

# Prolonged Neuromuscular Blockade in Traumatic Brain Injury: Balancing Cerebral Perfusion with Ventilator-Associated Pneumonia

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# Disclosures

- No disclosures to announce

# Overview

## Objective 1

- Benefits of utilizing paralytics for a prolonged treatment duration in TBI

## Objective 2

- Risks involved with prolonged paralysis of patients

# Situation



John Doe presents to the ED as a level 1 trauma after he was involved in an ATV accident. Per EMS, the patient was the un-helmeted passenger on an ATV when he went over the curb and landed on his head.



GCS 7 on EMS arrival but began to experience seizure-like activity and was intubated in the field.



Trauma Bay: GCS 3T, hemodynamically normal, hemotympanum of the L ear, scattered road rash; FAST negative

# Injuries and initial treatments



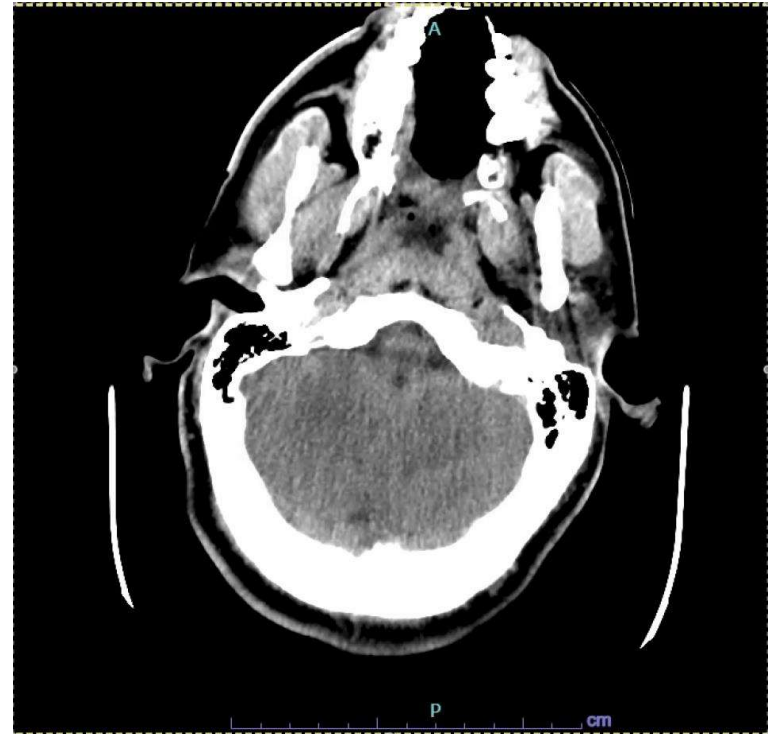
- L occipital parietal scalp hematoma
- Diffuse SAH in the inferior frontal lobes bilaterally
- Hemorrhage in the L-sided sylvian fissure
- Interhemispheric SDH on the anterior aspect of the frontal lobe



- Nondisplaced L-sided parietal occipital skull fracture
- L occipital bone fracture extending into temporal bone affecting the vestibular/inner ear structures



- Transverse process fractures of L1-L4



# Hospital Course

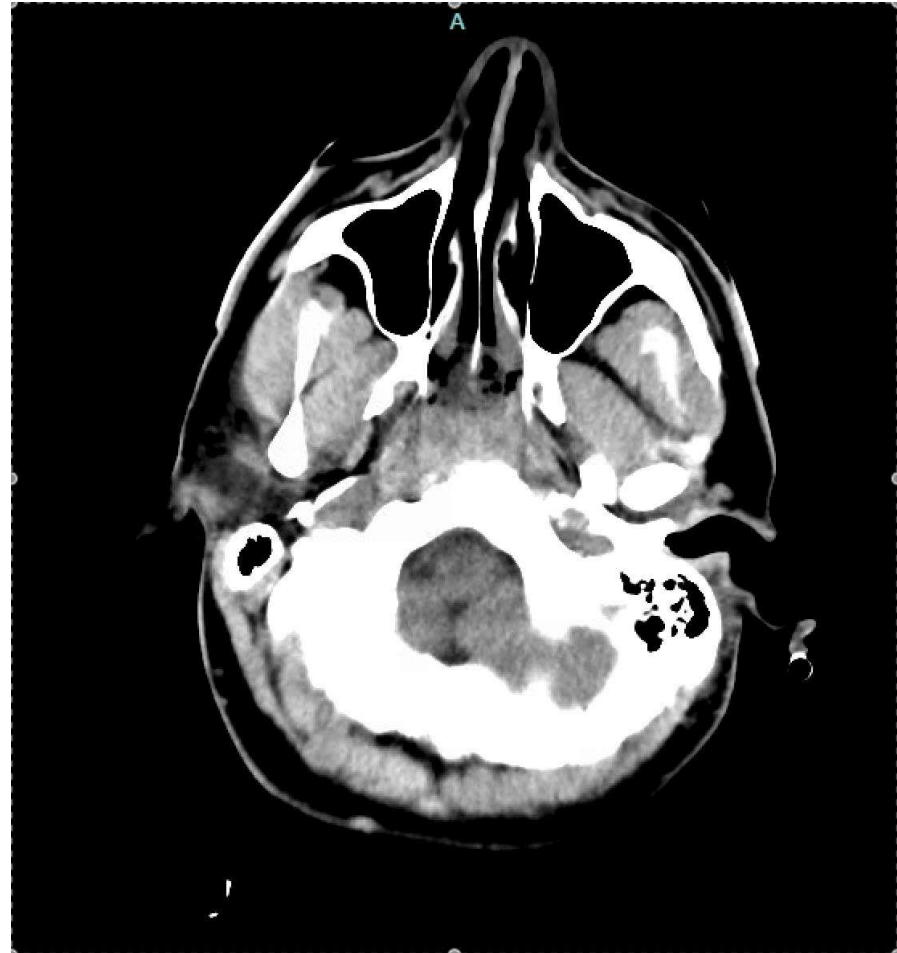
HD1: Admitted to SICU, EVD inserted



HD2: worsening head CT, high ICPs, started on paralytic



HD3: Persistently high ICP (>40), now on propofol, fentanyl, versed, nimbex



# Hospital Course

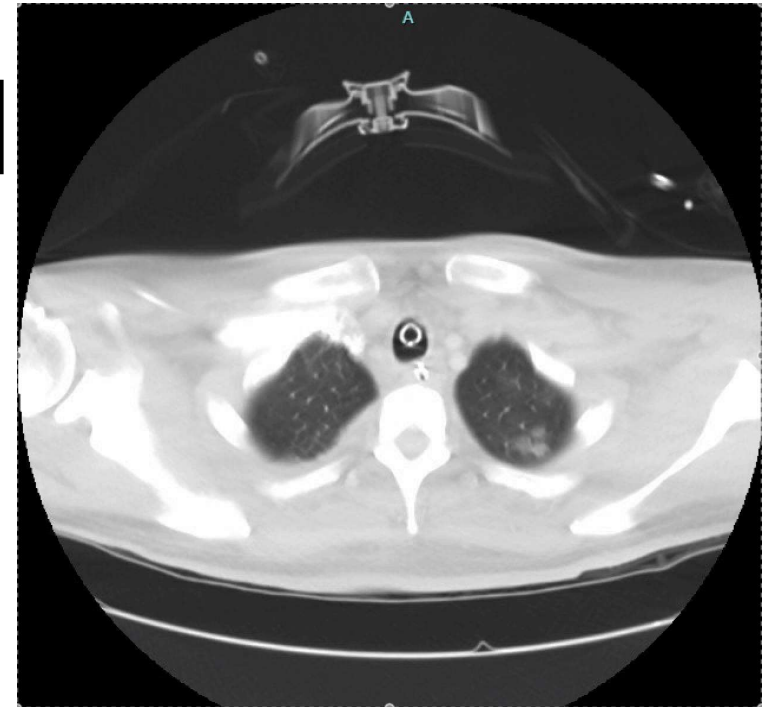
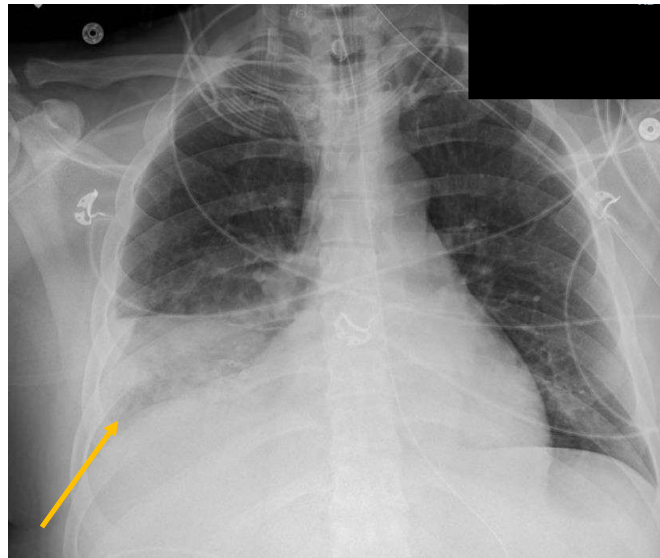
HD6: desaturation event,  $\uparrow$  WBC, fevers



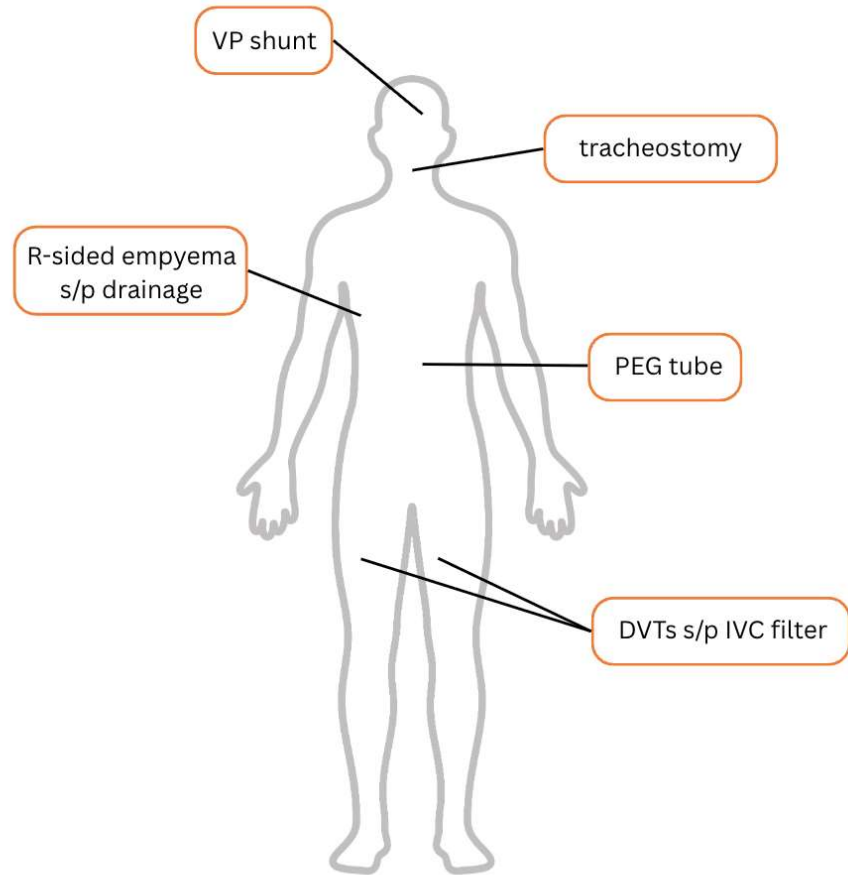
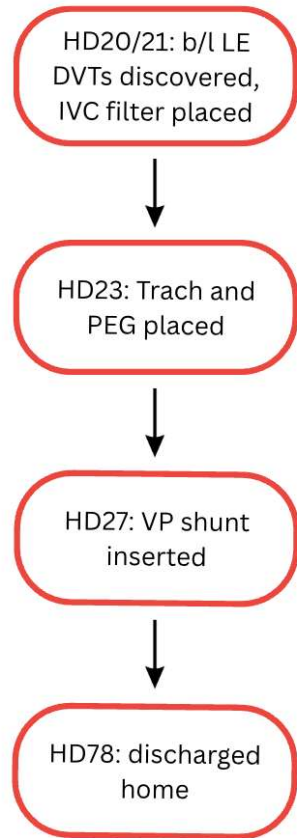
HD15: CT chest obtained, thoracic surgery consulted



HD16: paralytic discontinued, R CT inserted



# Hospital Course



# Key Takeaways



Prolonged paralytic use may help with optimal brain perfusion



Prolonged paralysis may lead to development of ventilator-associated pneumonia, empyema, and DVTs



The lack of established guidelines makes these clinical scenarios difficult to navigate



**Thank you!**

