Mycobacterial infections with immunosuppression

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Outline

- Case based learning
- Role of Tumor necrosis factor on immune function
- Effects of TNF- Inhibitors (TNF-I) and development of mycobacterial infections
- Management of mycobacterial infections in setting of TNF- I
- Implications for public health evaluation

Case presentation
HPI

- 60 y.o W male, presented in Mid summer to OS med. clinic for routine eval:
- BP 90/pal- given fluids
- Referred to U Conn (no beds at OSH)

HPI

- HPI started around August 2008
- Rt 4th finger joint swelling (PIP), pain, arthralgias of other fingers of hands, wrist
- Physical Tx, Whirlpool Tx tried without improvement
- 18 mths ago noticed Rt elbow swelling - bumps in line on skin, from wrist upwards
- S/p Rt arm medial aspect Bx- @ OSH
- BX results considered as RA

HPI

- Tx with MTX x 1 year for seronegative RA
- 2-3 months PTA- Tx with Arava (Leflunomide)
- No improvement
- Tx with Enbrel (Ethanercept)- no improvement
- Tx with Remicade (Infliximab) 3 months PTA x 1 dose, 2nd dose (1 month PTA)
- 2 weeks post Inflix: pt. has calf pain. Swelling of plantar aspects, with burning sensation.
- Prednisone increased from 30 mg to 60 mg

Pertinent Hx

- **ROS** + 30 lbs wt loss x 4 mths, no f/c/nt. swts,
- + dry cough- mild x 2 days
- **PMHx** of DM, pulm sarcoidois in past, Hx of Afib (on coumadin), Hypercholesterolemia on statin
- **Allergies:** None to a/biotics-
  - ? Reaction to Remicade
- Quit Tob in 70s, ETOH- last was 3 mths ago
  + marijuana/cocaine use- in the past, no IVDU
- Extensive travel in US

On exam

- Afebrile, Pulse in 90s, BP120/70
- PERRLA, EOMI, anicteric,
- + Shotty cervical Lnodes- rest unremarkable
- Bl bases bronchial BS, irreg. S1, S2,
- Abd- wnl
- Neuro- motor and sensory grossly wnl

Skin lesions

- Rt arm, weeping/ erythematous bases, with crusting, also some nodularity
- B/l lower extremities – nodular lesions

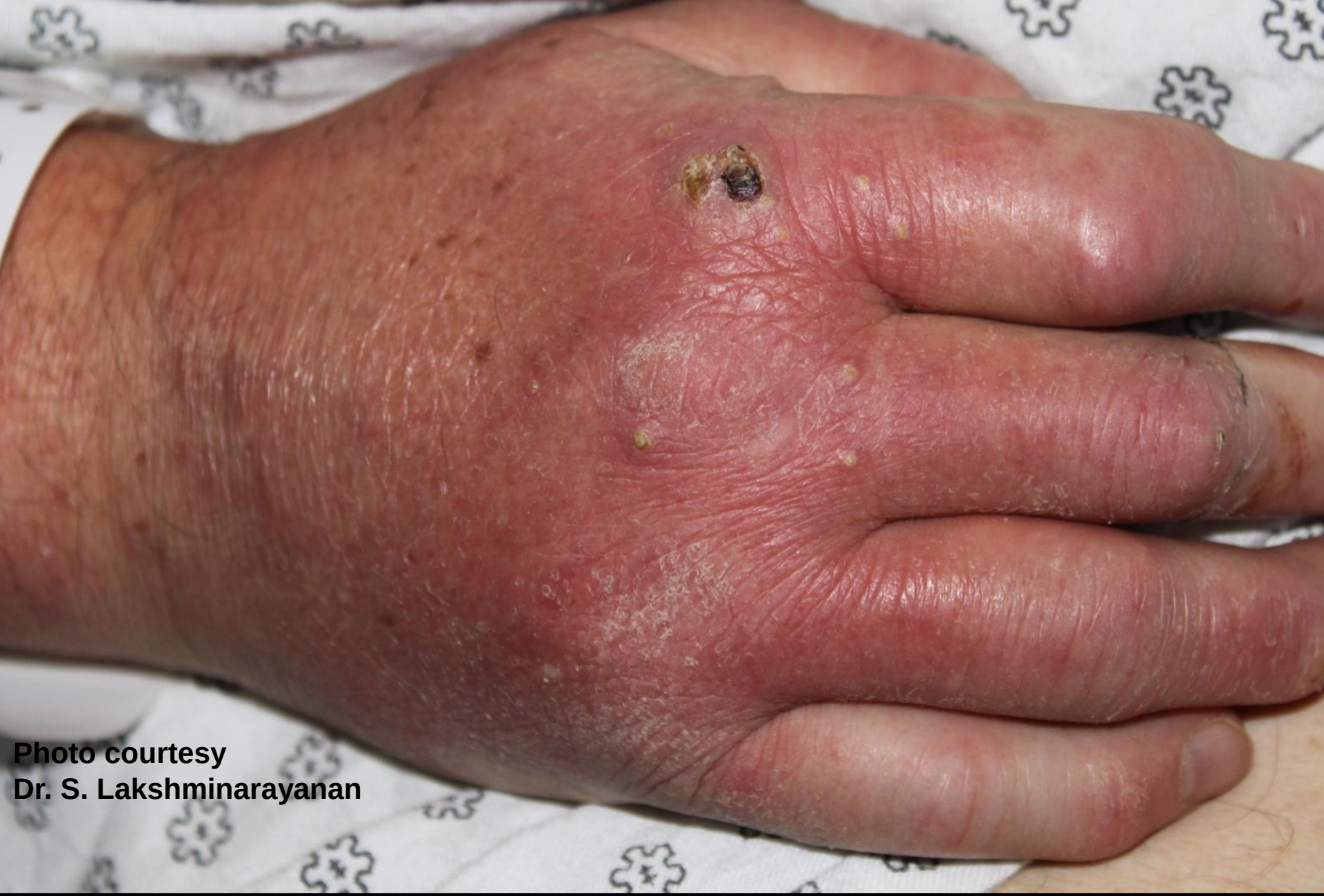
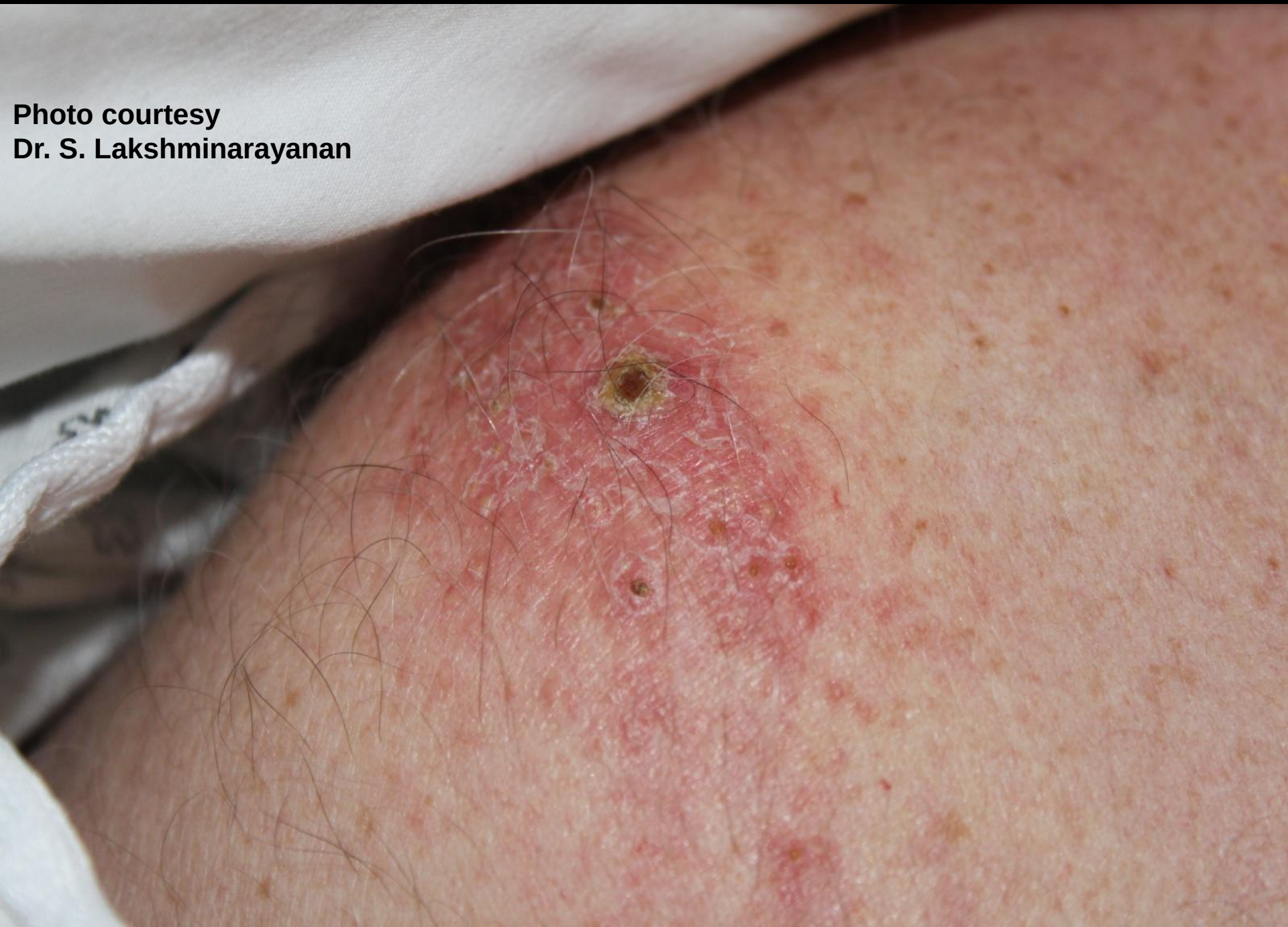


Photo courtesy
Dr. S. Lakshminarayanan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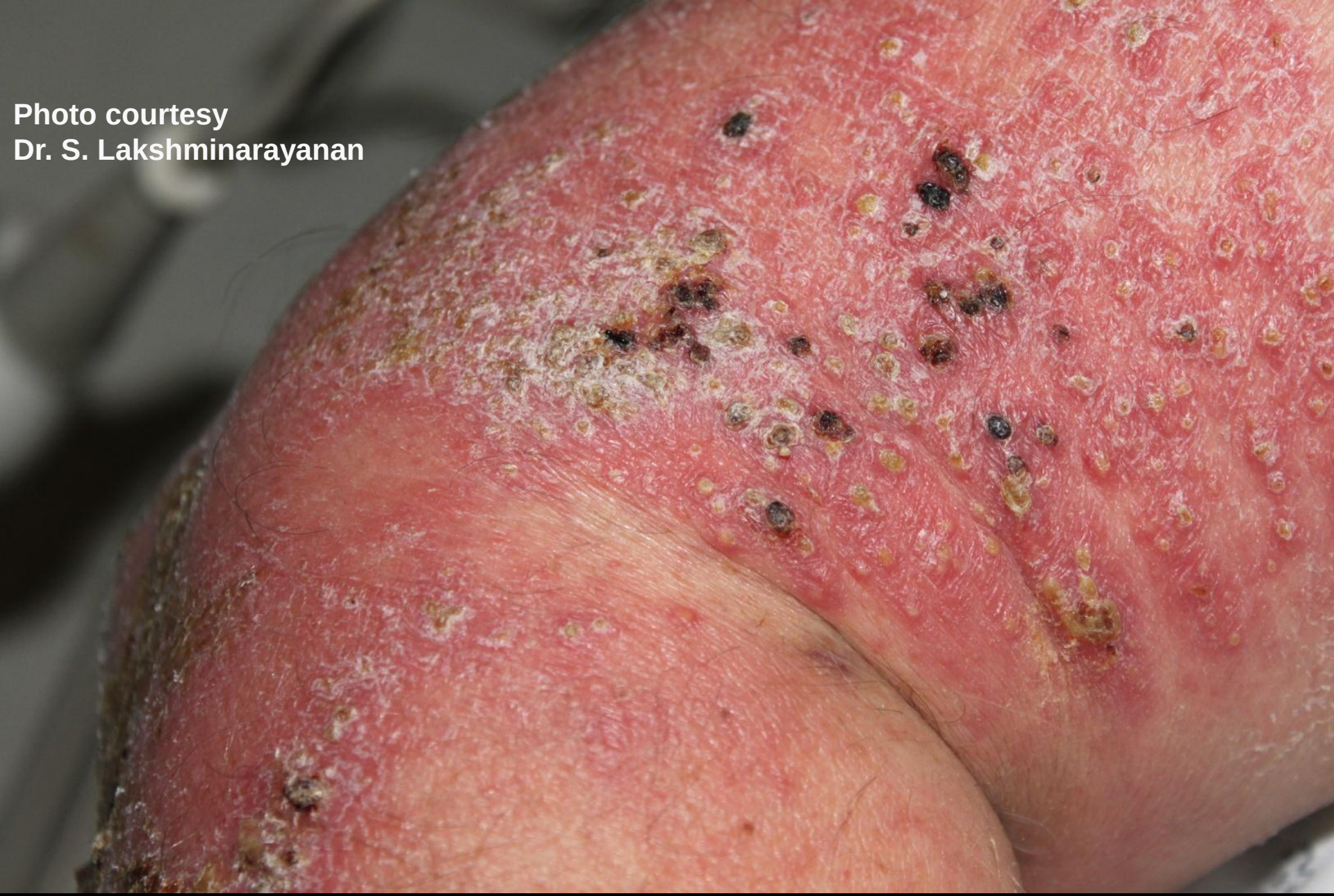
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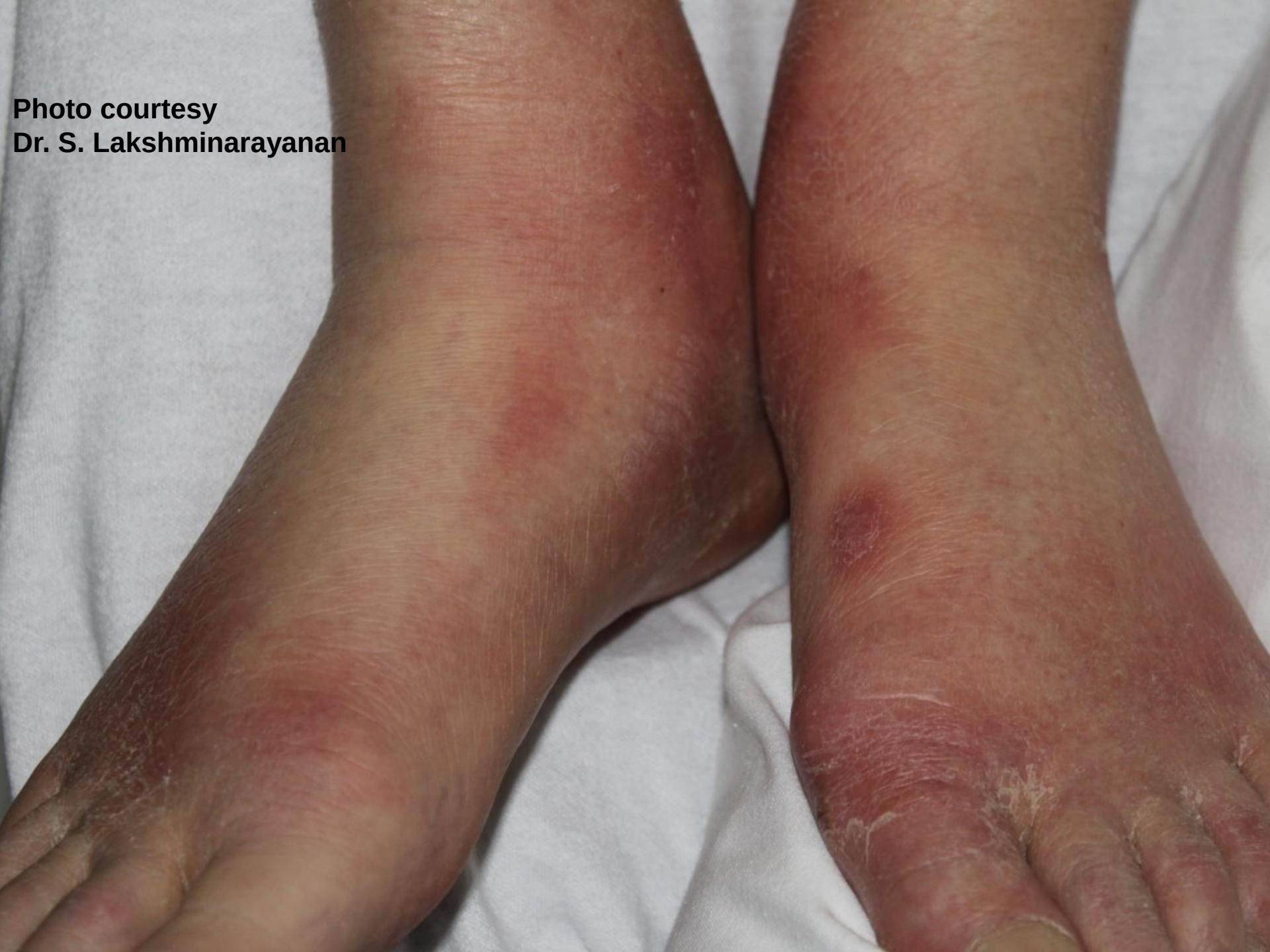
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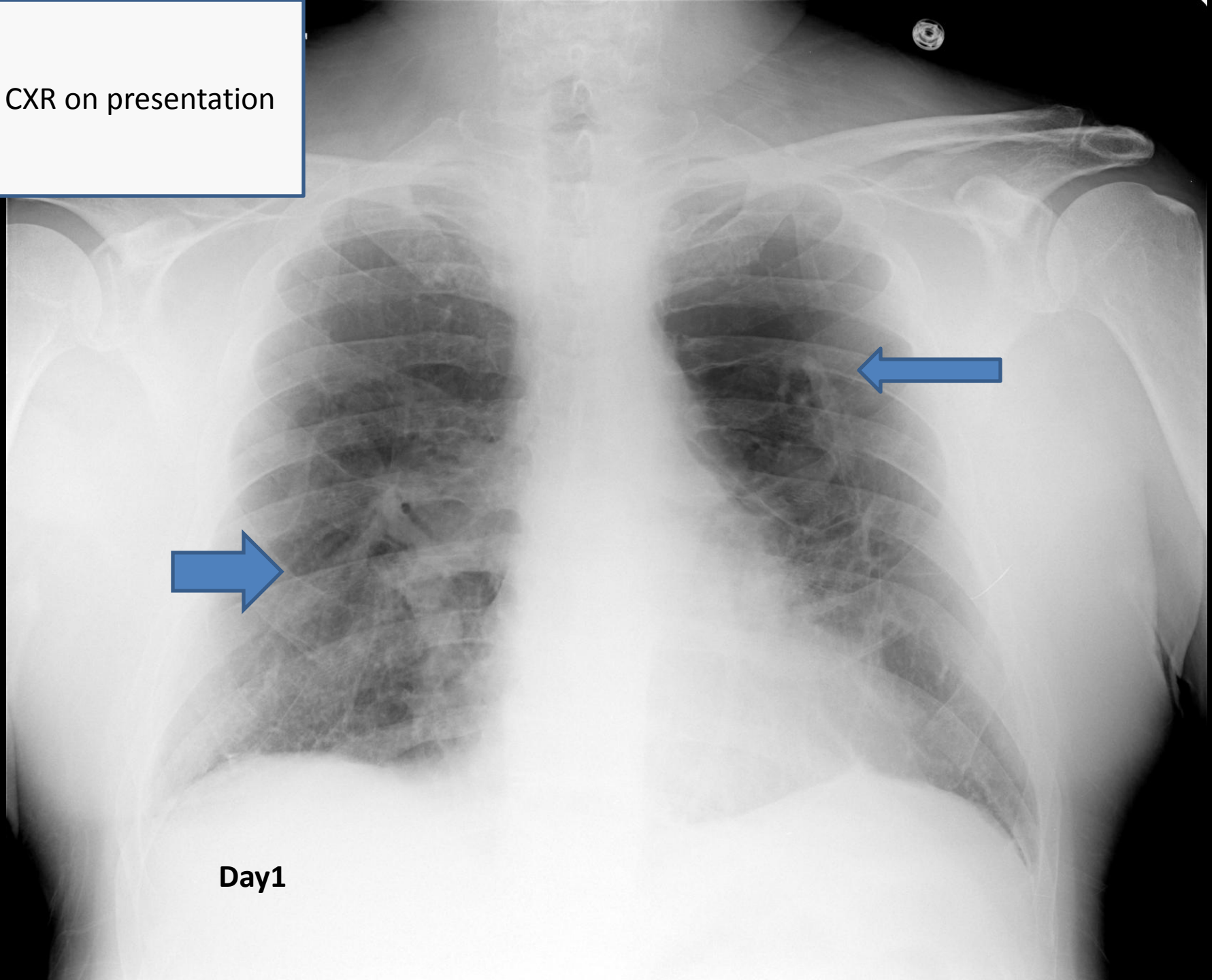
Labs

- Initial elevated wbc on admission- subsequently 14 , with high neutrophils,
- Renal Fx wnl-
- ALT in 70s AST in 50s
- Elevated ESR and CRP

CXR on presentation



Day1

Role of Tumor Necrosis factor, effect of TNF-inhibitors on immune function

Discussant- Dr. TV Rajan,

Professor of Pathology, UCHC

Treatment discussions for Rheumatoid arthritis. Evaluation of TB risks prior to TNF- I initiation

Discussant - Dr. Santhanan Lakshminarayanan, Asst. Professor, UCHC

What next?

- What other pertinent information to ask patient?

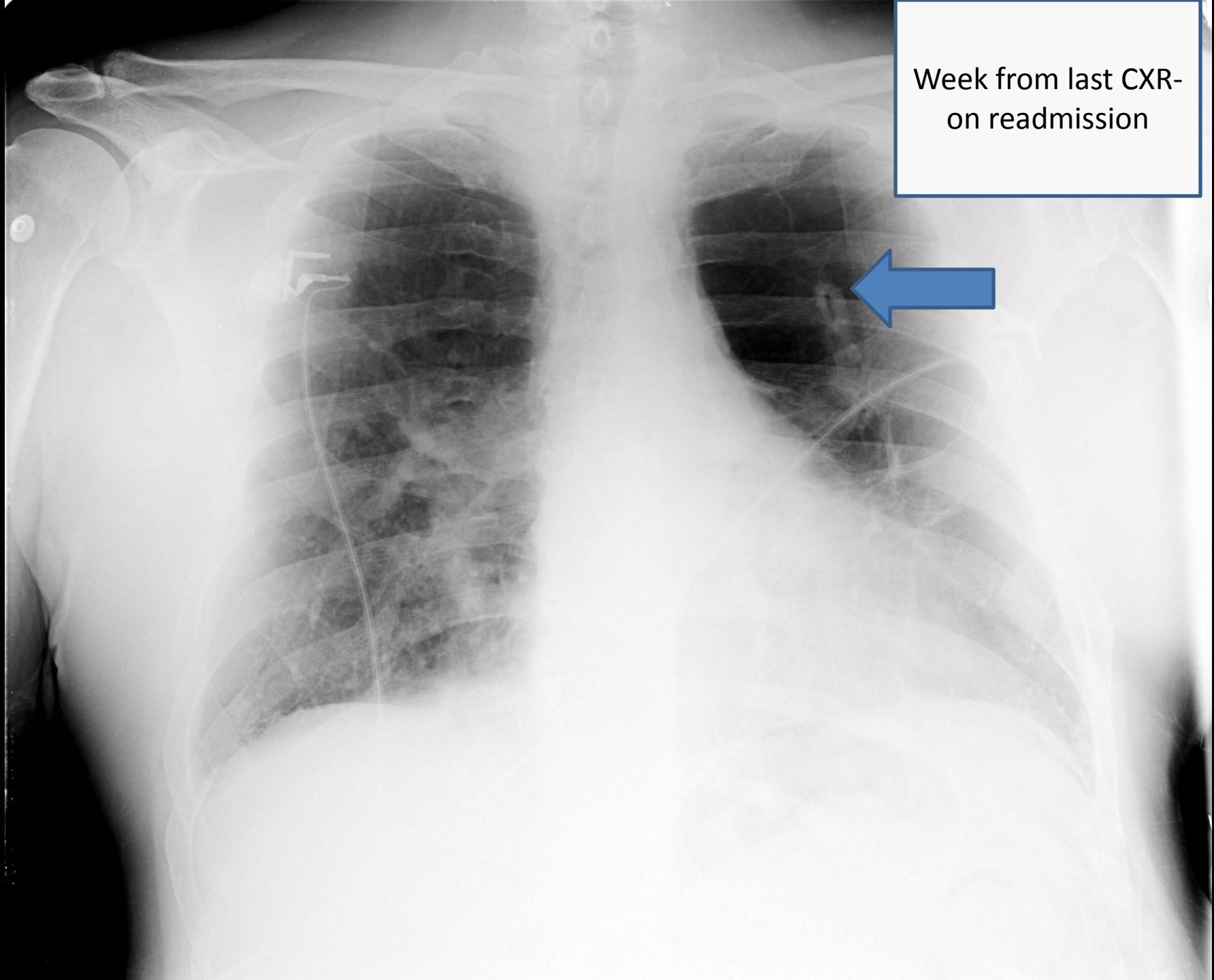
Patient f/up

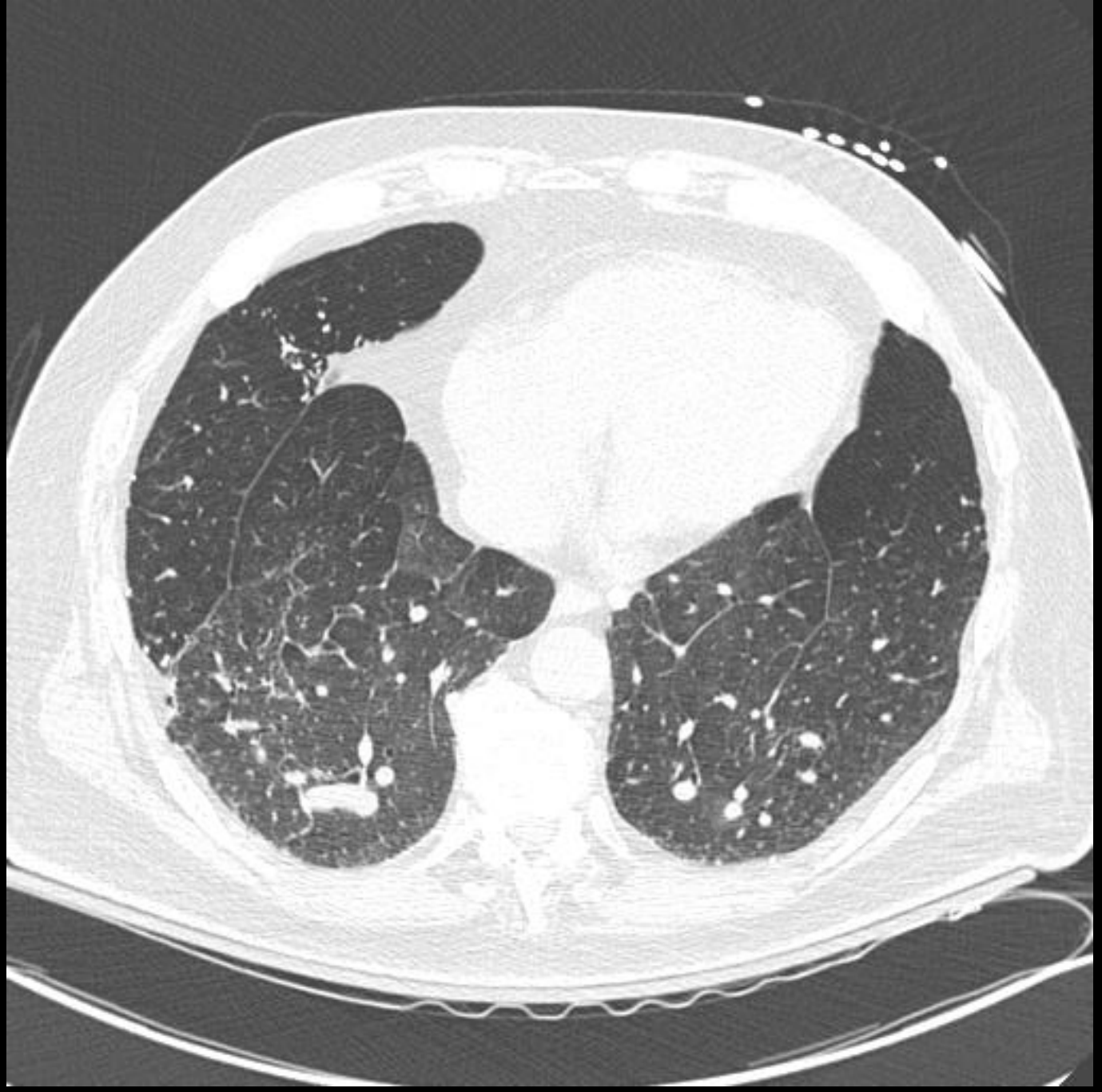
- Patient reports feeling well and wants to be discharged home

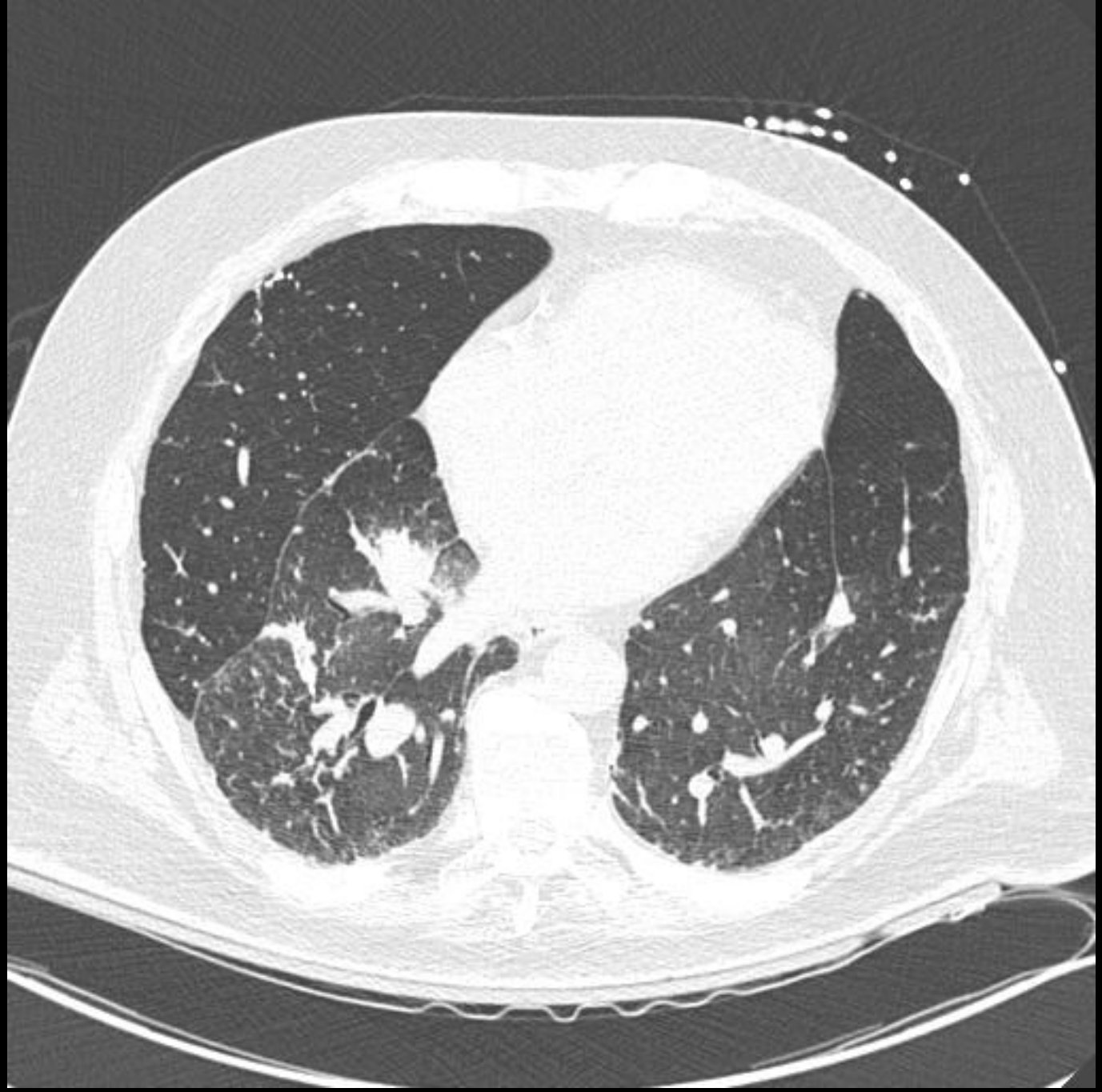
- What should be done?
- What public health measures need to be taken?
- What should the pt. be treated for?

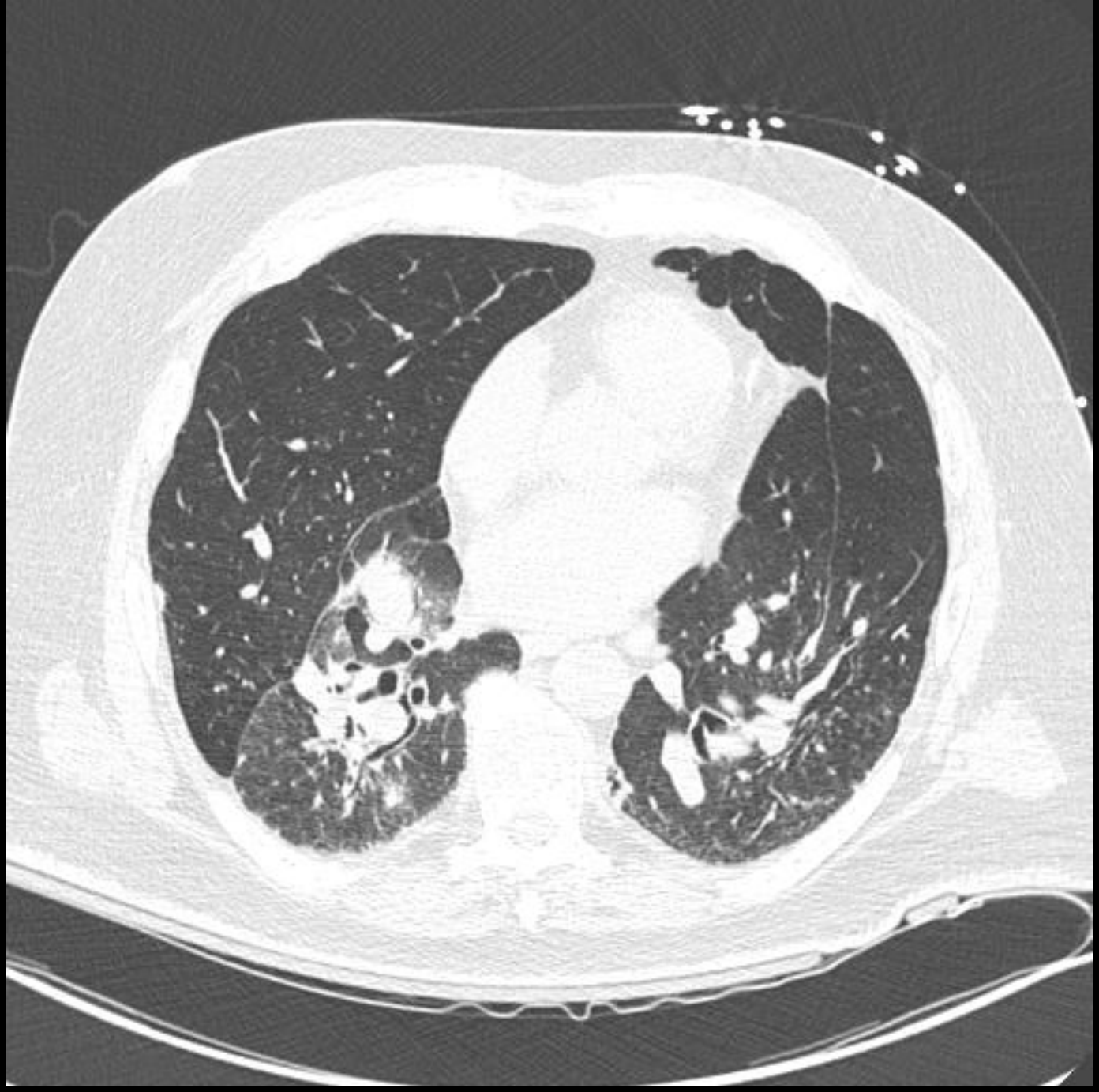
Pt. returns

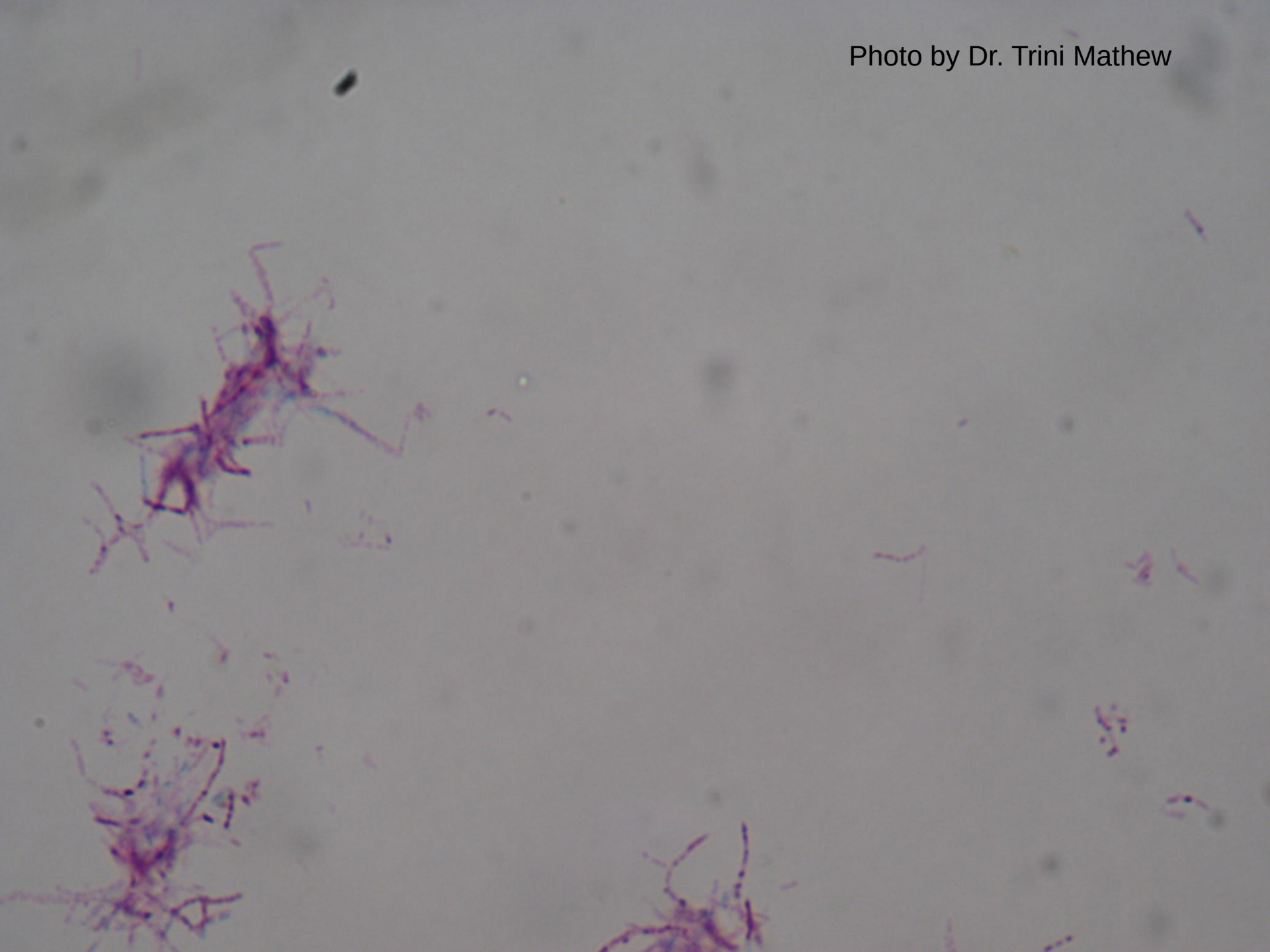
- BCx 2/4 + for GPR over the weekend
- Possible etiologies?
- Repeat BCx- negative


Week from last CXR- on readmission





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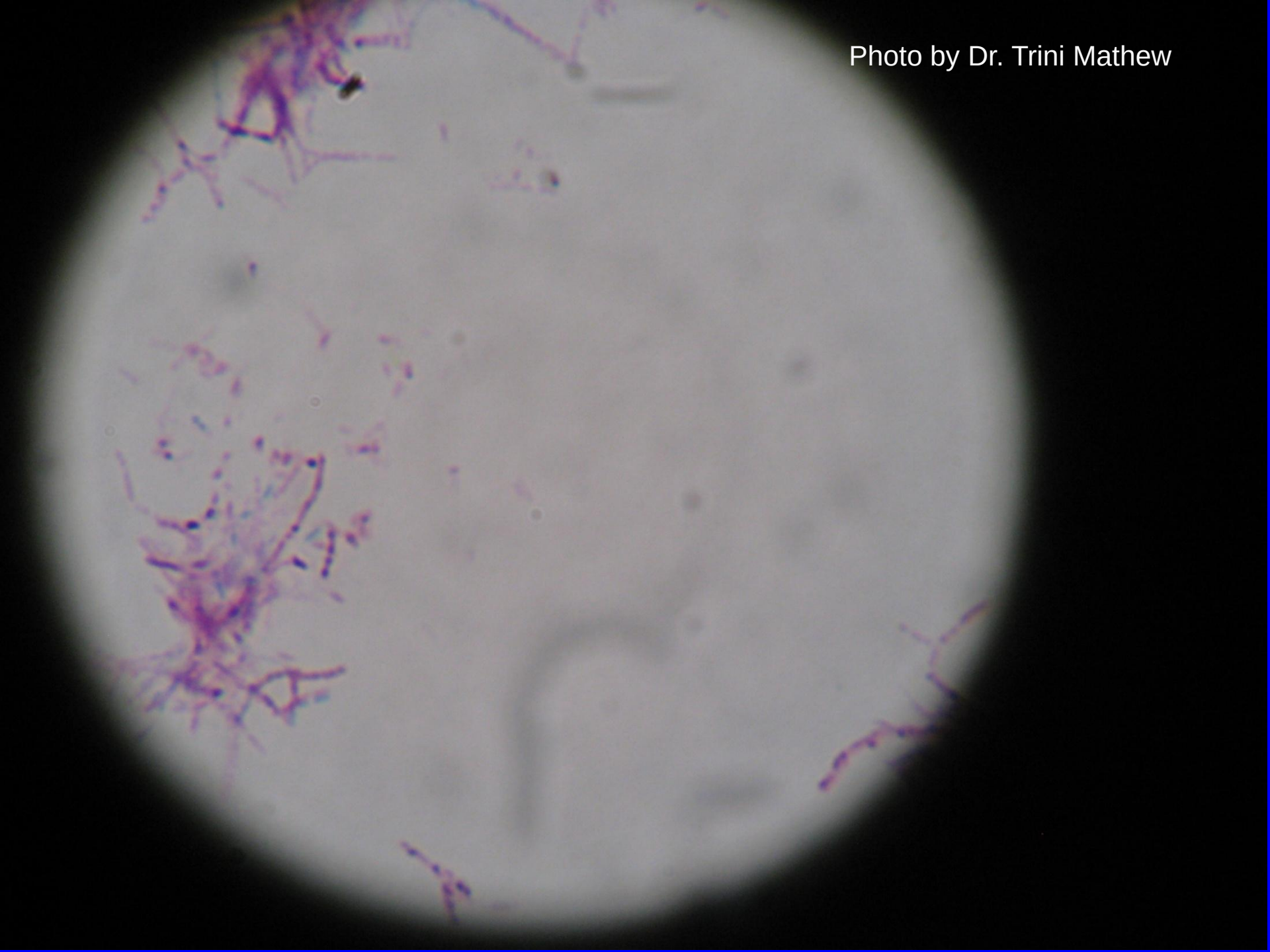
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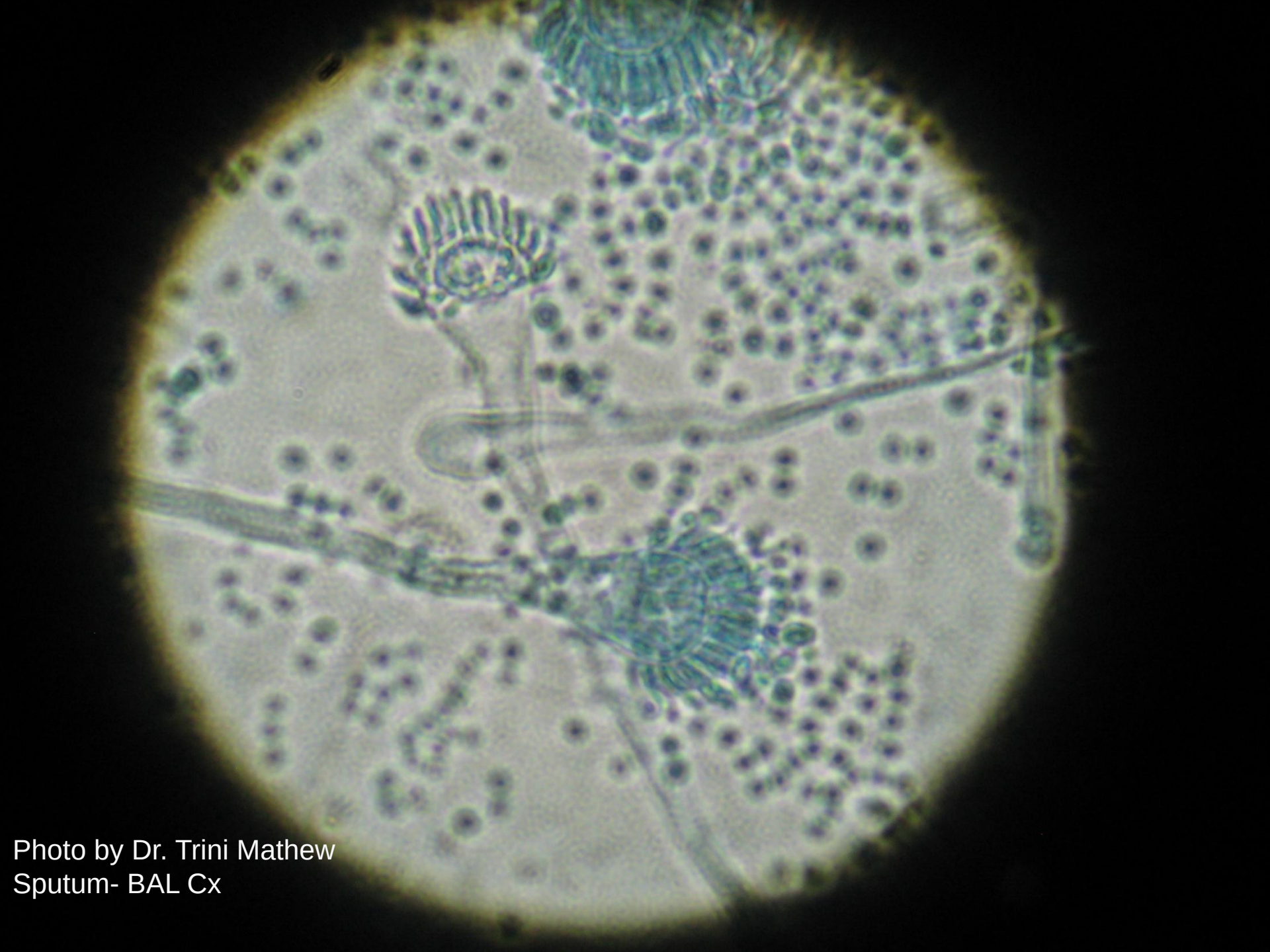
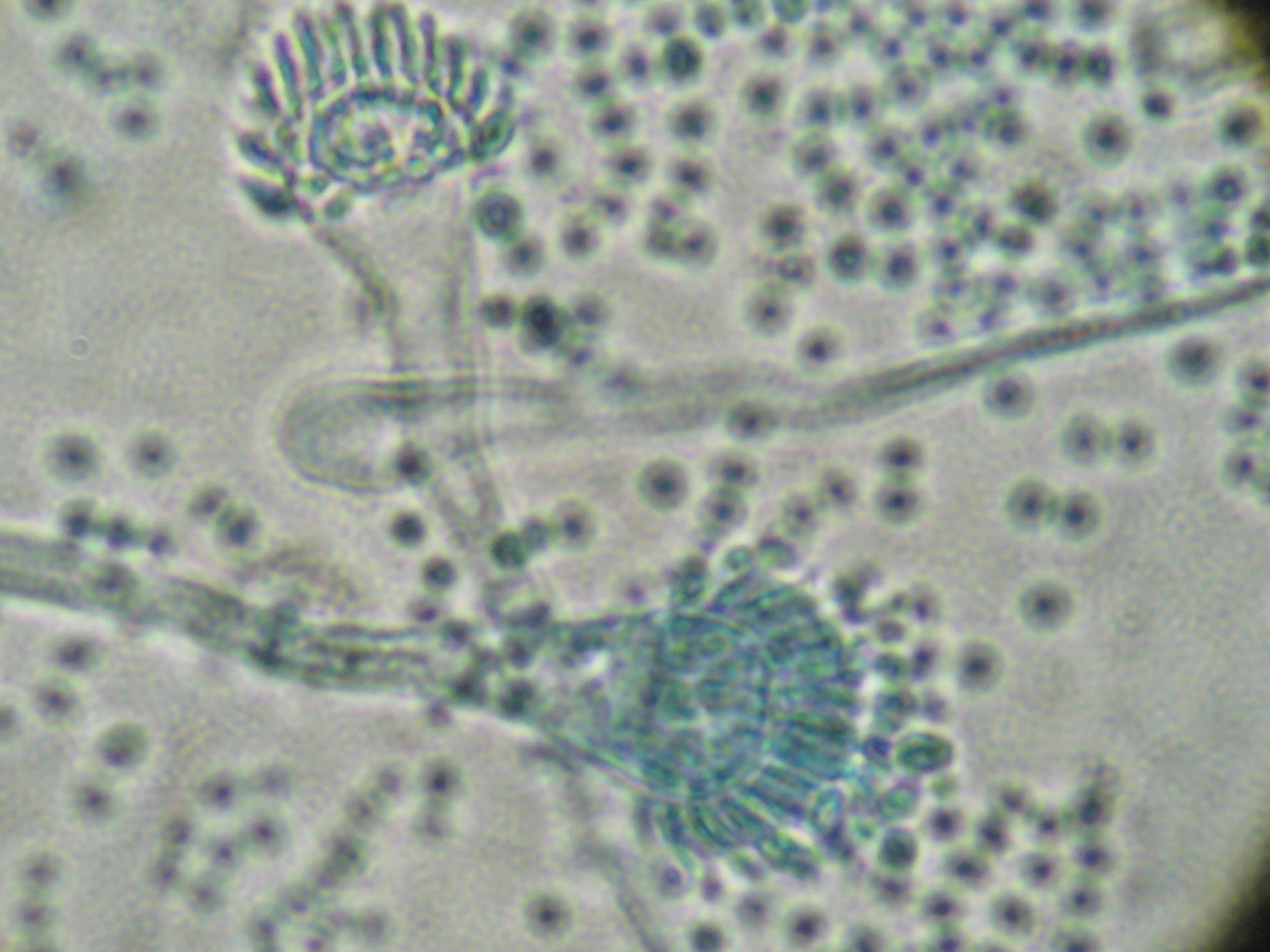


Photo by Dr. Trini Mathew
Sputum- BAL Cx



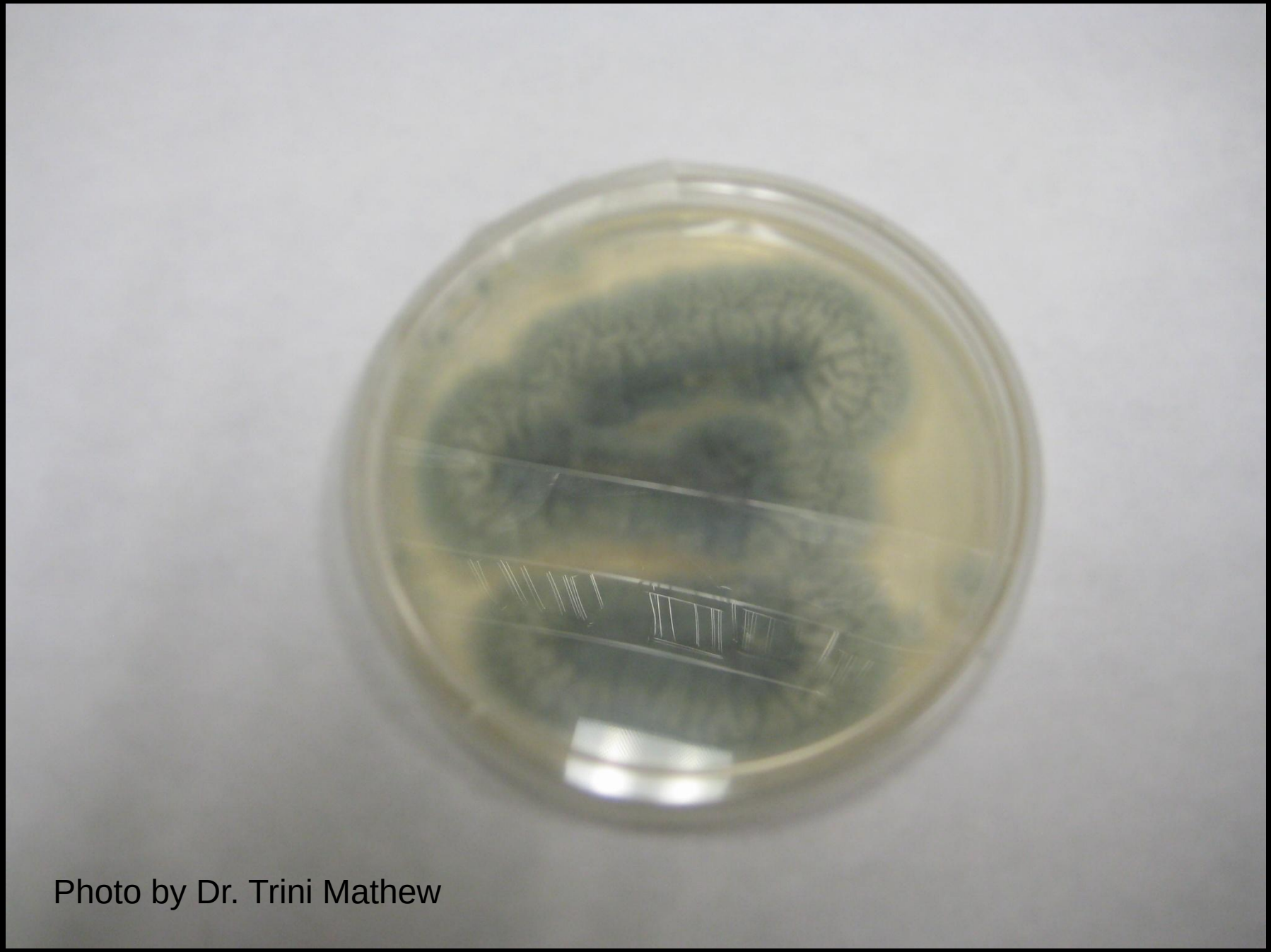


Photo by Dr. Trini Mathew

Hospital Course

- Pt. had Listeria bacterimia- Tx with IV Ampicillin

- Also had significant transaminitis (ALT peak in 200; AST peak 200)and CPK elevations (peak 4500)

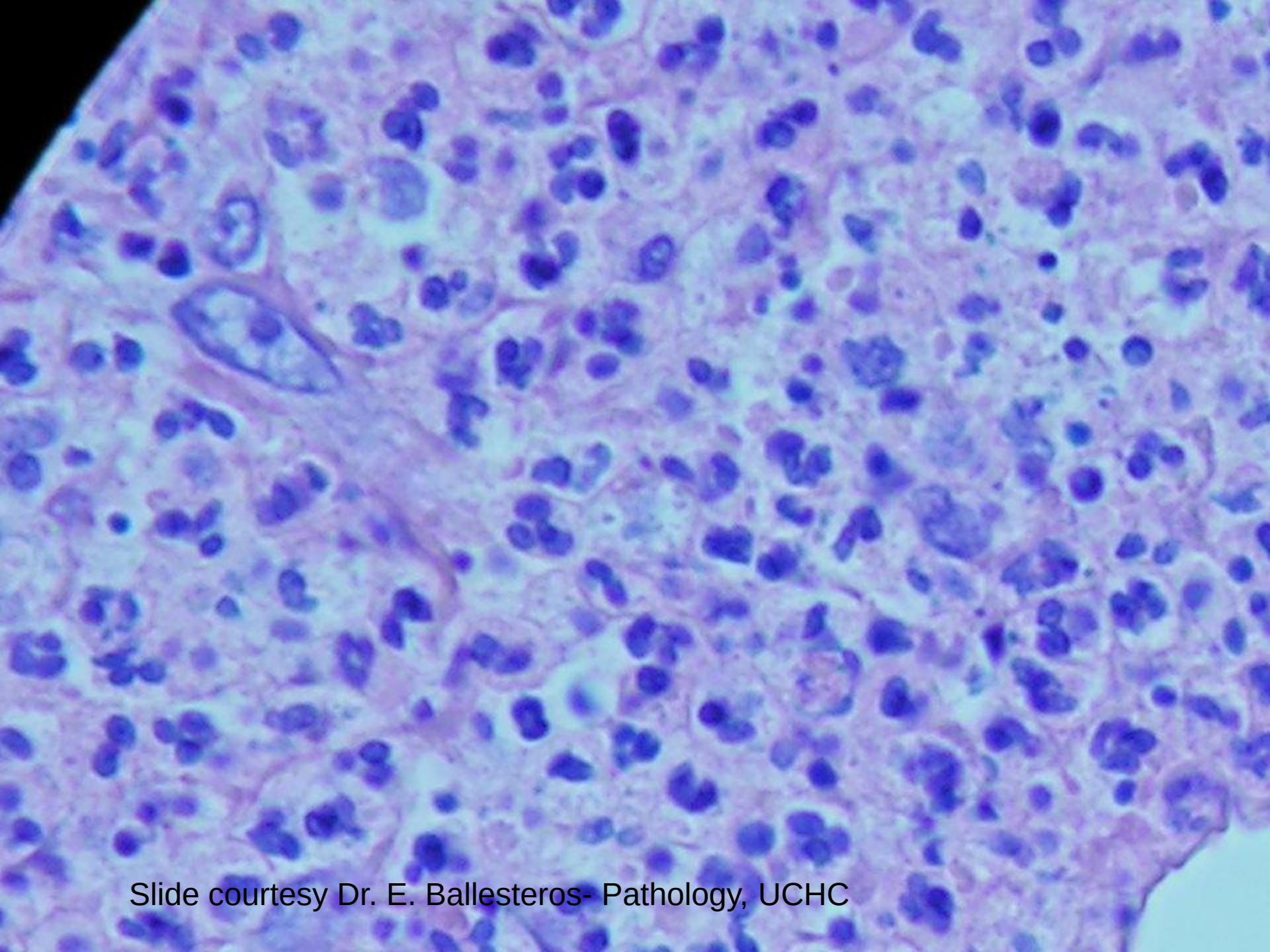
Hospital course

- Sputum and BAL smear + AFB x 2 days
- Skin….. Any takers….?

- What antimycobacterial regimen? (lung and soft tissue tx)

Tissue Pathology

Slides courtesy Dr. E. Ballesteros-Pathology, UCHC



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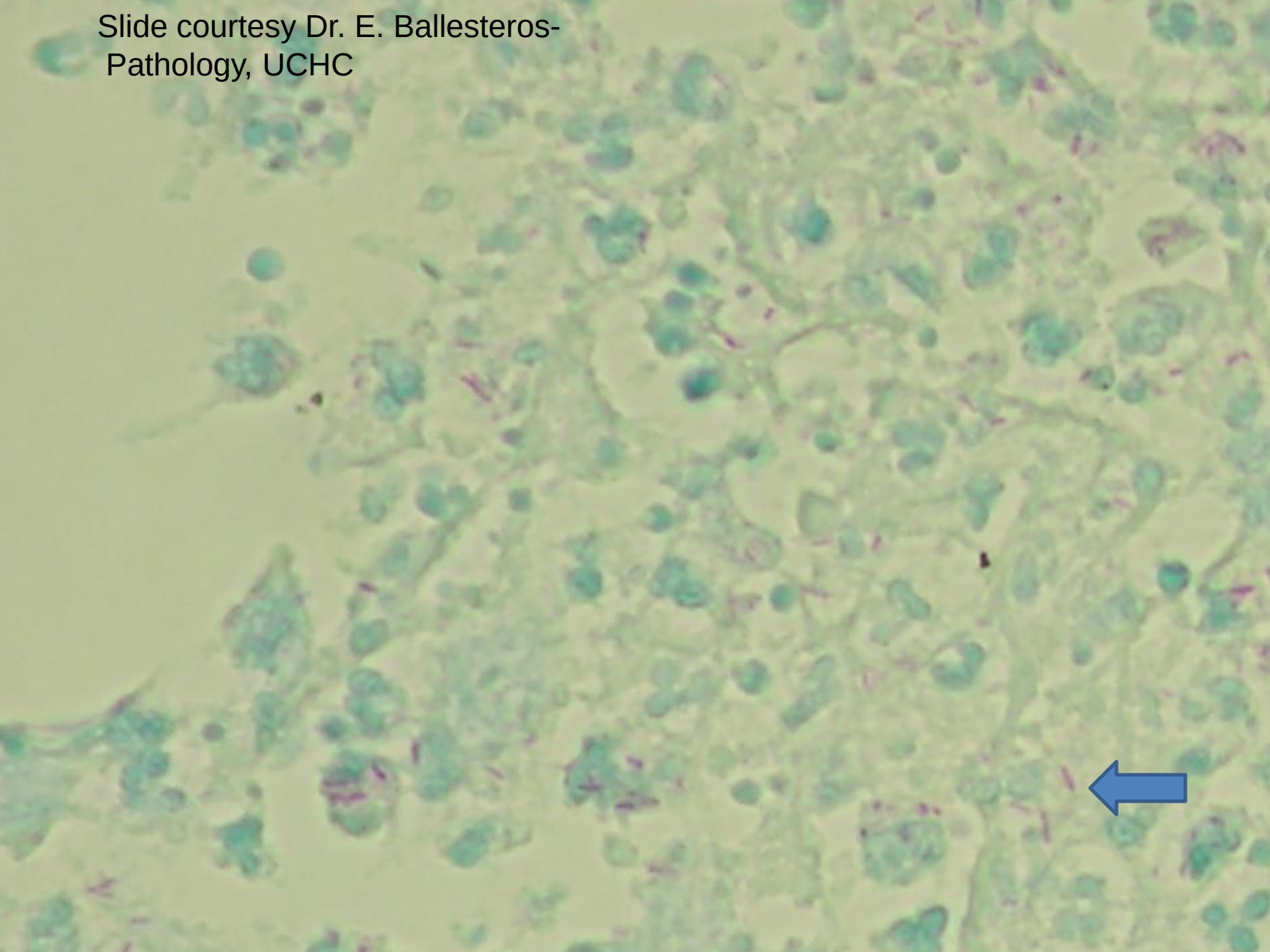

Treated with

- **Initial regimen: Azithro/Rifabutin/Ethambutol/Levaquin**
- **Then later was on Azithro/ Rifabutin/Ethambutol**
- **Then changed to: Rifabutin/Ethambutol/Doxycycline**

AFB tissue Culture result

- *M. marinum* Sensitive to
- Amikacin
- Doxycycline
- Ethambutol
- Rifampicin
- Trim/sulfa

Blood AFB + growth approx. 5 weeks later- *M. marinum*

Case Summary

- **TNF- I- cause immunosuppression**
- **Disseminated *Mycobacterium marinum* infection with other pathogens**
- **Long term treatment required**

References

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