



**A PRIMER FOR CLINICIANS**

# Radiographic Manifestations of Tuberculosis

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**SECOND EDITION 2006**

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CHARLES L. DALEY, MD

MICHAEL B. GOTWAY, MD

ROBERT M. JASMER, MD

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## ***About the Authors***

**Charles L. Daley, MD**, is a Professor of Medicine at the National Jewish Medical and Research Center and the University of Colorado Health Sciences Center. He is Head of the Division of Mycobacterial and Respiratory Infections at National Jewish Medical and Research Center.

**Michael B. Gotway, MD**, is a Radiologist with Scottsdale Medical Imaging, an affiliate of Southwest Diagnostic Imaging. He is also Clinical Associate Professor of Radiology and Medicine at the University of California, San Francisco. He is the former Acting Chief of Radiology and Director of Thoracic Imaging at the San Francisco General Hospital as well as the former Director of the Radiology Residency Training Program at the University of California, San Francisco.

**Robert M. Jasmer, MD**, is an Associate Clinical Professor of Medicine at the University of California, San Francisco. He is also an Attending Physician at the San Francisco Tuberculosis Clinic.

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## ***Learning Objective***

**Upon completion of this course, participants will be able to:**

- A.** identify a tuberculosis suspect on the basis of a chest radiograph
- B.** describe appropriate management options based on the appearance of a chest radiograph

### **CHAPTER 1 – BASIC CHEST RADIOGRAPH INTERPRETATION**

**Objective 1:** Learners will be able to describe why normal anatomy and pathology may or may not be visualized using radiographs.

**Objective 2:** Learners will be able to gather information from the radiograph instead of using pattern recognition.

### **CHAPTER 2 – RADIOGRAPHIC MANIFESTATIONS OF TUBERCULOSIS**

**Objective 1:** Learners will be able to describe the radiographic manifestation of pulmonary tuberculosis and use standard terminology to describe the radiographic findings.

**Objective 2:** Learners will be able to recognize various radiographic manifestations of tuberculosis.

### **CHAPTER 3 – CLINICAL CASES**

**Objective 1:** Learners will apply knowledge to interpret clinical cases.

**Objective 2:** Learners will use case studies to describe the radiographic abnormalities and will answer questions relevant to the evaluation and treatment of the case.

## ***Foreword***

**T**uberculosis conjures up many different images for both clinicians and laypersons, from the White Plague of centuries past to the sanatoria of the 19th century to impoverished people spreading resistant bacteria in urban areas in the 20th and 21st centuries. Despite many advances in both diagnosis and treatment, tuberculosis remains one of the most common causes of death from any infectious agent in the world. Currently, there are approximately 9 million cases of tuberculosis every year in the world, and it is hyperendemic in many countries of Africa, Southeast Asia, Latin America, and Eastern Europe. Roughly one-third of the world's population (2 billion people) is infected with *Mycobacterium tuberculosis*.

One of the most important and fascinating aspects of tuberculosis is the multiple forms it can take in radiographs of the chest. These differing radiographic appearances are often misunderstood and can easily be confused with other disease processes. In this text, we have set out to catalog the multiple chest radiographic manifestations of tuberculosis. Our intention is to make this as interactive an experience as possible, and we have included cases requiring readers' input as well as an entire chapter dedicated to case presentations with multiple choice questions.

Readers will note that, in several instances, portions of radiographs have been cropped to varying degrees. Of course, it is of paramount importance to adequately evaluate the quality of a radiograph prior to interpretation, and one step in this process is making certain that a portion of the radiograph has not been excluded from view. For the purposes of this text, cropping of the radiographs has been done to enhance the visualization of anatomy or pathology by increasing the resolution of the area of interest on the radiograph, and is a necessary step in providing high-quality radiographic reproductions.

The text has been divided into three chapters. The first consists of a basic discussion of what x-rays are, how images are created, and the skills necessary to read and interpret chest radiographs for the presence of disease. In the second chapter we provide examples of tuberculosis in all its multiple appearances. Finally, in the third chapter we present a series of cases to illustrate how the radiographic findings influence the evaluation and management of patients at risk for tuberculosis.