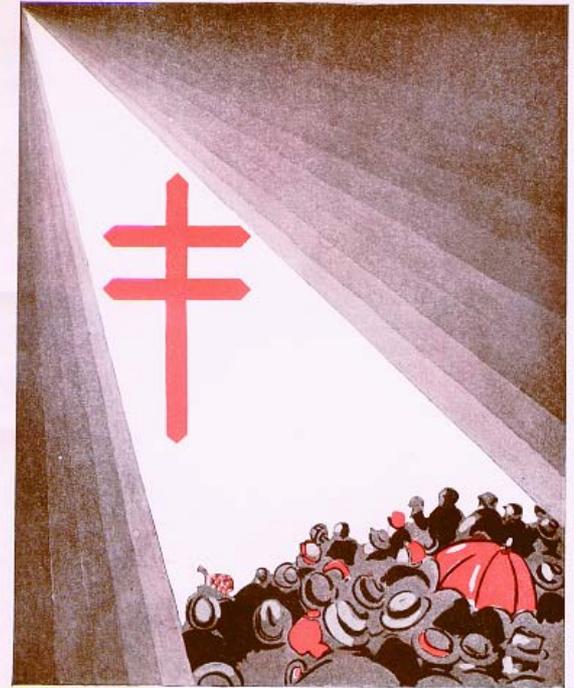


Interesting Case Extra-pulmonary Tuberculosis and Infection Control

Ayesha Bashir MD, MPH
Special Project Epidemiologist &
Deputy TB control officer
Arizona Department of Health
Services

Leadership for a Healthy Arizona



What You should know
about
Tuberculosis

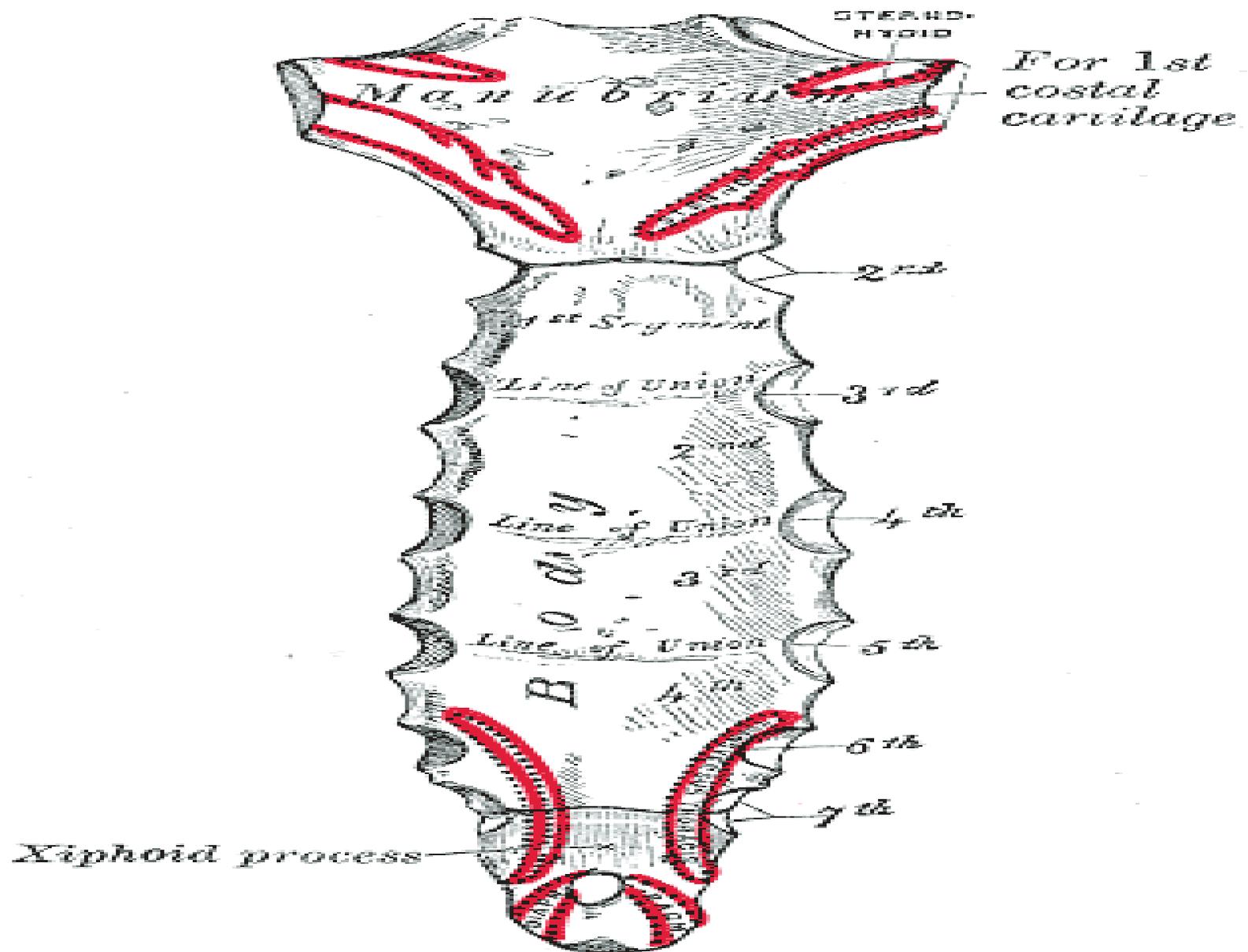


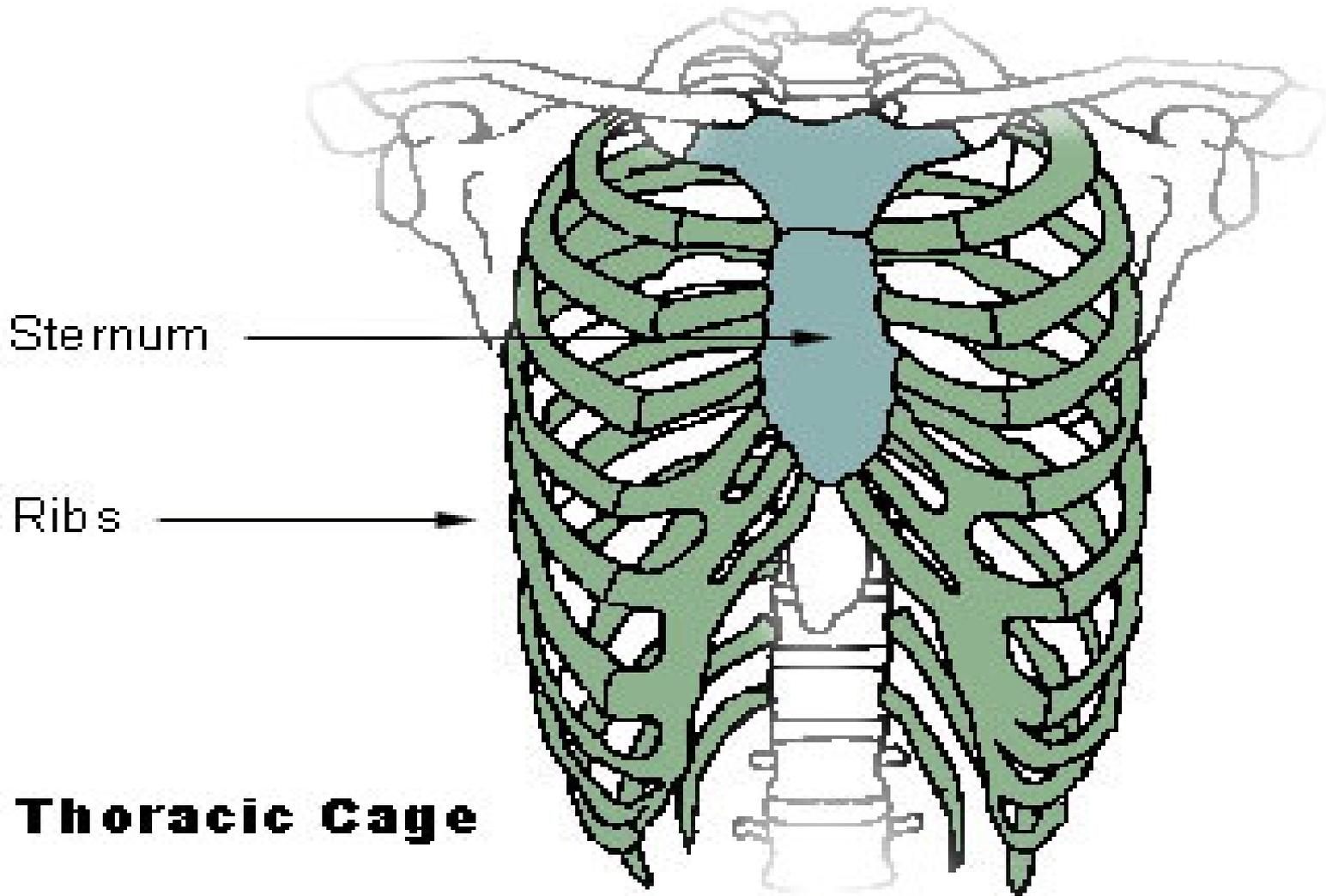
Background

- 43 year old Asian female
- Born in the Philippines, came to the US in 2007
- 2009- beings work as a nurse at a long term care facility
- A positive TST in 2009 is documented upon employment
- Past medical history -1 year manubrium sternum discomfort
- Travel history 2011

Travel history

- 2/10/11-Family vacation to the Philippines
- Flu like symptoms - cough —→ fevers
 - Physician diagnosed pneumonia - clindamycin for 7 days
- Day 5 developed sore throat, continued to cough and now had increase sternum pain and felt a mass
 - ENT
 - CT scan, diagnosed her pharyngitis- augmentin for 7 days
 - Referred to a surgeon for the mass on the manubrium – lipoma needed a biopsy
- Some Improvement
- 3/17/11-Returned back to the US





Thoracic Cage

Relevant history

- 3/26/11– ER, CT scan of the neck/chest diagnosis of soft tissue abscess around the manubrium-ciprofloxacin
- 3/27/11-ENT- direct admit to Hospital A complaining of:
 - Manubrium sternum pain and 2 masses
 - Fever, night sweats, weight loss from 90 lbs to 84 lbs for about 2 months on and off

Exam and Labs

- **Physical exam**
 - Vitals- BP 98/54, HR 72, RR 18, Temp. 37.2
 - No acute distress
 - Neck minimal warmth with a golf size ball swelling/mass that was soft over the anterior manubrium sternum slightly to the right, with small low lying ecchymoses, no thyroidmegaly , no adenopathy
 - Rest of the exam was normal
- **Labs** – anemia

CT scan chest and neck

- 3/26/11 - **CT scan of neck and chest** with and without contrast which revealed: superficial to the manubrium and centered slightly to the right of the midline is a rim enhancing cystic mass measuring 5.2 cm x 2 cm x 2.6 cm , at the same time deep to the manubrium involving the anterior mediastinum to the right of the midline is a rim enhancing fluid collection which extends cephalad, superior to the sterna notch to level anterior to the inferior pole of the thyroid lobe, measuring 2.1cm x 2 cm x 7.2cm. The manubrium has a mottled appearance especially on the right. CT scan of the lung and neck should no other area involved the lungs were clear.
- **Conclusion – there is a rim enhancing cystic collection deep and superficial to the manubrium with involvement of the superior anterior mediastinum with extension cephalad into the base of the neck and also finding consistent with osteomyelitis of the manubrium**

Sternal mass



Hospital course

- 3/28/11-CT guided aspiration of the abscess
 - Acid fast smear (AFB) 1+
 - 3/30/11-Started on isoniazid, rifampin, pyrazinamide, ethambutol, vitamin B6
 - Later cultures came back MTB
- Discharged with a diagnosis of soft tissue abscesses and manubrium sternum osteomyelitis caused by tuberculosis. To follow up with health department and physicians

Outpatient course

- 4/15/11-CT scan
- 5/23/11-CT guided aspirate done at Hospital B- done under airborne precaution, AFB positive
- 6/3/11-Admitted to Hospital B for aspiration and placement of draining tubes – done under airborne precaution
 - Thyroid work up was normal
 - AFB negative
- 6/7/11-Discharged home – dressing and tubes in place

Outcomes

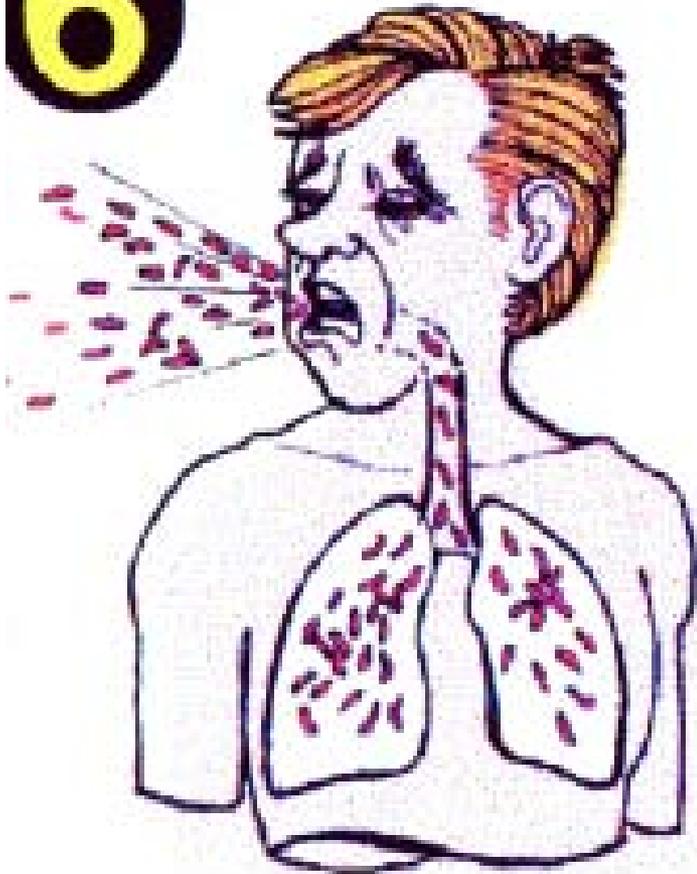
- Symptomatically improved, gained weight 93 lbs
- Husband tested PPD + - isoniazid
- Received her TB medication by directly observed therapy (DOT) via skype and once a week visits at home by local health department
- 6/3/11 - 2 drug isoniazid and rifampin
- Abscesses not improving- continues to have drainage
- Plan – needs surgery

Latent TB Infection (LTBI)

- Has inactive TB bacteria in his/her body
- The germs are not growing so the person **does not** feel sick and **is not** contagious
- An infected person **cannot** spread the TB germs to another person
- Needs treatment for latent TB infection to prevent TB disease

What is Active TB Disease?

6



- There are TB germs in the body
- The TB germs are **growing and multiplying**
- The person with TB will usually feel **really sick**
- The person can **spread TB through the air to other people**

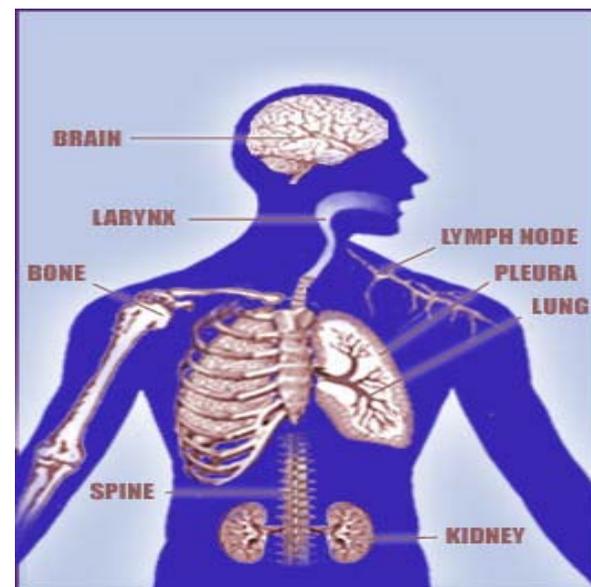
Sites for Active TB

- **Pulmonary**

- ✓ Lungs

- **Extra pulmonary**

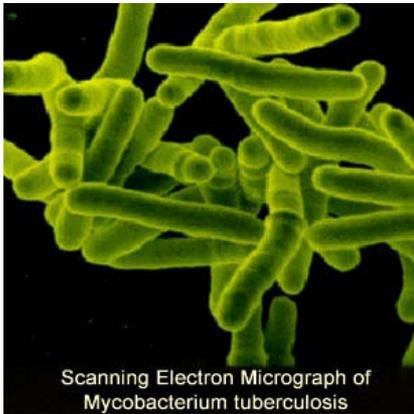
- ✓ Lymphatic
- ✓ Meningeal
- ✓ Bone/Joint
- ✓ Pleura
- ✓ Other



Signs and symptoms of TB

Pulmonary symptoms

- Cough
- Hemoptysis
- Chest pain



Systemic Symptoms

- Fever
- Chills
- Night sweats
- Loss of appetite
- Fatigability
- No Symptoms – 10% to 20 %

Sternum osteomyelitis

- Osteomyelitis of the sternum is a **very rare** manifestation of tuberculosis
- Tubercular sternal osteomyelitis is usually caused by **reactivation of latent loci** formed during hematogenous or lymphatic dissemination of primary tuberculosis. **Direct extension** from contiguous mediastinal lymph nodes has also been described.
- Unlike pyogenic sternal infections characterized by more rapid and fulminant course, tubercular sternal osteomyelitis usually presents insidiously as swelling and pain over the sternum

Infection Control for Extra Pulmonary TB

- Infection control , CDC *Guidelines for preventing the transmission of TB in Health care Settings, 2005* states:
 - “Persons with extra pulmonary TB usually are **not infectious unless** they have concomitant pulmonary disease, non pulmonary diseases located in the oral cavity or the larynx or extra pulmonary disease that includes an open abscess or lesion in which the concentration of organism is high, especially if drainage from the abscess or lesion is extensive, or if aerosolization of drainage fluid is performed.” (page 43)

Infection control open cutaneous/ wounds/ draining abscesses

- For the procedure or for any manipulation of the abscess recommend:
 - Appropriate airborne infection isolation precautions.
 - If it's possible, perform the procedure in an AII (airborne Infection Isolation) room.
 - Schedule the procedure when a minimum number of health care workers (HCW) are present.
 - Schedule the patient at the end of the day or do not allow performing another procedure in the same room until enough time has elapsed for adequate removal of MTB contaminated air.

Resources

- *TB Heartland*
- *CDC*
- *MMWR: Guidelines for preventing the transmission of TB in Health care Settings, December 30,2005/Vol. 54/No. RR-17*
- *Primary Tubercular Osteomyelitis of the Sternum, Indian Journal of Pediatrics, Volume 72—August, 2005*
- *Is Cutaneous Tuberculosis Infectious? A Case Presentation and Practical Management Plan, Infection Control and Hospital Epidemiology, Vol. 24, No. 11 (November 2003), pp.870-871*

Question

