Epidural morphine post selective posterior rhizotomy: a retrospective review

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Introduction: Selective posterior rhizotomy (SPR) is a surgical procedure for reducing the spasticity in children with cerebral palsy for improvement of mobility (1-3). These children experience severe pain postoperatively which is related to the surgical involvement of multiple levels of laminectomy, spinal nerve root manipulation and muscle spasms of lower limbs (1, 4). There are several postoperative pain managements in these children include intravenous morphine infusion, intermittent intrathecal morphine administration or epidural morphine infusion (5-10). However, there is few data using only epidural morphine infusion after SPR and its complications. The purpose of this paper is to present our experience with the use of epidural morphine infusion via a catheter placed at the time of surgery following SPR in children. Specifically, we looked at pain and side effects management postoperatively.

Methods: We reviewed children who underwent SPR between January 2002 and July 2006 in Montreal Children’s Hospital. The epidural infusion of these children was managed according to a protocol established in our institution. Postoperatively, the children are followed daily by the acute pain service (APS). We collected demographic data, pain scores, side effects, complications, duration of treatment using medical records and data from APS database. We present the results as mean and SD.

Results: Forty-three children underwent SPR with a mean age of 5.3 ± 1.5 years and a mean weight was 16.4 ± 3.0 Kg. All children received acetaminophen with 39.5% of ketorolac, 25.6% of diclofenac and or 2.3% of ibuprofen. 81.4% of children received diazepam for muscle spasm. The mean pain scores were 1.3 ± 1.9, 1.2 ± 1.6, 0.5 ± 0.9 and 0.2 ± 0.5, respectively, on the postoperative days 0, 1, 2 and 3. The mean maximum pain scores were 2.4 ± 3.4, 2.4 ± 2.9, 1.1 ± 1.7 and 0.4 ± 1.1, respectively, on the postoperative days 0, 1, 2 and 3. Five patients (11.6%) required intravenous morphine for breakthrough pain. The median length of epidural catheter stay was 3 days. Three children had technical problems lead to failure of epidural analgesia (one is catheter dislodgement and the others are catheter disconnection). Pruritus (74 %) and nausea/vomiting (72 %) were commonly reported. Only one patient had an episode of arterial oxygen desaturation (SpO₂ < 92%), which improved following oxygen supplementation. There were no episodes of bradypnea, apnea or excessive sedation. The median duration of hospital stay was 5 days.

Discussion: In our institution, continuous epidural morphine following SPR with pain adjuvants (acetaminophen, non-steroidal anti-inflammatory drugs) and diazepam has provided effective postoperative pain relieve with a low incidence of severe respiratory events. However, the incidence of pruritus and nausea/vomiting was high.

References: