



Mystery Case

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Chief Complaint

68 year old Caucasian male who
presented to the ED from clinic due to
abnormal lab results

CRP 20 (elevated from 5)

WBC 17

Your Thoughts?

Case Presentation

A 68-year-old male with a past medical history significant for COPD and chronic osteomyelitis to the sacrum presented to the ED after being told of abnormal lab results. He is well known to ID clinic for osteomyelitis of the coccyx with sinus tract initially diagnosed on 6 years ago and was last seen 5 days prior to presentation. He had been instructed to take Bactrim DS BID for chronic suppressive therapy and admitted to intermittent compliance.

Findings showed an elevated CRP of 20 from a baseline of 5 and a white cell count of 17,000.

Case Presentation

Upon initial evaluation, the patient did not have any major complaints.

He denied chest pain, SOB abnormal from baseline, palpitations, headaches, vision changes, nausea/vomiting, fever/chills, dysuria. He also denied constipation or diarrhea.

Case Presentation

Noted that he did admit to having one episode of loose, bloody stool 3 days prior. Resolved since that time. When pressed about abdominal pain, patient admitted to having lower abdominal pain 3 days prior that was dull and achy in nature. It worsened acutely the next day and then improved. He described pain to be intermittent with each episode lasting for about 1 hour. Pt states that he rested in bed, and then began to improve. Denied taking any pain medications.

ROS

Constitutional: No weight loss, fever, chills, weakness or fatigue.

HEENT: No visual loss, blurred vision. No hearing loss, sneezing, congestion, runny nose or sore throat.

Skin: No rash or itching. +Chronic intermittent drainage of sacral area

CVS: No chest pain, chest pressure or chest discomfort. No palpitations or edema.

Respiratory: No sputum. + Chronic shortness of breath, cough

GI: No nausea, vomiting or diarrhea. No bloody stool. +mild abdominal pain

GU: No dysuria, hematuria, frequency or urgency.

Neuro: No headache, dizziness, syncope, paralysis, ataxia, numbness or tingling in the extremities. No change in bowel or bladder control.

Musculoskeletal: No muscle, back pain, joint pain or stiffness.

Heme: No bleeding

Endo: No reports of sweating, cold or heat intolerance. No polyuria or polydipsia.

Your Thoughts?

Past Medical History

PMHx:

- COPD Gold B
- Chronic Osteomyelitis of the Sacrum
- Tobacco Abuse

PSHx

- End colostomy, s/p reversal
- Multiple surgeries to gluteal region

Past Medical History

Social Hx:

- Smoking: 1PPD, previously 3PPD
- Alcohol: Previously drank 2 cases of beer per day, quit >2 years
- Illicit Drug use: Denied
- Living in Lafayette, however has remote history of homelessness across the country. Previously traveled via hitch-hiking

Past Medical History

Family Hx:

- MI/CAD – Father, Brother
- Leukemia – Mother
- Cancer, undefined – Sister

Health Maintenance:

- Not up to date on vaccines

Past Medical History

Home Medications:

- Advair 100mcg-50mcg, BID
- Bactrim DS 800mg-160mg, BID
- Flomax 0.4mg, daily
- Spiriva 18mcg inhaler, daily
- Ventolin inhaler, PRN

Allergies: NKDA

Physical Exam

Vitals (ED):

Temperature – 97.88 Degrees Fahrenheit

HR – 95 bpm

RR – 20 br/min

BP – 158/85

SpO2 – 90% on Room Air

Height – 170 cm

Weight – 78.1 kg

BMI – 27

Vitals (IM Evaluation):

Temperature – 97.88 Degrees Fahrenheit

HR – 81 bpm

RR – 26 br/min

BP – 125/86

SpO2 – 97% on 2L via NC

Physical Exam

General: No acute distress. On 2L via NC

HEENT: EOMI, PERRLA, Normal conjunctiva, with noted arcus senilis. Normal hearing, Oral mucosa is moist, no pharyngeal erythema. Rhinophyma noted. No JVD.

Respiratory: Grossly CTAB, Respirations are non-labored, +Clubbing of the hands

Cardiovascular: RRR. No murmurs appreciated. Normal peripheral perfusion, no LE edema

Gastrointestinal: Soft, bowel sounds present. No rebound tenderness. RLQ tenderness to deep palpation. Rovsing's negative.

Musculoskeletal: No tenderness, no swelling. No CVA tenderness.

Integumentary: Warm, Moist, No pallor. Large abscess noted on sacrum/buttock, some fluctuance noted with purulent drainage. Scars noted from previous surgery.

Neurologic: AAOx3. No gross focal deficits, Cranial Nerves II-XII are grossly intact.

Your Thoughts?

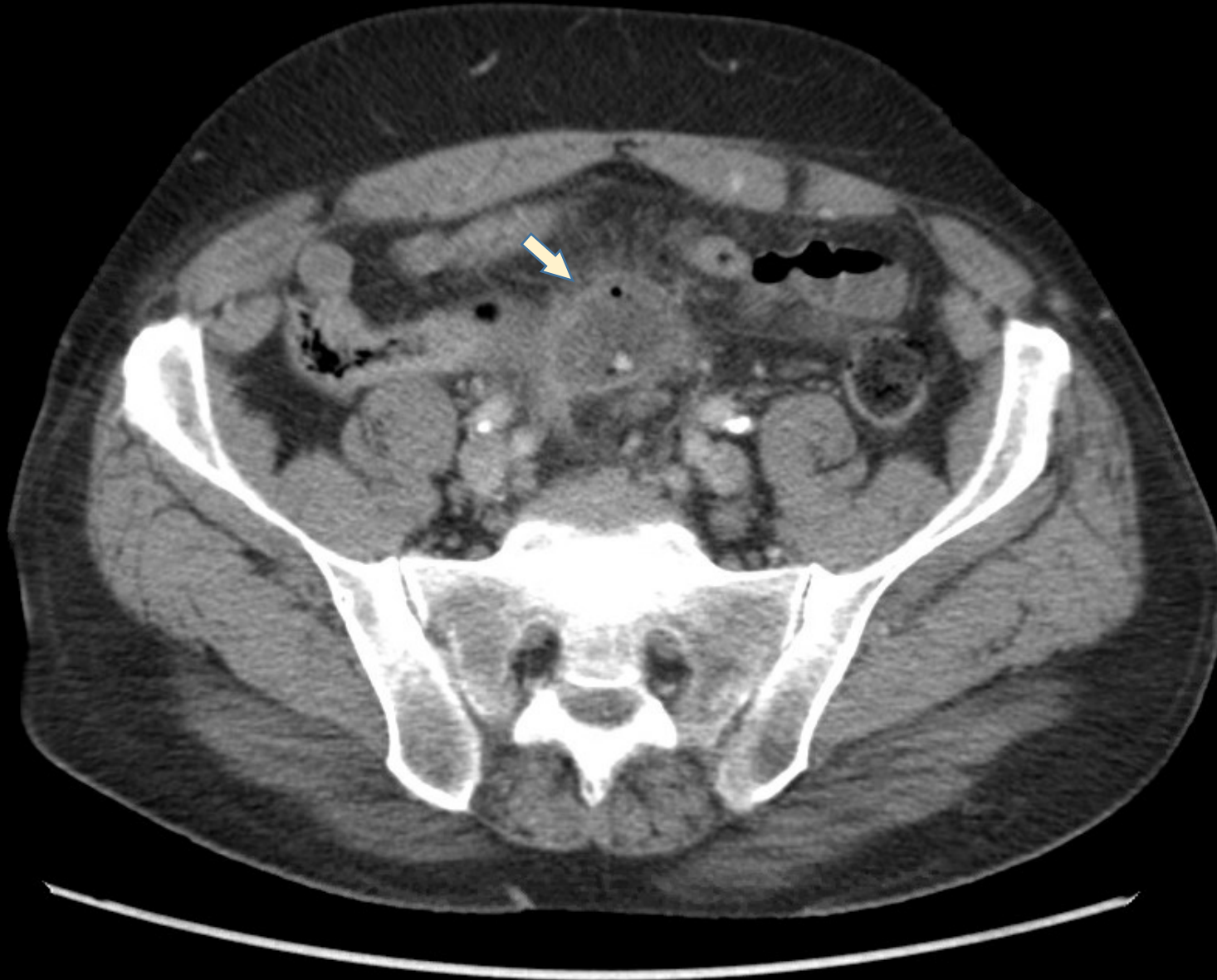
Labs

<i>Na⁺</i>	131 L	<i>Tbili</i>	0.6	<i>CRP</i>	20 (n <0.3)
<i>K⁺</i>	4.2	<i>AST</i>	26	<i>ESR</i>	93 (n 0-15)
<i>Cl⁻</i>	96 L	<i>ALT</i>	21	<i>Pro-Cal</i>	0.25 (n <0.7)
<i>CO₂</i>	28	<i>ALP</i>	124 H		
<i>BUN</i>	19 H	<i>Total Protein</i>	9.1 H		
<i>Cr</i>	1.10	<i>Alb</i>	2.6 L	<i>WBC</i>	17.7
<i>Glu</i>	103	<i>Lactate</i>	2.0	<i>H/H</i>	11.6/37
<i>Ca²⁺</i>	8.9			<i>Plt</i>	298
				<i>MCV</i>	79.6

Imaging



Imaging



Your Thoughts?

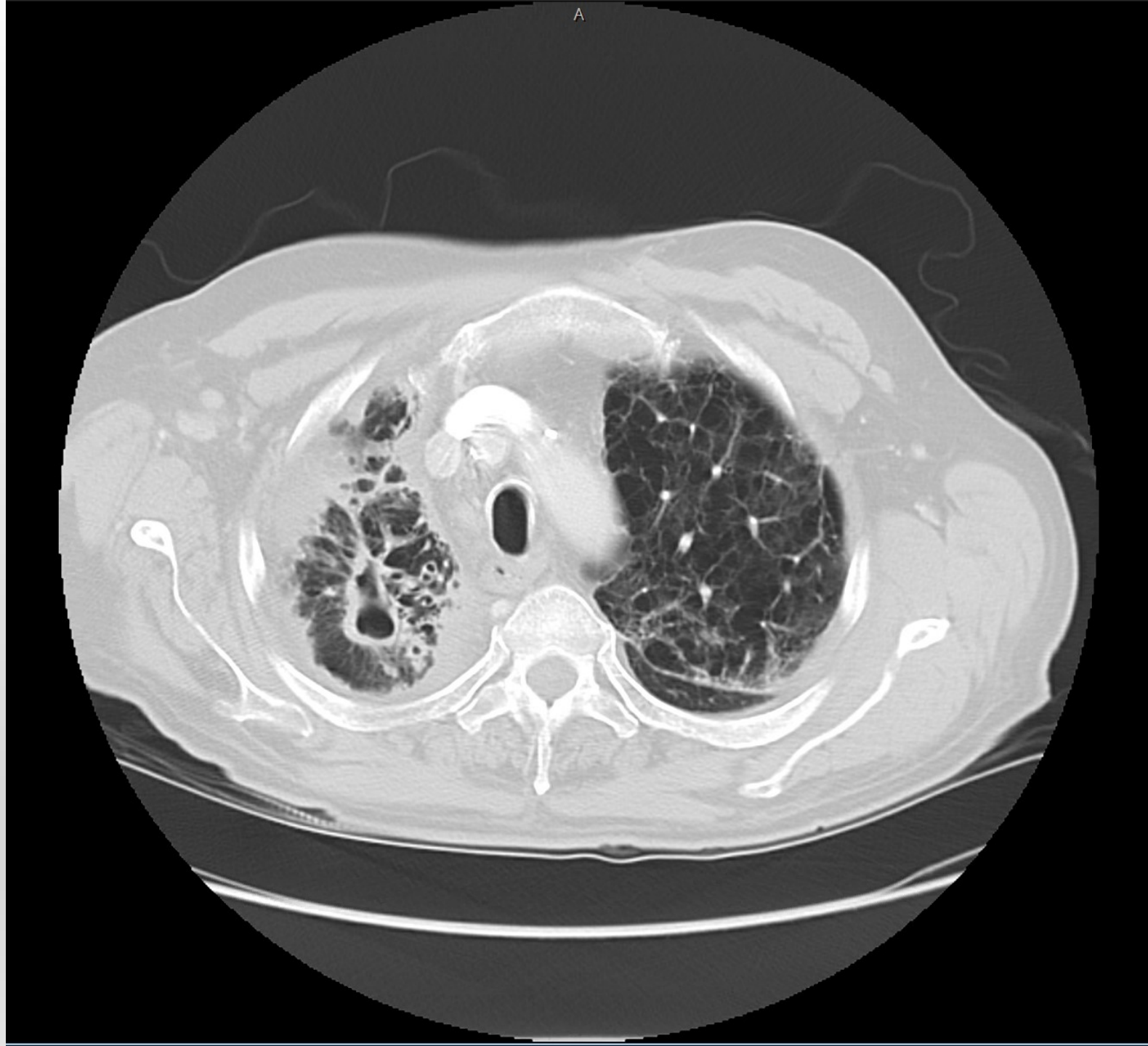
Hospital Day 0

- Initially admitted for sepsis secondary to acute on chronic osteomyelitis and started on broad spectrum antibiotics (IV Vancomycin and Zosyn)
- Surgery consulted to evaluate incidental finding of acute appendicitis, no immediate plans for intervention

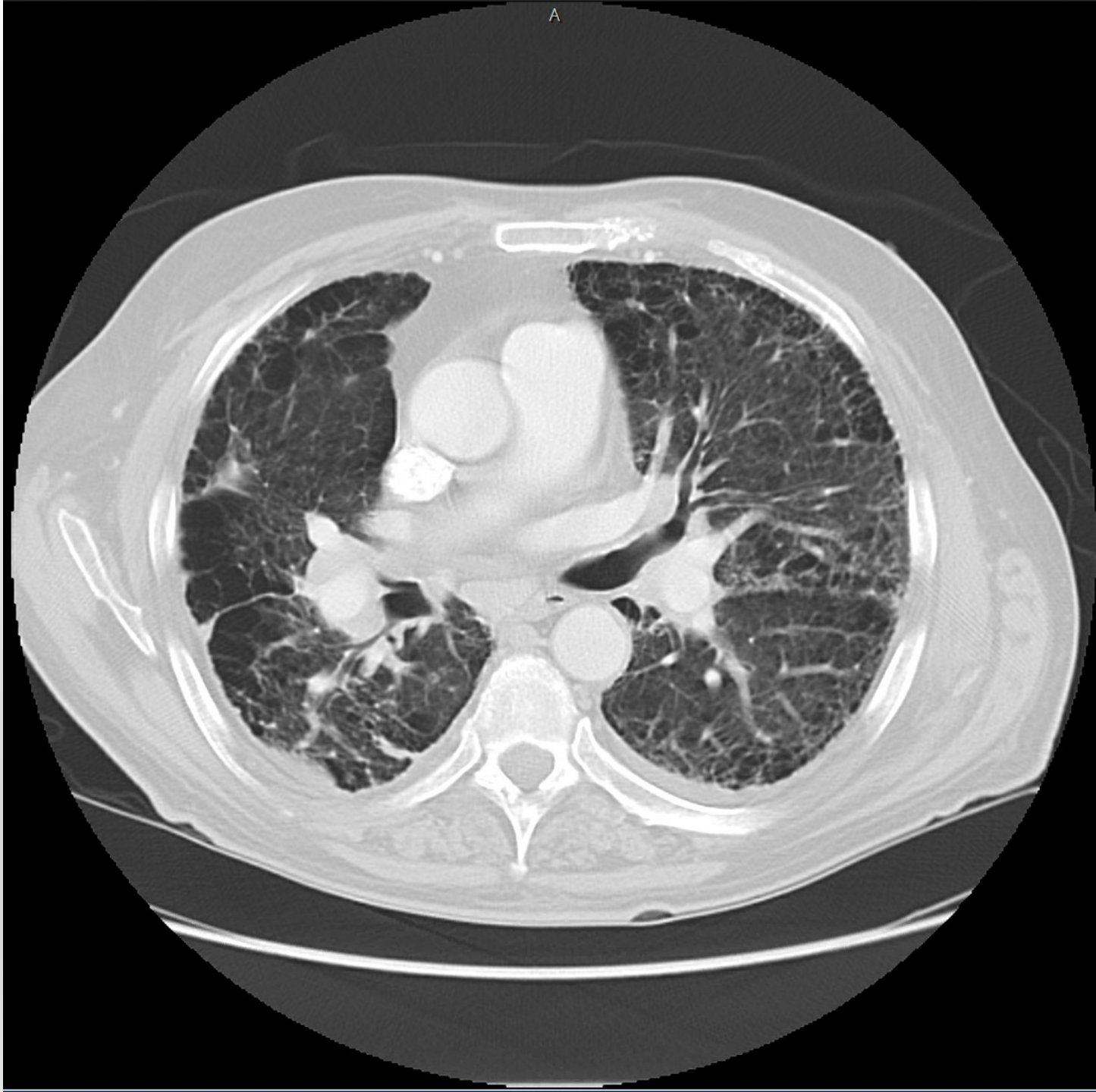
Hospital Day 1-3

- Involved IR per surgery recommendations for drain
- GI consulted, considering possible IBD (CD) in the setting of noted fistulous disease
- CT Enterography done with no evidence of overt IBD
- **Day 3, respiratory status starts changing**
 - Lung sounds now significant for deep expiratory rhonchi and b/l wheezing
 - Developing productive cough
 - One episode hemoptysis

Imaging



Imaging



Hospital Day 4-5

- Case discussed with Pulmonology and ILD workup initiated
- AFBs x3 ordered, sputum culture ordered, fungal, Gram stain, immunoglobulins
- ABG (3L NC): pH 7.5, CO2 33, pO2 31, bicarb 25.7
- Now requiring High Flow Oxygen

Imaging



Hospital Day 6-15

- Cultures to date were negative
- Abx were de-escalated
- CTPA negative for PE
- Patient had a difficult time weaning off high flow oxygen
- COPD medications adjusted
- ECHO done with EF 55% and changes consistent with possible pulmonary HTN

Your Thoughts?

Discharge Day

- Offered LTAC, however pt refused. Therefore discharged home with home health and supplemental O2
- F/u appts scheduled with Pulmonology, ID and Surgery clinics
- In terms of medications, planned for 28 days of doxycycline 100mg BID, ciprofloxacin 500mg BID, and Flagyl 500mg TID

Outpatient

- Seen in ID Clinic
 - Noted that Fungal Culture grew out *Coccidioides immitis*
 - *Coccidioides* IgM and IgG ordered, both elevated
 - Initiated on Fluconazole 400mg daily x6 months
 - Placed back on suppressive therapy for his chronic osteomyelitis with DS Bactrim

Final Diagnoses

Primary Coccidioidal Pneumonia

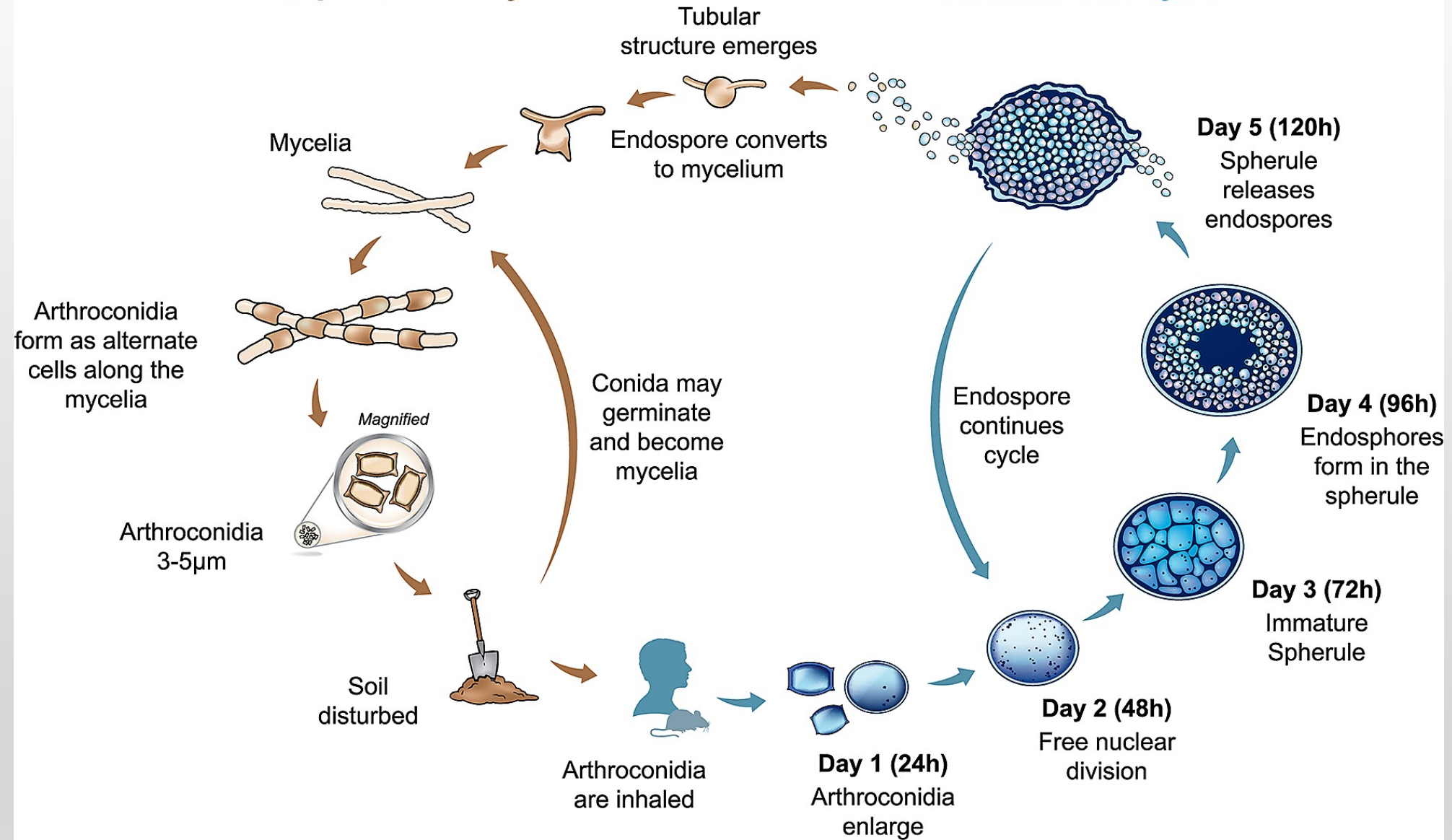
Discussion – *Coccidioides immitis*

What is it?

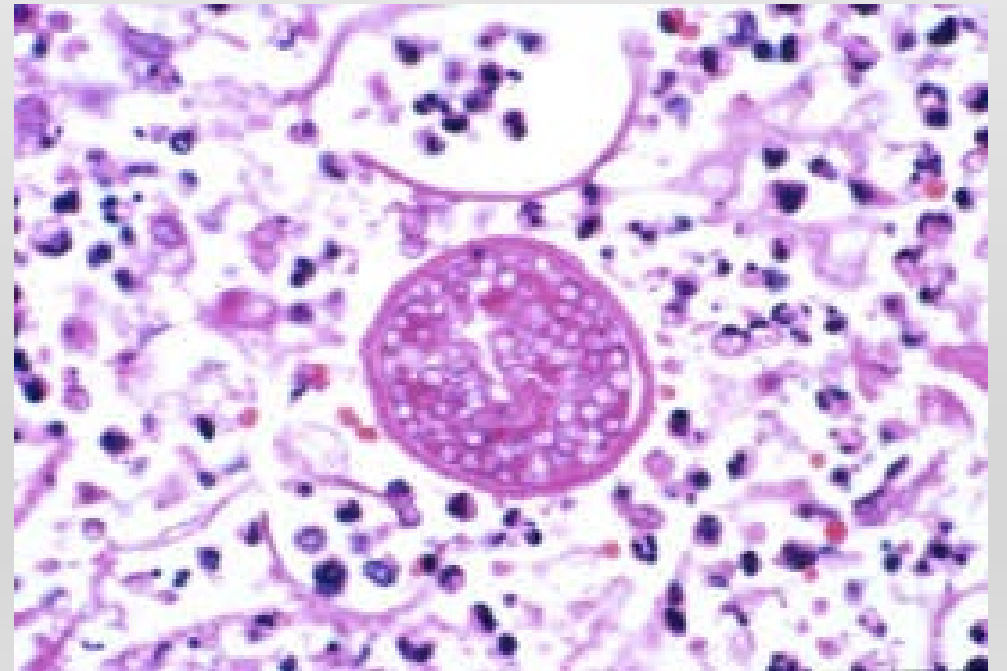
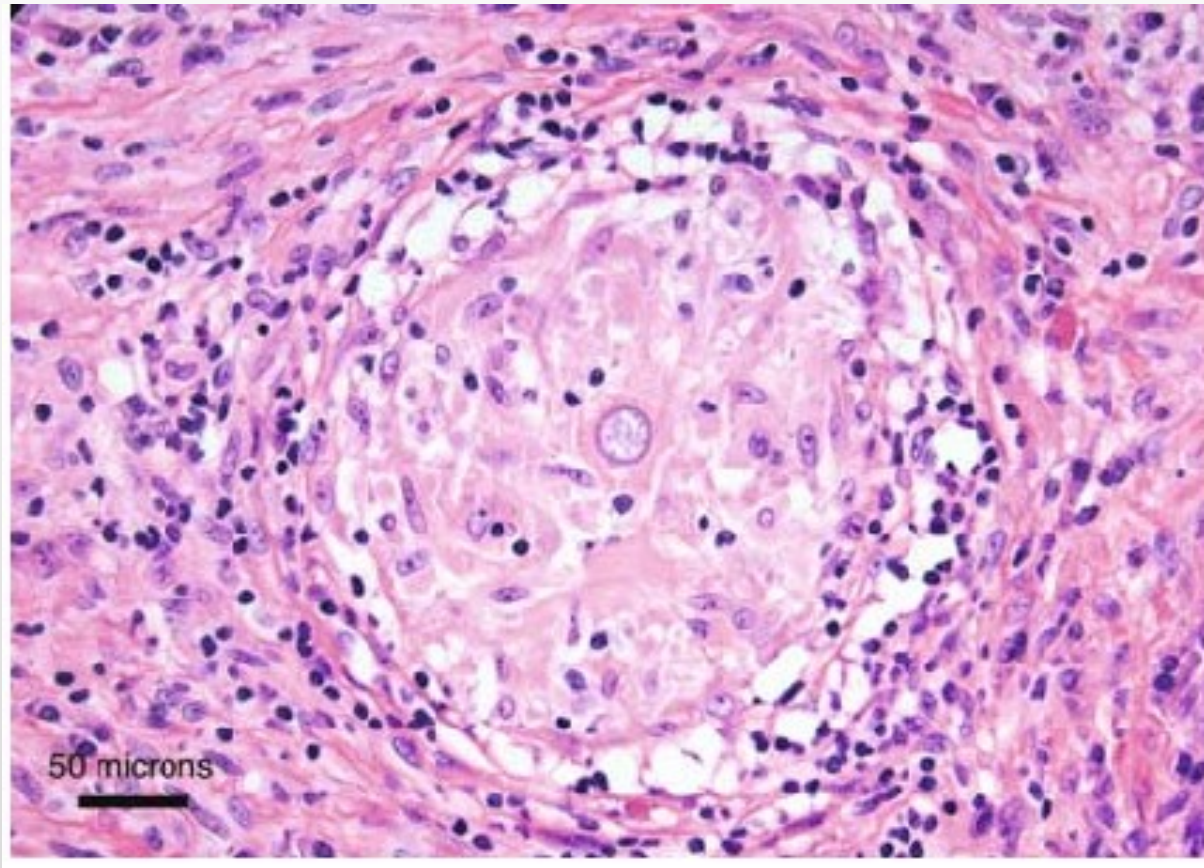
- Dimorphic fungus
- Endemic to Southwestern US: AZ, CA, NV, UT, NM, TX
- Most published cases from California and Arizona
- Men > women
- Known to grow as mold below the surface of the desert soil and are easily broken down into single-cell spores in dry conditions

Saprobic Life Cycle

Parasitic Life Cycle



Life Cycle of *Coccidioides*



Discussion – *Coccidioides immitis*

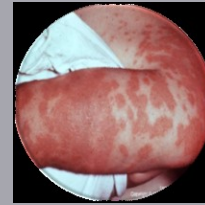
What can it do?



Asymptomatic
Infection



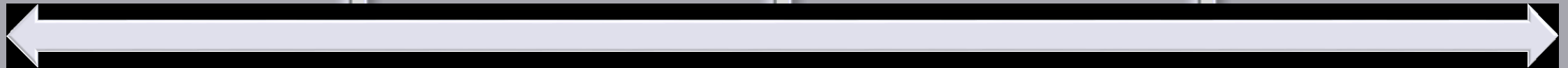
Primary Coccidioidal
Pneumonia



Nonmeningeal



Meningitis



Thoracic

Extra thoracic

Discussion – *Coccidioides immitis*

How do we diagnose it?

- Serum IgG and IgM
- Immunodiffusion test
- Culture
- BAL
- Coccidioidal antigen assay

Discussion – *Coccidioides immitis*

How do we fix it?

- Mild Disease
 - Supportive Care
- Disseminated Disease
 - Fluconazole 400mg daily or Itraconazole 200mg daily for at least 3-6 months
 - Amphotericin B only in severe cases

Discussion

- This case demonstrates how a thorough history can hint at a less likely diagnosis.
- Coccidioides infection can manifest similarly to interstitial lung disease, pulmonary fibrosis, TB, or COPD exacerbations. In non-endemic areas, it is easily excluded from the differential.
- Manifestations can range from asymptomatic to very mild infections in approximately 50% of cases to clinical illness in 40-50% of cases. The incubation period is usually 1-3 weeks.
- In this case, it is difficult to determine whether the extent of his disease is secondary only to coccidioidomycosis or to a combination of coccidioides infection and another disease process. It is unlikely he has recently acquired infection, and more so likely he has a more complicated and chronic course of infection. While rare, we feel that his chronic pulmonary disease, residual lung nodules and cavitary lung disease are secondary to coccidioidomycosis and not other pathogens.

Your Thoughts?

Case Updates

- Seen by Pulmonology as outpatient who recommended starting treatment for interstitial lung disease with Ofev (has been unable to do so yet)
- Got readmitted to the hospital about 5-6 months later after being found to have grown out *Enterobacter cloacae* in his respiratory Cx
- *Enterobacter* pneumonia treated with IV Meropenem x 14 days
- Fluconazole course extended for 1 year
- Diagnosed with lung cancer at an outside facility in Feb 2020, pathology unknown at this time
- Respiratory Cx growing *Achromobacter* species on 3/2/20

Final Thoughts?

Thank you!
