

MINI-GAUGE EPIDURAL NEEDLES AND CATHETERS FOR LABOUR ANALGESIA

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INTRODUCTION: Needle redesign revolutionized spinal anesthesia by producing large reductions in postdural puncture headache (PDPH). Epidural needles now represent the leading cause of severe PDPH after regional anesthesia. Further success in prevention is most likely to come from use of smaller gauge epidural needles. 20g epidural steroid injection has a reported PDPH incidence of 9.8 %(1) compared with > 70% with larger needles. 20g epidural needles produce a 4-5 fold reduction in CSF leak compared with current needles following puncture(2) and clinical work suggests that blood patch is more successful for smaller gauge punctures (3). This trial examined the feasibility of using mini-gauge Tuohy needles and catheters for continuous epidural labour analgesia.

METHODS: Following REB approval, ASA 1-2 parturients were recruited. Epidural placement involved use of a 19g(19.5g, 90mm) Tuohy needle (smallest needle permitting 23g catheter passage) and a 23g single port Portex 40cm epidural catheter. Analgesia was initiated using bupivacaine 0.08% with fentanyl 2mcg/ml (15-20ml) and maintained using PCEA. Breakthrough pain was treated by protocol. There was no formal in-training period for anesthesiologists. Patients were interviewed after epidural initiation, \leq first 24hours of delivery and between 14-21days post partum. The primary outcome was the combined failure rate (failed insertion or failed block \leq 30minutes of initiation). Secondary outcomes included: pain relief; incidence of puncture, PDPH; mode of delivery, details of epidural placement and anesthesiologist satisfaction.

RESULTS: 27 parturients (13 multiparous) were recruited. Successful block initiation was achieved in 24/27 and maintained throughout labor. Overall pain relief in 24/24 women was good to excellent (19/24 very good to excellent). Three block failures (2 unilateral, 1 absent) occurred (1 per each of three different anesthesiologists) all during initiation phase (early in study recruitment) to give a combined failure rate of 11% (95% CI 0.02,0.30). One patient developed PDPH post discharge (reported on day 14 followup) self treated with acetaminophen with complete symptom resolution. Anesthesiologist satisfaction was high.

DISCUSSION: Our work suggests that mini-gauge epidurals may be used to provide high quality analgesia and may reduce morbidity following dural puncture.

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