"Complications and Long-Term Outcomes in Epidural Anesthesia: A Case Study of Epidural Hematoma Post-Cesarean Section"

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BACKGROUND

- Epidural spinal anesthesia is a common procedure used to manage pain by injecting medication into the epidural space outside of the spinal cord.
- It is commonly injected in the L3-L4 region of the spinal cord.
- It is frequently used during labor to help block the transmission of pain signals from the nerve roots in the spine.
- Possible complications include hematoma, abscess, or neurologic deficits.[4]
- These risk factors can result in permanent damage, leaving patients with spinal cord injuries that require rehabilitation.

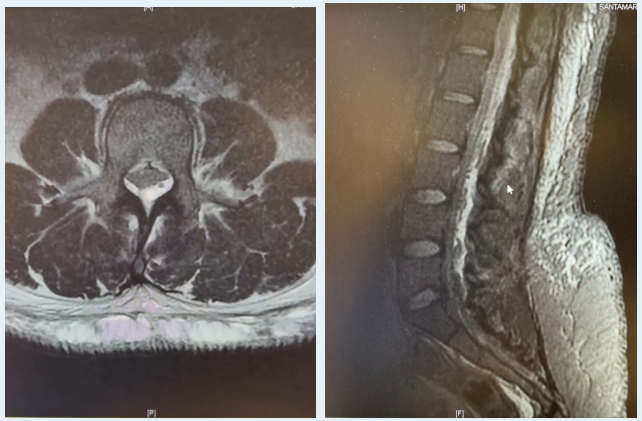
CASE DESCRIPTION

A 26-year-old female G1P0 (206 lbs.) with no notable occupation and PMH of preeclampsia and gestational DM underwent an emergency cesarean section at 37w1d for severe preeclampsia after receiving standard OB care in the Dominican Republic. Her postpartum course was complicated by uterine atony, resulting in >1L blood loss and administration of Hemabate, Cytotec, and TXA. She also required a magnesium drip and nifedipine for preeclampsia with severe features and was given antibiotics for presumed endometritis. She developed E. Coli MDR which was treated. She then developed lower extremity weakness and numbness. Neurology, Neurosurgery and Anesthesia were consulted to further evaluate her condition and she was admitted to inpatient rehabilitation.

RESULTS AND REHABILITATION COURSE

MRI imaging was significant for fluid collection posterior to the thecal sac at lower thoracic and lumbar level greatest at L3, consistent with an epidural lipomatosis with possible epidural hematoma. Patient did not undergo surgical intervention and was admitted to inpatient rehabilitation. On initial presentation to the rehab unit, her physical exam was significant for 2/5 motor strength in addition to decreased sensation throughout her lower extremities. Additionally, patient did not have control over her bowel and bladder. Her treatment plan included physical and occupational therapy, as well as a scheduled bowel and bladder regimen. She developed some improvement in motor strength by the end of her stay. Her hip flexion strength and ankle dorsiflexion on the right improved to 4/5 strength. She had minimal improvement to 2/5 strength in hip flexion and 4/5 strength in ankle dorsiflexion on the left. Unfortunately, patient remained incontinent of bowel and bladder. She received an AFO to help with her foot drop, however still required use of wheelchair for longer durations. The complex fluid collected noted on MRI, likely an epidural hematoma, resulted in a T10 D spinal cord injury and caused a devastating impact on her function, as well as her ability to take care of her newborn child.

IMAGING



DISCUSSION

Epidural injections are an option for many patients who present with chronic pain. Hematomas can be a rare but debilitating complication of epidural anesthesia. A study by Ehrenfeld et. al, in 2013 reported an incidence of .014% in 43,000 cases. Some risk factors include traumatic puncture, underlying hypercoagulable disorders, vascular lesions, or trauma[3]. It can be diagnosed with MRI imaging, with features of signal hypo intensity on T1 weighted sequences and signal hyperintensity on T2 weighted images[6]. This fluid collection can cause severe neurologic deficits, as seen in our patient. Treatment includes surgical decompression with laminectomy[5]. However, some common reasons against performing this procedure is risk of infection or disc herniation. It is imperative that we recognize the presentation of spinal epidural hematomas and act in an efficient manner to preserve as much function as possible.

CONCLUSION

It is crucial to recognize spinal epidural hematomas as a complication of epidural injections for pain management in outpatient settings. Prompt recognition and intervention of epidural hematomas can potentially prevent permanent damage, significantly impacting daily function and quality of life. In this patient's case, early intervention with decompressive surgery may have prevented the severity of her bowel and bladder function, as well as the loss of her motor strength and ability to walk independently.

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