Acute Care Management And Treatment Of Arachnoiditis, Hydrocephalus, And Cauda Equina Syndrome Following An Epidural Injection For Lumbar Radiculopathy

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Background & Purpose: Epidural injections (EI) are a common treatment of lumbar radiculopathy and the numbers are growing yearly. Over the last 10 years, the number has increased 116% and many pts. are undergoing multiple injections. Despite their prevalence, EI can cause adverse reactions including headaches (28%), urinary retention, arachnoiditis (6%), hydrocephalus (3%), and paralysis. Although the incidences of arachnoiditis, hydrocephalus, and cauda equina are rare independently, a few cases have been reported involving all 3. Significant functional deficits may result requiring extensive rehab; however, little evidence exists to describe the rehab of these pts., especially in acute care. The purpose of this case report is to describe the management of a pt. with multiple sequelae following an EI and outcomes across the acute care continuum.

Case Description: A 68y/o female presented to a pain clinic for an EI to the L5-S1 nerve root. Directly following, she developed LE weakness, urinary retention, and pain and was brought to the ER. An L4-L5 decompression for central stenosis was performed and she was d/c ambulating with a RW. 12 days later, she presented to the ER with progressive weakness, neurogenic bowel, and difficulty motor planning. Imaging revealed arachnoiditis, severe hydrocephalus, and clumping of the cauda equina roots. A VP shunt was placed and she was d/c to acute rehab. She received daily PT, OT, and SLP, starting in the ICU, and p/w LE weakness, absent proprioception, poor executive functioning, and required max assistance for all tasks. Treatment focused on neuro re-ed, functional training, balance, and therex. Despite initial gains, she soon plateaued and an MRI revealed subdural fluid collections from C6-T5. She underwent a
laminectomy and an evacuation of fluid. She was readmitted to acute rehab and continued treatment focused on progressive gait training and increasing independence. The AM-PAC and FIM were used to measure outcomes and progress.

**Outcomes**: The pt. demonstrated significant improvement in mobility and strength. From admission, her AM-PAC activity score increased by 14 points and by 8 points for mobility score, indicating reduced functional limitations. She increased her FIM scores in all areas, being d/c at mod. independent for all w/c level activities and ambulating short distances. She also achieved anti-gravity strength in all UE and LE groups, except hip extensors and abductors.

**Discussion**: Pt. p/w a rare cluster of complications stemming from an EI, causing a multitude of impairments including impaired strength, cognition, and motor control. Treatment focused on functional mobility starting with early mobilization in the ICU and continued across the acute care spectrum with increased intensity and duration of treatment sessions. As EI becomes more prevalent, it is vital for clinicians to recognize the adverse events that may occur and be able to implement EBP to develop a plan of care. Further studies are needed to investigate PT protocols in acute care.
