# Site Visit 2: HandP

Name: [redacted]
Address: 123 45th St, Queens, NY 11419
DOB: [redacted]
Location: Queens Hospital Center
Religion: Muslim
Source of information: Self and Uncle
Reliability: Reliable
Source of Referral: Self
Mode of Transportation: EMS

**CC:** “Last night I was feeling fever, headache, body aches, and really weak. I couldnt sleep at all. Then this morning my legs stopped working and I haven't been able to pee.”

**HPI:** [redacted] is a 19 yo M w/ no pmhx c/o b/l LE weakness, fever, urinary retention, and HA x1 day. Pt states last night he started feeling a HA, body aches, and a fever that didnt respond to tylenol. He had difficulty sleeping and when he tried to get up in the morning he couldnt ambulate. Denies trauma recently but states he moved into a new apartment last week and moved all of his things. He works as a taxi driver and says he was working 16 hours a day for the past week.

The HA was diffuse with a gradual onset. He states it bothered him all night, but by the time he got to the hospital said it was basically gone. He denies focal location of the HA, NVD, thunderclap onset, confusion, changes in vision, ocular pain, or slurred speech.

Pt states the fever started w/ the headache. When asked if he has had fevers regularly, he states he feels very hot over the past year. Denies unexplained weight loss, sweating through his bedding, hematochezia, melena, or changes in stool shape. He currently feels feverish in the hospital (102.0 upon presentation). After 1000mg of APAP and 1L NS his temp is 99.0.

Pt states he felt generally very weak when he went to bed but could walk just fine. When he woke up in the morning, his legs felt very weak. He slowly walked to the bathroom but when he got there he had to lean against the wall and slid to the ground (denied head strike) bc his legs were giving out. He cannot localize the weakness to a certain area and denies back pain or trauma. He denies diminished sensorium in the legs stating he can feel everything. He cannot recall if the weakness started in the feet and ascended. Denies recent URI, GI distress, or IV drug use.

Pt states he could urinate normally all of yesterday but since this morning he hasnt urinated (Most recent urination was last night). He feels like he has to urinate and is complaining of suprapubic pressure. He states he has been drinking a normal amount of fluids for him. He initially denied numbness in the groin, but over the duration of his stay he states his penis feels numb. Denies hx of STI or surgery.

Pt denies hx of symptoms like this. Pt states that sometimes when he rides his bike he feels like he is going to pass out, but that only happens x1 per year. Denies CP, SOB, u/l muscle weakness, or fhx of rheumatic or neurologic diseases.

**PMHx:** Denies

**Immunizations:** not discussed (but should have been) ***

**PSH:** Denies

**Medications:** Denies

**Allergies:** NKDA

**FHX:**
Denies fhx of autoimmune disorders

**Social Hx:**
Living Situation: just moved into a new, studio apartment without roommates. Moved to the US 5 years ago from Bangladesh.
Kids: none
Profession: Taxi driver
Diet: Not discussed
Sexual History: States he is a virgin
Smoking: Denies
ETOH: Denies
Drugs: Denies
Recent Travel: Denies
Sleep: Typically 5 hours per night. States he couldn't sleep at all last night due to a fever
Stressors: Reports working 16 hours per day for the past week. Also reports moving into a new apartment last week

**ROS:**
Constitutional: Reports fever, chills, body aches, and fatigue
Skin: Denies rash or easy bruising
Head: Denies trauma. See HPI
Eyes: Denies visual changes or pain
Nose/Sinus: denies congestion or rhinorrhea. Reports regular nosebleeds.
Mouth/Throat: Denies rashes, ulcers, stridor,
Neck: Denies pain or masses
Pulmonary: Denies SOB, cough, dyspnea, or wheezing
Cardiovascular: Denies chest pain, palpitations, or syncope
GI: Denies NVD, constipation, or abdominal pain
GU: See hpi
Neurologic: see hpi
MSK: denies focal joint pain. See hpi
Heme: Denies known bleeding disorders

Psych: Denies depression, GAD, or SI. Recently moved into a new apartment and has increased his workload. He denies additional stress but his uncle states that the pt is not taking care of himself.

**Physical exam:**

General: AOx3, in NAD, laying in hospital bed w/ gown. Pt has long hair and facial hair. Pt appears old for his stated age (19).

Vital Signs:
BP: Left seated: Initial - 124/72
RR: 16
P: 110
T: 102.0 (repeat post APAP 98.5)
O2 sat: 99% on RA

Height: 83 cm Weight: 205 lbs (93 kg) BMI: 27.8 kg/m²

Head: normocephalic. No signs of trauma or step-offs

Neck: B/l posterior lymphadenopathy present. Firm, pea-sized, non-tender. Supple and trachea midline. Full ROM

Eyes: PERRLA. EOM intact.

Nose: Mucosa pink and moist. No ulceration or septal deviation

Mouth and Pharynx: Moist mucous membranes. No rashes or ulcers. Uvula midline

UE: Radial pulses 2+ and equal b/l. Light sensation in tact. Full ROM. Motor strength 4/5 (against gravity and some resistance)

Cardio: RRR, S1 and S2 present. No S3 or S4. No murmurs, rubs, or gallops

Lung: Clear to auscultation b/l. No respiratory distress.

Abdominal exam: Suprapubic distension and TTP over what appears to be the urinary bladder. There are no lesions, ecchymosis, or pulsatile masses. Bowel sounds are present in all 4 quadrants. Denies TTP in the other quadrants

Neurologic:

Cranial Nerves: Grossly intact. CNVIII (vestibulocochlear) grossly intact by history. CNXI (hypoglossal) not tested

Motor:

- Normal tone w/ passive ROM.
- UE 5/5 strength
- LE demonstrate b/l weakness - right more affected than left
- Hip Flexion: 4/5 bilaterally

- Knee Extension:
    - Right 3/5 active movement against gravity but unable to resist against pressure
    - Left 4/5 active movement against gravity and minimal resistance against pressure

Gait: Patient is unable to stand or ambulate

Cerebellar: point-to-point and rapid alternating movements are intact b/l

Rectal Exam (preceptor performed): Sphincter tone was intact upon insertion
- * I asked the patient to “squeeze his butt around his finger,” to which the pt said, “I can't.”
    - Cauda equina (LMN injury)
        - Total absent sphincter tone (no resistance on insertion) and inability to bare down
    - Conus medullarus compression (UMN injury)
        - Sphincter tone is present upon insertion, but the pt cannot bare down

Sensory: Light touch and pinprick sensations are intact and symmetric across LE and UE
- *** can be expanded

Proprioception and Vibration (Posterior Column function)
- Tuning fork on the big toe
- Move it up and down w/ eyes closed
    - Ask which direction

## Reflexes:

Babinski - no hyperreflexia or clonus noted. Diminished withdrawal response noted on deep palpation w/ reflex hammer

DTR: Not performed
Findings
- If hyperreflexia
    - UMN lesion (transverse myelitis, spinal tumor, cord compression)
- If hyporeflexia
    - Initial spinal shock or GBS
- What do you see in cauda equina syndrome and why?
    - HYPOreflexia - but I thought it was chord compression?
        - It's not cord compression; cauda equina is outside the spinal cord

**Labs and Diagnostics**
Initial CBC and CMP were wnl
Bladder scan
- Revealed ~390 mL
- Straight cath performed

**Assessment:**
[redacted] is a 19 yo M w/ no known pmhx presenting w/ atraumatic b/l LE weakness, inability to ambulate, high fever (102), HA, body aches, and urinary retention (390 mL decompressed via catheterization) x24 hours. Pt denies saddle anesthesia, focal back pain, head strike, confusion, changes in vision, or LOC. Intact

anal sphincter tone and intact saddle sensorium reduce the likelihood of cauda equina syndrome. Infectious CNS processes are highly concerning (high fevers, posterior lymphadenopathy, body aches, and HA), but compressive etiologies should be r/o. Neurology should be consulted to guide imaging and w/u decisions.

Problem List:

1) Acute B/L LE weakness (R>L) and Inability to ambulate
2) Urinary Retention
3) Fever
4) Headache

DDx:

1) Transverse Myelitis
    a) TM is typically caused by a post-infectious immune overreaction or an autoimmune flare. This pts high fever and lymphadenopathy strongly signal infection. His “patchy” neurologic deficits (motor function impaired but sensorium intact) are highly characteristic of a TM and other inflammatory myelopathies. His atraumatic b/l LE extremity weakness and urinary retention raise concern for other must-not-miss diagnoses, but his PE is missing key characteristics of those conditions.
2) Spinal epidural abscess
    a) This is a must r/o differential provided his fever, progressive neurologic deficits, and lymphadenopathy.
3) Conus Medullaris compression syndrome
    a) Presenting symptoms are highly concerning: b/l LE weakness and urinary retention. In tact rectal sphincter tone w/ inability to bare down increases suspicion. Pt recently moved into a new apartment and sits for many hours a day as a taxi driver. It is possible these strains compromised spinal integrity.
4) GBS (Guillain-Barré syndrome)
    a) Like TM, GBS most typically occurs post-infection, and G.S. is demonstrating classic signs of infection. His progressive b/l LE weakness over 2 days is classic for GBS. His acute urinary retention is atypical of GBS, but this remains a leading dx that must be w/u
5) Meningitis
    a) Another leading diagnosis caused by infection (High fever, headache, generalized body aches, and posterior lymphadenopathy). The pts supple neck, urinary retention, and b/l LE weakness are uncharacteristic of meningitis. An infection of the CNS could account for his neurologic deficits so meningitis must be worked up and ruled out.
6) Potts disease
    a) Pt immigrated from an area highly endemic w/ TB and his vaccination status is unknown. A mass causing compression on the spinal cord could account for his neurologic deficits. Less likely because Pott’s disease typically has an insidious onset over weeks to months and localized spinal pain. This pt denies back pain and his onset was acute over 24 hours. Pott’s disease also has positional symptoms, which are also absent here.
7) Cuada equina
    a) Medical education stresses the urgency of r/o cauda equina syndrome and this pt has some of the hallmark signs: urinary retention and b/l LE. But he is missing some other key sx: flaccidity of anal sphincter tone and saddle anesthesias. While it is important to r/o the nuance of this presentation heavily points away from cauda equina. Cauda equina will have true flaccid paralysis of the LE but this pt was able to procude force on the motor exam. He exhibited spastic movements, more typical of UMN lesion vs. LMN.

Along w/ the pts preserved resting anal sphincter tone and lack of saddle anesthesia make cauda equina highly unlikely. This pt is going to receive an MRI, regardless and this must be r/o.

8) B12 deficiency
    a) Highly unlikely. Causes progressive nuerologic deficits.

**Plan:**

1) Neuro Consult (recommended the following)
- NCCT cervical and thoracic
- CT contrast Lumbar
- LP
    - Tubes 1 and 2 - Cell count and differential, glucose
    - Tube 3 - Gram stain and bacterial culture
    - Tube 4 - Viral PCR panel

2) Additional labs
- Blood cultures x2
- CRP and ESR
- RSR (r/o neurosyphilis)
- HIV screening
- B12

3) Additional orders
- Continuous pulse Ox - risk of respiratory failure if the diaphragm is involved
- Telemetry monitoring - autonomic dysfunction can dangerously alter BP and HR
- Is and Os + indwelling Foley catheter
- NPO - if emergent intervention needed
- IV fluid drip - maintain BP and hydration
- DVT prophylaxis - pt is now immobile

4) Preparing for transfer
- While the current facility may be able to w/u this pt, it is not equipped w/ a neuro-ICU or neurosurgery team if emergent intervention is needed