Differential Diagnosis

Infectious Diseases	Cancer	Autoimmune	Miscellaneous
Tuberculosis	Lung Ca	Vasculitis	Sarcoidosis
HIV	Lymphoma	SLE	
Whipples's Ds			
Histoplasmosis			
Lyme Ds			

SARCOIDOSIS

FOR	AGAINST
Fever	Anemia
Hilar/Mediastinal Adenopathy	(-) SACE
Iritis	
Arthralgia	
CN7 palsy	
Age/Sex	

TUBERCULOSIS (chronic/subacute miliary)

FOR	AGAINST
Fever	Atypical Radiographic Pattern
Anemia	(-) immunosuppression
Abd Pain	(-) Mantoux
Pericardial Thickening	
CN7 palsy	
Sterile Pyuria	
Hyponatremia	
Risk Factors: Age, DM	

LYMPHOMA

FOR	AGAINST
Anemia	Iritis
Fever	Arthralgias
Hilar/mediastinal lymphadenopathy	No weight loss/sweats
CN7 Palsy (CNS involvement)	

LUNG CANCER

FOR	AGAINST
Anemia	(-) smoking
Fever	(-) multifocal neuro signs
Hilar/Mediastinal LAD	
Inc NSE	
Low Na	
CN7 Palsy (leptomeningeal Ds, “spot” meta)	

VASCULITIS

FOR	AGAINST
Fever	(-) Asthma (Churg Strauss)
Anemia	(-) URT involvement (Wegener)
Arthralgia	(-) Renal involvement
Iritis	
CN7 palsy	
Mediastinal lymphadenopathy	

SLE

FOR	AGAINST
Fever	Unusual site of LAD
Anemia	(-) ANA
Lymphadenopathy	Not fulfilling SLE criteria
Cranial neuroparthy (CN7 palsy)	
Abd Pain	
Iritis	
Arthralgias	

HIV

FOR	AGAINST
Fever	Risk Factors
Anemia	(-) ELISA
Hilar Adenopathy	
CN7 Palsy	

WHIPPLE'S DISEASE

FOR	AGAINST
Fever	(-) Diarrhea
Arthralgia	(-) risk factors
Nervous system involvement	
Abd Pain	
Mediastinal LAD	

HISTOPLASMOSIS

FOR	AGAINST
Fever	Travel Hx
Hilar,Mediastinal Adenopathy	(-) Immunosuppression for dissemination Ds
Arthralgias	
Pericardial thickening	
CN7 (stroke syndrome)	
Noncaseating granuloma	

LYME DISEASE

FOR	AGAINST
Fever	(-) Travel hx
Arthralgias	(-) erythema migrans
Adenopathy	(-) cardiac manifestations
CN7 palsy	
Iritis	

What is the most probable Diagnosis?

SARCOIDOSIS.

What to do Next?

What do you need to confirm the diagnosis?

Noncaseating granuloma (Biopsy) in one organ +

Clinical evidence of sarcoidosis in another (used as a surrogate for tissue confirmation of sarcoidosis).

- SO a biopsy of a second site is not always needed.
- Biopsy is crucial for the exclusion of other causes of granulomatous histopathology with special stains for mycobacteria and fungi.

When to defer a Biopsy?

1. Bilateral Hilar Lymphadenopathy (BHL) in asymptomatic patients.

2. Lofgren’s syndrome (fever+Erythema Nodosum+migratory polyarthralgia+BHL) with quick/spontaneous resolution.

3. Heerfordt syndrome (anterior uveitis+parotid gland enlargement+CN7 palsy+fever)

So our patient with bilateral hilar lymphadenopathy

constitutional symptoms, iritis and probable nervous system

involvement, needs a Biopsy…

Where to get a biopsy from?

- Choose the most accessible lesions (cutaneous, subcutaneous, LN, parotid glands, conjunctival, lacrimal).
- Avoid to biopsy an erythema nodosum lesion.

No evidence of peripheral lesion for Biopsy?

- Obtain a biopsy or fine needle aspiration of radiographically enlarged intrathoracic lymph nodes.
- Use: Bronchoscopy with BAL, Endobronchial/Transbronchial Lung Biopsy (abnormal mucosa is preferred), Transbronchial needle aspiration (+/- EBUS).

So the most appropriate next step in our patient was the biopsy of the hilar lymph nodes.

Is it possible to have a proven Sarcoidosis at an extra pulmonary site and still have a need for bronchoscopy?

Yes!

- Symptoms suggestive of infection or Atypical clinical symptoms.
- Atypical Radiographic findings (cavitary lesions).
- Do not forget that sarcoidosis might need initiation of immmunosuppression…

Involvement of the Nervous System

- 5%
- Three different clinical scenarios:

1. a patient with neurological symptoms and active sarcoidosis of other organs, histologically proven.
2. a patient with new neurological symptoms and a history of otherwise inactive sarcoidosis.
3. a patient with possible neurosarcoidosis but no evidence of sarcoidosis elsewhere in the body.

WHAT TO DO NEXT?

#1: Imaging

- MRI of the brain is preferred.
- Shows lesions compatible with sarcoidosis, the extent of the disease and eliminates other possible diagnostic considerations.

#2: Lumbar puncture

- Elevated ACE (50%).
- Elevated opening pressure (10%).
- Increased total protein (66%).
- Pleocytosis, predominantly mononuclear (50%).
- Elevated IgG index, present oligoclonal bands.
- Also helps ruling out other possible diagnoses!
- Always perform after MRI/fundoscopy- possible mass effect in sarcoidosis.

- A presumptive diagnosis of neurosarcoidosis is often made on the basis of MRI and LP results in the appropriate clinical setting.
- ….like our patient with bilateral hilar adenopathy and constitutional symptoms….
- Treatment trial is justified and only after failure, reassessment including CNS biopsy is warranted.
- Biopsy, in an attempt to uncover an alternative diagnosis, should also be considered for patients with proven systemic sarcoidosis and neurologic disease who are progressively deteriorating despite therapy.

Serological Markers

- Serum ACE level: elevated in 75%
- Serum Amyloid-A
- sIL2-R
- Poor sensitivity-Poor availability.

What else should be ordered in this patient?

- ECG.
- 25-hydroxyvitamin and 1,25-dihydroxyvitamin D.
- Spot urine for calcium/creatinine, protein.