

Pediatric Pulmonary Tuberculosis

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Pediatric Tuberculosis Disease

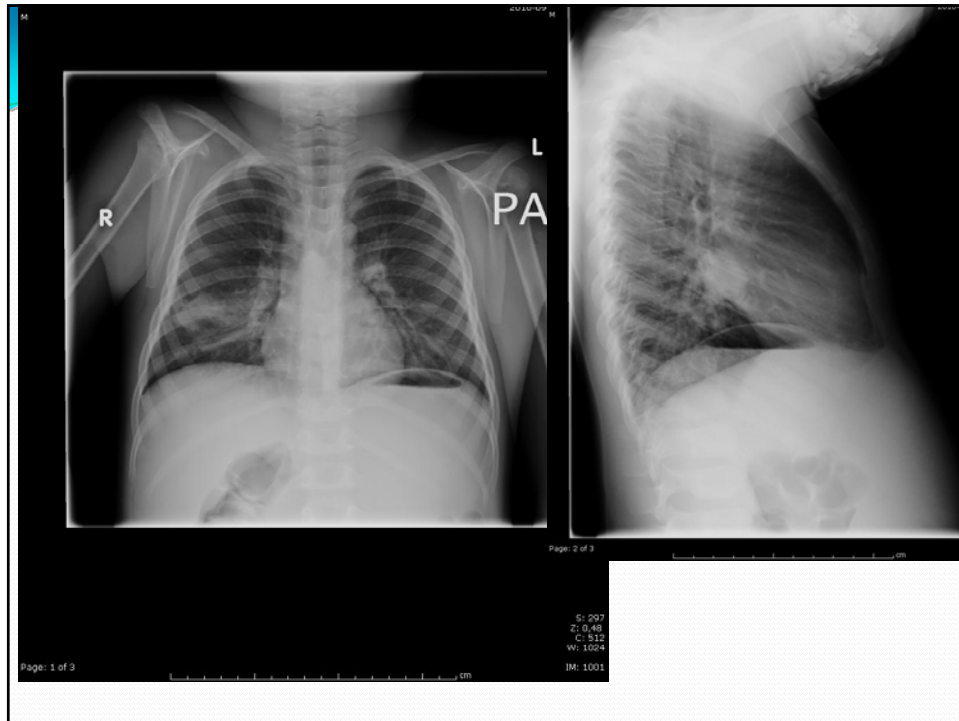
- Diagnosis of Pulmonary Tuberculosis
 - Signs and symptoms are often mild and/or non-specific
 - Culture diagnosis provides low yields
 - Younger infants and children have a higher progression to tuberculosis disease and invasive disease
- We will look at 2-3 cases to illustrate this

Case 1

- 5 year old boy from Salluit
- 17 mm PPD as part of contact tracing
- Mother started on treatment for Active Tuberculosis
 - Chest lymph node biopsy +ve
 - “Primary” infection

Case 1

- 2 months of mild cough, mostly night time and with exercise - +/- yellow sputum
- Afebrile, normal energy, no weight loss
- Looks well (90th %ile for weight) with normal examination
- PPD of 17 mm

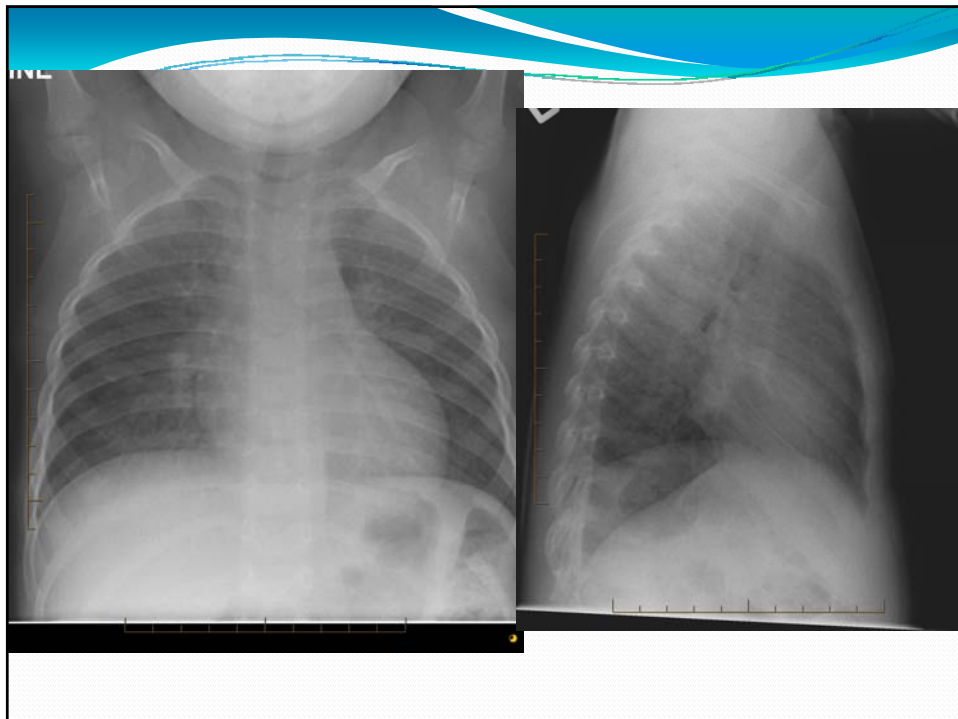


Case 1

- Is this pulmonary TB?

Case 2

- 23 month old male close contact of smear positive adult
 - On contact screening has PPD of 17 mm
 - 1 week history of mild rhinorrea with worsening cough; afebrile
 - Examination is normal, however child is heard to have a wet cough

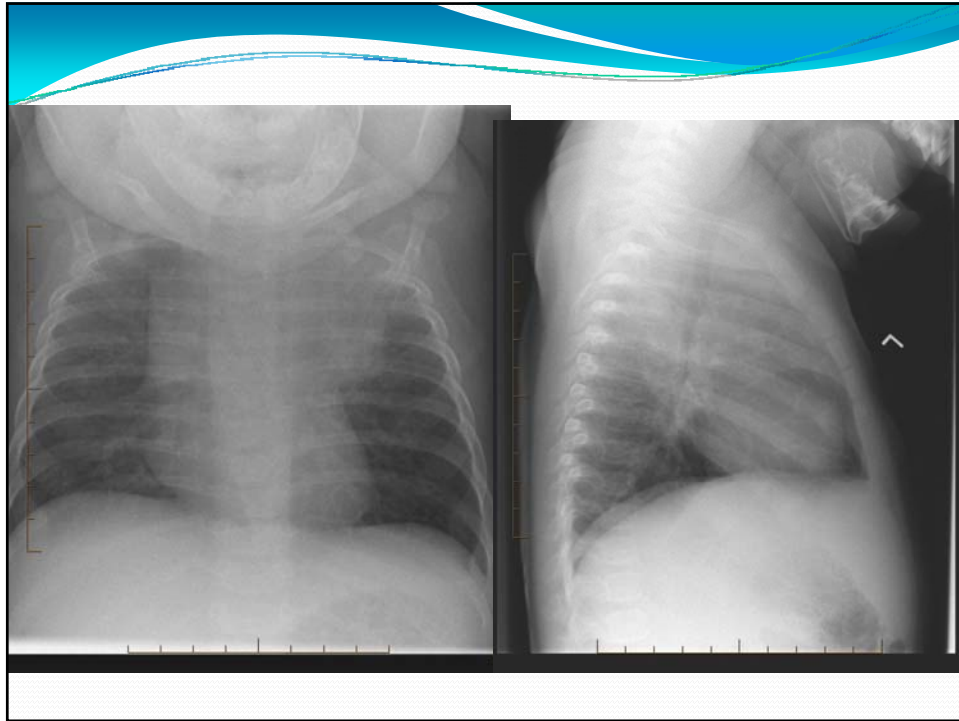


Case 2

- Is this Tuberculosis Disease?

Case 3

- 5 month old infant presenting to the ED with 5 days of fever and cough and respiratory distress
- Seen in EDx2 with diagnosis of pneumoniax2 before subsequent admission to MCH



Case 3

- History of 5 weeks travel to Morocco with return 4 weeks prior to presentation
 - No known sick contacts
- PPD: 17 mm
- Examination:
 - Febrile at 39.8
 - Decreased breath sounds on left

Case 3

- Is this Tuberculosis Disease?

Tuberculosis Disease in Children

- Primary Pulmonary Disease
 - Most common presentation in young children (<5 years)
- Clinically:
 - May have fevers, non-productive cough +/- wheezing, fatigue, poor appetite
 - Night sweats, weight loss are uncommon
 - Often asymptomatic

Diagnosis

- National (US) TB surveillance system
 - Between 1993 and 2001
 - 11 480 pediatric cases (<15 years of age)
 - 23.6% fulfilled laboratory criteria
 - (84.3% of adult cases)

Nelson et al. Epidemiology of Childhood Tuberculosis in the United States, 1993–2001: The Need for Continued Vigilance. *Pediatrics* 2004;114:333-341

Diagnosis

- In absence of a culture diagnosis, pediatric tuberculosis is diagnosed on probability of disease
- Clinical diagnostic triad:
 - Positive Tuberculin skin test (TST)
 - Clinical/Radiological findings of Tuberculosis
 - Known source case

TB Disease

	Risk of disease following primary infection			Comments
	Disseminated tuberculosis/ tuberculosis meningitis	Pulmonary tuberculosis	No disease	
<1 years	10–20%	30–40%	50%	High rates of morbidity and mortality
1–2 years	2–5%	10–20%	75–80%	High rates of morbidity and mortality
2–5 years	0.5%	5%	95%	..
5–10 years	<0.5%	2%	98%	“Safe school years”
>10 years	<0.5%	10–20%	80–90%	Effusions or adult-type pulmonary disease

Newton et al; Lancet Infect Dis; 2008

Cases Revisited

- All 3 cases were diagnosed with pulmonary tuberculosis
- Case 1: AFB –ve; Culture positive
- Case 2: AFB –ve; Cultures pending
- Case 3: AFB/PCR/Culture positive