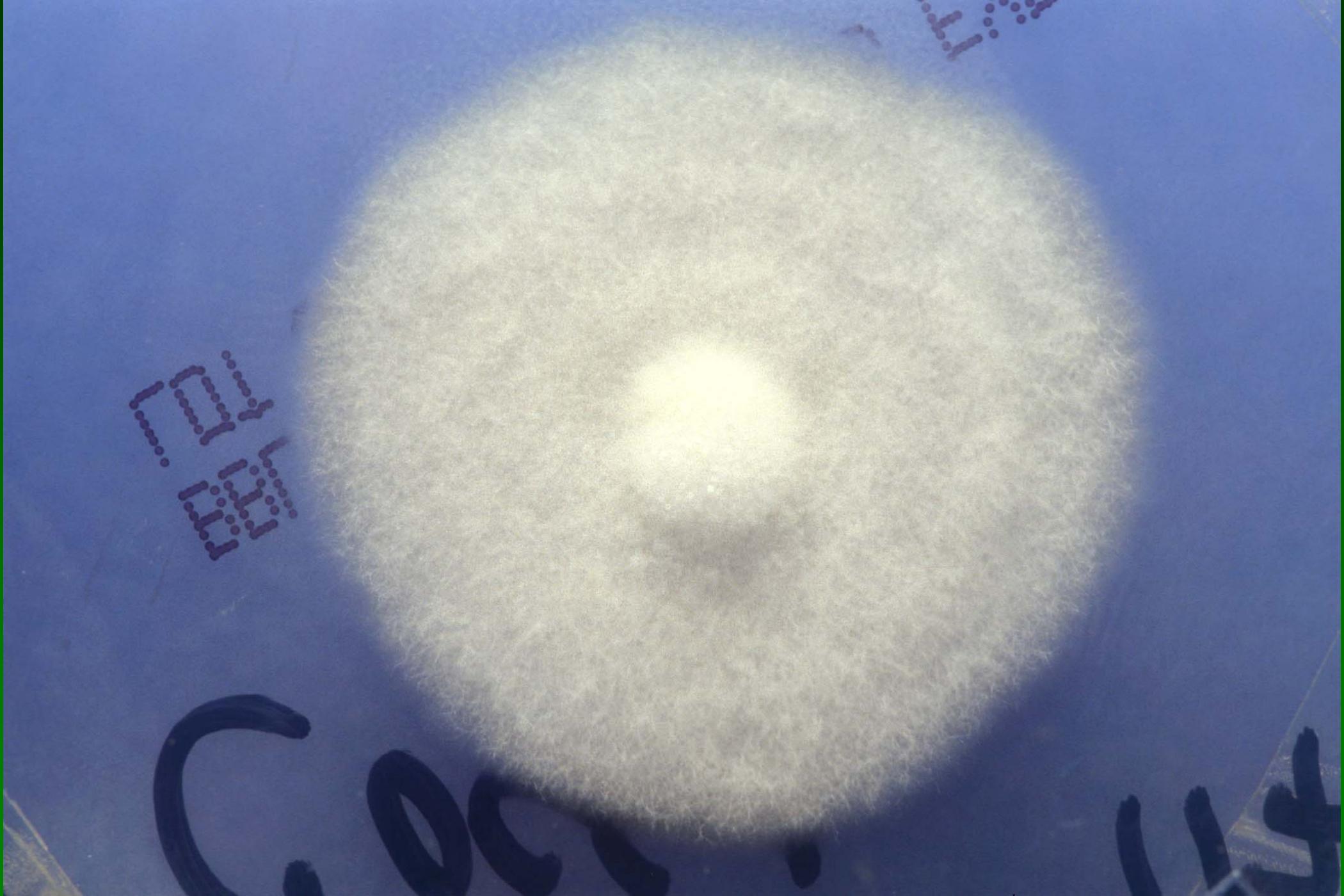






**Disseminated  
coccidioidomycosis:  
Valley Fever that escaped the  
lungs**



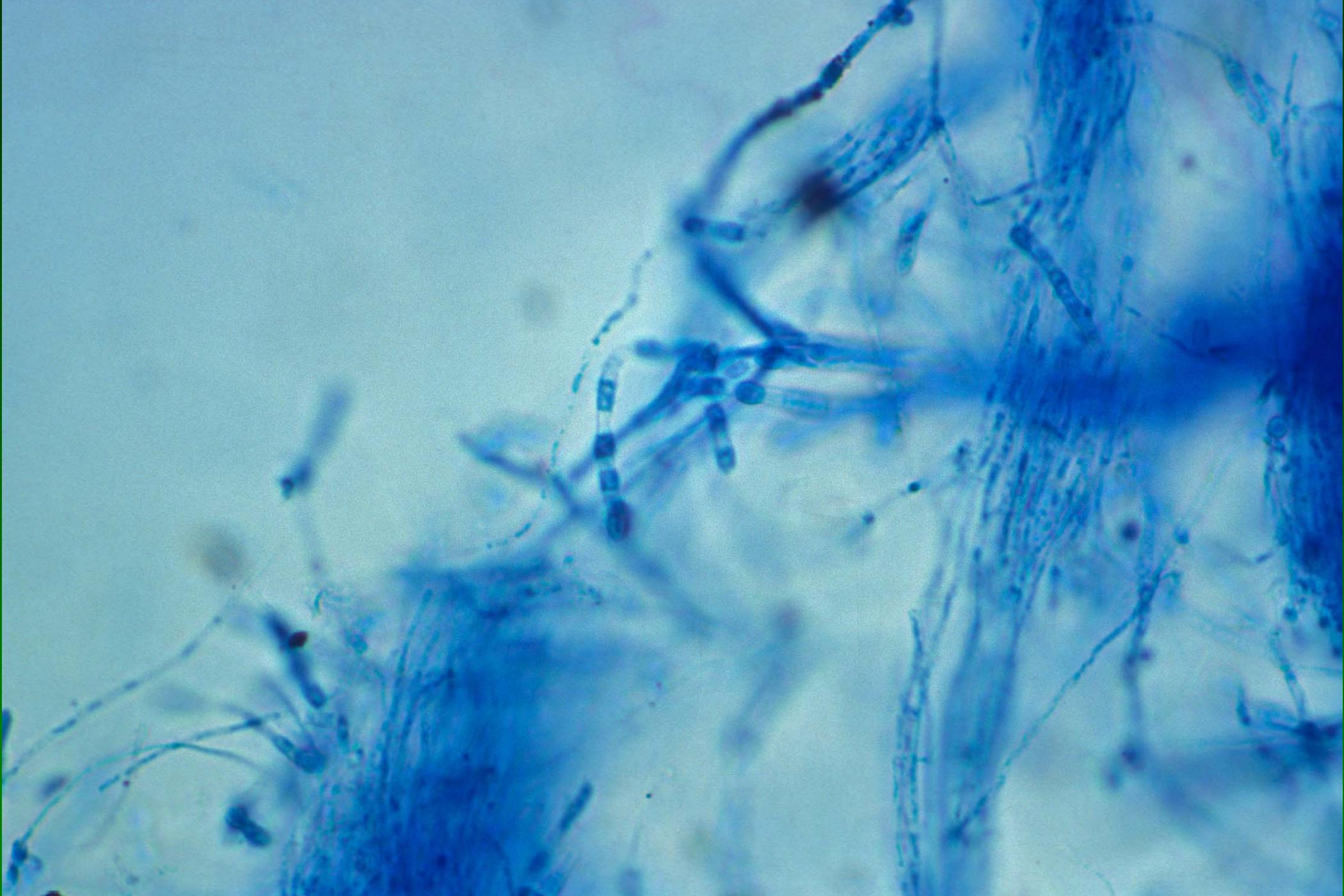


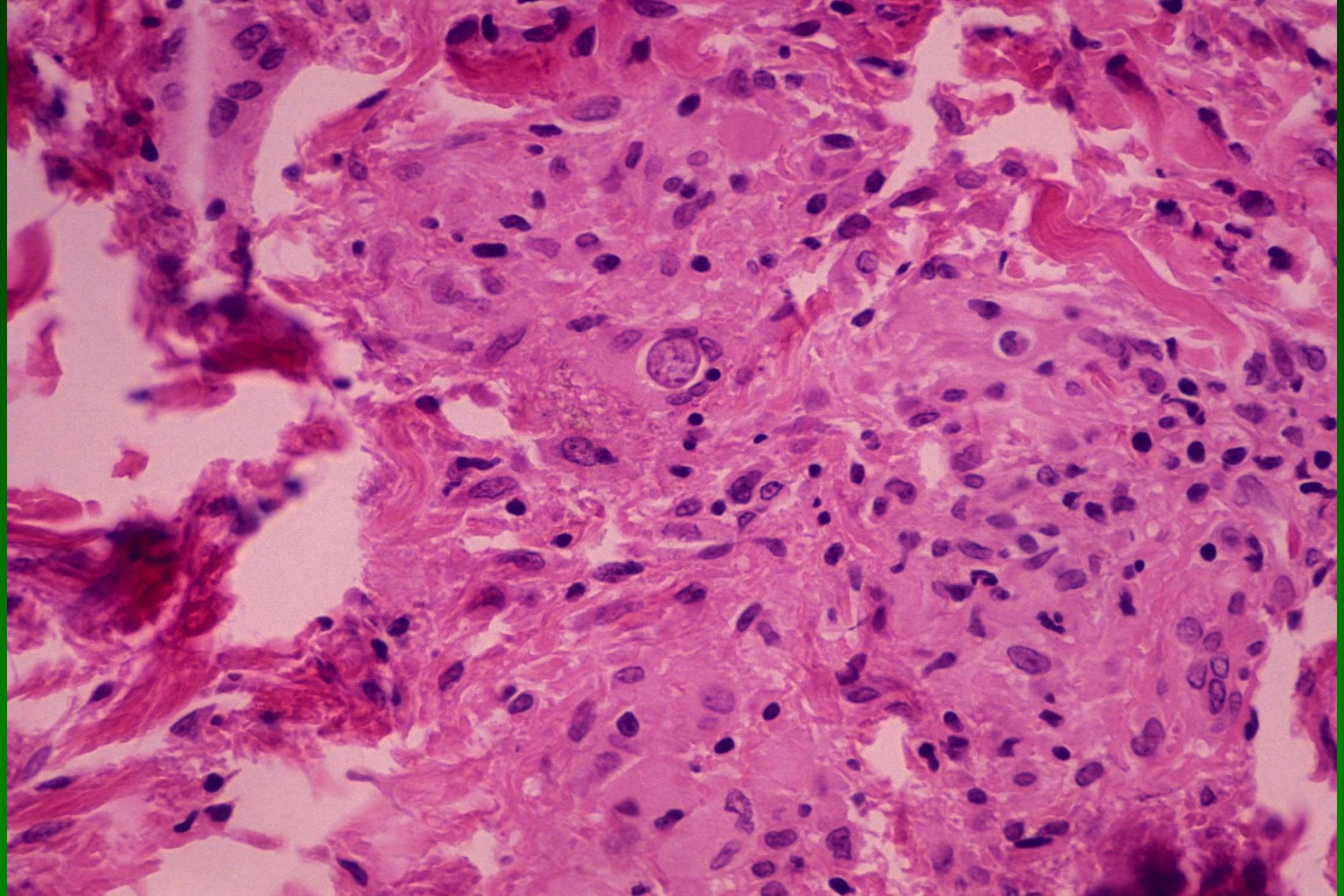
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# Normal course after infection with *Coccidioides*

- No recognizable symptoms (2/3)
- Self-limited illness (most of the remainder) with:
  - Fever
  - Skin rash
  - Joint pain
  - Cough and chest pain
  - Fatigue that lasts weeks to months

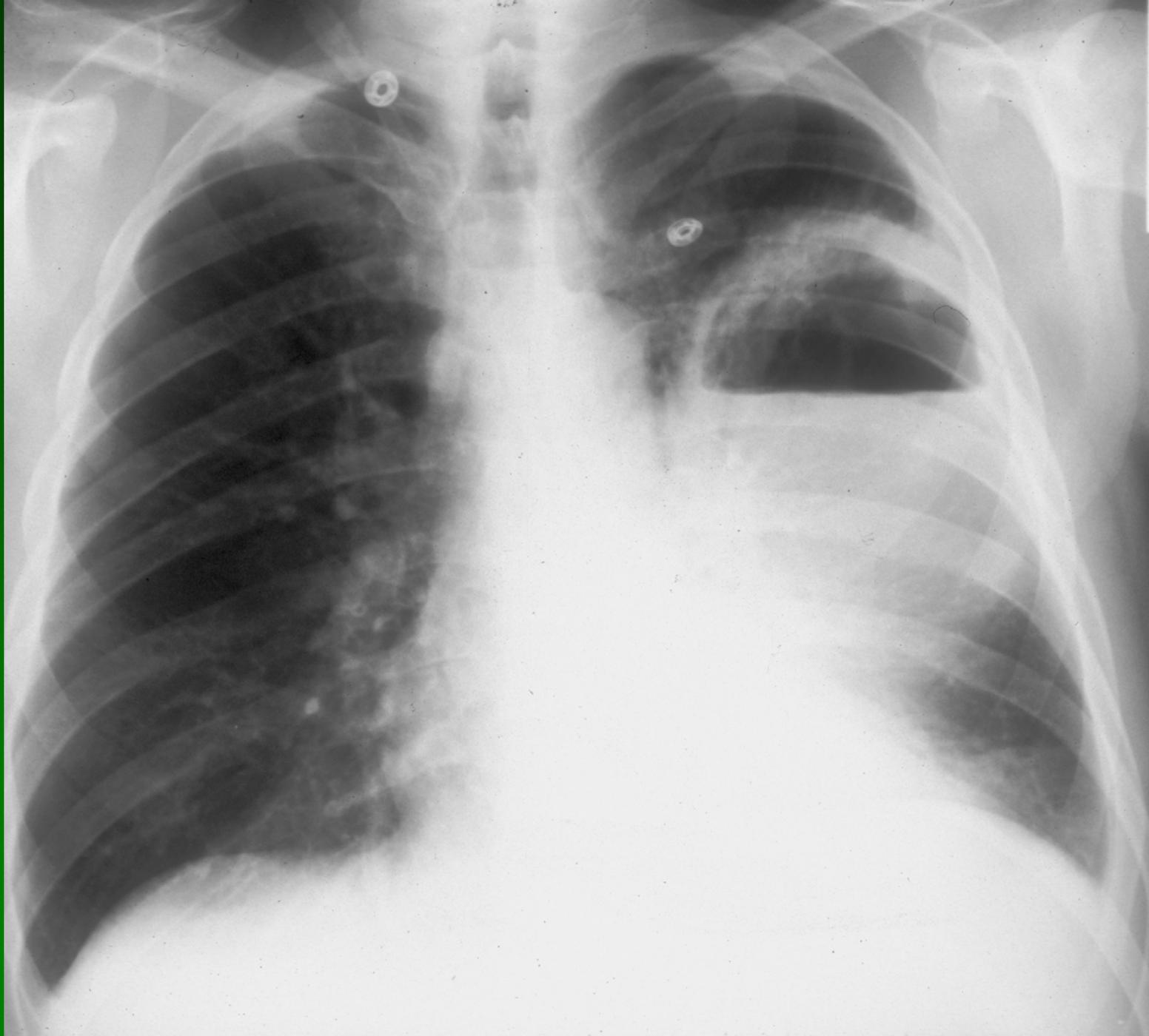


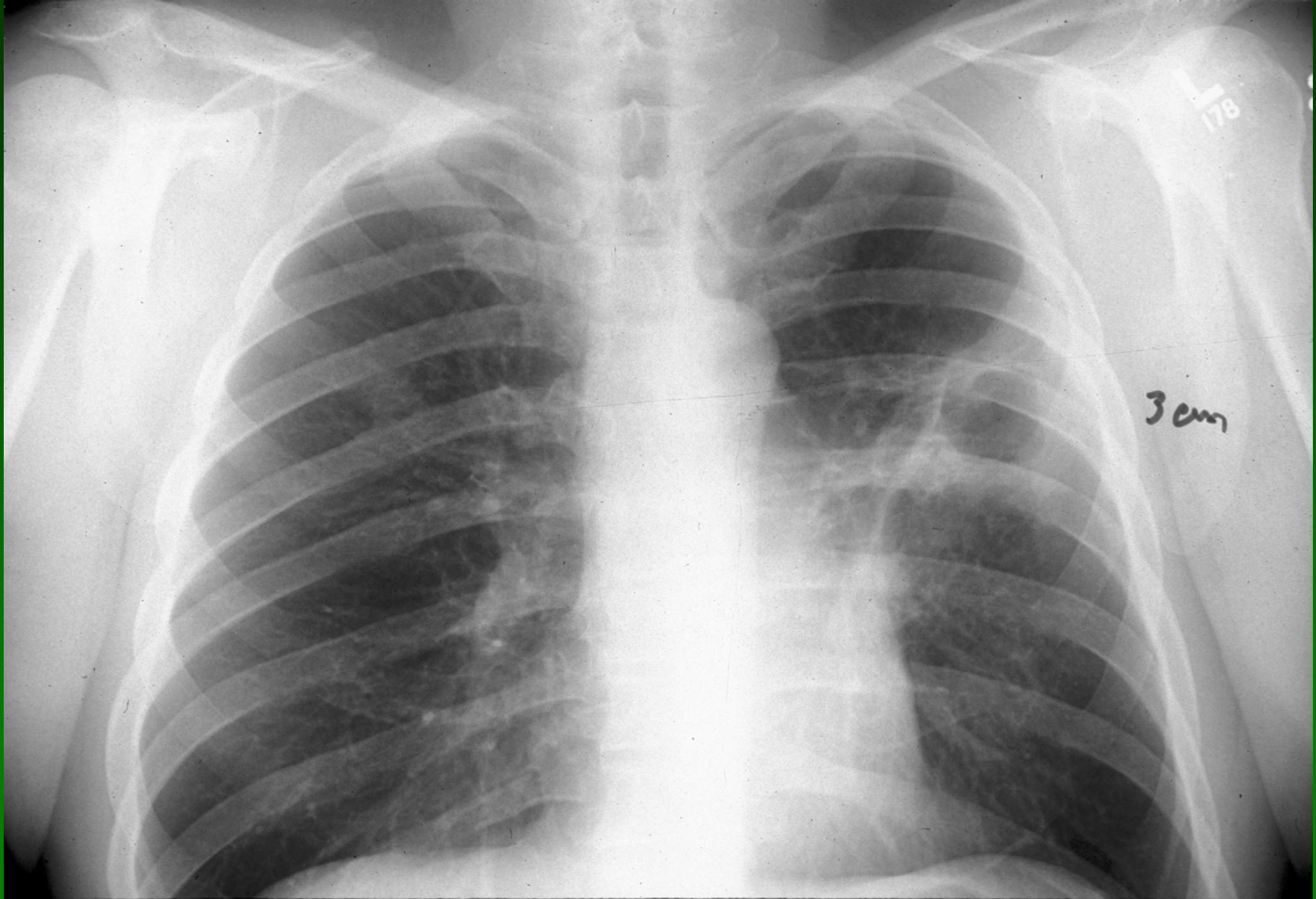




# The remaining patients

- Complicated pulmonary infection
  - Nodule that remains after the pneumonia
    - (looks just like lung cancer on the X-ray)
  - Cavity
    - (more common in diabetics)
    - (may cause symptoms)
    - (doesn't go away with medical treatment)
  - Other more extensive lung infection that can look just like TB





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# Disseminated infection (outside the lung)

- Who is at risk?

# Risk factors for dissemination

- Anyone
- Certain racial/ethnic groups
  - African descent
  - Pacific Islanders
- Compromised immunity
  - High dose prednisone
  - Organ transplant
  - AIDS

# Risk Factors

Risk Factor	Number
HIV infection	14
Steroids	19
TNF blockade	2
Organ tx	11
Hem/Lymph Malignancy	7
Renal failure	4
Chronic liver disease	4
Autoimmune (no steroids)	3
Pregnancy	2
Ifn-gamma Rec Def	1
None	80
Unknown	3

# Ethnicity Summary

Race	UMC Inpatient (%)	Tucson (%)	Arizona	Cocci Patients
White	51.5	54	55	41
Hispanic	24.8	36	25	21
Black	3.4	4	3	30
Asian	0.6	2	2	5
Native Am	4.1	?4	5	4
Unknown	14.0			

# Odds ratio by ethnicity

Ethnicity	OR (using UMC stats)	OR (using AZ stats)	OR (using Pima Cty stats)
White/European	1	1	1
Hispanic	1.06	1.12	0.76
Native American	1.14	1.12	NA
Asian	10.2	3.26	3.20
Black/African	10.9	13.4	9.8

# Ethnicity Summary

(OR in parentheses, compared to white)

Race	non-CNS (%)	Meningitis (%)	Current study (%)	Pima (%)
White	42	42	41	54
Hispanic	20 (0.71)	48 (1.7)	21(0.76)	36
Black	29 (9.3)	4 (1.3)	30 (9.8)	4
Asian	5 (3.2)	11 (7)	5 (3.2)	2
Native Am	5 (1.6)	7 (2.2)	4 (1.1)	?4

# Where does it go?

- Skin
- Bones and joints
- Central nervous system (meningitis)
- Almost anywhere else

# Disseminated cocci by type

Body Part	Number	Male	Risk factor	Death
Hematogenous	41	22	36	14 (5/9 with fungemia)
Multisystem	15	10	5	1
Axial skeleton	28	21	6/26	
Peripheral skel	26	18	11	
Soft tissue	15	13	4/14	
Visceral organ	9	4	3	
Skin	16	9	2/15	
Totals	150	97	67/147	15 (8 male; 14 had risk factors)



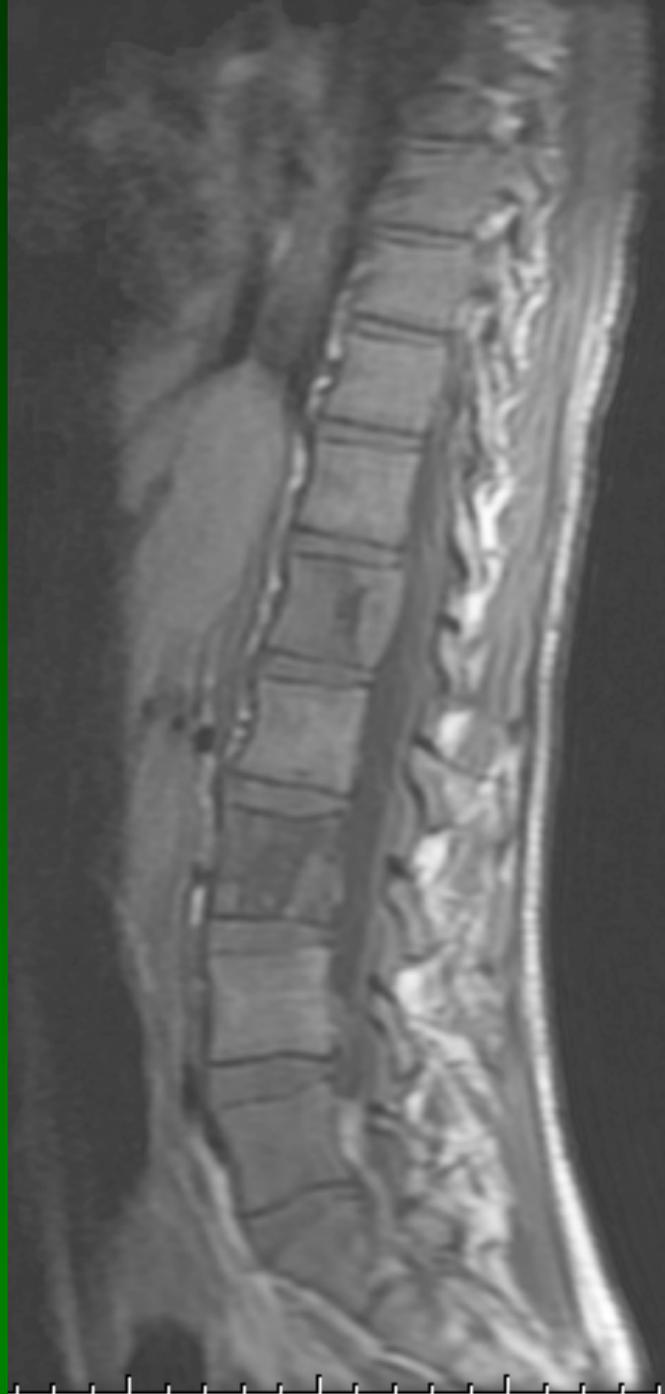


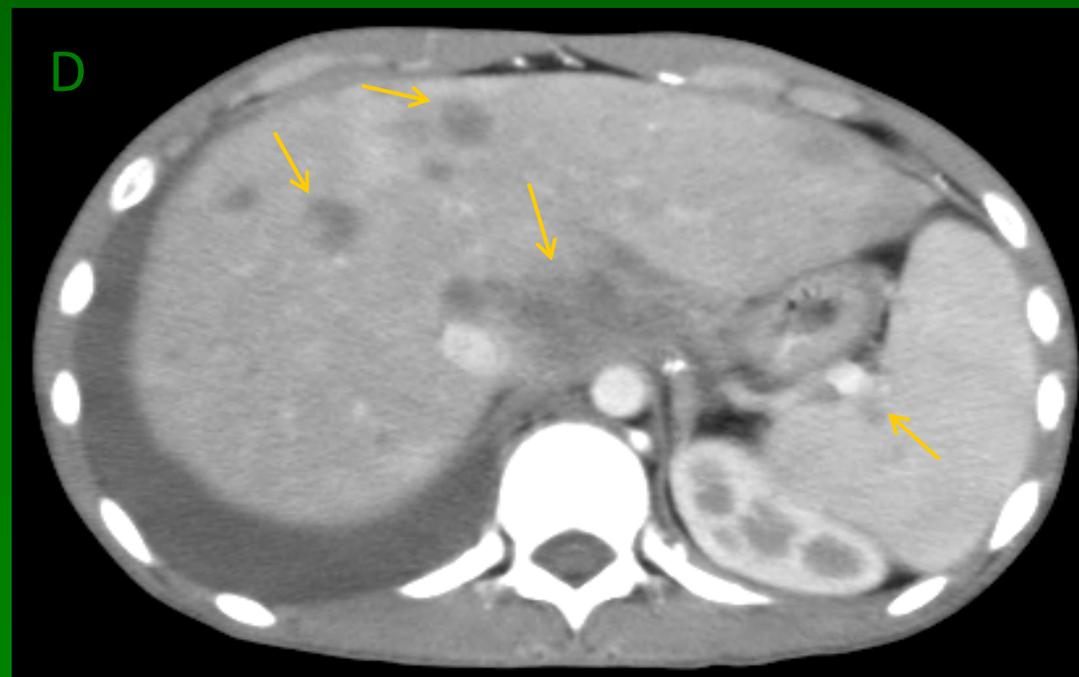
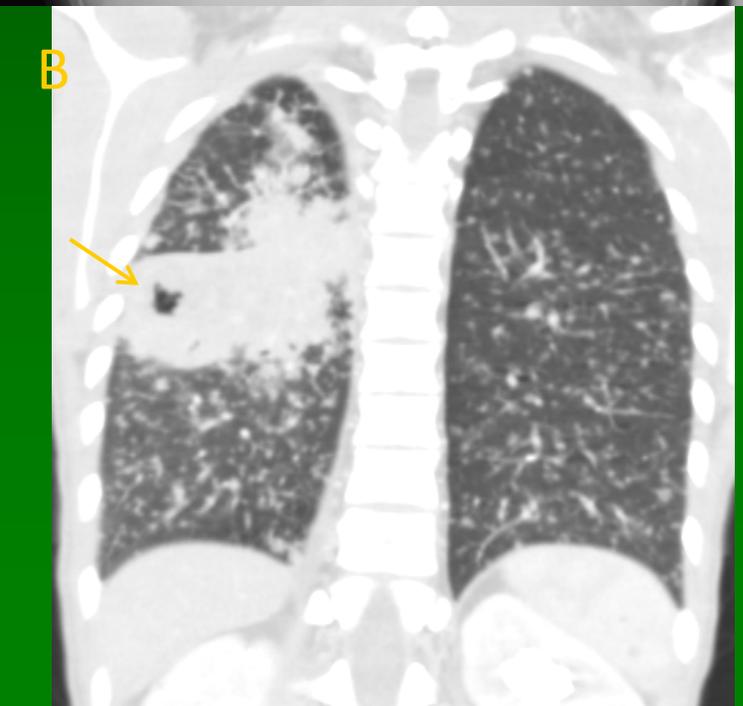
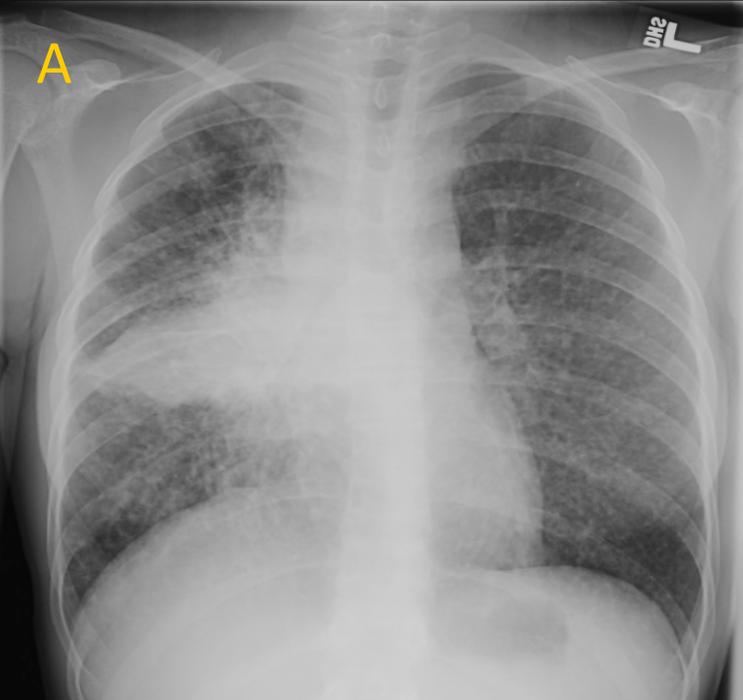






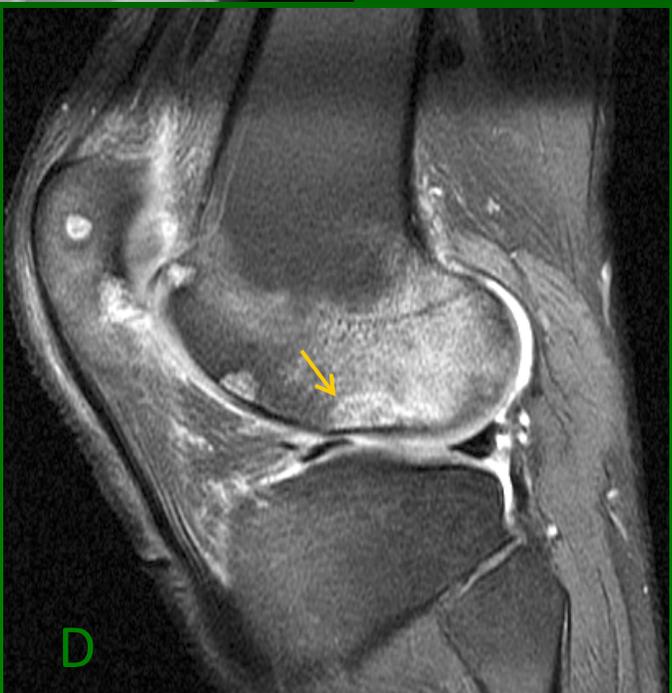
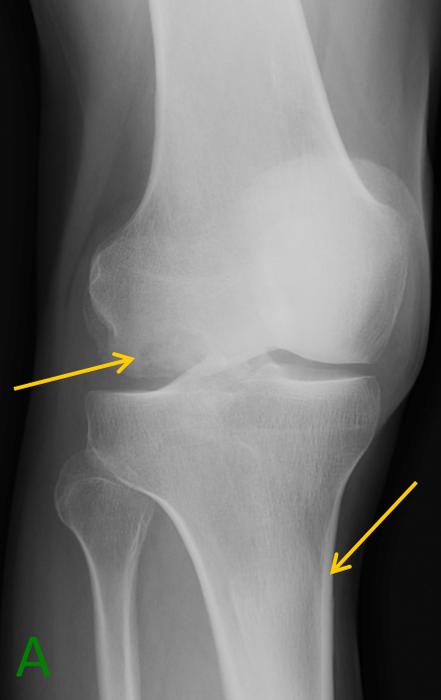












A 46 year old male with liver disease presented with right knee pain and effusion. *Coccidioides* species grew from a knee aspirate.

# How are patients with disseminated cocci treated?

- All require treatment
- Many require surgery to remove as much infected material as possible
- All require medical treatment, either lifetime or a very long time
  - Azole (fluconazole, voriconazole)
  - Amphotericin



The End



