

Accidental Dural Punctures (ADPs): Is Regularity of Practice More Important than Experience?

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Introduction

- Epidural analgesia remains the gold standard method of pain relief in the parturient.
- Accidental dural puncture (ADP) with epidural analgesia has reported rates between 0.19% and 3.6% [1].
- ADP can result in a debilitating post-dural puncture headache (PDPH) and has significant implications for the mother in the post partum period.
- The latest Royal College Of Anaesthetists (RCOA) Quality Improvement Compendium recommended an ADP rate of less than 1% [2].
- We retrospectively analysed all neuraxial procedures carried out over a year to identify
 - Our ADP rate
 - Any Factors that were contributing to our ADP rate

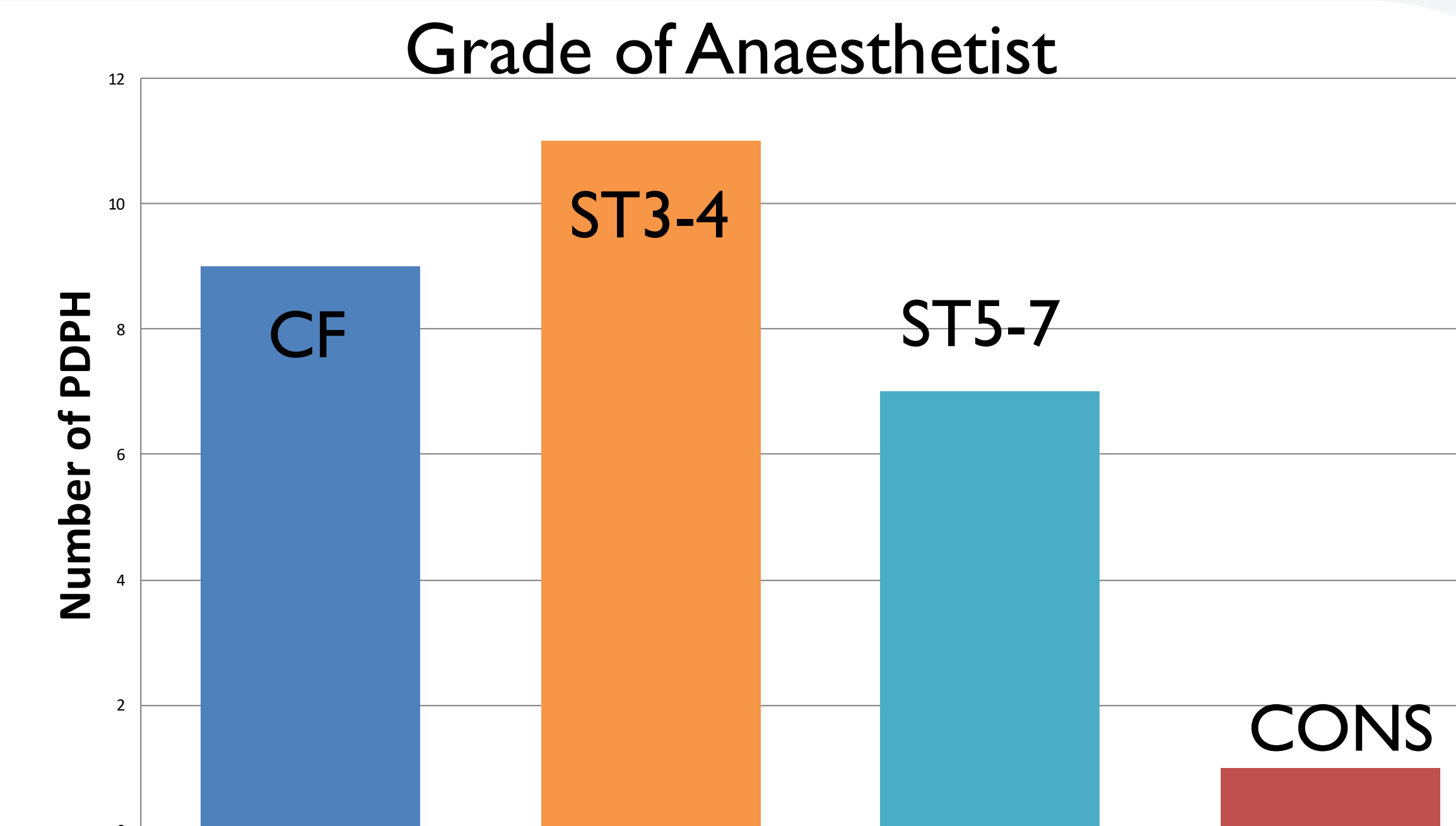
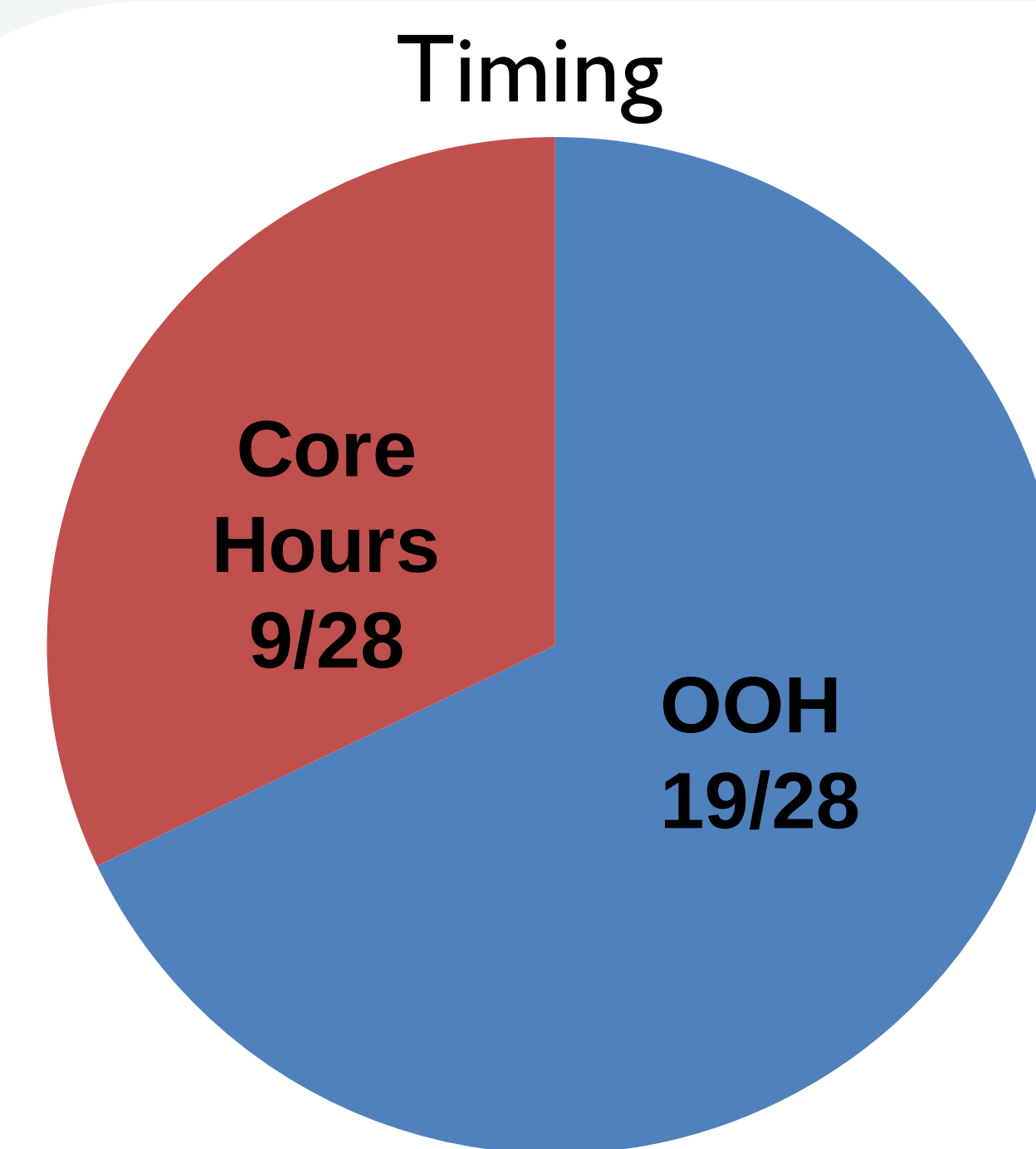
Method

- Data from CareFlow Electronic Patient Record (Maidstone, UK) was obtained retrospectively from 1st April 2021 to 30th March 2022 for all neuraxial procedures performed for labour analgesia and operative delivery.
- Parturients in whom a headache was identified by an anaesthetist as a PDPH postnatally were included
- Data obtained from this sub-set of ADP patients included:
 - Grade of anaesthetist
 - Type of neuraxial procedure (Epidural, Combined Spinal/Epidural and Spinal)
 - Positioning of patient
 - Number of insertion attempts
 - Whether ADP was recognised at time of insertion
 - Onset time of headache
 - Treatment with Epidural Blood Patch
- The audit was registered with the trust audit department

Results

- Over the period of study 1450 neuraxial procedures were performed
- 38 women were identified clinically on follow up to have a PDPH
- Of those:
 - 19 occurred after Epidural insertion
 - 9 from Combined Spinal Epidural (CSE)
 - 10 from Spinal anaesthesia.
- Cases where spinal anaesthesia was the sole technique were discounted from further analysis.
- 28 cases out of 1450 neuraxial procedures were identified as developing a PDPH giving our unit an ADP rate of 1.9%

Possible Causative factors



Grade Of Anaesthetist	Number Of ADPs	Total Number Epidurals	“Tap Rate”
CF	9	373	2.40%
ST3-4	11	735	1.50%
ST5-7	7	176	4%
Cons	1	166	0.60%

Additional Findings

- 18/28 (64%) had undergone multiple neuraxial procedures.
- ADP was identified at the time of insertion in 14/19 (74%) of cases.
- In 86% (12/14) of cases a spinal catheter was placed.
- The mean time for onset of headache was 26.1 hours.
- 13/28 (46%) received an EBP.

Discussion

- Our ADP rate was higher than the nationally recommend ADP rate of 1%.
- This audit included patients where a PDPH was clinically identified post-procedure but where an ADP wasn't always identified at time of insertion- equally patients who had a recognised ADP but didn't develop a headache were not included- this makes it difficult to fully estimate a "unit ADP rate"
- The majority of these ADPs occurred OOH where labour analgesia accounts for 30% of all anaesthetic workload at night. [3]
- The most surprising finding was that the ST5-7s had an ADP rate greater than junior colleagues.
- One might suppose the rates are high in ST5-7s because they are called to assist with failed attempts but in almost all cases the senior registrar was the first epiduralist i.e. they were called because of busyness not difficulty.
- As a result we speculate that regularity of practice is more important than overall experience in terms of ADP rate.
- As a result of this audit the department received funding for an epidural sim model.

References

References

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