An uncommon route for an uncommon pathogen

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Q: What do a cow and a knee have in common?
The Patient

• 81 yo Hispanic gentleman
• PMH: DM2, osteoarthritis of knees
• Meds: diclofenac, ibuprofen, ASA, PPI, multiple herbs and supplements
• Social:
  – No smoking, EtOH, or illicits
  – Resides in the US the majority of year
  – Travels to Chihuahua Mexico to his cattle ranch
The Presentation

• Chronic knee swelling 2/2 OA
• Cough, hemoptysis, and weight loss for 2-3 months
• Substernal CP, dyspnea, dizziness for 8 days
• Progressive somnolence and fatigue for 2-3 days
• ROS: + L hip pain, otherwise negative
The Exam

• VS normal
• Bibasilar crackles
• Normal heart sounds
• No JVD
• Pedal edema
• Prepatellar L knee swelling
• Oriented to self only
The Initial Work Up

- Na 130
- Cr 1.3
- Hb 12, Hct 36
- Trop 0.08
- BNP 200
- Lactate 1.3
- UA with small blood, trace LE, rare bacteria, 8 WBC
The Initial Course

• TTE obtained showed EF 50% with severe apical and septal hypokinesis, mild RV dilatation, grade I diastolic dysfunction
• ECG remained unchanged
• Troponins negative x2
• Gently diuresed
• Started on antibx for CAP
And Then...

- Antibx were broadened, antivirals were added
- Transferred to ICU for worsening septic picture
- Amphotericin was added with some improvement initially
- Developed progressive swelling of his knees bilaterally
- Liver enzymes became elevated
- Decompensated and was placed on vent
- Underwent bronchoscopy, LP, bone marrow bx, joint fluid aspiration
The Work Up

- Mycoplasma
- Hep A
- Hep B
- Hep C
- HIV
- Francisella
- Parasite screen
- Yersinia
- Legionella
- Leptospira
- Chlamydia
- Coccidioides
- Hantavirus
- AFB
- Brucella
- Histoplasma
- HSV
- CMV
- Coxiella
- ANA
- ANCA
- Quantiferon gold
- Sputum cx
- Blood cx
- Body fluid cx
- Body fluid analysis
- MRI L spine
- MRI hip
- MRI brain
- CT chest
- CT abd
- CT pelvis
AFB from bone marrow bx and bronchial washings returned positive.

Initial sputum samples remained negative.
Q: What do a cow and a knee have in common?

A: A needle.
Who would have thought?!
M. bovis

• Carried by cattle and other mammals
• 1-2% of TB cases in US, 10-15% in developing countries
• Risk factors: young age, residing in endemic areas, Hispanics, immunosuppressed
• Typically spread by aerosolized particles or non-pasteurized dairy products
• Has been found in blood samples of cattle
M. bovis vs. M. tuberculosis

• Clinically and radiographically indistinguishable
• Extrapulmonary manifestations are more common with M. bovis
• Distinguished by DNA PCR
• Differ in treatment regimen
  – Both require 4 drug regimen
  – Levofloxacin instead of pyrazinamide
PCR products of various Mycobacteria DNA. Lanes 2 and 3 are *M. tuberculosis*; lane 5 is *M. bovis*.

The Course Continued

• Reintubated x1
• Tension pneumothorax requiring needle thoracostomy and chest tube
• Anteroapical MI with development of apical thrombus
• Developed atrial fibrillation with RVR
• DVT at PICC site
• At one point, made DNR and extubated
And Continued...

- PEG tube placed
- L psoas fluid collection drained for possible abscess
- Discharged to SNF after 92 days
- Rehospitalized x2 later that year
  - 13 days for FTT, GIB
  - 8 days for sepsis with enterococcus bacteremia
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- But was back in Mexico the following spring!
Thank you.