Post dural puncture headache: data from a UK tertiary centre 2018-2021 and the effect of the SARS-CoV-2 pandemic

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Introduction

Post dural puncture headache (PDPH) is caused by cerebrospinal fluid (CSF) leakage through an accidental or intentional dural puncture. It is typically postural and accompanied by neck stiffness and auditory symptoms.

Why does PDPH matter ?

PDPH may cause significant morbidity and, in the 2009-2012 MBRRACE-UK report, was linked to the death of two women [1].

What is the risk?

The risk of accidental dural puncture with epidural analgesia is widely quoted as a 1% risk. PDPH following spinal anaesthesia is more variably quoted as 0.5-1% [2].

What were our aims?

- To assess PDPH rate in our UK tertiary obstetric unit between 2018-2021.
- To determine if we were providing accurate risk data to women.
- To ascertain whether the pandemic had had an effect on local PDPH rates.

Methods

Following Trust clinical audit department approval, a Microsoft Excel© database was collated for all anaesthesia complications in our obstetric unit from January 2018 to December 2021 inclusive (four years).

Denominator data was taken from our Trust Births and Deliveries database.

Statistical analysis was performed using percentages and chi squared tests with significance set at $p< 0.05$.

Neuraxial block	PDPH (%)	Single epidural blood patch (%)	Second epidural blood patch (%)
All	1.28	36.2	3.2
Spinal	0.92	31.3	-
Epidural	1.45	46.2	6.2

Fig. 1. Rates of PDPH and requirement for epidural blood patches between 2018-2021

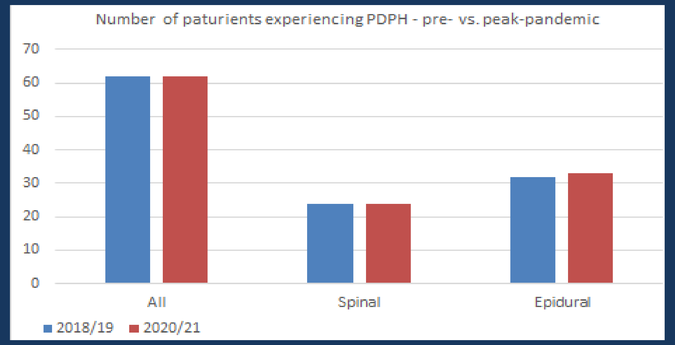


Fig. 2. Comparison of PDPH numbers pre- vs. peak-pandemic

Results

In the four years 2018-2021, the overall rate of PDPH was 1.28% (1 in 78) for all neuraxial blocks. (See Fig. 1)

Epidural analgesia

PDPH occurred in 1.45%, (1 in 69) with 46.2% requiring an epidural blood patch (EBP) and 6.2% needing a repeat EBP.

Spinal anaesthesia

PDPH occurred in 0.92% (1 in 109) with 31.3% requiring an EBP. No repeat EBPs were performed.

PDPH rates pre- (2018-19) and peak- (2020-21) pandemic

There was **no significant difference** between:

- Overall rates of PDPH (*p=0.93)*
- PDPH rate after epidural analgesia *(p=0.95)*
- PDPH rate after spinal anaesthesia *(p=0.86)* (See Fig. 2)

Discussion

Current local practice is to quote risk of PDPH as

- 1 in 100 (1%) after epidural procedures.
- 1 in 500 (0.2%) after spinal procedures.

Our actual rates of PDPH exceed these, particularly for spinal anaesthesia.

Epidural blood patch

- Performed in less than half of those with a PDPH.
- Very few require repeat procedures.

SARS-CoV-2 pandemic

- Appears to have had no influence on PDPH rate.
- Our Trust quickly recognised that preserving the safe delivery of maternity services during the pandemic was paramount; anaesthetic staffing on the delivery unit was at no point compromised by demands elsewhere in the Trust.

Local recommendations

- Identify factors contributing to our PDPH rate.
- Amend currently quoted risk rates for neuraxial blockade locally, especially for spinal anaesthesia.
- Consider wider use of spinal needles smaller than our standard 25G.

References 1. Knight M, Kenyon S, Brocklehurst P, Neilson J, Shakespeare J, Kurinczuk JJ (eds.) on behalf of MBRRACE-UK. Saving Lives, Improving Mothers' Care – Lessons learned to inform future maternity care from the UK and Ireland. Confidential Enquiries into Maternal Deaths and Morbidity 2009-12. Oxford National Perinatal Epidemiology Unit. University of Oxford 2014. 2. OAA Epidural Information Card, available at www.labourpains.com/Epidural-Information-Card (accessed 9th February 2022).