Why can't I move my legs?

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Chief Complaint: Lower extremity weakness post c-section

HPI:
A 19-year-old female presented to the Emergency Department for altered mental status. Two days prior to presentation, the patient underwent a cesarean-section and received epidural anesthesia. During the c-section, the patient started complaining of trouble swallowing, but was maintaining her airway. About one-hour post procedure, she became lethargic, only responding to painful stimuli. Her VS were normal with the exception of her point of care glucose which was 20. She was given D50 without improvement of symptoms. Physical exam was remarkable for anisocoria, with the right pupil fixed and dilated at 4 mm, with left pupil 2 mm. She was hypotonic with decreased gag reflex. A STAT CT head was performed and the patient was transferred to another hospital for further management where a repeat CTH was done (see Figures 1-3)

Pertinent Physical Exam:
Over the subsequent hours while awaiting transport, the patient became more alert, complaining of blurry vision, bilateral hand numbness and leg weakness with 0/5 strength in bilateral lower extremities that lasted about 1 hour. On arrival to the Emergency Department, the patient was awake and alert, afebrile with a blood pressure of 120/70, and a heart rate of 70. She was asymptomatic and no longer had blurry vision, numbness or weakness. Neurological exam was nonfocal including cranial nerves, motor, sensory, gait and reflexes.

Questions:
1. What were the initial findings on the CT scan?
2. What is the optimal management for this diagnosis if symptomatic?

Fig. 1. Axial CT head without contrast with multiple foci of pneumocephalus is noted in the frontal subdural space and along the tentorial notch.

Fig. 2. Axial CT head without contrast with multiple foci of pneumocephalus is noted in the frontal subdural space and posteriorly along the falx cerebri.

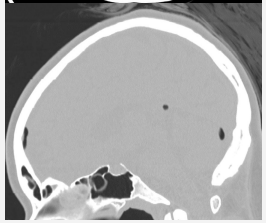

Fig. 3. Sagittal CT head without contrast in lung window demonstrates foci of pneumocephalus along the frontal, posterior falx and along the tentorium.

Answers:
1. Multiple foci of pneumocephalus (air in the intracranial cavity) is noted in the frontal subdural space, along the tentorial notch, and posteriorly along the falx cerebri.
2. Optimal medical management of pneumocephalus is hyperbaric oxygen therapy.

Case Discussion:
Pneumocephalus is defined as the presence of air in the CNS, including the epidural, subdural, subarachnoid, parenchymal, or ventricular spaces. While pneumocephalus can be a life-threatening condition, in the majority of pneumocephalus cases, the air is reabsorbed without clinical manifestations. The most common symptom is a headache. Patients may also experience symptoms of space occupying lesions such as focal neurological deficits and cranial nerve palsies.

Conservative measures for pneumocephalus include observation for asymptomatic patients or placing the patient in the Fowler position of 30 with supplemental oxygen therapy. Optimal medical management of symptomatic pneumocephalus is hyperbaric oxygen therapy to allow for reabsorption of nitrogen into the bloodstream to reduce the volume of the intracranial air. If the pneumocephalus is causing tension physiology, a burr hole may be required to relieve the pressure.

This patient had received an epidural for her C-section, which was the likely culprit for her pneumocephalus. She was admitted to the hospital for observation and potential need for hyperbaric oxygen therapy but did not undergo any specific treatments for pneumocephalus given improvement with conservative therapy. She remained asymptomatic throughout her hospital course without any complications and was ultimately discharged.

Pearls:
- Always think about iatrogenic complications in patients with neurological symptoms, especially after spinal interventions.
- Pneumocephalus, although usually asymptomatic, presents with a wide range of neurological symptoms and may ultimately require hyperbaric oxygen therapy.