HPI
- 24 year old woman presented to ER with dysphagia and dysarthria
- 3 days PTA developed fever and abdominal pain
- The following day developed neck pain, blurry vision, double vision, slurred speech, and difficulty swallowing

HPI (cont.)
- Reported generalized weakness, tongue feeling swollen, unable to eat or drink for the past 3 to 4 days, now unable to swallow saliva
- Denied headache, focal weaknesses, numbness, tingling, bowel, or bladder dysfunction
- Denied chills, night sweats, nausea, vomiting, or diarrhea

Rules of Engagement
- Dr. Hollander knows nothing about the case
- Case presented in a stepwise fashion
- Opportunity to pause for discussion
- Dr. Hollander must commit to a final diagnosis
- Opportunity for the audience to vote
PMH
- Frequent UTIs
- Chronic abdominal pain
- Depression
- Gastric polyp
- H/o pyelonephritis
- H/o fungemia and bacteremia
- S/p hysterectomy with R salpingo-opherectomy after bleeding complications with pregnancy

Additional History
- Allergies: ketorolac, vancomycin, penicillin
- Medications
  - Ciprofloxacin 500mg po BID
  - Ferrous sulfate 324mg po daily
  - Oxybutynin 5mg po BID
  - Sertraline 25 mg po daily
  - Metoclopramide dose unknown
  - Methadone 1 week ago due to R kidney pain

Additional History (cont.)
- Social History
  - Former smoker, occasional drinker, denied illicit drug use
  - No recent travel or hiking trips
  - No sick contacts
- Family History
  - Mother: kidney disease, diabetes type II
  - Father: obesity
  - No history of neurologic disorders or cancer

Physical Exam
- T 36.5  BP 160/96  P 108  R 16  Sat 99% RA
- Gen: no acute distress but anxious
- HEENT: conjunctiva clear, neck supple
- Resp: lungs clear bilaterally
- Heart: regular, normal S1, S2, faint systolic murmur, normal pulses, no edema
- Abd: benign
- Skin: normal
Neurological Exam

- A&O x 3.
- PERRLA, visual fields intact. Mild right lateral rectus palsy. Other cranial nerves intact. No tongue fasciculations.
- Normal finger to nose and heel to shin.
- Normal muscle bulk and tone. All major muscle groups strength 4-/5.
- Normal sensation by 4 modalities.

Labs

- LFT: normal
- ESR 18, CRP 5, TSH 0.07
- Urine Cx: >100,000 E. Coli
- Utox: + cocaine, methadone, opiates, benzo

Additional studies

- CT head w/o contrast: negative
- MRI/MRA brain: possible posterior pituitary adenoma of <0.5cm
- CTA neck: negative
- CSF: WBC 0, RBC 0, protein 22, gluc 54
- CSF HSV-1 & 2 PCR: negative
- CSF enterovirus PCR: negative

Clinical Course

- On HD 2, Code Blue for respiratory arrest with bradycardia and hypotension, intubated.
- ~8 hours later, extubated after demonstrated tidal volume of 430cc on PS 10, PEEP 5.
- Reintubated within 5-10 minutes due to hypoxia and poor air movement.
Clinical Course

- Repeat exam: ptosis of L eyelid, bilateral nystagmus, bilateral lateral rectus palsy, no facial asymmetry, upper and lower extremities strength 4/5. Normal reflexes.
- Negative Inspiratory Force: negligible
- Repeat MRI brain and C-spine: negative
- EEG: no seizures

A presumptive diagnosis was made...

Audience, your diagnosis?

A. Guillain-Barre Syndrome (Miller-Fisher variant)
B. Myasthenia Gravis crisis
C. West Nile encephalitis
D. Lambert-Eaton Myasthenic Syndrome
E. Botulism
F. Tick paralysis
G. Amyotrophic Lateral Sclerosis
Answer: **Botulism**

- Heptavalent botulinum anti-toxin administered on HD 3 and metronidazole started
- Blood sent to State Health Department for botulinum toxin assay
- Progressive descending paralysis
- Trial of daily pyridostigmine without improvement
- EMG on HD 5: presynaptic neuromuscular defect, proximal > distal muscles

**Additional History**

- Subcutaneous “black tar” heroin and cocaine use 10 days to 2 weeks prior to presentation
- Had a skin infection at the injection site but not confirmed on exam
- Ate store bought canned food frequently but did not can food herself
- Wound botulism thought most likely

**Hospital course**

- PEG and trach placed on HD 9
- Completed 14 days of metronidazole; blood, stool, CSF culture remained negative.
- Initial serum botulinum toxin on HD 3 indeterminate.
- Repeat serum and stool assay negative.
- Discharged on HD 17 to LTAC for vent weaning. Exam improved at the time.

**Botulism**

- Descending paralysis, predominately bulbar symptoms
- Other key features:
  - Absence of fever
  - Symmetric neurologic defects
  - Patient remains alert and responsive
  - Normal BP and HR
  - No sensory deficits
- EMG helpful to make the diagnosis
- Contact State Health Department for heptavalent antitoxin as soon as suspected, **DO NOT WAIT** for diagnostic tests
Wound Botulism

- Subcutaneous or intramuscular use of “black tar” heroin
- Incubation period up to 10 days
- History is key but may be difficult to obtain
- Botulinum toxin assay only 33-44% sensitive
- May have fever and leukocytosis from concomitant wound infection by other bacterial pathogen
- Penicillin G or metronidazole recommended for wound botulism

Thanks

- Dr. Harry Hollander
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References