An unusual case of multiple pulmonary nodules

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Case presentation

- M.F. 6-year-old girl
- Past medical history - uneventful
- Presented in ER elsewhere with:
  - 2 week history of right cervical lymphadenopathy
  - Mild fever, elevated inflammatory markers
- Admitted to general pediatric ward
  - Infectious investigation
  - Chest x-ray → Extensive laboratory work up
הצללות נודולריות מרובות, דיפוזיות, בשתני הראות.
פיזור микронודולים מיליארי דיפוזי
# Nodular Infiltrates DD

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<td>Septic emboli</td>
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<td>Mycoplasma</td>
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Ref: ??
Multiple pulmonary nodules

- Perilymphatic
- Centrilobular
- Random

Random refers to no preference for a specific location in the secondary lobule.

Secondary lobule

- The smallest functional unit that can be directly visualized by HRCT
- The smallest unit of lung covered by a connective tissue layer
Secondary lobules

The centrilobular artery (in blue: oxygen-poor blood) and the terminal bronchiole run in the center.

Lymphatics and veins (in red: oxygen-rich blood) run within the interlobular septa.

Centrilobular area

Perilymphatic area

Perilymphatic distribution

- Subpleural
- Peribronchovascular within axial interstitium
- Along lobular septae.
Perilymphatic distribution

- Most commonly in sarcoidosis.
- Silicosis
- Coal-worker's pneumoconiosis
- Lymphangitic spread of carcinoma.
**Centrilobular distribution**

- **Centrilobular area** is the central part of the secondary lobule.

- Away from the periphery of the lobe, pleural surface, or interlobular septa.

- It is usually the site of diseases that enter the lung through the airways.
Centrilobular distribution

- Centrilobular nodules DD:
  - Hypersensitivity pneumonitis
  - Respiratory bronchiolitis
  - Infectious airways diseases (endobronchial spread of TB or NTM, bronchopneumonia)
  - Uncommon in bronchioloalveolar carcinoma, pulmonary edema, vasculitis
Random distribution

- A result of the hematogenous spread.

- Small random nodules DD:
  - Hematogenous metastases
  - Miliary tuberculosis
  - Miliary fungal infections
  - Sarcoidosis may mimic this pattern, when very extensive
  - Langerhans cell histiocytosis (early nodular stage)
Miliary infiltrates

- Innumerable, small 1-4 mm pulmonary nodules scattered throughout the lungs

- Though the term miliary nodule has been used to describe a variety of CT patterns, it should be confined to randomly distributed micro-nodules only
Back to our patient

Random nodular distribution
An additional procedure was performed
Case presentation 2

- 2 years-old-girl
- Referred from Nablus to PICU
- Barking cough and stridor for the last 2 weeks
- Weight loss
- Severe inspiratory stridor
- Bilateral firm cervical lymphadenopathy
- Neck mass
- Chest x-ray
A diagnostic procedure was performed...
Diagnosis
Metastatic Differentiated Thyroid Cancer (DTC)
Pulmonary metastasis
Differentiated Thyroid Cancer
Uncommon presentations of common diseases are more common than common presentations of uncommon diseases.
Respiratory presentations of Differentiated Thyroid Cancer (DTC)

• "Miliary" infiltrates

• Stridor

Uncommon presentations of an uncommon disease