

# Post-dural puncture headache – not only a headache for the patient: guidelines and training in obstetric anaesthesia

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Included in this edition of SAJAA is an important South African exploratory survey of management practices for post-dural puncture headache (PDPH), by Monteith et al.<sup>1</sup> The authors investigated these practices within the context of a large academic department, and compared their findings with international guidelines.<sup>2</sup>

The authors developed an electronic survey that consisted of 40 questions based on the latest international obstetric anaesthesia (OA) evidence-based PDPH management guidelines, followed by a national review validation process.<sup>2</sup> They included a total of 140 surveys, from the inexperienced trainee to the specialist anaesthesiologist with more than 10 years of experience, and defined “correct practice” as a score of more than 70% by a participant.<sup>1</sup>

Key points highlighted by the authors are as follows:

- 34% of participants had never been involved in the management of a patient with PDPH.
- 56% indicated insufficient knowledge and expertise to manage a patient with PDPH.
- Low labour epidural rates in South Africa (SA) contribute to poor epidural skills development.
- PDPH rates are high, with variable PDPH management practices.
- Staff has limited experience in the management of PDPH.
- Dedicated SA guidelines are required.

Monteith et al. remind us that PDPH is not to be seen in isolation, but rather as a symptom of deficiencies in the training of practical skills for neuraxial anaesthesia required in OA. The incidence of PDPH in the setting of spinal anaesthesia has been considerably reduced, provided the correct needle gauge and type are used. A 27 G pencil point (atraumatic) spinal needle is associated with an incidence of PDPH as low as 0.5%, in contrast to 45–80% after unintended dural puncture with a 16–18 G Tuohy epidural needle.<sup>3</sup>

Although Monteith et al. state that their study findings are in the context of anaesthesia practice at the University of the Witwatersrand and can therefore not necessarily be generalised to other training centres in South Africa, it is likely that similarities exist. Tygerberg Hospital regularly experiences service pressure, with labour ward bed capacity reaching 140%, in combination

with nursing and anaesthesia staff shortages. It becomes very difficult to motivate for a daily epidural analgesia service when labour ward teams are faced with this growing burden of disease and the hard reality of maternal morbidity and mortality.

Despite these challenges faced in labour wards across the country, and a list of alternative analgesic options to explore, the lumbar epidural is still considered the gold standard in labour analgesia, against which all other techniques are benchmarked.<sup>4-6</sup> Not only is the epidural a valuable practical tool in OA, but also in many other areas of perioperative and pain medicine. This raises the question: how do we as teachers best teach this essential practical skill to ensure that trainees reach the required standard so that the epidural becomes a tool in the toolbox of every specialist anaesthesiologist?

A quality labour epidural service is the foundation of not only a high success rate of epidural analgesia, but also the correct management of complications like PDPH, and ultimately an overall reduction in complications and improved patient safety.<sup>7</sup>

Components of a quality labour epidural service include:

- Evidence-based guidelines.
- A dedicated, enthusiastic team, consisting of nurses, anaesthesiologists, and obstetricians.
- Adequate hospital management support.
- Adequate resources, including monitoring equipment, consumables, and drugs.

Central to this quality epidural service is skills training. Drake et al. defined competence in obstetric epidural anaesthesia using measurable outcomes.<sup>8</sup> They reported little improvement in epidural success rates after 10 attempts. Trainees had to perform 50 epidurals to achieve competence as measured by cumulative sum (CUSUM) analysis. This goal of 50 labour epidurals per trainee is rarely achieved in training facilities across SA, and newly qualified specialists may enter private practice with less than 10 supervised labour epidurals during their training.

These training challenges have brought about several innovative opportunities for practical epidural skills training outside the labour ward. The first is the use of the combined spinal epidural (CSE) technique in obese obstetric patients for elective caesarean section. The CSE technique can also be used to anaesthetise selected patients coming for vascular bypass procedures,

especially in the elderly population where the risk of developing PDPH is reduced.<sup>9</sup> Secondly, cadaver skills training workshops can provide simulation where trainees can experience the tactile feedback required to improve dexterity.

Monteith et al. based their survey instrument on the United Kingdom-based Obstetric Anaesthetists' Association guidelines.<sup>1,2</sup> These guidelines are context-sensitive; therefore the authors recommend the development and institution of formal guidelines for the SA context.<sup>1</sup> In SA, collaboration between governance structures such as the Colleges of Medicine of South Africa (CMSA), the Health Professions Council of South Africa (HPCSA), and the Obstetric Anaesthesia Special Interest Society (OASIS) has the potential to improve training standards and guide the practice of neuraxial anaesthesia practice. The CMSA is currently considering the introduction of workplace-based assessments, which promises to translate theory into practice in the future.<sup>10</sup>

Without a change to the status quo, which would include training and formal guidelines, PDPH will continue to be a headache, both for the patient and the anaesthesiologist.

## References

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