

# A Case of *Mycobacterium xenopi* in Pulmonary Vasculitis

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## Introduction

- Non-tuberculous mycobacteria (NTM) are ubiquitous bacteria with variable pathogenicity.
- *Mycobacterium xenopi* is a rare species within this class; infection is an indolent process, yet is associated with high mortality.
- Structural lung disease is a risk factor for infection and colonization.
- Diagnosis of infection is made based on imaging findings and cultures.
- Treatment includes a multidrug regimen of rifampicin, ethambutol, azithromycin or fluoroquinolone, and amikacin for severe disease for at least 12 months.
- Here, we present a case of *M. xenopi* infection in the setting of pulmonary vasculitis and the subsequent challenging management.

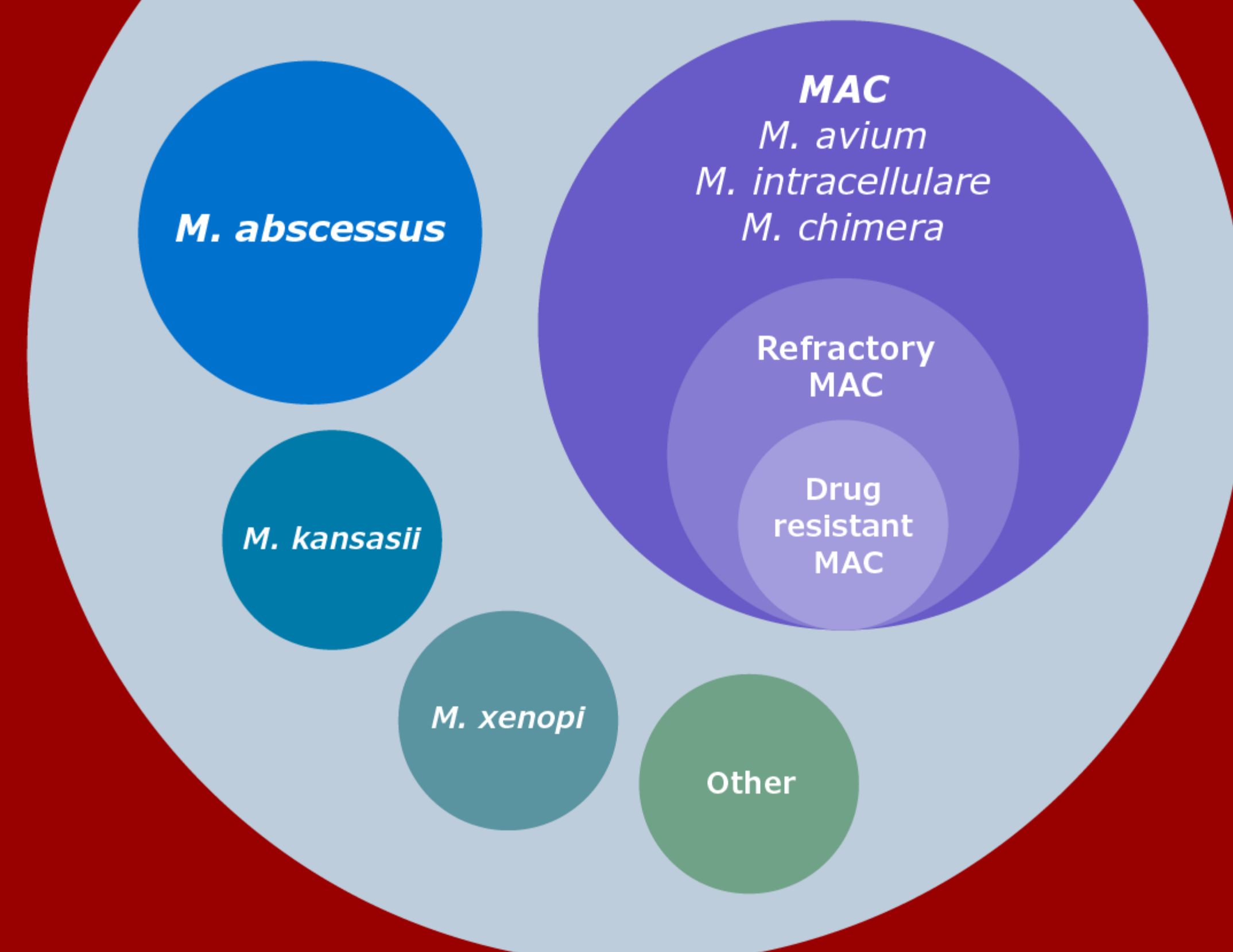
## Initial Presentation

- A 44 year old man from New England with a history of chronic obstructive pulmonary disease (COPD) and granulomatosis with polyangiitis with lung and renal involvement presented with dyspnea and black sputum
- CT chest showed diffuse ground glass opacities and nodules. Bronchoscopy with lavage showed diffuse alveolar hemorrhage and capillaritis, which was managed as a vasculitis flare requiring plasma exchange.
- Bronchoalveolar lavage (BAL) samples later returned positive for *M. xenopi*, the treatment of which was deferred due to severe, active vasculitis. The patient was discharged on a 6-week prednisone taper for vasculitis and planned follow up in infectious disease clinic.

## Subsequent Presentation

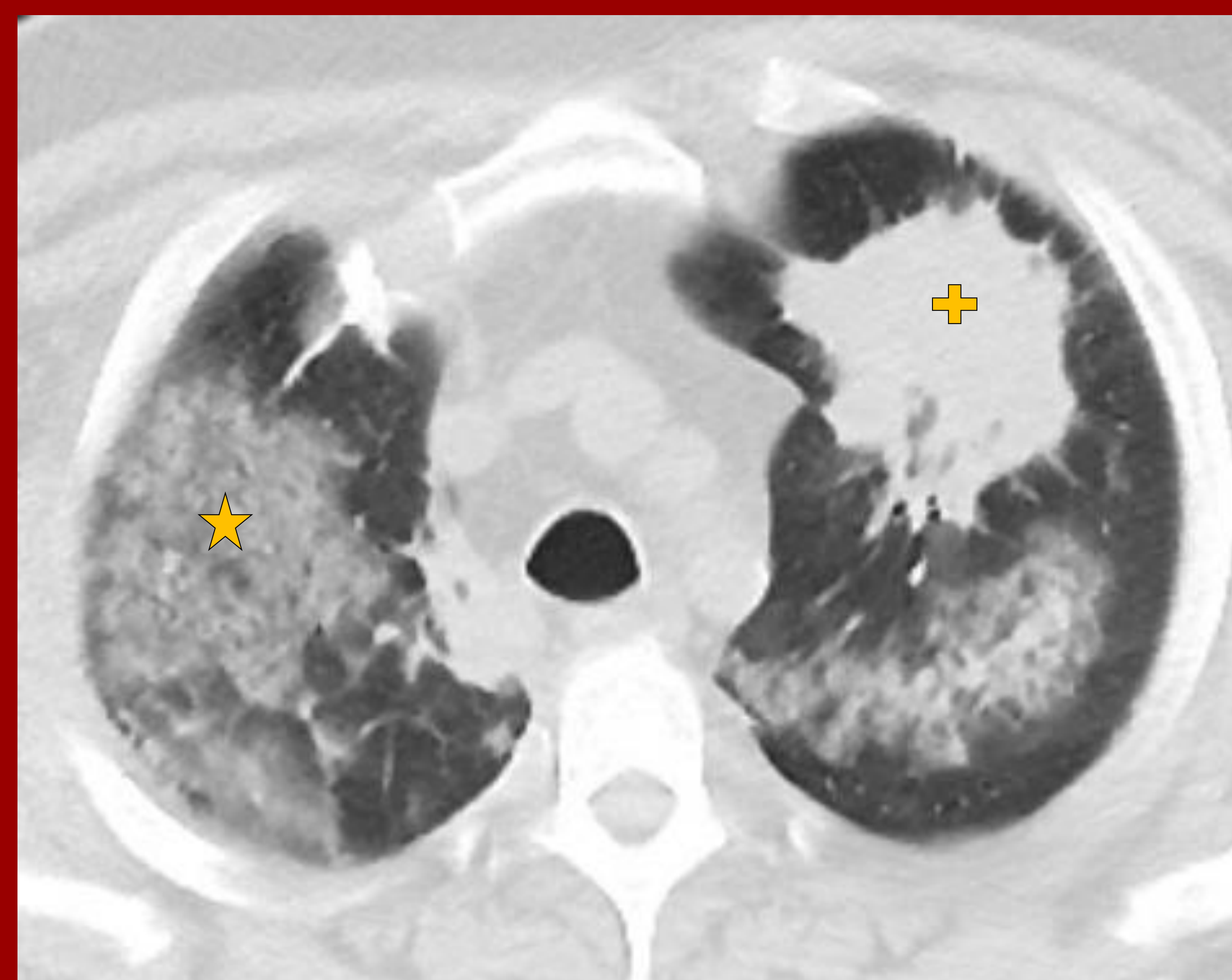
- He presented to the hospital one month later with dyspnea found to be respiratory syncytial virus (RSV) positive, and he was managed for a COPD exacerbation and viral illness
- His respiratory status worsened, and he was found on CT to have bilateral bronchiolitis with cavitory nodules and mass-like opacity in the left upper lobe, consistent with progressive NTM infection.
- After prolonged management of his acute viral infection, complicated by severe sepsis, bacteremia, and renal failure requiring temporary hemodialysis, he was initiated on treatment for *M. xenopi* pneumonitis with moxifloxacin, ethambutol, and rifampicin and discharged home. Amikacin could not be used due to renal failure.

## NTM LD



Relative distribution of NTM lung disease organisms

Aksamit, T. (2021, April 22). *Nontuberculous Mycobacteria (NTM)*. Chest Foundation Lung Health. <https://foundation.chestnet.org/lung-health-a-z/nontuberculous-mycobacteria-ntm/>



CT of the chest demonstrating ground glass opacities from diffuse alveolar hemorrhage (\*) and NTM consolidation (+)

## Discussion and Conclusions

- Diseases which are risk factors for NTM infection, including pulmonary vasculitis, can be highly morbid and complicate diagnosis and treatment of NTM infection.
- In this patient, severe vasculitis activity precluded initial NTM treatment.
- Immunosuppression for vasculitis then contributed to accelerated progression of NTM lung disease.
- Pulmonary vasculitis is a risk factor for rare NTM infections. Both the natural course and the treatment for vasculitis can make timing and choice of treatment regimen for NTM infection challenging.

## Selected References

Wassilew N, Hoffmann H, Andrejak C, Lange C. Pulmonary Disease Caused by Non-Tuberculous Mycobacteria. *Respiration*. 2016;91(5):386-402. doi: 10.1159/000445906.

Daley C, et al. Treatment of Nontuberculous Mycobacterial Pulmonary Disease: An Official ATS/ERS/ESCMID/IDSA Clinical Practice Guideline, *Clinical Infectious Diseases*, 2020;71(4):e1-e36). <https://doi.org/10.1093/cid/ciaa241>