AN UNUSUAL CASE OF RECURRENT PNEUMONIA

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The case

History

- 32 year-old male who presented with a 4 days history of:
  - Productive cough
  - Right sided pleuritic chest pain
  - Low grade intermittent fever
  - No preceding URTI symptoms, sick contacts or recent travel
  - Hospitalized twice for pneumonia in the past two years
  - Told to have a lung “cyst” during second admission but declined surgery and biopsy
ROS
- Intermittent headache, fatigue and decreased appetite
- Otherwise negative

PMH
- Seizure disorder since childhood

Medications
- Dilantin

Allergies
- NKDA
History cont...

Family Hx

- Diabetes in mother

Social Hx

- Smokes ½ PPD for 12yrs, drinks socially, uses marijuana, unemployed
Physical Exam

- **VS:** T 100.6, P 108, BP 125/78, RR 22, pulse ox 97% on RA
- **GENERAL:** Overweight young male in moderate distress
- **PULM:** IC retraction; dullness, decreased air entry and scattered ronchi over lower 1/3rd of the right lung field posteriorly & laterally
- **CV:** Tachycardic, regular rhythm, systolic flow murmur
- **LYMPHATIC:** No significant lymphadenopathy
- The rest of the exam was normal
Diagnostic Data

- ESR: 18
- Quantiferon gold: negative
- Respiratory culture:
  - No viruses / Bacteria
  - Few Candida Albicans
  - No mycobacteria
- Blood Culture: negative

- Bands: 6
- Neutrophils: 79
- Lymphocytes: 15
- Eosinophils: 2
- Monocytes: 3
- Basophills: 0
Imaging
Patient course

- Initiated on CAP protocol
- Failure to improve after 48 hrs of treatment
- Chest CT and 3D CT with reconstruction was performed
BRONCHOPULMONARY SEQUESTRATION (BPS)
Introduction

- Rare congenital thoracic malformation - representing 0.15 to 6.4% of all pulmonary malformations

- Cystic/solid mass composed of nonfunctioning primitive tissue that does not communicate with the tracheobronchial tree.

- Blood supply is from systemic circulation

- Two forms
  - Intrapulmonary & Extrapulmonary
<table>
<thead>
<tr>
<th></th>
<th>Intrapulmonary</th>
<th>Extrapulmonary</th>
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</thead>
<tbody>
<tr>
<td>Prevalence</td>
<td>75-90%</td>
<td>10 -25%</td>
</tr>
<tr>
<td>Own Pleural investment</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Location</td>
<td>70% on left side</td>
<td>&gt;95% on left side</td>
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<tr>
<td>Venous drainage</td>
<td>Pulmonary veins</td>
<td>Systemic veins</td>
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<tr>
<td>Fore gut comm.</td>
<td>Very rare</td>
<td>More common</td>
</tr>
<tr>
<td>Associated anomalies</td>
<td>Uncommon</td>
<td>More common</td>
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Pathogenesis

- Developmental abnormality in the primitive foregut and lung buds-accessory lung bud

- Portion of the developing lung mechanically separated from the rest of the organ by compression from
  - CV structures
  - Traction by aberrant systemic vessels
  - Inadequate pulmonary blood flow.

- Intrapulmonary sequestration may be acquired
Clinical Presentation

Extrapulmonary

- Commonly diagnosed incidentally
- May present early with respiratory distress & chronic cough
- May manifest as GI symptoms and feeding difficulties
Clinical Presentation

Intrapulmonary

- Usually diagnosed later in childhood or adolescence
- Commonly presents as recurrent infection
- Rarely – hemoptysis / hemothorax
- Overdistension may lead to impairment of cardio respiratory function
Differential Diagnosis

- Primary lung abscess
- Recurrent pneumonia due to other causes
- Congenital lung mass
- Congenital diaphragmatic hernia
- Bronchogenic cyst
- Congenital lobar emphysema
- Chronic lung infection (TB, Fungal….)
Treatment

- Asymptomatic - controversial
  - Resection advocated because of:
    - Likelihood of recurrent infection
    - Need for larger resection if sequestration becomes chronically infected
    - Possibility of hemorrhage from AV anastomoses

- Symptomatic disease - surgical resection
  - Excision for EPS lesions
  - Lobectomy for IPS lesions
Complications

- Recurrent infection
- Heart failure
- Massive bleeding
- Fibrous mesothelioma, carcinoma
Antibiotic coverage was broadened

Underwent thoracotomy and right lower lobe lobectomy

Smooth post op course and discharge
Conclusion

- BPS is a rare malformation

- Intrapulmonary sequestration accounts for more than 75% of cases

- Possibility of BPS and other congenital malformations should be kept in mind in patients presenting with recurrent infection

- Treatment is surgery
References

- Landing BH, Dixon LG. Congenital malformation and genetic disorders of the respiratory tract (larynx, trachea, bronchi and lungs). AM Rev Respir Dis 1979; 120:151
Thank you!