[NM-218] Persistent lower-extremity paresthesia after epidural anesthesia in a pediatric patient with Charcot-Marie-Tooth Disease

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ABSTRACT:
Charcot-Marie-Tooth Disease (CMT) is part of a spectrum of disorders resulting from gene mutations responsible for myelin production, leading to changes in the function and structure of neurons. We present a patient with CMT undergoing major orthopedic surgery of the hip. An epidural was placed for post-operative pain management and he developed persistent paresthesias post-operatively.
CASE REPORT:
An 11-year old boy with CMT disease, sensory integration disorder, and hip dysplasia presented for left pelvic osteotomy with proximal femur osteotomy. The anesthetic plan included GA with epidural for post-operative pain, especially given his high anxiety level and sensory integration issues. GETA was induced and an epidural was placed easily via midline approach at L4. Epidural boluses of 0.25% Bupivacaine + Epi were given in divided doses totaling 10 mL. An infusion of Ropivacaine 0.15% + Morphine 15 mcg/mL was continued post-operatively. On POD #1, Acute Pain Service (APS) was notified given the pt had significant pain, and on exam, had unilateral sensory block of the RLE (non-operative side) with little to no block on the left (surgical side). An epidural bolus was given with no change in sensory block or pain control and the catheter was removed. On POD #2 the patient had continued RLE numbness and weakness which persisted for several days, gradually improved, and he was discharged home on POD #4. On POD #6, APS was called by the orthopedic service given the patient's onset of severe RLE paresthesias unrelieved by narcotics and weakness of the right ankle. A referral to neurology clinic was made and he was readmitted on POD #7 due to intractable neuropathic pain in the plantar aspect of the right foot. MRI of the spine was normal without evidence of myelopathy. An aggressive multi-disciplinary approach to treating his neuropathic pain was instituted at our inpatient rehabilitation facility. This included PT, OT, psychiatry, hypnotherapy, myofascial therapy, and multiple trials of medications. He was discharged after 1 month on gabapentin and fluoxetine with improved, but continued neuropathic pain of his right foot. At his 5 month follow-up, his pain had completely resolved.
DISCUSSION:
In general, the use of regional or neuraxial anesthesia in patients with pre-existing neurological disorders is controversial and relatively contraindicated. The data to support the use of neuraxial anesthesia in patients with CMT are lacking, without large trials. The safe use of neuraxial anesthesia in CMT patients has been reported in several case reports with prolonged epidural neuraxial block reported in one patient. The cause of our patient's neuropathy remains unclear. Unilateral epidural block may suggest close proximity to nerve roots with the possibility of physical violation during placement or by the catheter. Another possibility is sensitization of peripheral nerves to local anesthetic given his underlying disease. Given the severity of his symptoms post-operatively, perhaps more caution is warranted with regional anesthesia in patients with CMT disease pending the availability of further studies providing safety data in these patients.
