

American Thoracic Society International Conference

GREAT CASES

Clinical, Radiologic & Pathologic
Correlations by Master Physicians



Where today's science meets tomorrow's care™



ATS 2017
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May 19 - May 24
Washington, DC
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Great Cases: Clinical, Radiologic & Pathologic Correlations by Master Physicians

Organized by the Council of Chapter Representatives

Sunday, May 21, 2017
2:15 p.m. – 4:15 p.m.

WALTER E. WASHINGTON CONVENTION CENTER
Ballroom C (South Building, Level 3)

Chairing: Stephen P. Kantrow, MD, New Orleans, LA
Steven H. Kirtland, MD, Seattle, WA

Master Clinicians: Sharon I. Rounds, MD, Providence, RI
Marvin I. Schwarz, MD, Aurora, CO
Paul C. Stillwell, MD, Aurora, CO

Master Radiologist: Alison G. Wilcox, MD, Los Angeles, CA

Master Pathologist: Jeffrey L. Myers, MD, Ann Arbor, MI

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Baltimore, MD

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Chapel Hill, NC

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Presented by Harman Kular, MD
Houston, TX

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Presented by Krishna Siva Sai Kakkera, MBBS
Little Rock, AR

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Presented by Prangthip Charoenpong, MD
Brooklyn, NY

Case 1

She Who Sings Frightens Away Her Ills

Presented by Julien Nguyen, MD

A 54-year-old African American female singer from England with a history of hypertension, diabetes, and uterine fibroids presented with acute rhinorrhea, productive cough, and mild shortness of breath over several days. She denied a history of smoking. Her history was otherwise unremarkable.

Initial screening chest radiograph showed diffuse, bilateral lower lung zone nodules versus cysts (Figure A) that were further characterized as innumerable sub-centimeter cavitary pulmonary nodules on CT chest with an incidental 1.8 cm right thyroid nodule (Figure B). Serologic studies for ANA, ANCA, rheumatoid factor, anti-DNA and anti-Jo-1 were negative. ACE level was normal and interferon gamma release assay was negative. Due to her scheduled performances, two months elapsed before transbronchial biopsies were obtained, revealing benign alveolar tissue with negative stains for S100, CD1a, HMB45, and Congo Red and an absence of granulomas.

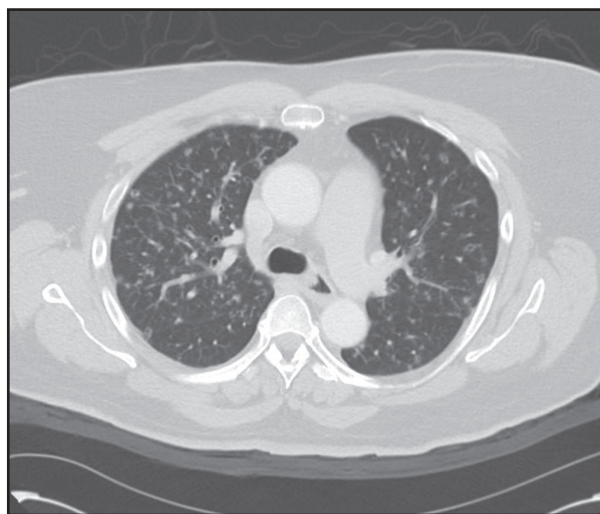
Questions:

- 1) What is your diagnosis?
 - a. Lymphangioleiomyomatosis
 - b. Benign metastasizing leiomyoma
 - c. Sarcoidosis
 - d. Metastatic medullary thyroid carcinoma
 - e. Multiple pulmonary leiomyomatous hamartomas (MPLH)
- 2) What is the appropriate treatment for this diagnosis?
 - a. Observation
 - b. Oophorectomy or GnRH agonist
 - c. Oral corticosteroids
 - d. Sirolimus
 - e. Thyroidectomy followed by vandetanib

Figure A



Figure B



Case 2

The Naked Trachea

Presented by Udit Chaddha, MBBS, MD

A 55-year-old man with no past medical history presented to an outside hospital with one week of chest pain, cough and progressive dyspnea. Due to continued decline despite 7 days of vancomycin and piperacillin/tazobactam, he was transferred to our center. Chest computed tomography (CT) revealed a 3 cm segment of circumferential thickening of his trachea from the thoracic inlet to the T4 level (Figure A). The patient required an endotracheal intubation for worsening respiratory distress. Routine blood work and cultures had been unrevealing except for a leukocytosis with neutrophilia.

Flexible bronchoscopy findings are shown in Figure B.

Questions:

- 1) What is your diagnosis?
 - a. Adenoid cystic carcinoma
 - b. Granulomatosis with polyangiitis
 - c. Relapsing polychondritis
 - d. Endobronchial mucormycosis
 - e. Membranous (bacterial) laryngotracheobronchitis
- 2) How would you manage this patient?
 - a. Surgical debridement
 - b. Tracheal stent
 - c. Corticosteroids
 - d. Amphotericin B and micafungin
 - e. Rituximab and methylprednisolone

Figure A

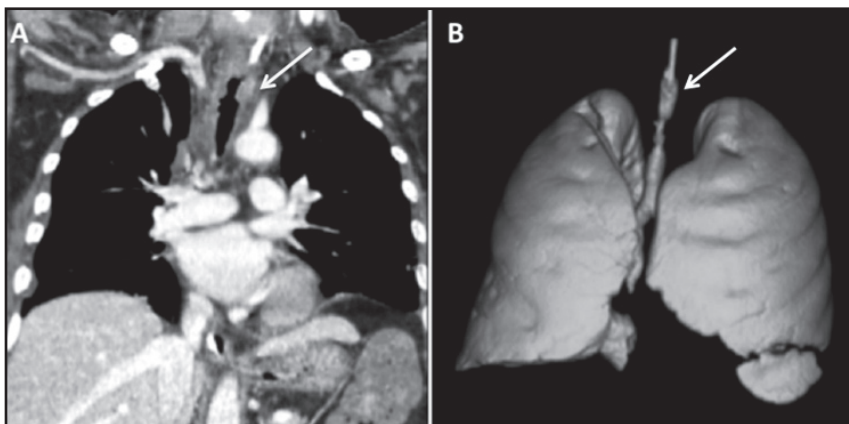
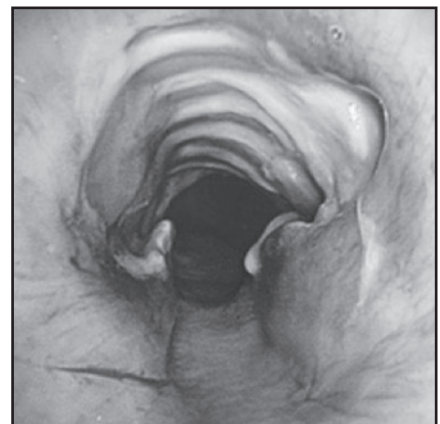


Figure B



Case 3

Mysterious Masses

Presented by Bich-Chieu Tran, MD

A 70 year old military veteran presented for evaluation of fever and cough with an abnormal chest radiograph. He had a history of prostate cancer treated with external beam radiation in 2002 and subsequent hormonal therapy, chronic obstructive pulmonary disease requiring supplemental oxygen, and a history of asbestos exposure for 13 years. He smoked one pack of cigarettes per day for 50 years. He reported chronic night sweats and a 5 pound weight loss over the past 6 months. Vital signs and physical exam were unremarkable.

A CT chest demonstrated pleural-based nodules and masses (Figures A and B).

Questions:

- 1) What is your diagnosis?
 - a. Metastatic prostate cancer
 - b. Metastatic lung cancer
 - c. Benign fibrous tumors of the pleura
 - d. Thoracic splenosis
 - e. *Dirofilaria immitis* infection
- 2) What would you do next?
 - a. Navigational bronchoscopy
 - b. Video-assisted thoracoscopic lung biopsy
 - c. *Dirofilaria immitis* serology
 - d. Scintigraphy with Technetium-99m sulfur colloid
 - e. Transthoracic needle biopsy

Figure A

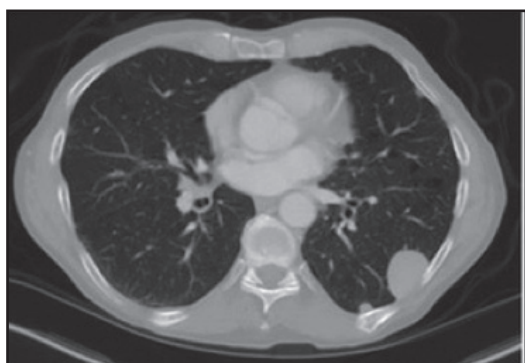
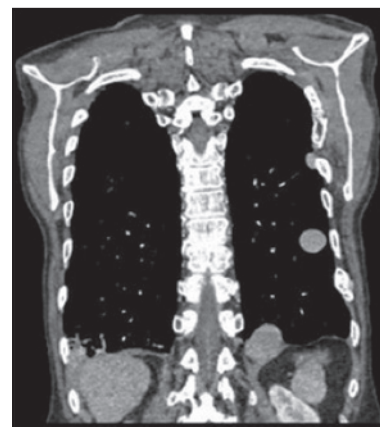


Figure B



Case 4

There's Nothing Cute about This Chest Syndrome

Presented by Matthew J. Bruehl, MD

A 14-year-old boy with sickle cell disease (HbSS) presented to the emergency department with fever, cough, and right-sided chest pain. Chest radiography showed a right middle lobe infiltrate. A CBC showed neutrophilic leukocytosis and anemia below baseline with a hemoglobin of 6.9 g/dL. He was diagnosed with acute chest syndrome and treated with intravenous fluids, antibiotics, analgesics and a red blood cell transfusion. Over the next several days he developed hepatomegaly, coagulopathy, worsening bilateral pleural effusions, and acute kidney injury. His serum ferritin was elevated (1,610 ng/mL). He developed frank hemoptysis that resolved with correction of his coagulopathy. A computed tomography (CT) scan of his chest was done (Figure A). He developed a prolonged nosebleed with recurrent hemoptysis several days later. His renal function continued to decline, requiring hemodialysis. He was treated with plasma exchange and methylprednisolone and improved.

He was discharged on hospital day 57, but was re-admitted 9 days later with hypertension, abdominal pain, altered mental status and seizures. An abdominal CT showed progression of the right lung lesion (Figure B).

Questions:

- 1) What is the diagnosis?
 - a. Pulmonary infarction with sickle cell crisis
 - b. Salmonella lung abscess
 - c. Granulomatosis with polyangiitis
 - d. Disseminated mycobacterium tuberculosis
 - e. Hemophagocytic lymphohistiocytosis
- 2) Which therapy is most likely to lead to clinical improvement?
 - a. Exchange transfusion
 - b. Methylprednisolone and rituximab
 - c. Etoposide
 - d. Anti-mycobacterial therapy
 - e. Broad spectrum antibiotics

Figure A

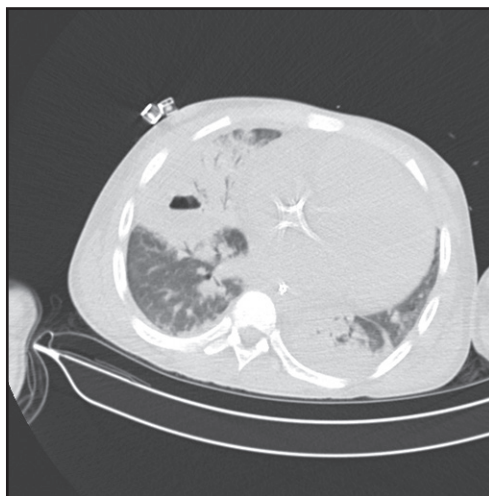
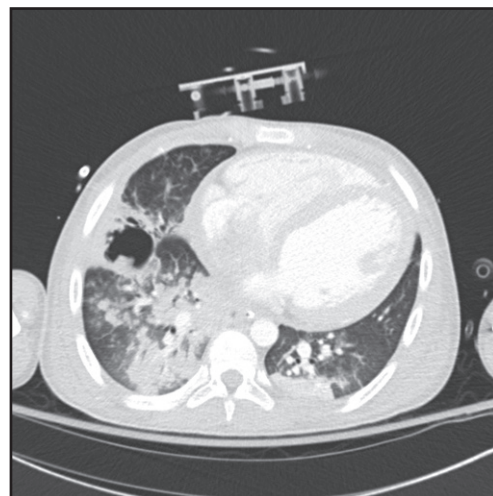


Figure B



Case 5

A Nagging Pimple

Presented by Harman Kular, MD

A 39 year-old previously healthy man developed a productive cough. He is originally from Cameroon and immigrated to the United States ten years ago. He resides in central Texas and works as a petroleum engineer technician. He has a 28 pack-year smoking history and quit 6 months prior to presentation. He noted a forehead lesion that had increased in size over the past two weeks (Figure A). Examination is otherwise normal. Diagnostic studies revealed an elevated white blood cell count (14,000/uL) with eosinophilia (absolute count 2380/uL) and elevated IgE (1100 IU/mL). His chest radiograph is shown below (Figure B).

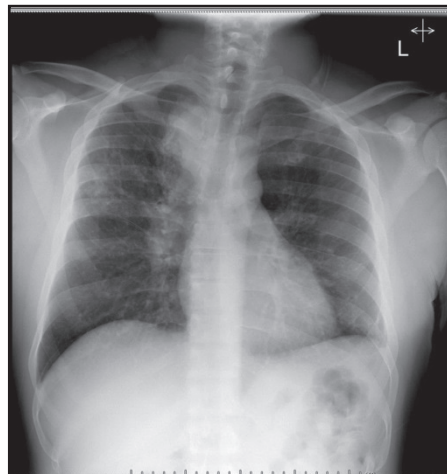
Questions:

- 1) What is your diagnosis?
 - a. Cutaneous leishmaniasis
 - b. Lung cancer metastasis
 - c. Disseminated fungal infection
 - d. Hypereosinophilic syndrome
 - e. T cell leukemia/lymphoma (HTLV-1 related)
- 2) What is this patient's risk factor for the development of this disease?
 - a. Occupational exposure
 - b. His African descent
 - c. His residence
 - d. a and c
 - e. All of the above

Figure A



Figure B



Case 6

When a Bird is a Herring: Guilt by Association

Presented by Krishna Siva Sai Kakkera, MBBS

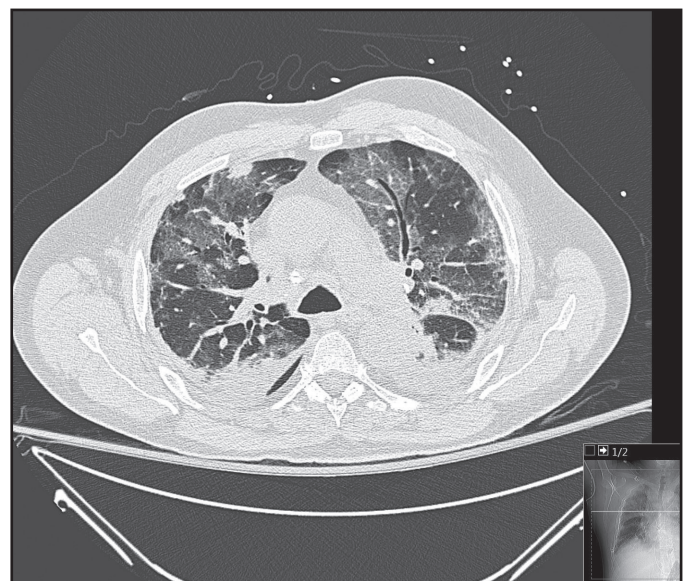
A 59 year old male with chronic lymphocytic leukemia presented with a 3 month history of cough, low-grade fever, shortness of breath and hypoxemia. His symptoms began after he moved in with his partner who owned cockatiels. Chest CT revealed bilateral upper lobe ground glass infiltrates with areas of consolidation (Figure A). His symptoms improved with steroids and empiric therapy for community acquired pneumonia.

He was discharged home to complete a two week course of therapy but re-presented three weeks later with persistent fever and worsening hypoxemia. Previously seen ground glass infiltrates had resolved on repeat chest CT, with worsening sub-pleural abnormalities in the lower lobes. His peripheral blood count was normal and a bone marrow demonstrated preserved cellularity.

Questions:

- 1) What is the diagnosis?
 - a. Recurrent hypersensitivity pneumonitis
 - b. Leukemic infiltrates of the lung
 - c. Cryptogenic organizing pneumonia
 - d. Chronic eosinophilic pneumonia
 - e. Pneumocystis jirovecii pneumonia
- 2) What would you do next?
 - a. Restart systemic steroids
 - b. Give another course of antibiotics
 - c. Perform bronchoalveolar lavage and transbronchial biopsy
 - d. Obtain video-assisted thoracoscopic lung biopsy
 - e. Obtain induced sputum for Giemsa stain

Figure A



Case 7

Zebras Have Hooves Too

Presented by Prangthip Charoenpong, MD

A 53-year-old male from Trinidad presented with a one year history of dry cough associated with decreased appetite, unintentional weight loss, and a peripheral white blood cell count (WBC) of 21,000 per mm³ with 50% eosinophils.

Chest CT demonstrated upper lobe predominant, peripheral abnormalities (Figure A). The patient returned abruptly to Trinidad and did not present again until nine months later. Chest CT at that time revealed progressive mediastinal lymphadenopathy. He was again lost to follow-up and re-presented seven months later with worsening cough and weight loss. No wheezing was noted on physical exam. Labs were remarkable for WBC of 46,000 per mm³ with 53% eosinophils. Mediastinal and bilateral hilar adenopathy and peripheral abnormalities persisted on chest CT (Figure B). Rheumatologic evaluation included negative ANCA, ANA and RF. The peripheral blood JAK2 mutation test was negative. Stool evaluation for ova, cysts and parasites was negative. The patient underwent bronchoscopy. Bronchoalveolar lavage fluid cell count was 1740 white blood cells per mm³ with 59% eosinophils. Cytology demonstrated numerous eosinophils admixed with a few macrophages and small lymphocytes.

Questions:

- 1) What diagnostic test would you perform?
 - a. Testing for filarial and strongyloides antibodies
 - b. Bone marrow with cytogenetic analysis
 - c. Total IgE, aspergillus specific IgE and IgG
 - d. Video-assisted thoracoscopic lung biopsy
- 2) What might have predisposed the patient to developing this disease?
 - a. Geographic exposure
 - b. Gender
 - c. Frequent air travel
 - d. Smoking

Figure A

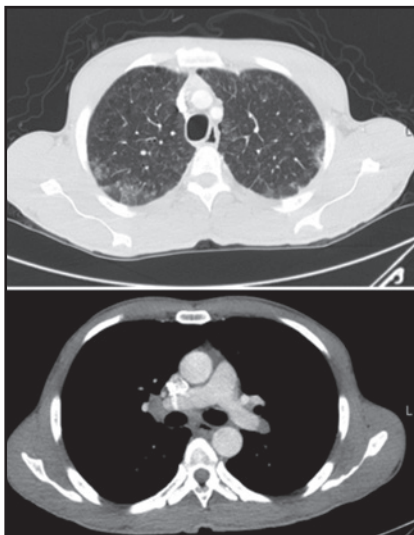
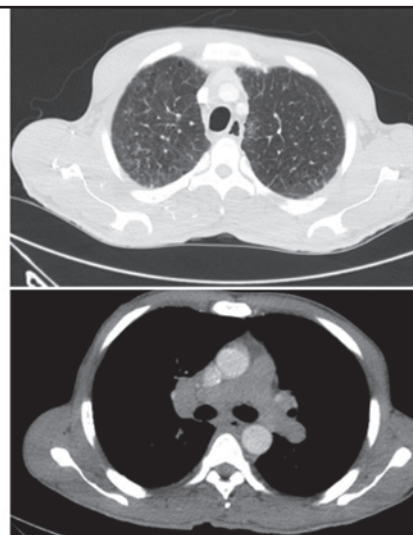


Figure B





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