

A Case of Unilateral Hemiparesis Following Labor Epidural Placement



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LEARNING OBJECTIVE

How can a seemingly appropriately placed lumbar epidural catheter result in upper extremity monoparesis?

INTRODUCTION

- Neurological sequelae of labor epidural anesthesia is relatively rare, with incidence varying from 1:6,700 patients experiencing transient neurological injury to 1:240,000 patients developing persistent neurological injury
- Most commonly, complications described in literature are monoparesis, unilateral cranial nerve involvement or systemic dysfunction such as respiratory arrest and hypotension
- However, there have been cases of transient brachial monoparesis and transient flaccid paralysis that have been reported in the literature

CASE PRESENTATION

- 18-year-old, spanish-speaking G1P0 with pre-eclampsia without severe features at 38 2/7 weeks gestational age
- Catheter placed in L4-L5 epidural space with loss of resistance with saline at 5 cm with a multi-orifice epidural catheter threaded to 11 cm at the skin
- Test dose was negative, followed by standard epidural dosing resulting in significant pain reduction
- Approximately 30 minutes after dosing, the patient developed weakness of the left upper and lower extremities. Strength testing of LUE and LLE revealed 3/5 strength while RUE and RLE strength remained 5/5. There was not shortness of breath or facial involvement, and the patient remained hemodynamically stable. Concurrently, the patient had pain from labor contractions on the right side. During the course of several unsuccessful attempts to troubleshoot and relieve pain, the patient progressed and had an uncomplicated vaginal delivery. The epidural was subsequently removed.
- CT scan was performed and demonstrated no focal lesion or hematoma formation .
- The weakness resolved and she returned to baseline motor/sensory function ~1-2 hours after.

DISCUSSION

- A proposed mechanism for hemiparesis in our patient could be subdural spread of local anesthetic via the low-volume dura-arachnoid interface explaining the high, unilateral involvement. This can occur if the epidural needle punctures the dura but not the arachnoid mater and a catheter is subsequently threaded. However, there is usually sparing of, or minimal effect on sympathetic and motor functions, due to the relative sparing of the ventral nerve roots. Despite this, our patient did experience motor weakness.
- Other considerations could include uneven epidural spread due to epidural septa, but this would be unlikely due to the extent of the motor blockade.
- The unilateral upper and lower extremity weakness in our patient was transient and resolved completely, as many neurological complications of labor epidural do, it is important to recognize the signs and symptoms of cephalic spread of local anesthetic above the intended level in case of development of life-threatening symptoms such as respiratory arrest or loss of consciousness

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