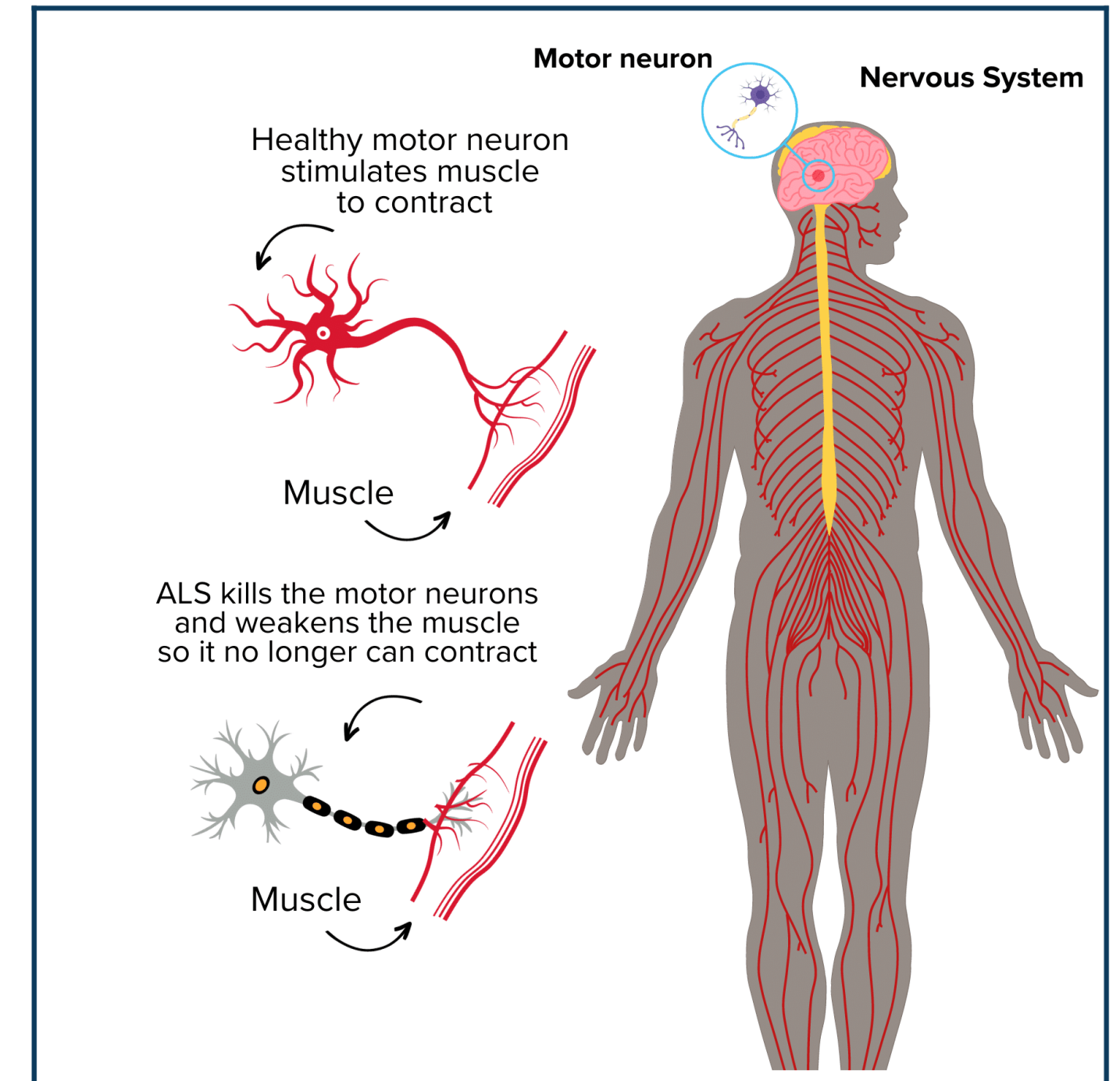


Cesarean Section in Acutely Progressive Amyotrophic Lateral Sclerosis (ALS)

Daniel Olix, MD, MS, Adrienne Ray, MD

Background

- ALS is a progressive and fatal neurodegenerative disorder of upper and lower motor neurons causing progressive paralysis and respiratory failure
- Primarily affects voluntary muscles leading to progressive muscle atrophy and often affects the respiratory muscles
- Incidence is approximately 2 in 100,000, more common in men aged 50-70, and rarely affects women of childbearing age
- There is little information on ALS in pregnancy, however it has been reported that symptoms may worsen and complicate disease management
- There is even less information or reports of anesthetic management of cesarean section in these patients



Case Report

- 42yo G5P2 initially presented with slowed speech at 12 weeks gestation and developed upper extremity (UE) weakness soon thereafter
- EMG and nerve conduction studies showed bilateral C5 radiculopathy, left cubital tunnel syndrome, and bilateral carpal tunnel syndrome. MRI showed cervical stenosis and cord compression.
- She was referred to Neurosurgery and decision was made to proceed with C5-6 ACDF. POD1 she reported improved UE radiculopathy and strength and was discharged home.
- At 6wk post-op follow-up, she complained of hand clumsiness and continued dysarthria. Symptoms rapidly progressed over the following two weeks including multiple falls.
- She was admitted and a myelogram confirmed a motor neuron disease pattern most consistent with ALS. Plan for repeat C/S at 34 weeks gestation.
- Given concern for the patient's respiratory status, a CSE with narcotic-only spinal (10mcg fentanyl and 100mcg morphine) was placed. The epidural catheter was dosed with a total of 13mls of 2% lidocaine with epinephrine and bicarb 2-3mls at a time until a surgical block was achieved.
- We were able to preserve her respiratory function without the need for supplemental oxygen.
- She tolerated the surgery very well and a viable infant was delivered without complication.

Discussion

- While there is evidence for utilization of neuraxial anesthesia in ALS patients, the incidence of ALS in pregnancy and anesthetic management of these patients is rarely reported.
- The increased oxygen demands during vaginal delivery favor a cesarean section in ALS patients due to a potential respiratory crisis.
- General anesthesia may worsen these patient's respiratory function and lead to prolonged mechanical ventilation.
- This case demonstrates a safe anesthetic plan for a C/S in a patient with rapidly progressive ALS.

References

- Amjadi N. A pregnant woman with ALS from Iran: a case report. *Annals of medicine and surgery*. 2012.
- Hamad AA. Clinical characteristics, course, and outcomes of ALS overlapping with pregnancy: a systematic review of 38 published cases. *Ital Neuro Soc*. 2023.
- Porto LB. Pregnancy 5 Years After Onset of ALS Symptoms. *J OBGyn Canada*. 2019. Samworth AG. Neuraxial and Regional Anesthesia in a Patient with ALS. *Cureus*. 2023.

