po 15 min ve **vertikální** poloze a **zlepšující se** po 15 min v **horizontální** poloze u pacientů po durální punkci
- U 5% PACIENTEK NENÍ VLIV POLOHY



**CEFALEA FRONTÁLNĚ**



**TINNITUS  
PORUCHY SLUCHU**

**PSEUDOMENINGISMUS**

**TLAK ZA OČIMA  
DIPLOPIE**

**NAUZEJA  
ZVRACENÍ**

# Treatment of obstetric post-dural puncture headache

**Obstetric Anaesthetists' Association**



December 2018

**PubMed, EMBASE, Ovid Medline, Cochrane 1960-2017  
Nezahrnuje intrathékální katetr (profylaxe)**

## CONSERVATIVE TREATMENT

### Bed rest

Although most women gain some relief from obstetric post-dural puncture headache 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 in the treatment of obstetric post-dural puncture headache.

### Intravenous fluids

In the treatment of obstetric post-dural puncture headache, 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 in the treatment of obstetric post-dural puncture headache.

## PHARMACOLOGICAL MANAGEMENT

### Simple oral analgesia

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

### Opioid analgesia

Opioid analgesia may be offered to women with obstetric post-dural puncture headache if simple oral analgesia is ineffective but long-term therapy is not recommended.

### Caffeine

There is limited evidence to support the use of caffeine in the treatment of obstetric post-dural puncture headache. If used, treatment with caffeine should not exceed 24 hours, oral therapy is preferred and doses should not exceed 300 mg with a maximum of 900 mg in 24 hours. A lower maximum dose of 200 mg in 24 hours 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 in the treatment of obstetric post-dural puncture headache.

### **ACTH and analogues**

There is currently **insufficient evidence** to recommend the use of ACTH and its analogues in the treatment of obstetric post-dural puncture headache.

### **Steroids**

There is currently **insufficient evidence** to recommend the use of hydrocortisone, dexamethasone or methylprednisolone in the treatment of obstetric post-dural puncture headache.

### **Triptans**

There is currently **insufficient evidence** to recommend the use of triptans in the treatment of obstetric post-dural puncture headache.

### **Gabapentinoids**

There is currently **insufficient evidence** to recommend the use of gabapentinoids in the treatment of obstetric post-dural puncture headache.

### **Other medications**

There is currently **insufficient evidence** to recommend the use of desmopressin, methylergonovine, ondansetron or neostigmine and atropine in the treatment of obstetric post-dural puncture headache.

## **INVASIVE PROCEDURES**

### **Acupuncture**

There is currently **insufficient evidence** to recommend the use of acupuncture in the treatment of obstetric post-dural puncture headache.

### **Greater occipital nerve blocks**

There is currently **insufficient evidence** to recommend the use of greater occipital nerve blocks in the treatment of obstetric post-dural puncture headache.

### **Sphenopalatine ganglion blocks**

There is currently **insufficient evidence** to recommend the use of sphenopalatine ganglion blocks in the treatment of obstetric post-dural puncture headache.

### **Epidural morphine**

There is currently **insufficient evidence** to recommend the use of epidural morphine in the treatment of obstetric post-dural puncture headache.

## EPIDURAL FLUID ADMINISTRATION

### Epidural crystalloids

There is currently **insufficient evidence** to recommend the use of epidural crystalloid infusions in the treatment of obstetric post-dural puncture headache. 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 in the treatment of obstetric post-dural puncture headache.

### Hydroxyethyl starch

There is currently **insufficient evidence** to recommend the use of epidural hydroxyethyl starch infusion in the treatment of obstetric post-dural puncture headache.

### Gelatin

There is currently **insufficient evidence** to recommend the use of epidural gelatin in the treatment of obstetric post-dural puncture headache.

### Fibrin glue

There is currently **insufficient evidence** to recommend the use of epidural fibrin glue in the treatment of obstetric post-dural puncture headache.

## APPENDIX A

### Treatment pathway for obstetric PDPH

When PDPH is diagnosed the following treatment options should be considered:

1. Bed rest may reduce the intensity of symptoms, but prolonged bed rest is not recommended as it may increase the risk of thromboembolic complications.
2. Thromboprophylaxis should be considered for women whose mobility is reduced due to PDPH.
3. Encourage fluid intake to maintain adequate hydration.
4. Offer simple oral analgesia such as paracetamol, weak opioids and NSAIDs if not contraindicated.
5. Stronger opioids such as morphine or oxycodone may be offered but treatment should usually be limited to < 72 h duration.
6. Caffeine may be offered but limited to 24 h duration with a maximum dose of 900 mg (200 mg maximum in breastfeeding women).
7. Offer an EBP when symptoms affect daily living and care of the baby (a guide for EBP management is provided in Appendix C).
8. 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.
9. Arrangements should be made for appropriate follow-up after discharge from hospital for women who have experienced dural puncture with an epidural needle or PDPH.
10. When women experience dural puncture with an epidural needle or PDPH, the GP and community midwife should be informed of treatment received and arrangements for further follow-up.



## APPENDIX C

### Checklist for performing an epidural blood patch

#### Pre EBP procedure checklist

- Give patient written information to aid consent process (e.g. OAA headache after an epidural leaflet [http://www.labourpains.com/assets/managed/cms/files/Headache after epidural.pdf](http://www.labourpains.com/assets/managed/cms/files/Headache%20after%20epidural.pdf)).
- Check when the last dose of anticoagulant was given.
- Check for evidence of maternal systemic infection.
- Check for the absence of 'red-flag' symptoms suggesting a different diagnosis e.g. change in the nature of headache, development of focal neurological signs, reduced conscious level and atypical headaches.

#### Consent

Written consent should be obtained and the following may be discussed:

##### *Benefits of EBP*

- Efficacy: complete relief of symptoms following a single epidural blood patch is likely to occur in up to one third of cases. Complete or partial relief may be seen 50-80%. In cases of partial or no relief, a second epidural blood patch may be performed after consideration of other causes of headache.

##### *Risks and Side effects*

- Repeat dural puncture.
- Back pain during and for several days after EBP is common and can be significant.
- Rare complications include nerve damage, bleeding and infection.

## EBP Procedure

- The procedure requires two clinicians. A consultant obstetric anaesthetist or experienced senior trainee should perform the epidural injection and a second clinician to take blood.
- Cardiovascular monitoring and intravenous access may be considered to detect and treat bradycardia during the procedure.
- The patient may be placed in the lateral or sitting position, considering the comfort of the patient in relation to her symptoms and the preference of the anaesthetist.
- The epidural injection should be performed at the same space or one space lower than the level at which the original dural puncture occurred.
- A full aseptic technique should be employed for both the epidural component and venesection.
- The epidural space should be located before venesection is performed.
- After venesection blood should be injected immediately into the epidural space through the epidural needle.
- Volumes of up to 20 mL are recommended if tolerated by the patient.
- There is insufficient evidence to recommend the routine collection of blood for culture. The decision on whether to do so should remain with the individual clinician.

## Post EBP procedure management

Guidance on the management of obstetric patients immediately following an EBP is lacking. The following is suggested:

- Keep patients in the supine position for 1-2 h.
- Regular observations of maternal pulse, blood pressure and temperature may be made following the procedure. The frequency and duration of these observations should be decided by individual units and must take into account maternal health.
- Consider prescribing laxatives to avoid constipation and advising patients to avoid twisting, bending and straining.
- Women should be reviewed by an anaesthetist within 4 h of the procedure. The effect on headache and presence of side effects should be documented. After the initial review, women may mobilise and, where appropriate, they may be discharged home. Those women who remain in hospital should be reviewed daily until discharge or until symptoms resolve.
- For further review and follow-up procedures see Appendix B.

**KREVNÍ ZÁTKA**

**JE STANDARDNÍ LÉČBOU PDPH**

**MOŽNOST I OPAKOVAT 1x**



(Attach Addressograph label)

Patient Name:

Unit No:

DOB:

**Document all follow-up below  
(inpatient review or telephone)**

Print and attach extra copies as needed

Date:	Time:	Days since onset:	Reviewed by:	
Headache?	Yes / No	Pain score: 0 1 2 3 4 5 6 7 8 9 10		
Postural?	Yes / No	Patient location:  Management:		
Location?				
Neck stiffness?	Yes / No			
Photophobia?	Yes / No			
Diplopia?	Yes / No			
Hearing loss?	Yes / No			
Tinnitus?	Yes / No			
Fits?	Yes / No			
Other (specify)			Signed:	Grade: GMC:

Date:	Time:	Days since onset:	Reviewed by:	
Headache?	Yes / No	Pain score: 0 1 2 3 4 5 6 7 8 9 10		
Postural?	Yes / No	Patient location:  Management:		
Location?				
Neck stiffness?	Yes / No			
Photophobia?	Yes / No			
Diplopia?	Yes / No			
Hearing loss?	Yes / No			
Tinnitus?	Yes / No			
Fits?	Yes / No			
Other (specify)			Signed:	Grade: GMC:

**Dural puncture with an epidural needle and post-dural puncture headache (PDPH)  
Management and Follow-up Form**

[Attach addressograph label]

 Patient Name:  
 Number:  
 DOB:

 Home phone:  
 Mobile phone:
**INITIAL EVENT**

Date: \_\_\_ / \_\_\_ / \_\_\_\_\_ Time: \_\_\_\_\_ Performed by: \_\_\_\_\_ Grade: \_\_\_\_\_

Recognised dural puncture  Deliberate subarachnoid block Type / Size needle: \_\_\_\_\_ Spinal level: \_\_\_\_\_ Loss of resistance: Air  Saline Details of insertion: a) No attempts overall: 0 / 1 / 2 / 3 / >3    b) more than one level: Yes  No **SUBSEQUENT MANAGEMENT**Labour analgesia: Epidural re-sited? Yes  No  Level: \_\_\_\_\_Intrathecal catheter: Yes  No Mode of Delivery: Spontaneous  Instrumental  Caesarean section 

Significant events (e.g. PPH): \_\_\_\_\_

Onset of headache Date: \_\_\_ / \_\_\_ / \_\_\_\_\_ Time: \_\_\_\_\_

Verbal / written information: Delivery suite  Postnatal ward  N/A as HA started at home Critical Incident or Datix completed: Yes  No Duty of Candour followed: Yes  No **MANAGEMENT PRINCIPLES**

- Senior anaesthetists must be involved in the management of PDPH
- Postnatal headaches are common: consider differential diagnosis
- In particular, consider need for neurological opinion/imaging
- Prescribe simple analgesia including NSAIDs if no contraindications
- All women with suspected PDPH should receive an information leaflet if in hospital
- Bed-rest is not necessary, although many women find it reduces symptoms
- Remember need for thromboprophylaxis if woman is bed-bound
- Daily follow-up is required
- A letter to GP and community midwife must be completed and sent

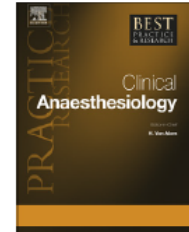
**COMMENTS**GP letter sent: Yes  No  Date sent: \_\_\_ / \_\_\_ / \_\_\_\_\_ Signed By: \_\_\_\_\_Follow up appointment required: Yes  No  Date: \_\_\_ / \_\_\_ / \_\_\_\_\_



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journal homepage: [www.elsevier.com/locate/bean](http://www.elsevier.com/locate/bean)



4

### Any news on the postdural puncture headache front?



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### *Intrathecal insertion of an epidural catheter*

Intentional placement of an epidural catheter through the dural rent into the intrathecal space is an attractive alternative to reattempting epidural analgesia after UDP; the spinal administration of local anesthetics and opioids will provide excellent labor analgesia. Moreover, labor analgesia can easily be converted to surgical anesthesia if an emergency cesarean delivery becomes necessary. Several retrospective series have suggested that the presence of an intrathecal catheter, particularly one that remains in place for 12–24 h, reduces the risk of PDPH after catheter removal. While in situ, the catheter mechanically obstructs the dural hole and prevents CSF from leaking. It may also induce an inflammatory reaction that promotes dural healing when the catheter is removed. In a 2010 meta-analysis, no reduction in the incidence of PDPH was identified when a catheter was left in the sub-arachnoid space at the time of UDP [30].

However, in a 2013 meta-analysis, the authors found a significant reduction in the requirement for EBP in women who had an intrathecal catheter compared to those who did not (relative risk (RR) 0.64; 95% confidence interval (CI) 0.49 to 0.84), although there was no difference in the incidence of PDPH (RR 0.82; 95% CI 0.67 to 1.01). Of note, most of the studies included in the analysis were retrospective or observational trials. Well-designed prospective studies are difficult to conduct because of logistical and ethical concerns. Two trials in which women were quasi-randomized to groups according to the time of delivery found no difference between groups in the incidence of PDPH and the need for EBP [43,44]. The quasi-randomized study by Russell was prematurely stopped and was consequently underpowered to detect small differences [43]. Surprisingly, although there was no difference in the incidence of PDPH, the author supported the placement of an intrathecal catheter after UDP to minimize patient suffering (no additional punctures and subsequent complication risk, e.g., repeat UDP) [43]. In the past 3 years, several retrospective studies have been published [45–47] addressing this practice. These studies found a lower incidence of PDPH in women who received intrathecal catheters than those who received epidural catheters.

# Alternativa BP?



## The Sphenopalatine Ganglion Block as a Treatment for Post-Dural Puncture Headache in the Post-Partum Patient: A Case Report

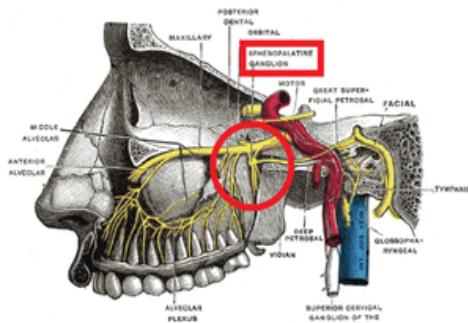
Jessica C. Wrobel, MD; Mihaela Podovei, MD; and Dominique Y. Arce MD, MPH

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### Background:

- Post-dural puncture headache (PDPH) is a major cause of morbidity in post-partum patients who received neuraxial anesthesia for labor analgesia.
- The headache is thought to be due to loss of CSF with parasympathetically mediated reflex vasodilation of the meningeal vessels
- Conservative management: rest, fluids, abdominal binders, caffeine, and acetaminophen
- Gold standard treatment: Epidural blood patch (EBP)
  - Timing of EBP is subject to availability of qualified staff



Pterygopalatine Ganglion. 12 Feb. 2018, en.wikipedia.org/wiki/Pterygopalatine\_ganglion.

### The Sphenopalatine Ganglion Block

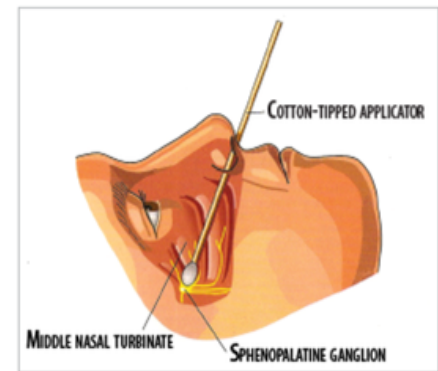
- The SPG block is a relatively noninvasive procedure that has been used as a treatment for migraines and cluster headaches
- The sphenopalatine ganglion (SPG) is a parasympathetic ganglion located in the pterygopalatine fossa
  - Can be topically accessed trans-nasally
- Proposed mechanism: parasympathetic blockade preventing profound vasodilation associated with PDPH (1)

### Case Presentation:

- A 29 year-old G1P0 at 38/5 weeks gestation presented for IOL for gestational hypertension
- A labor epidural was placed, and was complicated by a dural puncture
- PPD 1: Patient reported a severe positional headache with associated nausea, photophobia, and tinnitus
- Her symptoms remained severe despite conservative management
- At approximately 23:15 on PPD1, anesthesia was called to evaluate the patient for an EBP
- Due to the labor and delivery case load and patient census, it was not possible to schedule the EBP until the morning, when the anesthesia and nursing providers were available
- In order to temporize her headache, an SPG block was performed using cotton tipped applicators soaked in 4% viscous lidocaine
- Her headache improved from a 10/10 to a 0/10 immediately following the block
- Nursing evaluation: 4 hours after the block – patient rated her headache as a 3/10
- She was able to care for her baby and rest overnight
- Her headache returned to full intensity the following morning
- PPD2: Patient received an EBP with complete resolution of her headache

### Discussion:

- Little is known about the utility of the SPG block as a treatment for PDPH
- This case demonstrates that the SPG block
  1. May have a place in the PDPH treatment algorithm
  2. May serve as a temporizing measure prior to daytime treatment with an EBP
- The SPG block may also be an appropriate treatment for patients who wish to avoid oral medications, or who want to try a less invasive option prior to an EBP



<http://nasent.com/igrain/>

### References:

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## Závěr

Krevní zátka  
za 48 hod

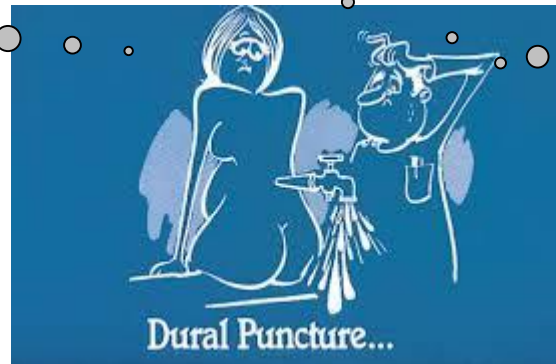
Katetr intrathékálně  
na 12-24 hod

Monitorace  
a 24 hod

Krevní zátka  
max 20 ml

Dokumentace

Paracetamol  
NSA



# DĚKUJI ZA POZORNOST