

# 04/16/25 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Nikola (@) Case Discussants: Sharmin (@) and Julia (@)

Scribing (Ethan)  
**CC:** 40 y/o M with 2 weeks of progressive mid-back pain

**HPI:** 2 weeks of progressive mid-back pain. He had previously experienced episodes of back pain due to his long-standing work in construction, this episode was distinct in both severity and duration. The pain was localized to the middle of his back, without radiation, and got worse on standing up and bending, while it improved while lying down flat. In addition to the back pain, he also noticed that he has to urinate frequency over the last two weeks, and he also gets winded and out of breath more easily over the past year, which ultimately led to him quitting work. He also has intermittent mild headaches.

**ROS:** (-) for chest pain, abd pain, fever, night sweats, dysuria, changes in bowel habits

Patient drinking and peeing a lot in ER

**PMH:**  
 Hypertension, T2DM, obesity, chronic dry cough NOS  
 Appendectomy at age 12, contact dermatitis to nickel

**Meds:**  
 Lisinopril, metformin, and ibuprofen for back pain

**Vitals:** T: 98.3F BP: 133/87 RR: 18 HR: 72 Sat: 89% on RA (asymptomatic at rest) BMI: 30

**Exam:** Gen: no acute distress

CV: normal rate and rhythm, no murmur

Pulm: bilateral inspiratory crackles

Abd: distended, no pain on palpation, nonpalpable liver and spleen

Neuro: normal CN, strength, no FND

MSK: tenderness to percussion at T6-T7 level

Skin: wnl

### Notable Labs & Imaging:

#### Hematology:

WBC: 10.6 (neutrophilic) Hgb: 13.1 Plt: 500K INR: wnl aPTT: wnl

Smear: wnl CRP: 27.6

#### Chemistry

Na: 150 K: 4 Cr: 1.1 (0.9 3y ago) Cl: 106 Ca: wnl PTH: wnl

AST: 71 ALT: 41 ALP: 542 (nl 150) GGT: nl Tnl: wnl

PSA: wnl

#### Imaging:

CXR: bilateral interstitial infiltrates

CT thorax: pathologic compression fx of the T6 without spinal cord compression, bilateral interstitial infiltrates and mid-zone predominance along with multiple cysts and nodules, CP angles were spared, no LAD. CT head (noncontrast): "floating teeth sign"

MRI Brain: a lesion involving the hypothalamic-pituitary axis

Additional hx: Patient mentioned painless spontaneous teeth loss one month prior

Lung biopsy: lymphocytic infiltrates, septal thickening, eosinophils, and large cells with foamy cytoplasm and prominent nuclei. IHC positive for S100 protein, CD1a, placental alkaline phosphatase, and langerin.

**Dx:** Systemic Langerhans cell histiocytosis with lung, bone, and CNS involvement

**Problem Representation:** 40 y/o M with compression vertebral fracture, nodular, cystic lung disease, and central diabetes insipidus

### Teaching Points(Khashayar):

#### # Approaching back pain

## **Initial Evaluation** -> Time course, localization, characteristic of the pain, associated symptoms , differences and similarities to previous episodes, risk profile of the patient.

## **Expanding on location** -> Mid-back pain is not of the more common locations of pain -> thoracic, infections, inflammatory -> what is the context of back pain? -> retroperitoneal structures -> Aortic dissection as don't miss ddx

## **Red Flags** -> Neurologic findings, bladder/bowel symptoms, young age, Trauma, Fever -> Diseases of the spine are usually slow progressing -> new onset of symptoms are concerning here

**Dangerous things to rule out** -> osteoblastic metastasis of prostate cancer, vascular

## **Urinary Frequency** -> time course -> infection and pyelonephritis? Presence in men is unusual -> relation to back pain -> possible neurologic findings

#### # Combining the Bone brain and lung findings

PMH pointing to many causes that can lead to neoplastic disease with particular focus on those affecting the bone, the back pain can be brought together with the impaired lung with possibility of neoplastic disease that has metastasized.

ALP singular => erosive bone disease, high platelet and CRP => inflammation => Mets vs. Granuloma vs. histiocytic -> bone + brain would invoke the possibility of histiocytic disease

## **The Sodium** -> lack of access, Diabetes insipidus, iatrogenic  
 Central vs nephrogenic -> **nephrogenic** -> electrolyte imbalances medication side effect etc. **central** -> with the spinal pathology more likely here

## **Floating teeth** is the description given to the appearances on imaging of teeth that appear to be floating as a result of alveolar bone destruction around their roots. -> severe periodontal disease (most common cause), hyperparathyroidism, eosinophilic granuloma , metastases, multiple myeloma -> hyperpara can be combined with the MRI findings

## **Pulmonary Langerhans cell histiocytosis (PLCH)** is a unique form of LCH in that it occurs almost exclusively in cigarette smokers. It is now considered a form of smoking-related interstitial lung disease.