Management of re-sited epidural catheters following accidental dural puncture

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Summary

Immediate epidural re-site after accidental dural puncture (ADP) may result in unpredictable subarachnoid drug spread. We wanted to describe management and behaviour of epidural catheters, re-sited immediately following recognised ADP.

Introduction

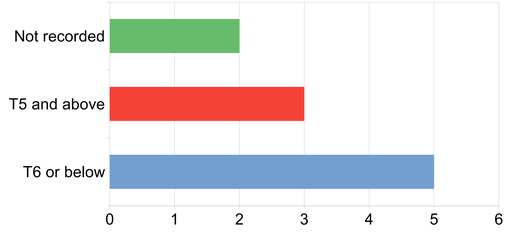
Accidental Dural Puncture complicates approximately 1% of epidural insertions. Management options include abandoment of epidural analgesia, insertion of a spinal catheter, or re-siting the epidural at a different level. In a survey of Australian obstetric anaesthetists, re-siting the epidural was a preferred by 64% of respondents due to concern regarding the safety of intrathecal catheters.[1]

The presence of a dural puncture when re-siting an epidural risks unpredictable subarachnoid drug spread, which could lead to an unexpectedly high (or dense) block, or other adverse clinical features.[2]

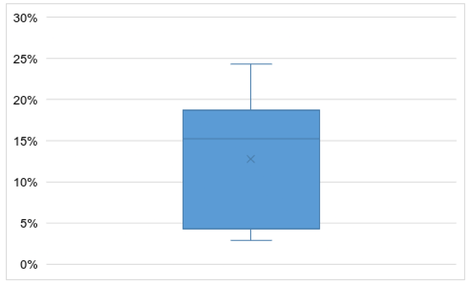
Methods

Caldicott guardian approval was obtained to review all ADPs in our unit during 2021. Cases where ADP was recognised at the time of insertion, and undergoing immediate epidural re-site, were included. We reviewed subsequent management of the epidural catheter and the clinical response. Information was primarily obtained from the anaesthetic record with supplementary information sourced from the Badgernet (Clevermed, Edinburgh,UK) electronic patient notes.

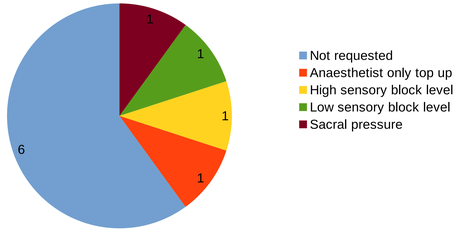
Highest sensory block height during labour



% change from initial to lowest systolic BP



Anaesthetist troubleshooting during labour



Results

Thirteen patients met inclusion criteria. Case notes were available for 10. ADP was identified by free flow of CSF from the needle (n=7), or aspirating CSF from the catheter (n=3). Re-sited catheters had a documented meniscal drop (n=7), and negative catheter aspiration (n=9).

Nine re-sited catheters had a test dose of 3-4mls of 0.25% levobupivacaine. One developed a sensory block to T7, with partial motor block. No patients developed significant hypotension following the test-dose. Eight patients received a loading dose of 10-20mls of 0.1% levobupivacaine + 2mcg/ml fentanyl, and one, 10ml of 0.25% + 5mls 0.125% levobupivacaine. Initial sensory block heights ranged from T6 to T11. All epidurals were then managed according to standard protocol. Three incidences of sensory blocks greater than T6 during labour occurred and were managed uneventfully. No patients became hypotensive. Six patients required emergency caesarean section, all under successful epidural top up. One patient developed a block to T1/C5 with associated paraesthesia of the left hand, but the case proceeded uneventfully.

Discussion

All epidurals were successfully re-sited and provided effective labour analgesia. All of those topped up for caesarian section were effective. One case with a high block in theatre was managed uneventfully.

Caution is advised when managing a re-sited epidural catheter following ADP, however this small case series review from a year of data in our large tertiary unit is reassuring.

1. Newman MJ, Cyna AM. Immediate Management of Inadvertent Dural Puncture during Insertion of a Labour Epidural: A Survey of Australian Obstetric Anaesthetists. Anaesthesia and Intensive Care. 2008;36(1):96-101.
2. Rutter SV, et al. Management of accidental dural puncture in labour with intrathecal catheters: an analysis of 10 years' experience. International Journal of Obstetric Anaesthesia, 2001;10(3):177-181.