Tuberculosis in a Single Lymph Node Presenting as Flank Pain

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Learning Objectives

Recognize that extraperitoneal tuberculosis, and particularly tuberculous lymphadenitis, can present as a single nodule and should be strongly considered in the appropriate clinical setting.

Identify classic imaging characteristics of tuberculosis lymphadenitis.

Case

A 45-year-old Peruvian male prisoner with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) presented with right flank pain, intermittent fevers, chills, and night sweats for three weeks. Prior to 7 months of incarceration, he traveled internationally throughout Central and South America and eastern Asia. He denied weight loss, abdominal pain, dysuria, or hematuria. He was never treated for his HIV. As a child, he received the Bacillus Calmette-Guerin vaccination, but had no known exposure to tuberculosis. Sputum cultures and Quantiferon Gold were negative 3 weeks prior to presentation.

On initial exam the patient was febrile to 101.3°F with tachycardia to 112, with otherwise normal vital signs. The patient complained of R flank pain; however, his abdomen and back were non-tender to palpation and there were no palpable lymph nodes on exam. Laboratory testing revealed a CD4 count of 24/μL, white blood cell count of 4100/mm^3, hemoglobin of 12.3g/dL, and hematocrit of 36.3%. Other labs tests were within normal limits. Blood cultures showed no growth. Sputum for acid-fast bacilli was negative on three occasions but Quantiferon Gold assay was positive. Computed tomography (CT) of the chest was negative for pathology. CT of his abdomen and pelvis with contrast revealed a solitary enlarged retroperitoneal lymph node located posterior to the transverse duodenum (1.8 x 2.1 x 3.9 cm) with a central area of low attenuation. Endoscopic ultrasound (EUS) was used to assist with biopsy the lesion given its precarious location. Ziehl-Neelsen stain of the specimen demonstrated numerous acid fast bacilli. Polymerase chain reaction assay was positive for *Mycobacterium tuberculosis*. The patient was started on on rifampin, isoniazid, pyrazinamide, and ethambutol for treatment of tuberulosis and antiretrovirals for treatment of his HIV. He expereienced resolution of symptoms within 1.5 weeks and was discharged without complications.

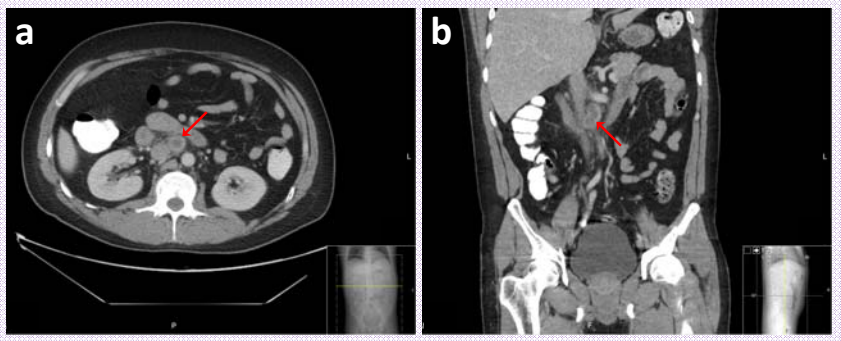

Figure 1. Abdominal computed tomography scan demonstrates solitary enlarged retroperitoneal lymph node (arrows) with central area of hypoattenuation, located posterior to transverse duodenum, measuring 1.8 x 2.1 x 3.9 cm. **(a)** Axial image. **(b)** Coronal image.

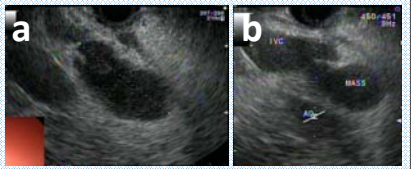

Figure 2. Endoscopic ultrasound allows excellent visualization of solitary enlarged retroperitoneal lymph node prior to biopsy. **(a)** Lymph node lies directly posterior to probe in transverse duodenum and is hypoechoic. **(b)** Lymph node is positioned precariously adjacent to critical structures. IVC, inferior vena cava; MASS, lymph node; AO, aorta.

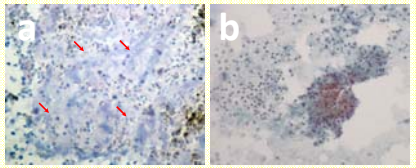

Figure 3. Pathologic examination of lymph node biopsy specimen reveals classic features that confirm *Mycobacterium tuberculosis*. **(a)** Ziehl-Neelsen stain demonstrates numerous acid-fast bacilli (arrows). **(b)** Papanicolaou stain shows nuclear detail in loosely formed granuloma.

Discussion

The differential diagnosis for an HIV patient with an isolated enlarged lymph node includes malignancy, infection, and inflammatory conditions. However, in patients with several known risk factors (incarceration, immunodeficiency, and recent travel to endemic areas), tuberculosis should be strongly considered even in cases of atypical presentation.

Isolated extra-pulmonary tuberculosis accounts for 21% of tuberculosis in the United States, usually presenting as tuberculous lymphadenitis.[1] Most (60%) tuberculous lymphadenitis is localized to the cervical lymphatic region. Abdominal tuberculosis comprises only 12% of extra-pulmonary tuberculosis although the rate is increased in patients with immunodeficiency. Within the abdomen, gastrointestinal and genitourinary tuberculosis are the most common, followed by tuberculous lymphadenitis.[2,3,4]

Isolated retroperitoneal lymph node enlargement in tuberculosis remains more rare, as most cases of tuberculous lymphadenitis present as several matted lymph nodes, often palpable on exam. CT imaging usually reveals low attenuating central necrosis with a hyper-attenuating area of rim enhancement, consistent with an inflammatory response.[5] In our patient, CT revealed a central area of caseation without rim enhancement. Biopsy by EUS provided a minimally invasive method to help identify active tuberculosis in a solitary nodule at an atypical location with localized symptoms of flank pain. Therefore, in patients at risk for tuberculosis, biopsy of even a single lymph node must be pursued vigorously in order to establish a diagnosis and provide appropriate treatment for the patient.

References

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