

Indolent Lung Infection in a Person Living with HIV

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AETC Program National Centers and HIV Curriculum

- **National Coordinating Resource Center** – serves as the central web –based repository for AETC Program training and capacity building resources; its website includes a free virtual library with training and technical assistance materials, a program directory, and a calendar of trainings and other events. Learn more: <https://aidsetc.org/>
- **National Clinician Consultation Center** – provides free, peer-to-peer, expert advice for health professionals on HIV prevention, care, and treatment and related topics. Learn more: <https://nccc/ucsf.edu>
- **National HIV Curriculum** – provides ongoing, up –to-date HIV training and information for health professionals through a free, web –based curriculum; also provides free CME credits, CNE contact hours, CE contact hours, and maintenance of certification credits. Learn more: www.hiv.uw.edu

Learning Objectives

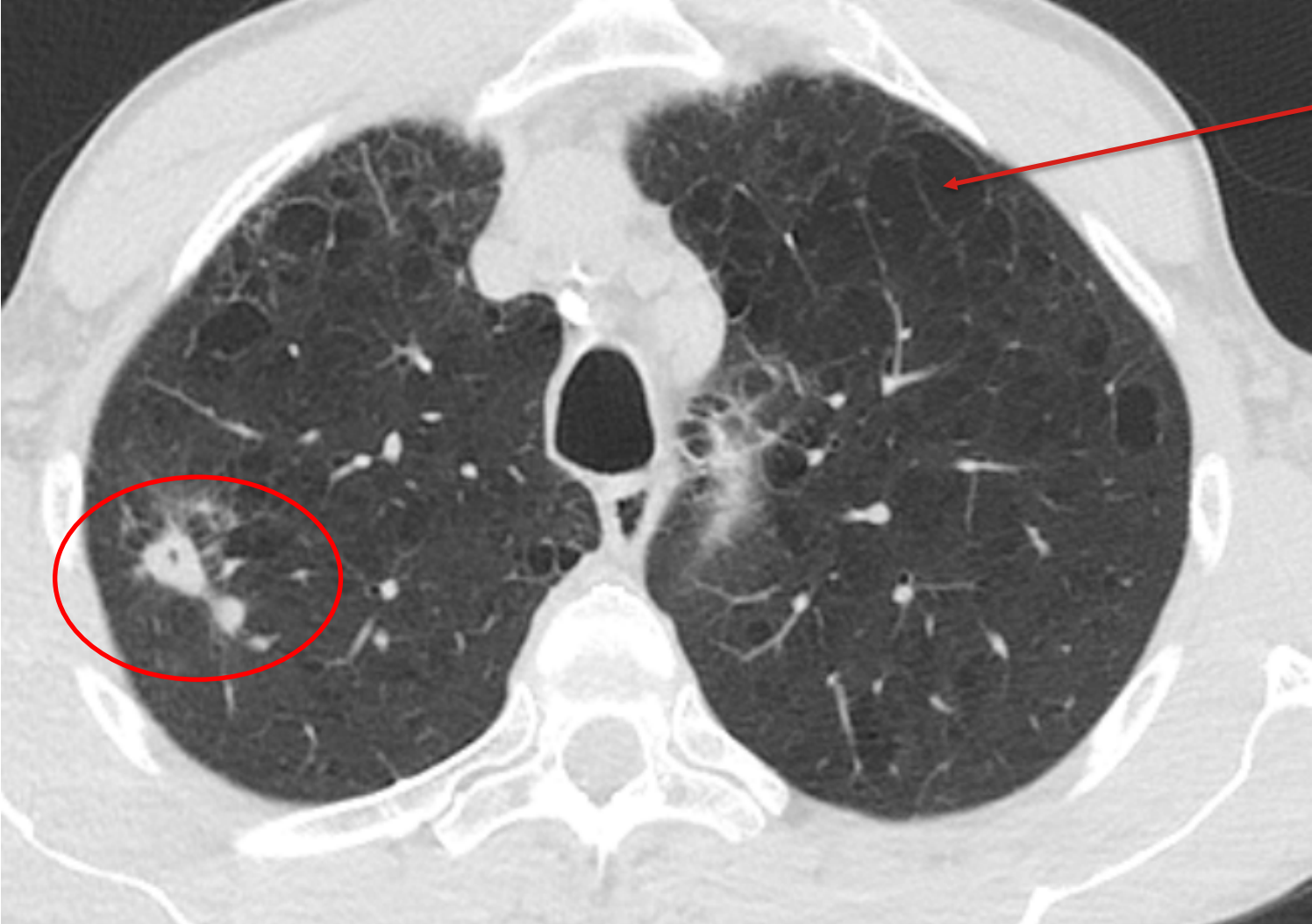
- *Describe the presentation of fungal infection in a PLWH*
- *Differentiate a rash caused by fungal infection from seborrheic dermatitis*
- *Be able to decide when to discontinue antifungal therapy in a PLWH*

Case History

57-year-old male referred to the ID clinic after 1.5-year history of productive cough, progressive dyspnea, and weight loss.

- Treated for bacterial pneumonia
- CT chest imaging: right upper lobe nodule
- PET scan: enlarging nodule concerning for malignancy
- Biopsy: nondiagnostic
- Referred to University of Kentucky

CT Chest



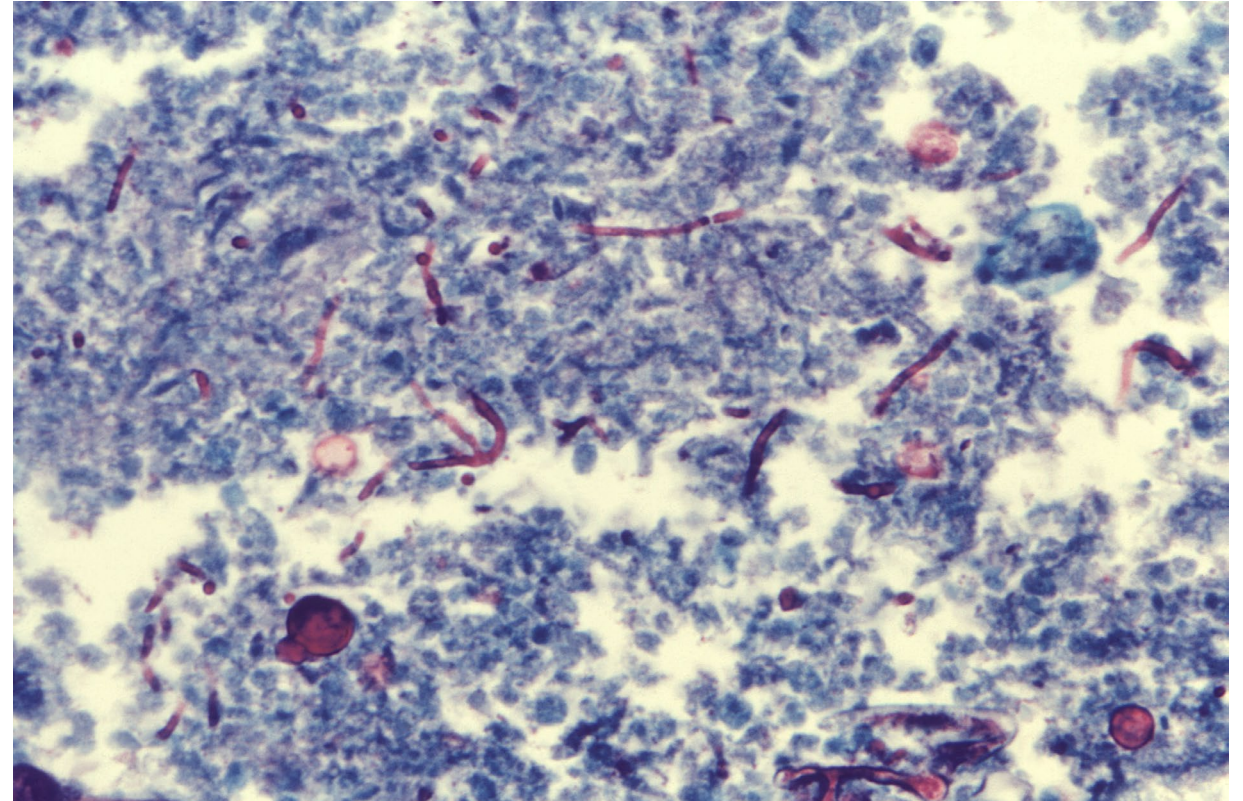
Case History

- Underwent wedge resection
- Pathology sent



Case History

- Pathology: necrotizing granulomatous inflammation
- Referred to our ID clinic



From CDC: <https://phil.cdc.gov/Details.aspx?pid=15786>

Case – ID Visit

- Reported unintentional weight loss, cough, dyspnea, persistent rash
- Prior history of several male sexual partners without protection
- Remote history of IVDU

Case – ID Visit



- Traveled to Arizona and California 2 years ago for construction work

Case – ID Visit

Exam

- Photo representative of patient's rash
- Located on face, below chin, chest, and back
- Small degree of scaling (less than this photo)



Used with permission from DermNet.org

Case – ID Visit

- Multiple risk factors for HIV
 - IVDU
 - Unprotected sex with multiple male partners
- Rapid test for HIV
 - Positive
- Pathology from lung: suggestive of *Coccidioides* species
- Serology: *Coccidioides immitis* antibody positive



AETC NCRC images

Case

In summary, 57-year-old male with progressive cough, dyspnea, weight loss, and history of unprotected sex with male partners and IVDU. Workup thus far suggestive of pulmonary coccidioidomycosis.

New diagnosis of HIV, with coccidioidomycosis possibly representing an opportunistic infection.

Rash on face, chest, and back.

Case

Next steps for ID?

- Treat HIV
 - Start ART
- Treat coccidioidomycosis
 - Start fluconazole
- Rash?



Case - HIV

- Rapid start on bicitgravir/emtricitabine/tenofovir alafenamide
- Test CD4 count
- Prophylaxis?
 - Started trimethoprim/sulfamethoxazole 1 DS tab daily until CD4 count results

Case - Coccidioidomycosis



- Start antifungal therapy
 - Fluconazole 400mg daily
- Test for co-infection
 - Fungal serologies, cryptococcal antigen, *Histoplasma* urine antigen

Case - Rash

- Differential
 - Coccidioidomycosis
 - Seborrheic dermatitis
 - Psoriasis

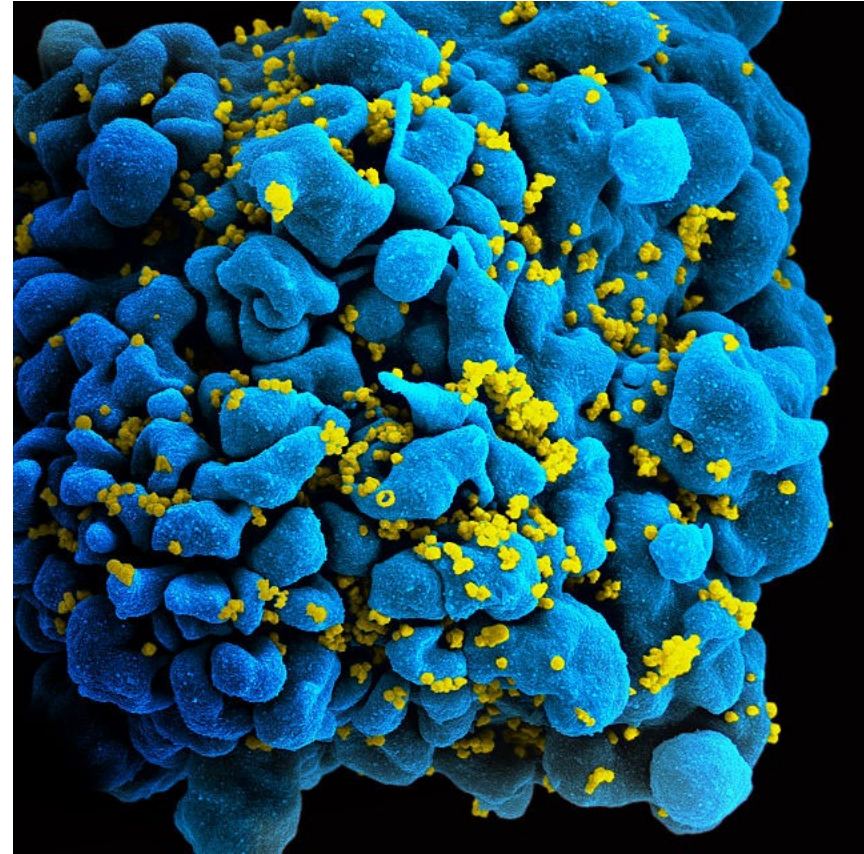


Case

- CD4 count 170 cells/uL
- HIV viral load 552,664 copies/mL
- ART continued
- Fluconazole continued
- Prophylaxis continued

Case – 4 week follow up

- HIV viral load 210 copies/mL
- Tolerating medications
- Rash and cough improved, gaining weight



Wikimedia Commons: https://commons.wikimedia.org/wiki/File:HIV_H9_T-cell.jpg

Case – 3 month follow up

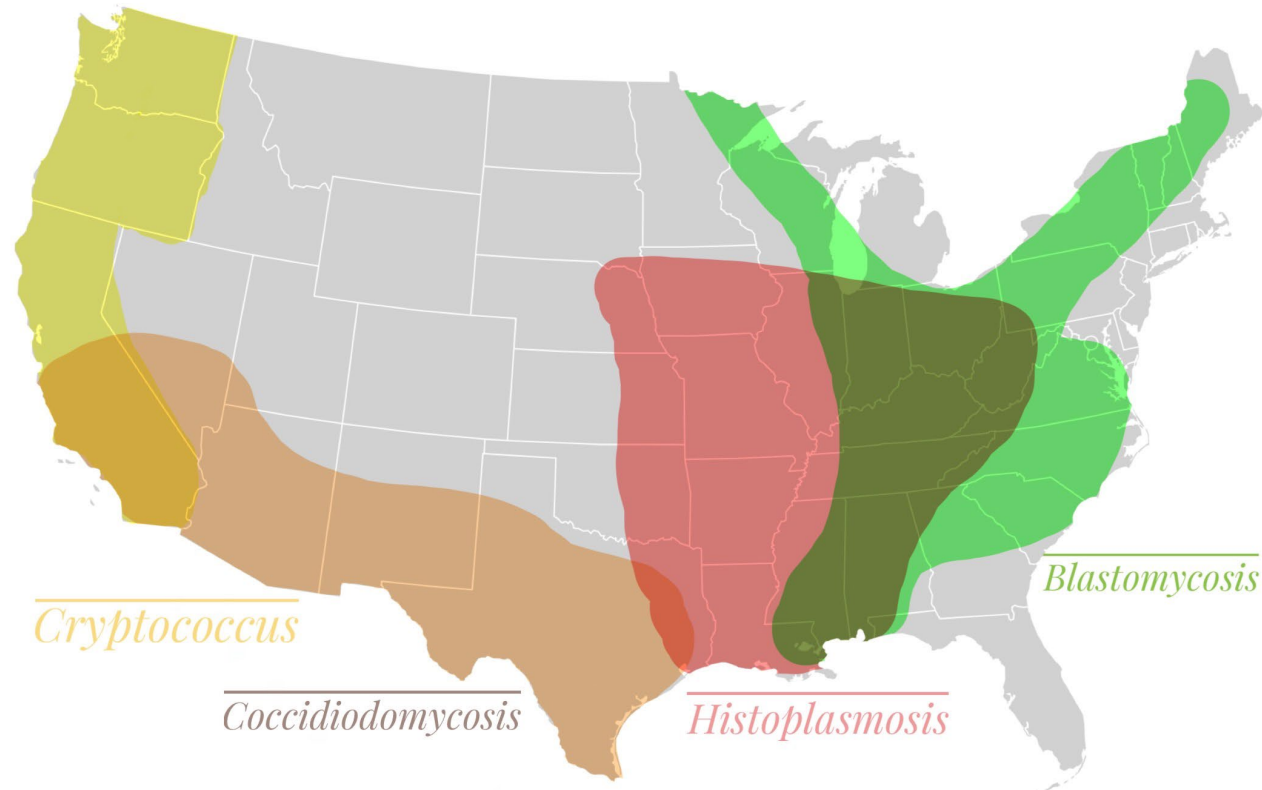
- CD4 count 543 cells/uL
- HIV viral load 51 copies/mL
- Symptoms continue to improve

Case – Latest follow up

- CD4 count 517 cells/uL
- HIV viral load <40 copies/mL
- Rash nearly resolved
- Completed PFTs – mild emphysema, patient cut back on smoking

Coccidioidomycosis

- Endemic mycosis in Southwest US
- Caused by *Coccidioides immitis*
- "Valley Fever"



Coccidioidomycosis- Clinical Disease

Pneumonia – focal/diffuse

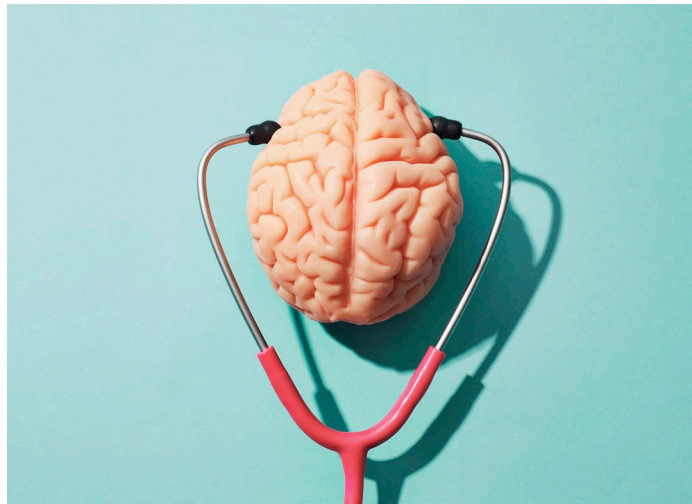


Cutaneous



NIAID photos: <https://www.flickr.com/photos/niaid/48140273032/in/album-72157682471971014/>

Meningitis



Coccidioidomycosis

- Rash - either
 - Erythema nodosum
 - Erythema multiforme

Erythema nodosum

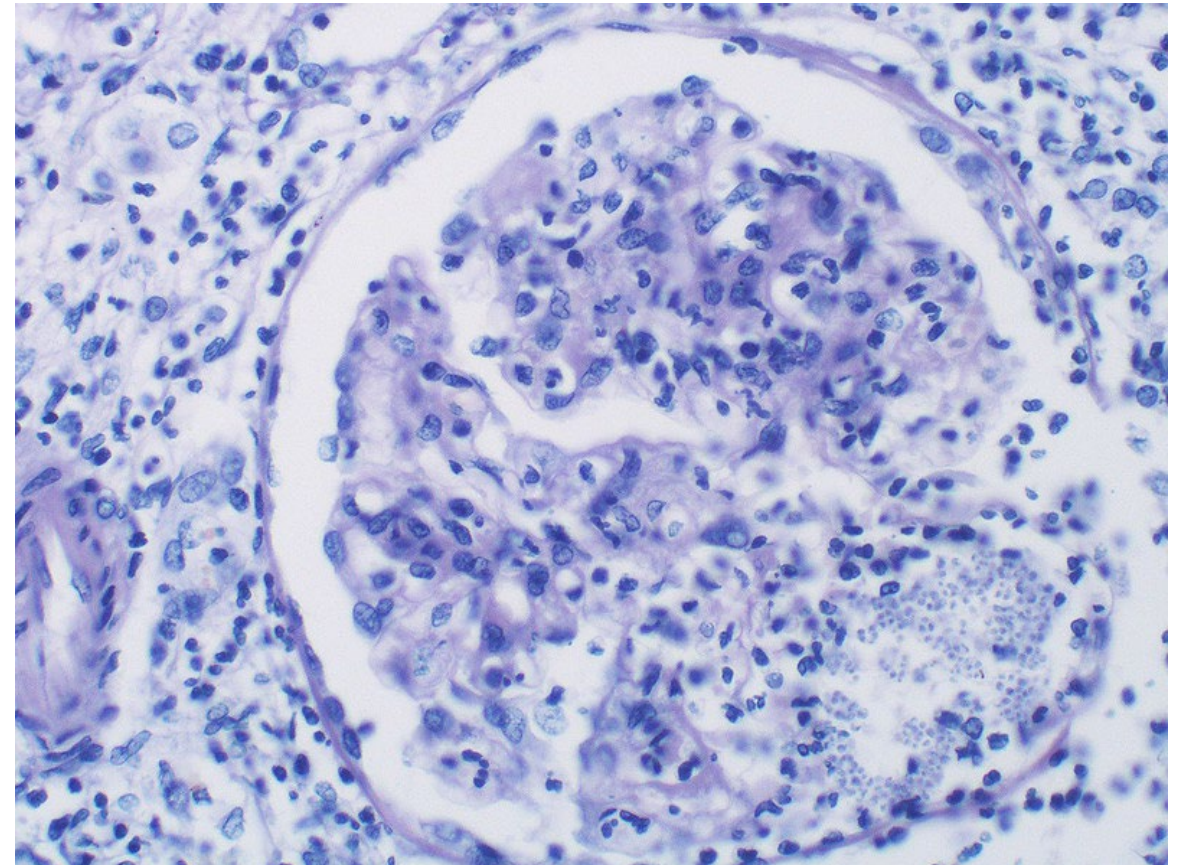


Erythema multiforme



Coccidioidomycosis

- More likely to develop disease if:
 - HIV+
 - CD4<250 cells/uL
 - not virologically suppressed
- Risk and severity of disease decreases with ART



NIAID photos: <https://flic.kr/p/9478Qo>

Coccidioidomycosis

- Diagnosis
 - Serology
 - Antigen
 - Culture
 - Histology
 - Clinical presentation
 - PCR available but not approved for PLWH

Coccidioidomycosis

- Treatment
 - When to stop therapy
- Role for prophylaxis?

Seborrheic Dermatitis

- Increased prevalence in PLWH
 - 34-83% of PLWH vs. 1-3% in general population
- Usually improves with ART
- Can use ketoconazole shampoo
- Fluconazole is also used for extensive disease

Back to the case

- Did the rash improve because of ART – seborrheic dermatitis improved after immune recovery?
- Or because it was due to coccidioidomycosis – treated with fluconazole?
- Or because fluconazole also covers *Malassezia furfur* (cause of seborrheic dermatitis)?



References

- HIV Clinical Guidelines for Opportunistic Infections – clinicalinfo.HIV.gov
- National HIV Curriculum - hiv.uw.edu
- Images courtesy of:
 - CDC Public Health Image Library
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