Cavernous Mass In The Lung

Advanced Clerkship In Diagnostic Radiology
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Outline

• Introduction
• Clinical Case
• Radiological Findings
• Differential Diagnosis
• Treatment
Introduction

- Cavernous mass can often be seen in chest x-ray
- It has many differential diagnosis
- Not always easy to find the right diagnosis...ergo...
- Look always for clinical feature!
Clinical Case

Patient History

- 27 year old female with pain in right ankle (arthropathy) & fatigue
- Some respiratory symptoms
Physical Examination

- Swollen right ankle
- Otherwise normal examination, i.e. asymptomatic
Radiological Findings

Chest CT Imaging (Lung window)

Cavitary Lesion
Radiological Findings

- Multiple nodular opacities
- Evidence of cavitation in several of these opacities
Radiological Findings

Chest CT-Imaging (Soft-tissue window)

- Mediastinal and hilar adenopathy
Radiological Findings

- Again, mediastinal and hilar adenopathy
Differential Diagnosis

- Metastasis
- Wegener‘s Disease
- Pneumatoceles
- Lymphangiomatomyomatosis
- Langerhans Cell Histiocytosis (= Eosinophilic Granuloma)
- Sjögren‘s Disease
- Emphysema
- Sarcoidosis
- Mycobacterial Infection
Radiological Findings

Chest X-Ray

- On this chest x-ray, cavitaries can be appreciated
In this case...it was
Sarcoidosis

- Also called sarcoid of Boeck
- Female individuals btw. 20 ~ 40 are often affected (m:f = 1:3)
- Ten times higher prevalence in blacks
- Pathogenesis unknown; pollen?, mycobacterial infection?, inorganic dusts?
Clinical Feature

1. Acute form: fatigue, fever, muscle aches, dyspnea, joint pain, swollen glands etc.
2. Subacute form: mostly asymptomatic, also with organ involvement
3. Chronic form: symptoms appear slowly; initial symptoms can be dyspnea, cough and other respiratory abnormalities
Radiological Findings (Comparison)

Chest X-Ray: “usual finding”

Bihilar lymphadenopathy
Staging

The lung is the most affected organ!

Stage I (45 ~65%):
   isolated lymphadenopathy
   (right paratracheal or bihilar)
Stage II: involvement of parenchyma &
   adenopathy
Stage III: isolated to the parenchyma
Stage IV: end stage of sarcoidosis; extensive fibrosis &
   honeycombing
Rare Cases

1. Tracheobronchial involvement (~25%)
2. Eggshell calcification of the lymph nodes (~5%)
3. Pleural effusion (< 2%)
4. Nodular sarcoidosis (<1%)
5. Cavitary sarcoidosis (only 10 cases in the literature!)
Cavitary Sarcoidosis

Discussion

- Cavities range from 3~8cm
- Usually thick walled
- Probably result from ischemic necrosis of the granulomas, or
- Secondary to a granulomatous angiitis
Cavitary Sarcoidosis

Discussion

• Patient may be asymptomatic; however, life threatening hemoptysis has been reported

• May mimic cavitary infection and other diseases
**Typical Pathological Findings**

- Mononuclear infiltrate of cells
- Development of granulomas of epithelioid cells, macrophages, and multinucleated giant cells
- Granulomas distribute along lymphatic pathways
Typical Pathological Findings

Granulomas adjacent to bronchiole and pulmonary artery

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Typical Pathological Findings

Confluent granulomas, forming nodules
Typical Pathological Findings

Microscopic – confluent granulomas and necrosis
Treatment & Prognosis

- Usually not treated; Steroids in severe cases: 80% of cases resolve completely; fibrosis develops in 20%
- Recurrence may appear, also in transplanted lung
- Mortality: 2 ~ 7% (respiratory failure, cor pulmonale, hemorrhage) – worse in black population
References

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