



Center for
Tuberculosis

PEDIATRIC TUBERCULOSIS: RADIOLOGIC CONSIDERATIONS

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Accreditation Statement



Accreditation Statement

In support of improving patient care, Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

Credit Statement(s):

AMA

Mayo Clinic College of Medicine and Science designates this live activity for a maximum of 18.25 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



ACPE

Mayo Clinic College of Medicine and Science designates this educational activity for a maximum of 18.25 ACPE Knowledge-based contact hours. Participants should claim only the credit commensurate with the extent of their participation in the activity.

UAN Number: UAN JA0000238-0000-26-089-L99-P.

ANCC

Mayo Clinic College of Medicine and Science designates this activity for a maximum of 18.25 ANCC contact hours. Nurses should claim only the credit commensurate with the extent of their participation in the activity.



IPCE CREDIT™

This activity was planned by and for the healthcare team, and learners will receive 18.25 Interprofessional Continuing Education (IPCE) credit for learning and change.

Other Healthcare Professionals:

A record of attendance will be provided to all registrants for requesting credits in accordance with state nursing boards, specialty societies or other professional associations.

For disclosure information regarding Mayo Clinic School of Continuous Professional Development accreditation review committee member(s) and staff, please go here to the course accreditation page.

Available Credit

- 18.25 ACPE,
- 18.25 *AMA PRA Category 1 Credit™*
- 18.25 ANCC
- 18.25 Attendance
- 18.25 IPCE

Disclosure:

Relevant financial relationship(s) with ineligible companies:

- **Education Grant:** Qiagen
- **Scientific Advisory Board:** Procter & Gamble

Role of radiology in pediatric TB

Impact clinical decision-making:

1. Decision to treat TB disease—abnormal CXR consistent with TB
2. Decision to treat LTBI—normal CXR
3. Alternate diagnosis—abnormal CXR, non-TB findings
4. Monitor treatment

Low frequency of microbiologic confirmation in children increases the importance of radiology in dictating clinical decisions

Pediatric TB Radiology

The Union

International Union Against
Tuberculosis and Lung Disease

ABOUT US

OUR WORK

NEWS

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DIAGNOSTIC CXR ATLAS FOR TUBERCULOSIS IN CHILDREN

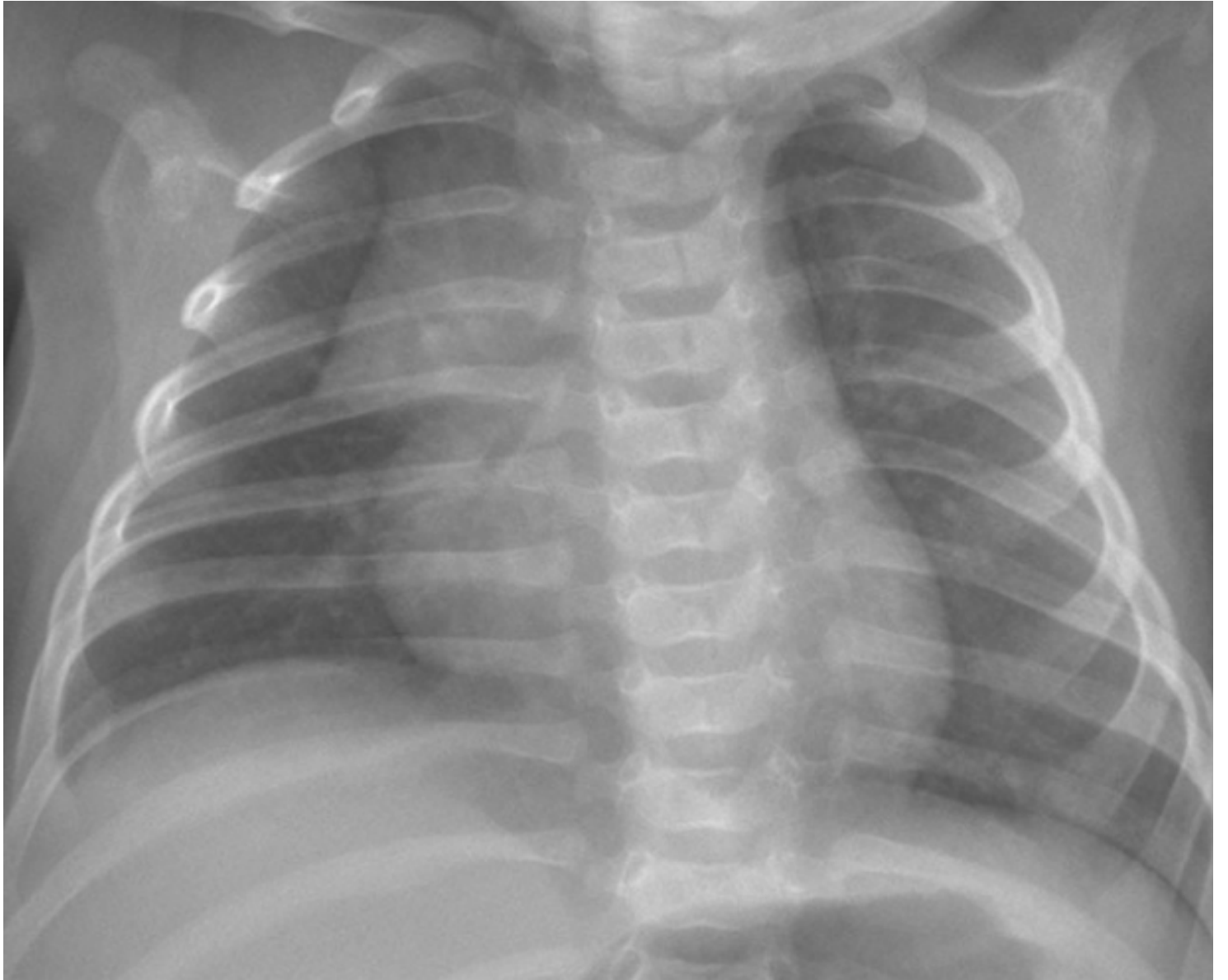
24 March 2022

DOWNLOAD:

[Publication in English \(Pdf\)](#)

<https://theunion.org/technical-publications/diagnostic-cxr-atlas-for-tuberculosis-in-children>

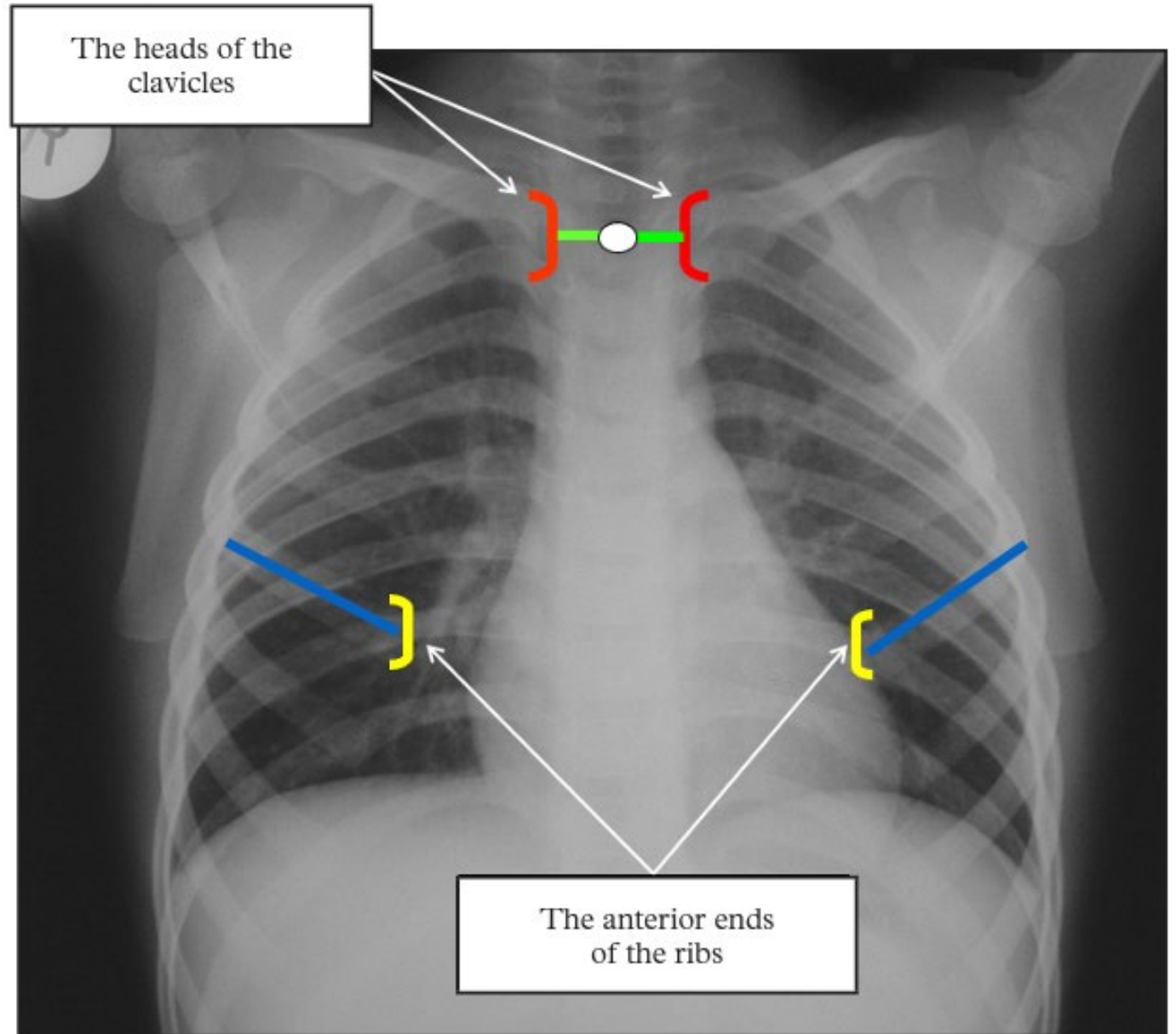
Radiologic Characteristics of Normal Pediatric X-Ray



Normal CXR

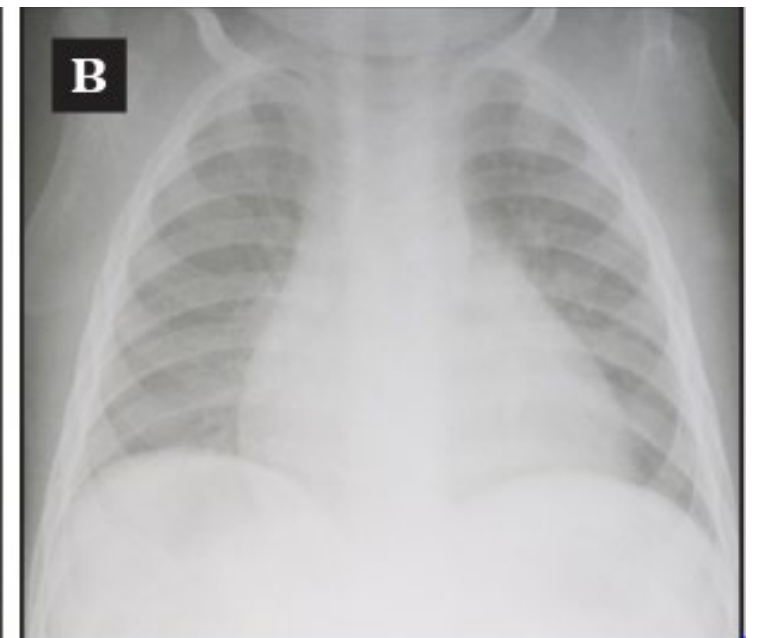
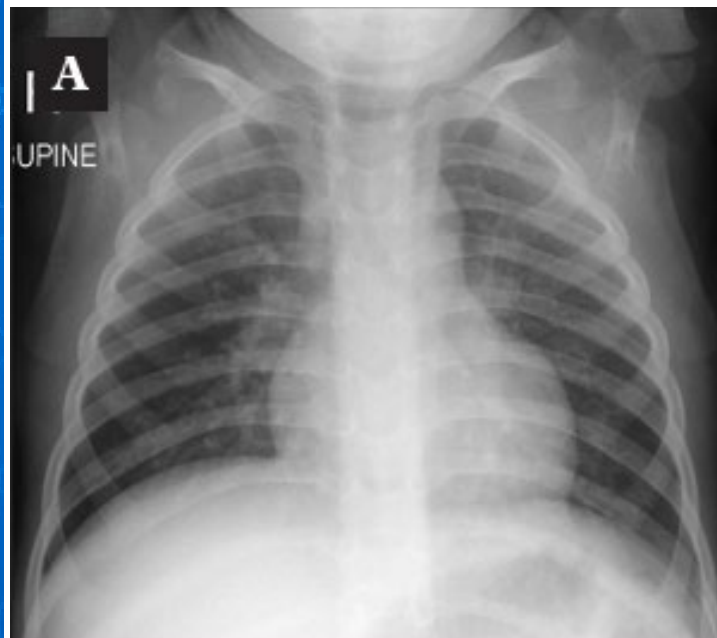
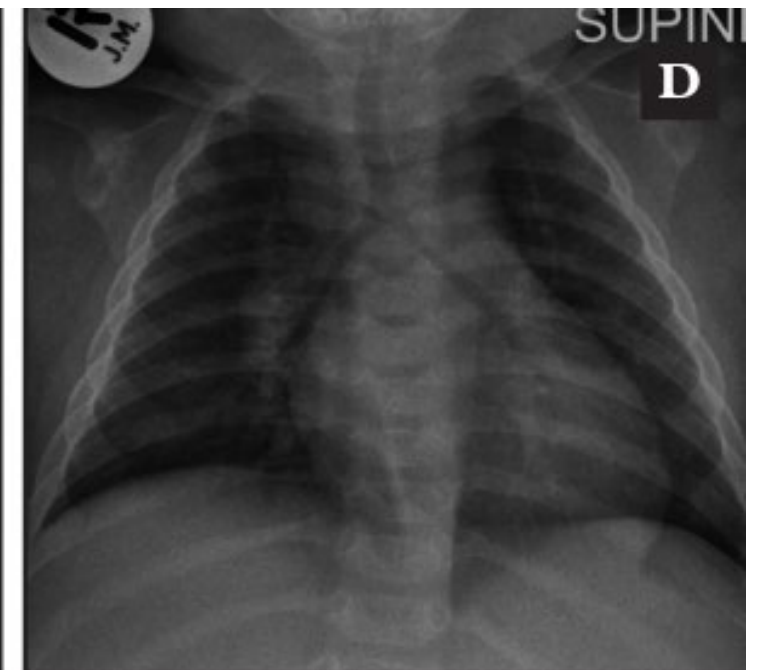
Assuring the quality of the pediatric CXR

Rotation



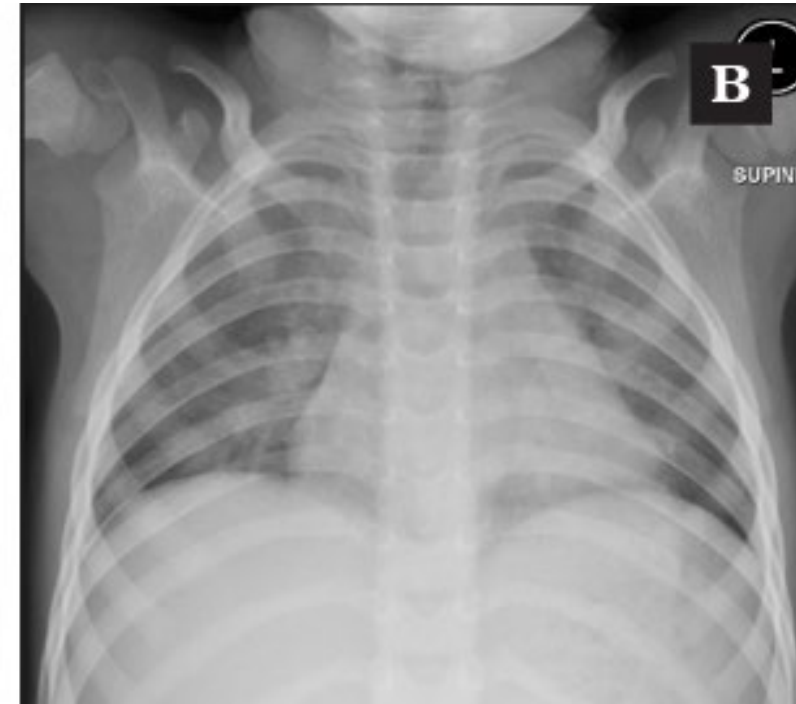
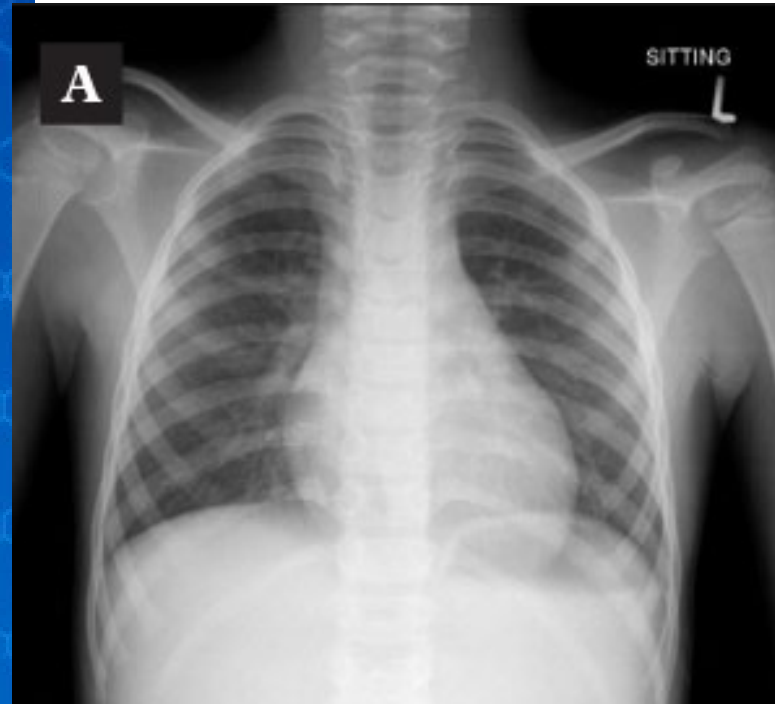
Assuring the quality of the pediatric CXR

Penetration



Assuring the quality of the pediatric CXR

Inspiration



Pediatric TB
interpretation: Impact of
pre-test probability

Make sure to use it—
and communicate to the
radiologist!

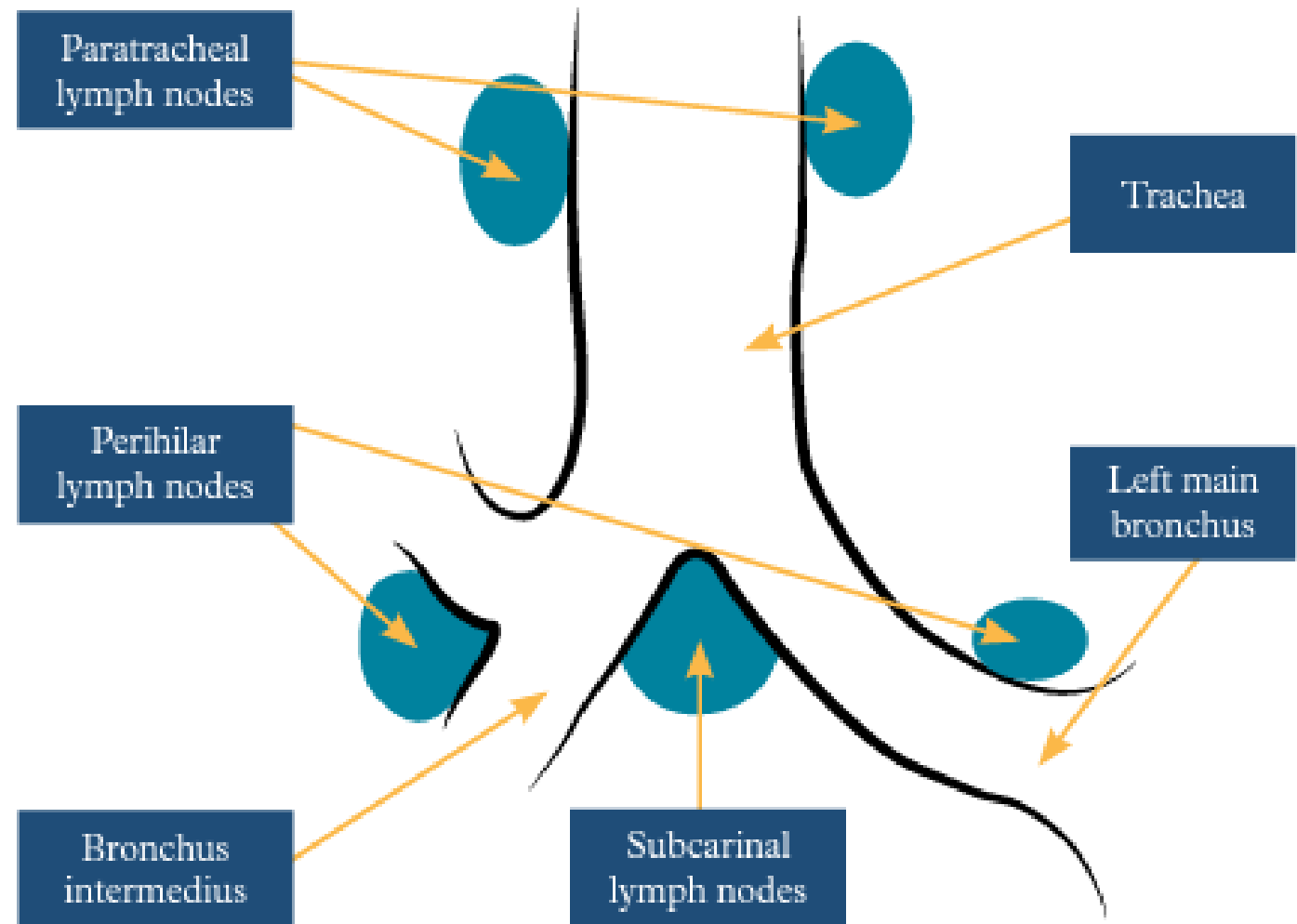
3-year-old, exposed to highly infectious household contact. Positive IGRA. Patient with cough (but also some URI symptoms). Looking for evidence of active TB, in particular hilar adenopathy to determine if the patient has active TB.

3-year-old screened in primary care with no known TB contact. Low level positive IGRA. Asymptomatic with normal exam. LTBI suspected, need to confirm normal x-ray.

R/O TB

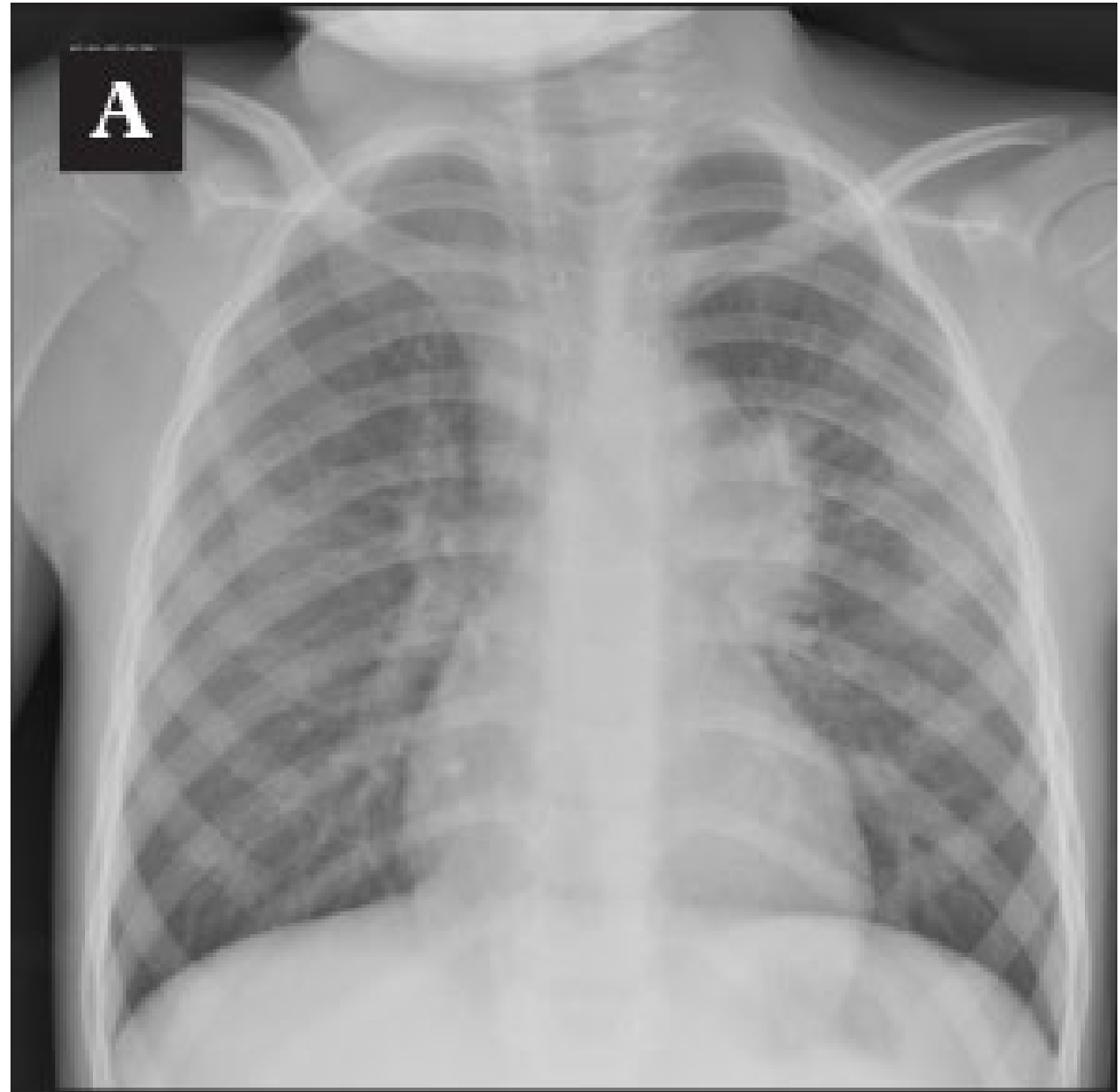
Radiographic TB disease patterns in children

Intrathoracic adenopathy



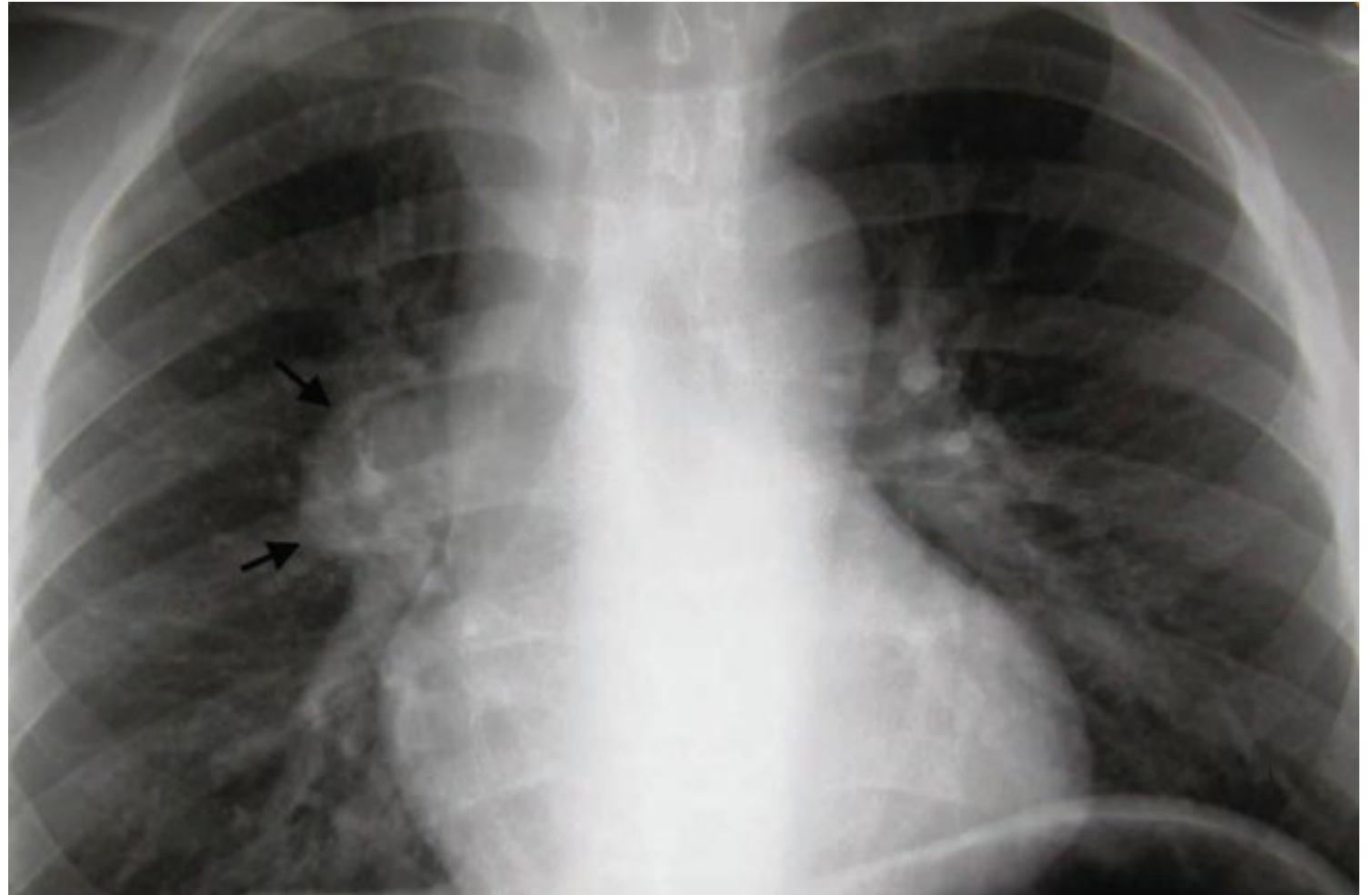
Radiographic TB disease patterns in children

Hilar adenopathy



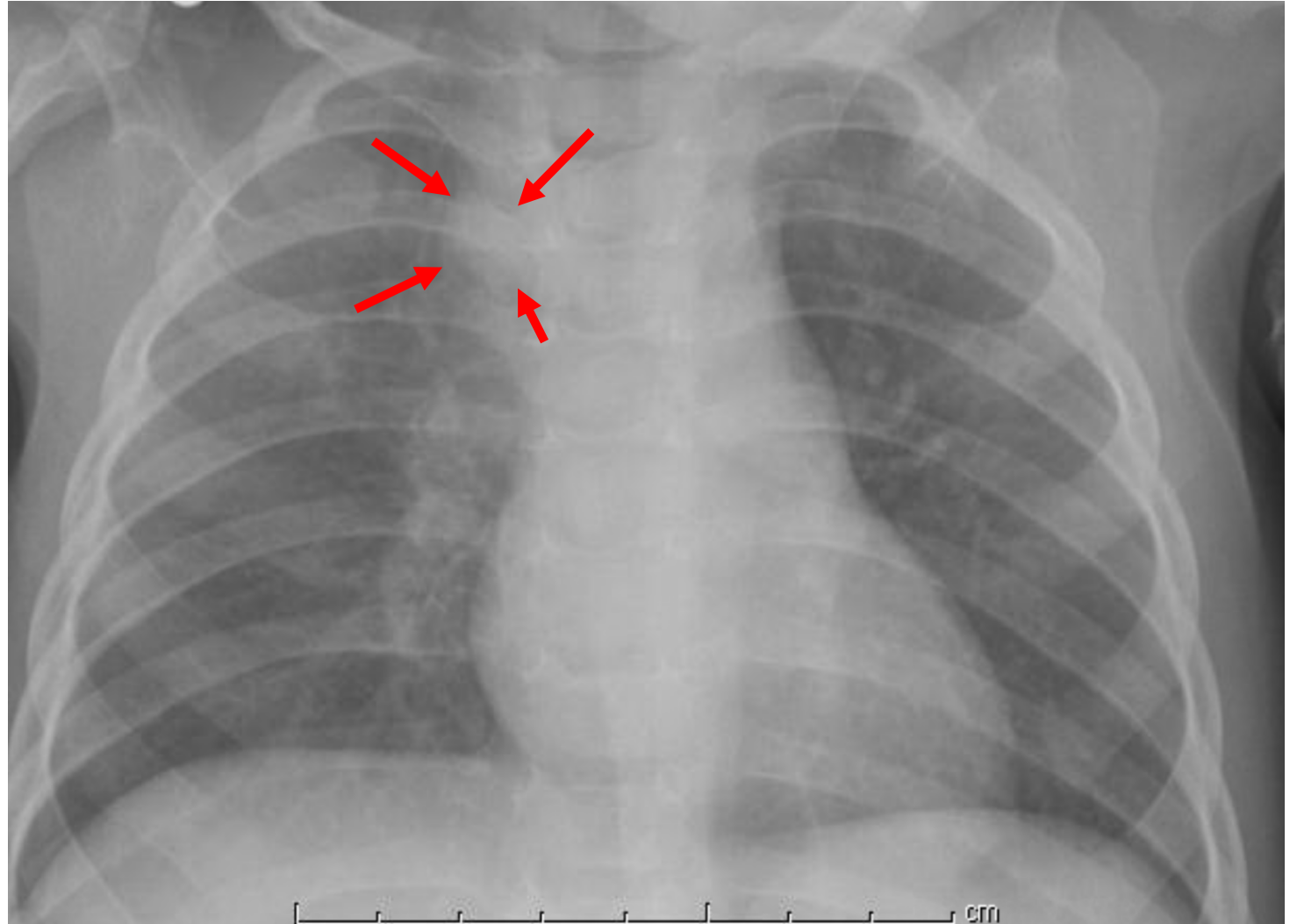
Radiographic TB disease patterns in children

Hilar adenopathy



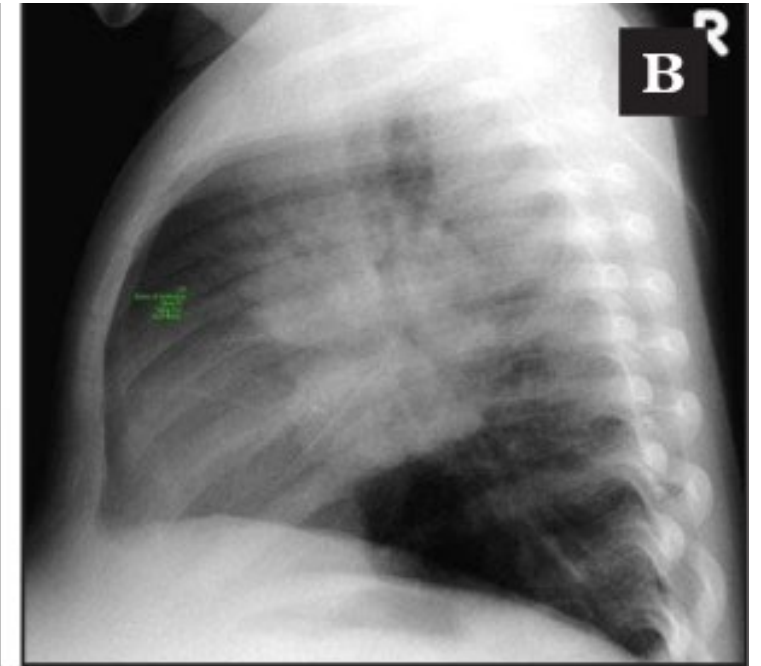
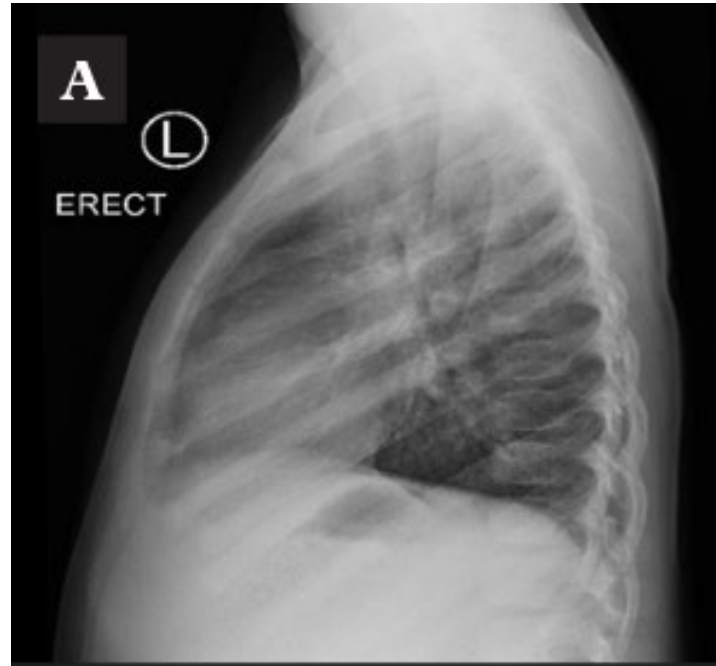
Radiographic TB disease patterns in children

Paratracheal Adenopathy



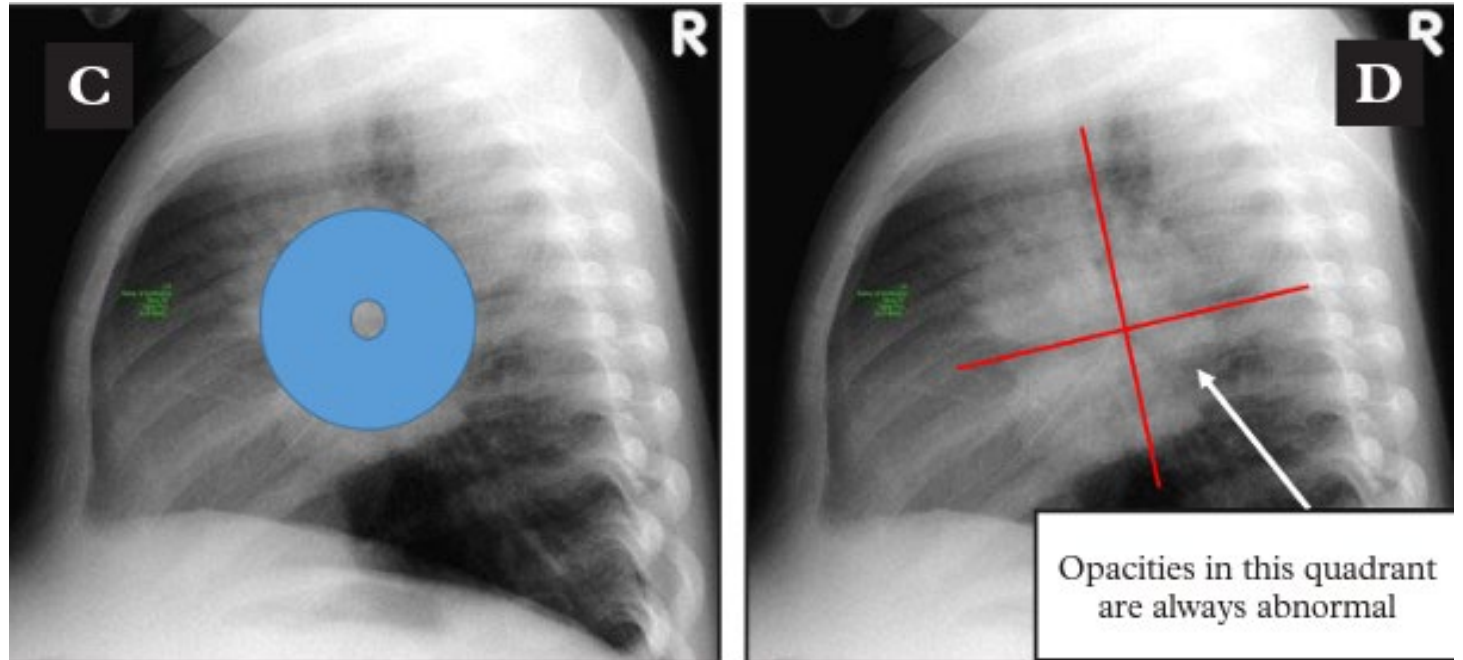
Radiographic TB disease patterns in children

Hilar
adenopathy:
importance of
lateral film



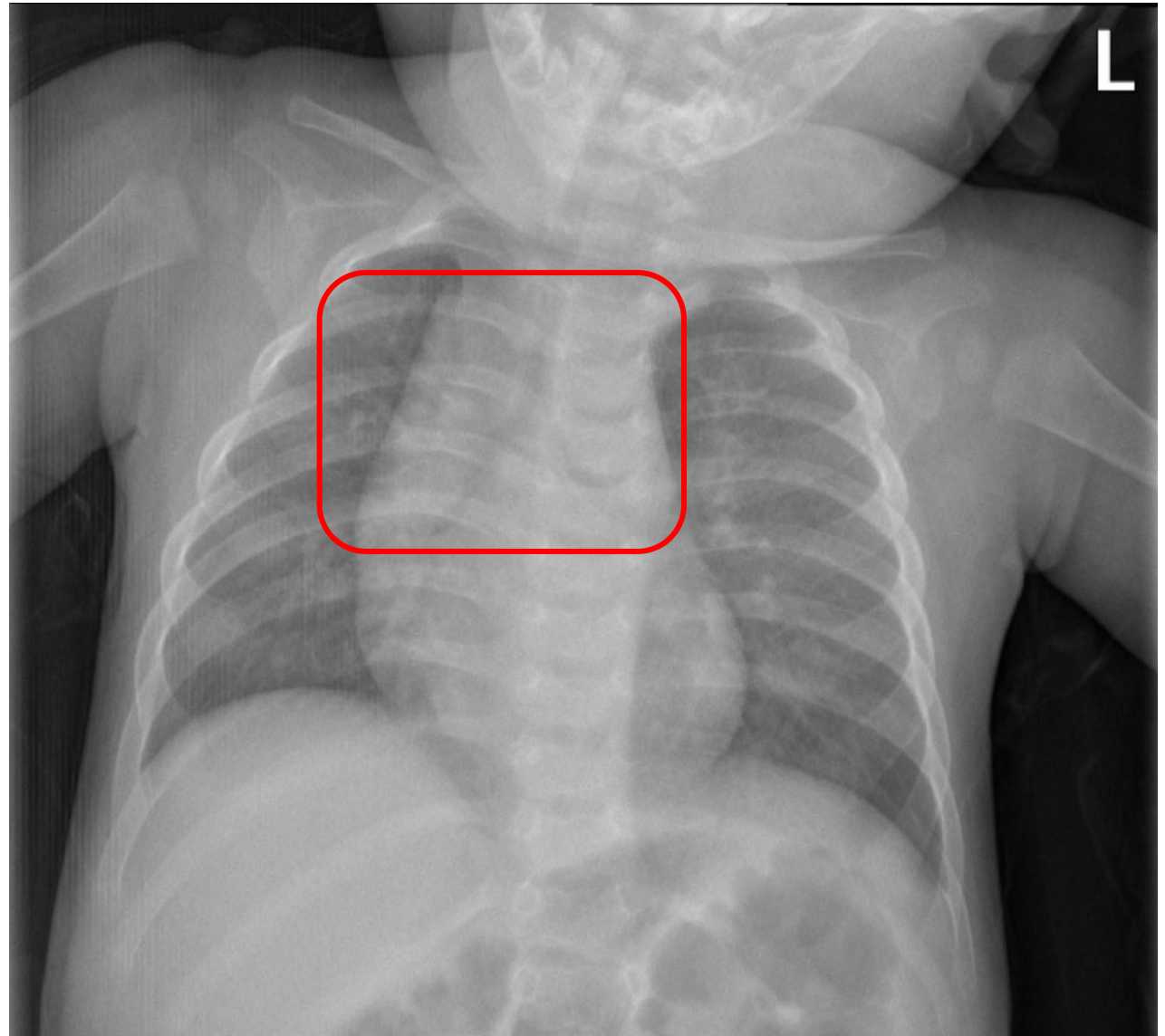
Radiographic TB disease patterns in children

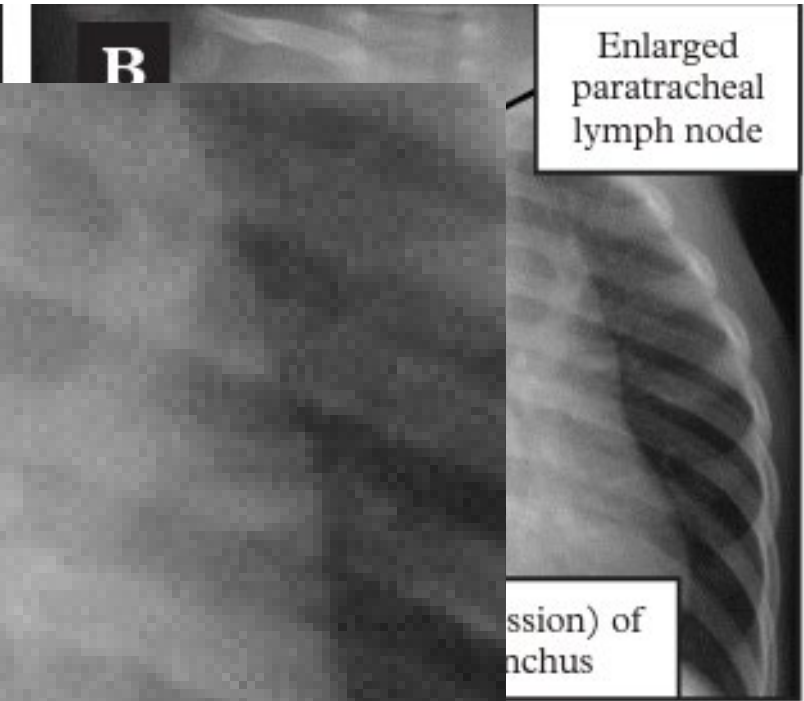
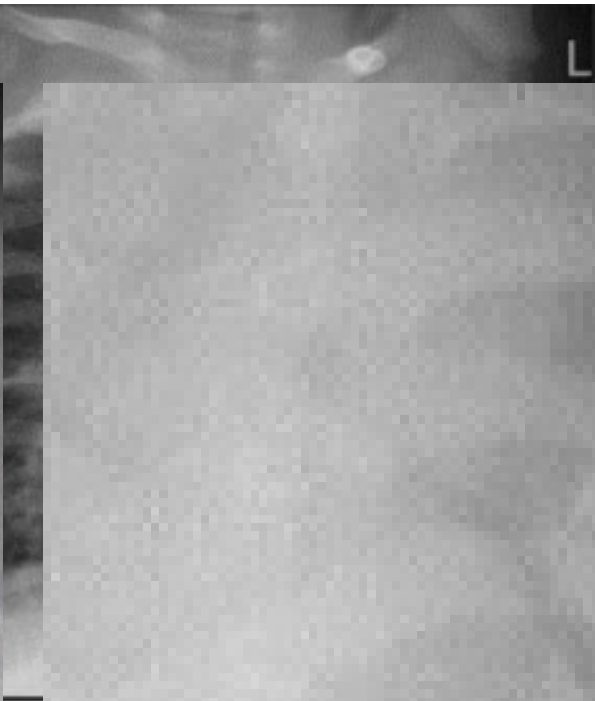
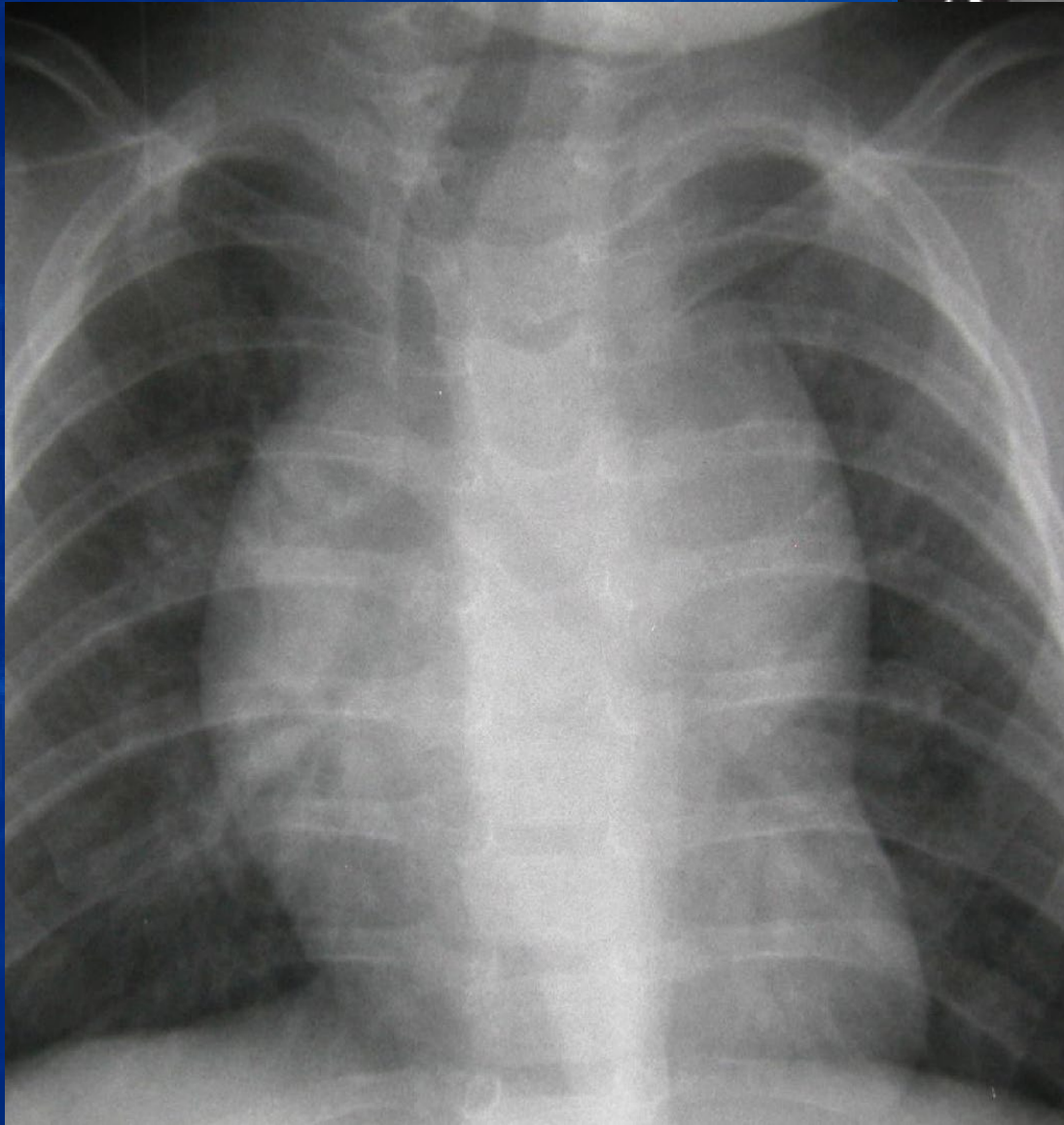
Hilar
adenopathy:
importance of
lateral film



Radiographic TB disease patterns in children

Subtle signs of airway
compression

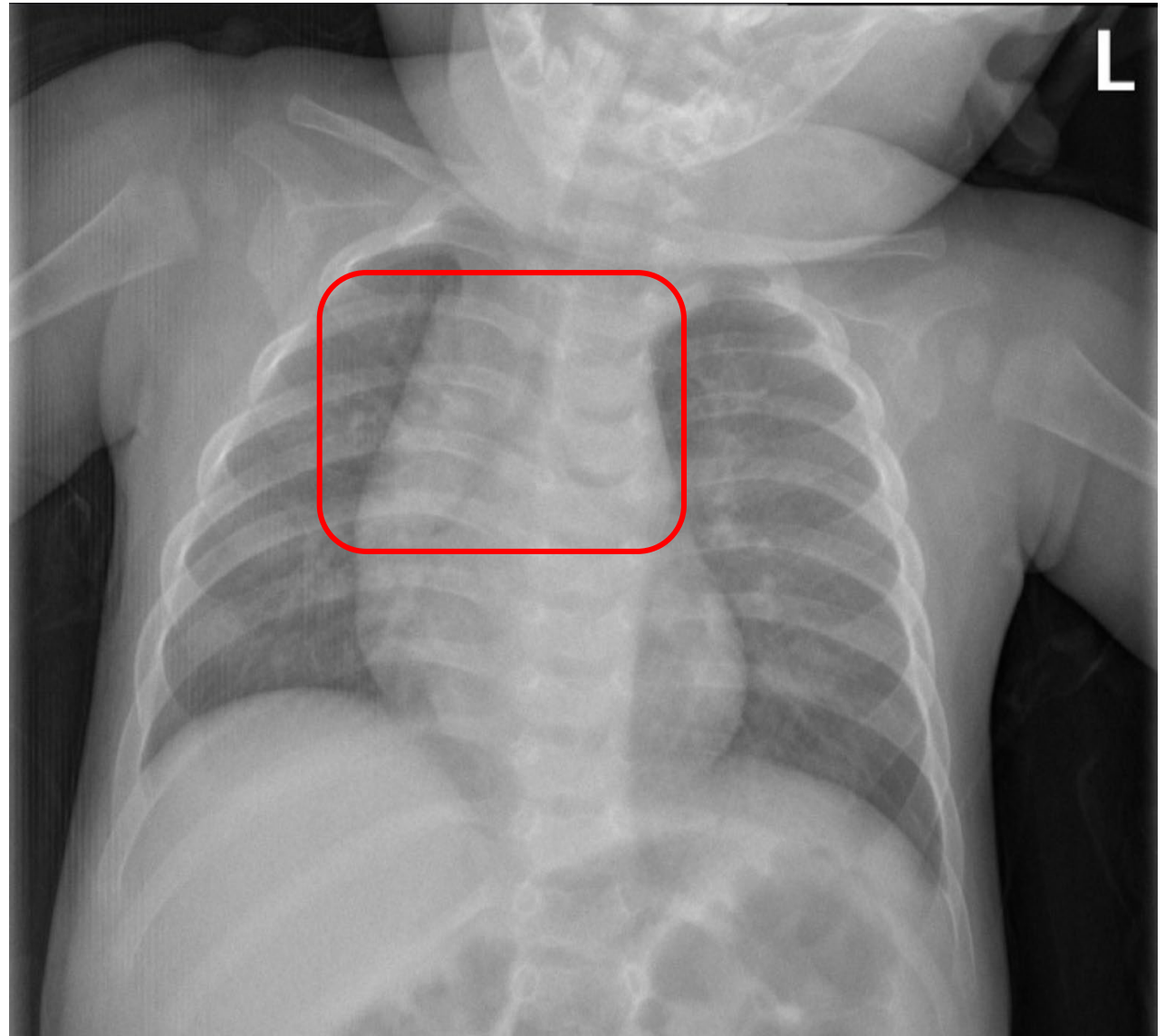




Enlarged
paratracheal
lymph node

ssion) of
nchus

Radiographic TB disease patterns in children



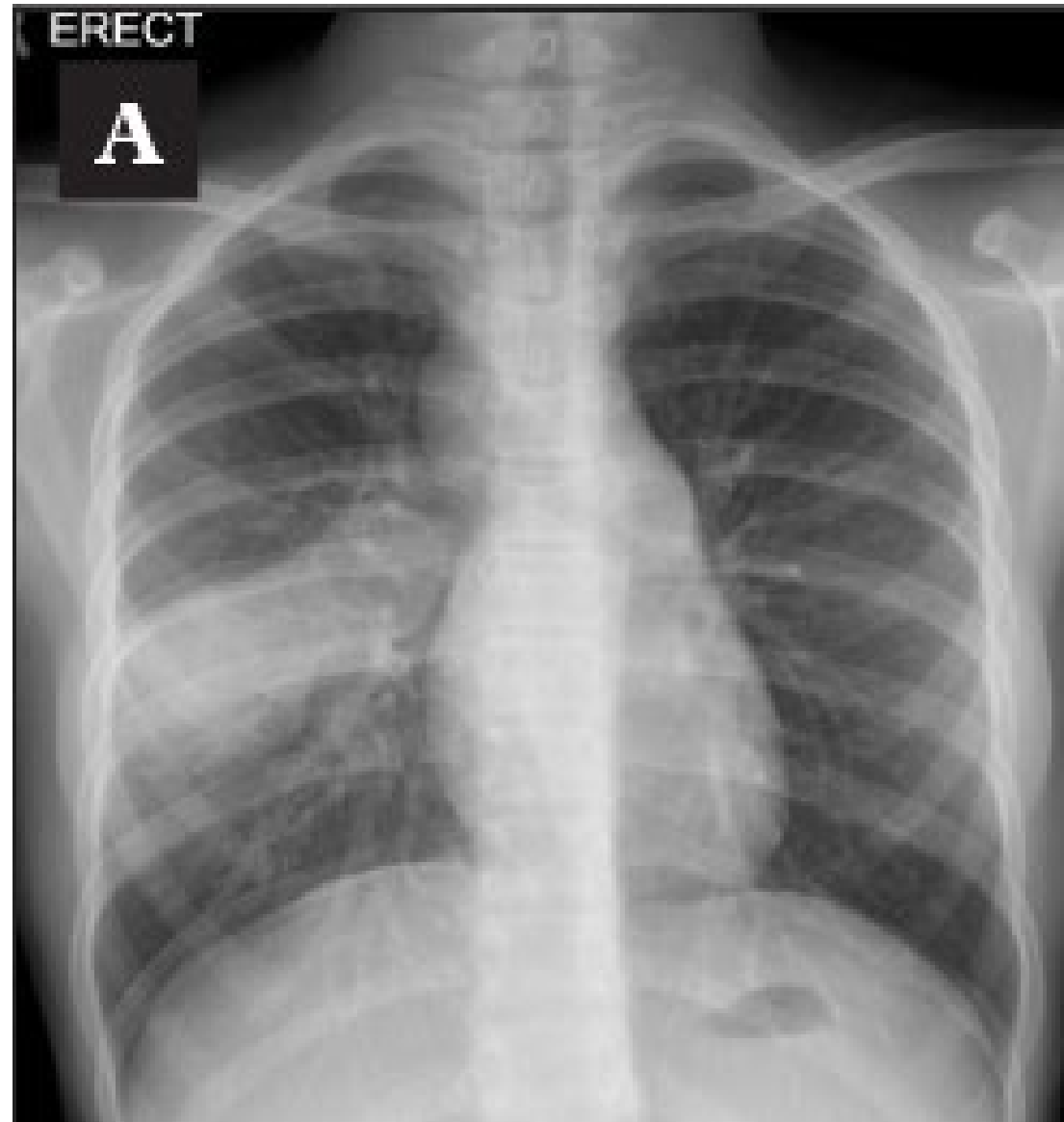
Radiographic TB disease patterns in children



Subtle radiographic concerns, imperfect film, high stakes:
Potential role for CT scan

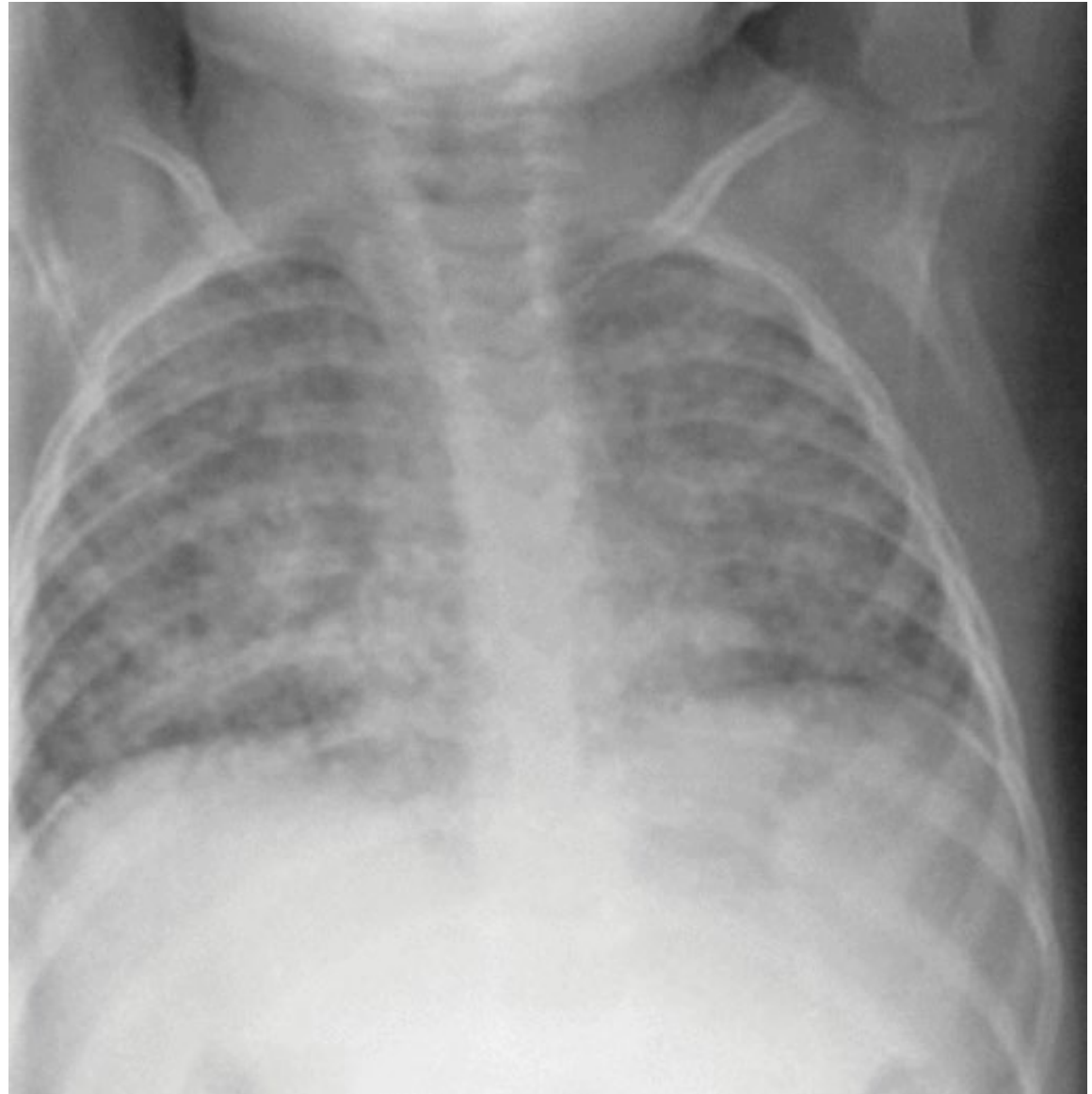
Radiographic TB disease patterns in children

Adenopathy with
consolidation



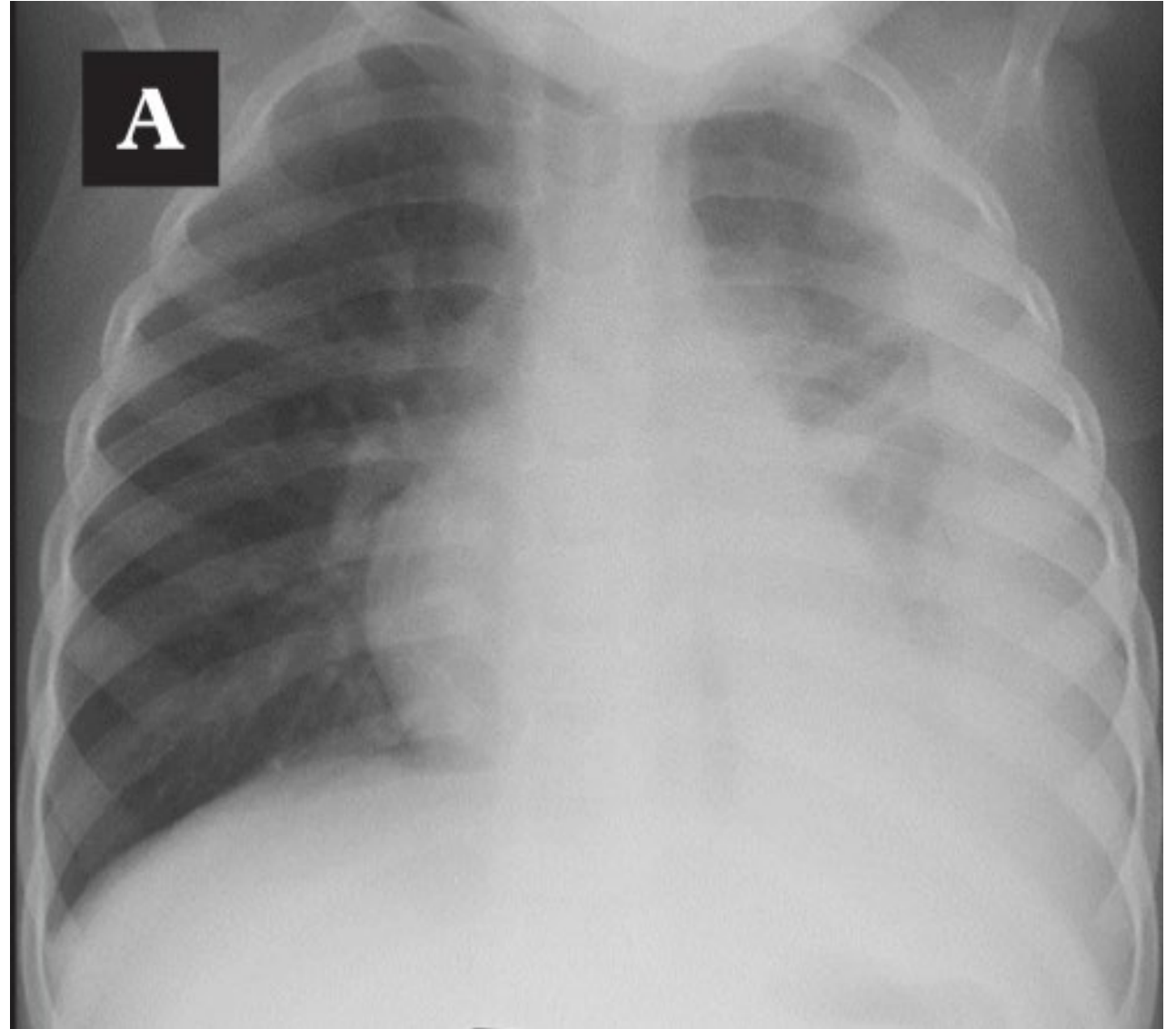
Radiologic characteristics of pediatric TB

Miliary pattern



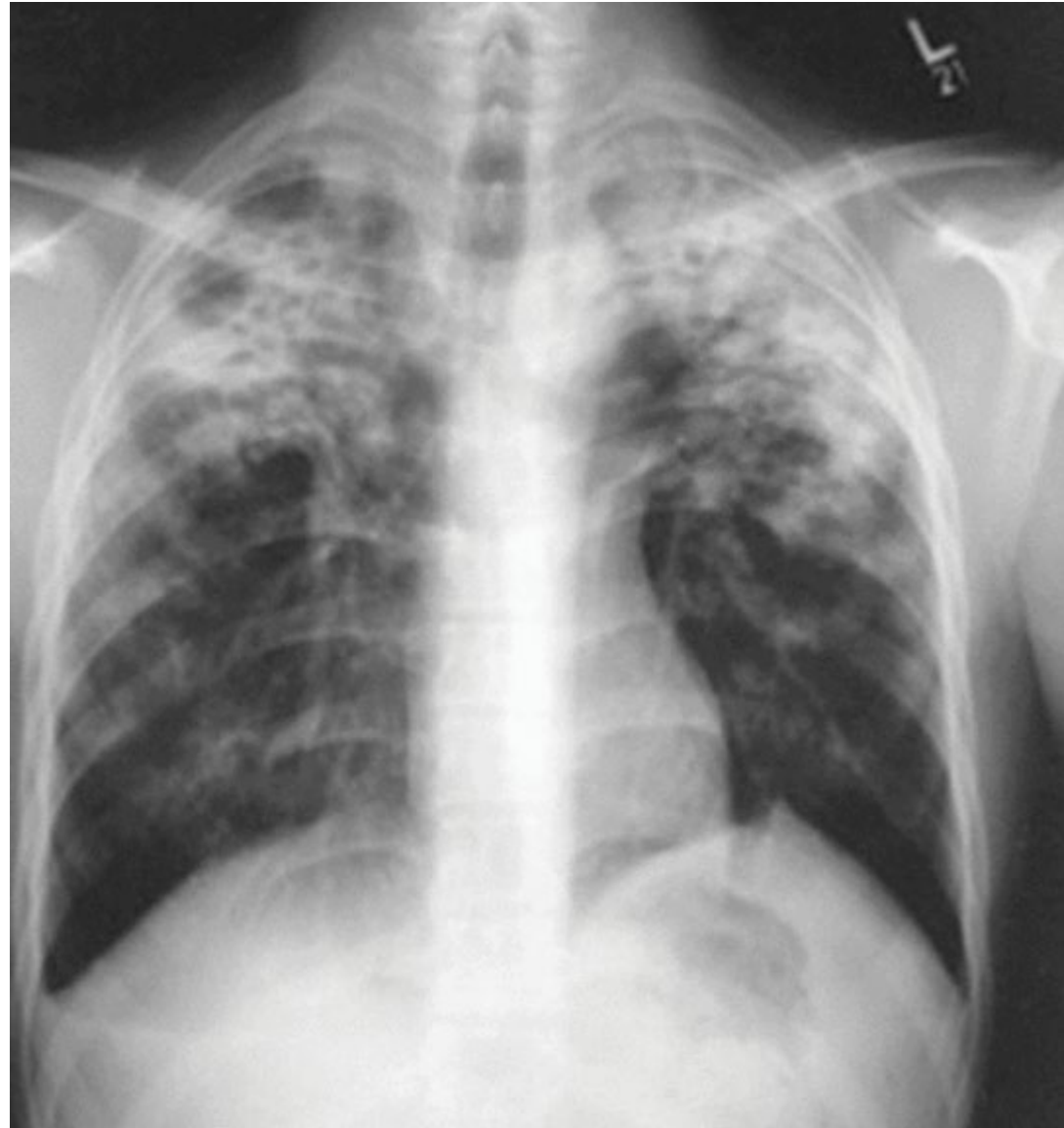
Radiologic
characteristics of
pediatric TB

Pleural Effusion



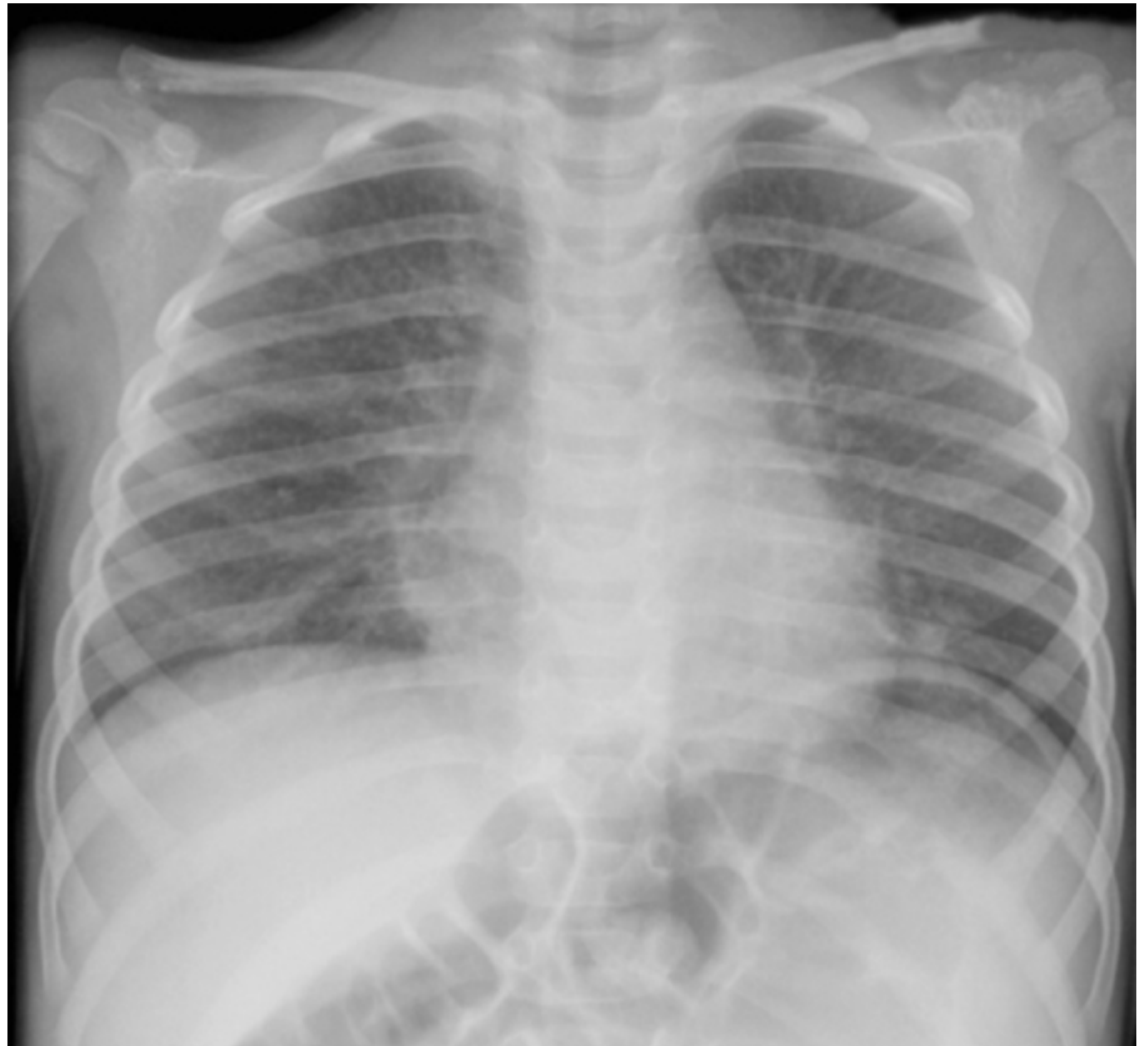
Radiologic characteristics of pediatric TB

Cavitary, upper lobe
disease



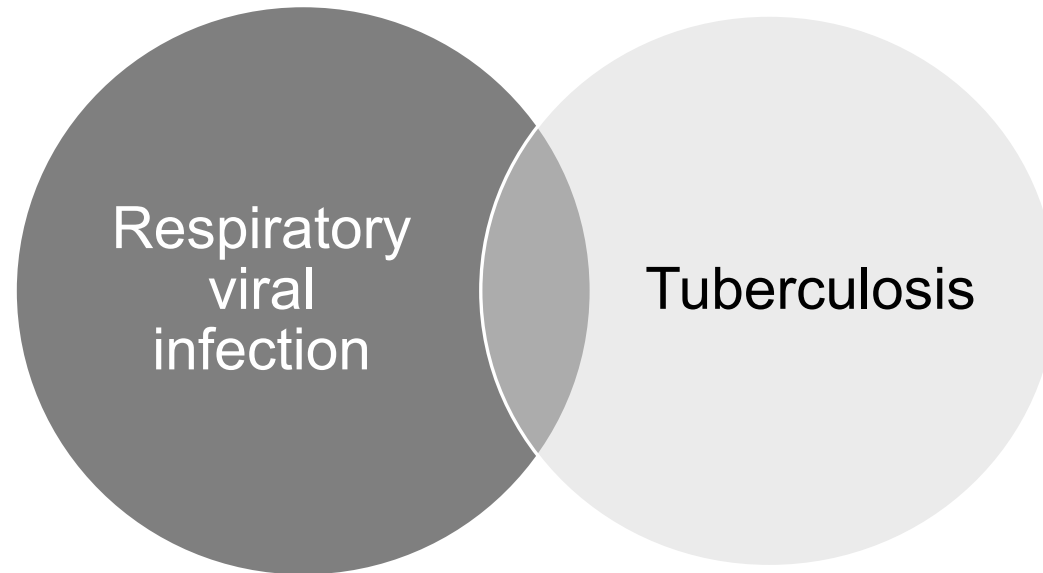
Key non-TB Disease patterns

Viral pneumonitis,
bronchiolitis, reactive
airways disease



Navigating radiologic uncertainty

School age child with household exposure, positive IGRA, cough



“Streaky RML density, potentially not inconsistent with an infectious etiology, which may not be exclusory of tuberculosis in the right clinical circumstances”

Navigating Uncertainty

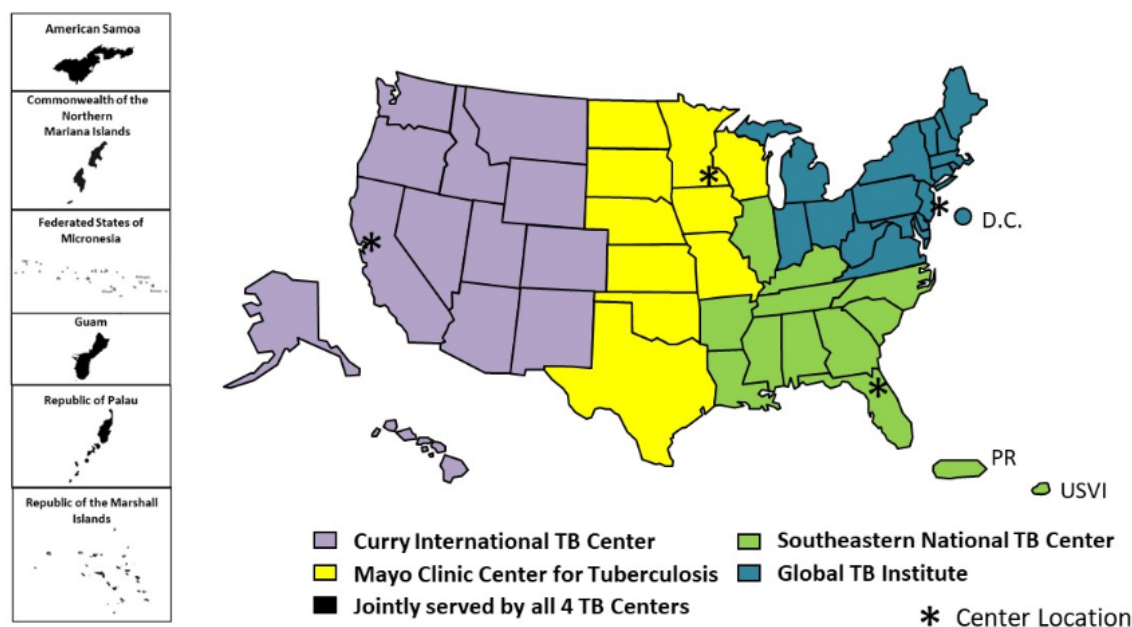


Navigating Uncertainty: Available resources

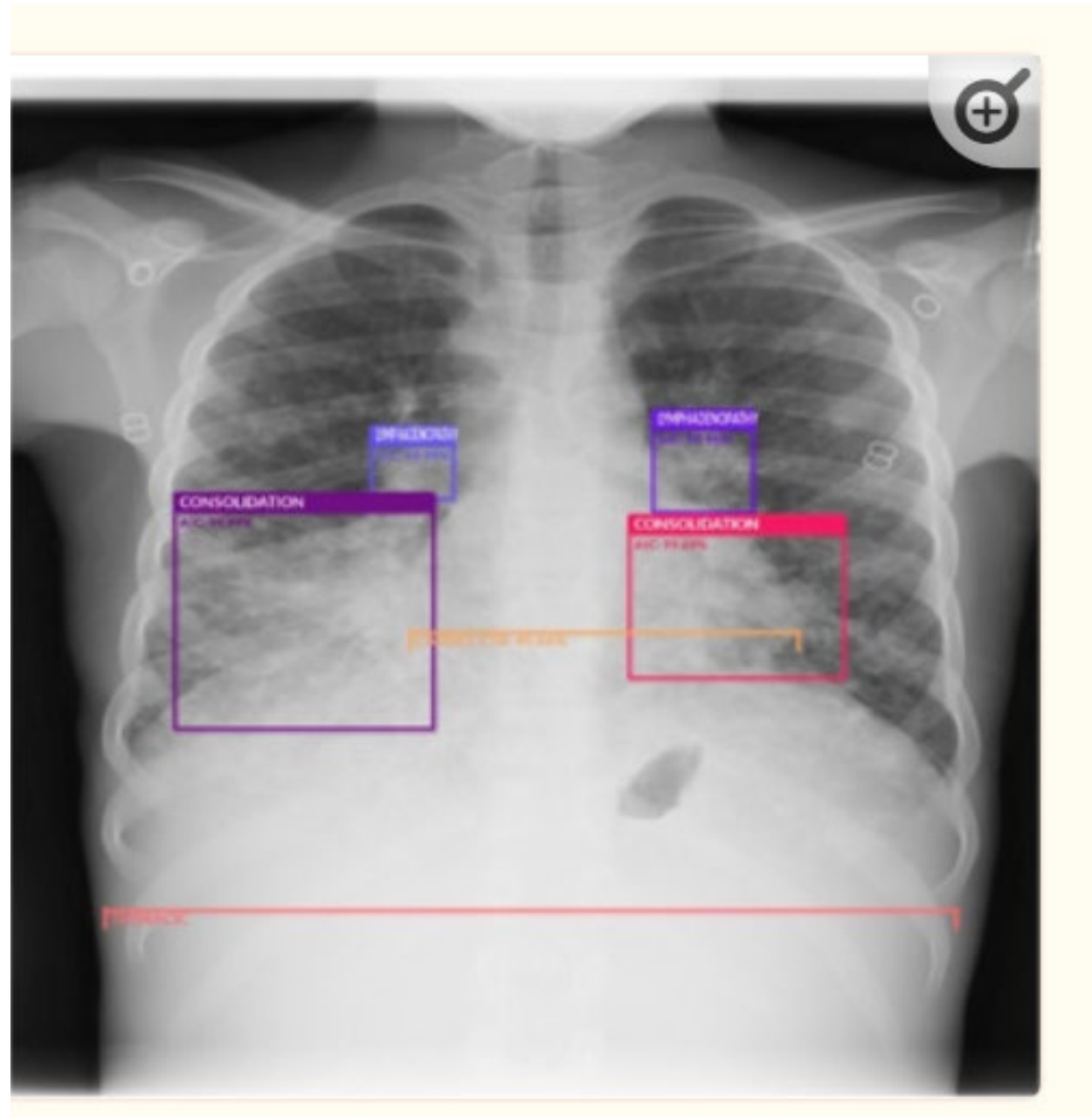


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CDC 24/7: Saving Lives, Protecting People™

TB Centers of Excellence for Training, Education, and Medical Consultation



Pediatric TB Radiology: Future Directions and Innovations





Thank you