

ORIGINAL ARTICLE

Incidence of epidural blood patch following obstetric regional analgesia in private Australian anaesthetic practice

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Background: Collection of audit data about epidural blood patches has traditionally relied on voluntary reporting, which is notoriously incomplete. The records of Medicare-funded Australian private obstetric practice, which represents 30% of all deliveries, allow a novel method of central data collection and retrieval.

Method: Data relating to all deliveries, epidurals and blood patches in private practice in Australia over a two-year period were retrieved from the Health Insurance Commission.

Results: The overall rate of epidural analgesia in labour was estimated at 30% and the proportion of epidurals that progressed to blood patching was 0.35%. The rate of epidural blood patching varied between states from 0.18% to 0.56%.

Conclusion: Despite certain limitations of our data interpretation, we regard this technique as a useful audit tool capable of generating accurate and robust audit data that might otherwise be unobtainable.

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INTRODUCTION

Post dural puncture headache (PDPH) is used here to refer to a headache of any cause that occurs following dural puncture; the two events may be entirely coincidental (as in the case of a pre-existing cause for headache), or may be a complication of either accidental dural puncture (ADP) during epidural analgesia or intentional dural puncture (IDP) during intrathecal anaesthesia. A recent meta-analysis reported an overall incidence for ADP of 1.5%, with a PDPH rate approximately half that.¹ In Australia the incidence of PDPH has been identified

as a priority for obstetric anaesthetic audit,² but inconsistent data collection has hampered strategies to pursue a national dataset.

Prospective collection of data is generally seen as the most reliable form of audit, but is not without problems. In the UK the Obstetric Anaesthetists' Association initiated a voluntary reporting system, the National Obstetric Anaesthesia Database (NOAD), whose first report in 1999 focussed on post partum headaches.³ Although ambitious, the NOAD survey represented only 9% of women who delivered babies over the study period and underlined the fact that even prospective surveys may suffer from bias.

An alternative information source comes from third party data collection. Health information managers use diagnostic codes to categorise disease and medical intervention, and in Australia the International Classification of Diseases Manual (Australian modification, ICD-10-AM) is used. The manual has specific codes for PDPH related to anaesthetic interventions. However the coding information is usually derived from case notes and discharge summaries written by obstetric trainees or clerical staff who may be unaware of the significance of PDPH and fail to record it. Interpretation of these figures is difficult, and in this institution third party data collection has underestimated the incidence of PDPH compared with our prospective

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anaesthetic database. In Australia there is also a division of responsibility for healthcare provision between state and federal governments, with each state being responsible for funding and data collection in public hospitals; this hampers collation of national anaesthetic data.

Another potential source of information comes from private medical services, which in Australia are defined in the Medicare Benefits Schedule (MBS). Payment for these services is made through the Medicare program that is federally funded and managed by the Health Insurance Commission (HIC). If a patient wishes to obtain a rebate of private fees, a claim is lodged with Medicare and the details are recorded by HIC. While HIC collects no data related directly to anaesthetic complications, it does collect data related to treatment of those complications; for example, an epidural blood patch is a procedure with a specific item number (18233). Therefore, a payment may be made for each clinical episode of care, allowing individualised tracking of such interventions, and since HIC processes these claims it represents a valuable data source.

METHODS

The HIC was asked to release anonymised data using codes from the item numbers defined in the Medicare Benefits Schedule Book (November 2000 edition) for the calendar years 2000 and 2001 according to the following search strategy:

1. All parturients were identified using the item numbers corresponding to any type of delivery (vaginal, instrumental or operative, including second trimester delivery).
2. To identify labour epidurals this group of patients was linked to the use of the epidural item number occurring up to 72 h before the birth item number.

3. This sub-group was linked to the use of the epidural blood patch item number occurring within 1 week, 1 month and 3 months after the date of the epidural. The overall epidural rate was calculated using total deliveries (by all means including elective caesarean section) and total labour epidurals. The overall EBP rate was calculated using total labour epidurals and total epidural blood patches.

Data were further subdivided on a regional basis. Where small numbers of events occurred in the smaller Australian states, concerns were raised by the HIC about patient confidentiality and hence these data have been combined with adjacent regions.

Statistical comparisons between regions were made using a χ^2 test with Yates correction as appropriate. Statistical significance was taken at the $P < 0.05$ level.

RESULTS

A total of 149 147 parturients were identified as delivering in private practice in Australia during the calendar years 2000 and 2001 (Table 1), in whom 45 116 labour epidurals were performed. The overall epidural rate for women in labour was 30.2%.

The total numbers of epidural blood patches for which information was available are given in Table 2. Of the women who had epidurals, 139 received EBP, of whom 119 had one EBP, 19 had two patches (two of these women had their second patch on the same day) and one woman had three (total 160 patches). For reasons of patient confidentiality the HIC will not release information if it is possible to identify an individual patient, so records of 158 EBP procedures were available (Table 2). One week after epidural insertion 151 epidural blood patches had been performed; at one month, 160 had been performed, and at 3 months this figure was unaltered. The overall epidural blood patch rate was 0.35%.

Table 1. Regional variations in epidural analgesia in private obstetric practice

State	Total population	Total deliveries	Total epidurals	Epidural rate
ACT	311 947	2225	660	30%
NSW	6 371 745	51 333	14 045	27%
NT	210 664	1436	271	19%
QLD	3 655 139	29 130	8513	29%
SA	1 467 261	9555	4304	45%
TAS	456 652	3146	624	20%
VIC	4 644 950	37 892	10 477	28%
WA	1 851 252	15 065	6222	41%
<i>Total</i>	18 969 610	149 782	45 116	30%

ACT: Australian Capital Territory; NSW: New South Wales; NT: Northern Territory; QLD: Queensland; SA: South Australia; TAS: Tasmania; VIC: Victoria; WA: West Australia.

Population figures from *The Australian Bureau of Statistics, Census 2001* (<http://www.abs.gov.au/Ausstats>).

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