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INTRODUCTION

A lumbar plexus block (LPB) is a complex block that can produce excellent analgesia for hip and leg procedures. The more often used lumbar epidural has its own related risks. Dadure et al's. study compared continuous LPB to lumbar epidural for pain management after major hip or femoral surgery in children. With fewer complications, pain control was equal in the study.¹ Recent reviews demonstrate the superiority of peripheral nerve blockade over neuraxial techniques, as it results in fewer complications; i.e. no urinary retention. Fear of complications have limited the use of LPB, however prior reviews of cohort of pediatric regional anesthesia have shown that serious complications for LBP are rare.^{2,3} The PRAN is a multi-center program that prospectively collects information about regional blocks and their complications. Here we review the most recent data from PRAN on LPB.

METHOD

All regional procedures are entered prospectively into PRAN from 04/01/07 to 10/30/13 were analyzed for LPB and lumbar epidural data. Both intra- and postoperative complications were analyzed.

RESULTS

614 LBP performed during the review period. The overall complication rate was 18.57%. Of these 172 were single shot (ss) blocks with a complication rate of 5.81%. There were 442 catheters placed with a complication rate of 23.53%. The most common complication was catheter related (n=46); leaking or dislodgement. Other complications included inadequate analgesia as defined by a pain score ≥ 5 (37), vascular puncture (9), adverse drug reaction (6), neurological problems (3), abandoned block (1), excessive motor block (1), other intra-operative complication (1). There were no long-term complications.

4799 lumbar epidural blocks were performed with an overall complication rate of 22.5%. Of these, 474 were ss, with a complication rate of 6.75%. There were 4325 catheters placed with a complication rate of 24.30%. Most catheter complications were adverse drug reactions (212), catheter related issues (186), inadequate analgesia (154), excessive motor block (72), unilateral blockade (53), vascular puncture (52), neurological problems (25) and others (326). There were no long-term complications.

DISCUSSION

LPB is a complex block to perform. Most complications seen were technical (leakage/dislodgment). The high rate of inadequate analgesia with LPB catheter is likely explained by the high rate of leakage for a high volume-requiring block, as well as the strict definition of inadequate analgesia by a PS ≥ 5 for any reason by PRAN. Complication rates of LPB and lumbar epidurals were relatively equivalent. However, lumbar plexus blocks do not carry the risk of urinary retention. This confirms that the PRAN experience correlates with prior major European cohorts.² Given the high rate of catheter failure, using a better method of catheter fixation would decrease complications for this block. Also, a long-acting single shot LPB might provide equal analgesia and lead to consideration of the use of a slow-release local anesthetics.

References

- 1.Dadure, C et al. Ann Fr Anesth Reanim 2010
 - 2.Ecoffey C et al. Pediatr Anesth 2010
 - 3.Polaner DM, et al. Pediatr Anesth 2012
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