

ROENTGEN

SIGNS

IN

CLINICAL

DIAGNOSIS

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PREFACE

This text is written for medical students, residents in radiology and allied specialties, and practicing physicians.

The book presents the fundamentals of radiology rearranged on the basis of objective signs as seen in roentgenograms. The text is organized to promote some idea of the limitations as well as accuracy in roentgen diagnosis by pointing to the technical and anatomical facets behind roentgen signs. It is organized to lead the reader to systematic thinking and analysis of roentgen signs prior to the formation of definitive diagnoses.

Our proposed curriculum for the teaching of radiology to medical students and the post-graduate groups is organized into three phases.

PHASE I: *The presentation of normal radiographic anatomy.* This course is integrated with that of normal anatomy in the preclinical teaching program. The text used is the *Atlas of Normal Radiographic Anatomy*.

PHASE II: *The presentation to the student of the roentgen signs which make up the basic concepts of roentgen pathology.* These are classified in terms of changes in size, contour, architecture, density, position and function. No attempt is made at this stage to teach more than a recognition of the pathology seen, and the importance of reviewing each film in a systematic way. If mention is made of specific diseases, it is merely to illustrate these major principles.

The text is used in this phase in a limited fashion, emphasis being placed on chapter and paragraph headings, with reference to illustrations to induce orderly thinking in terms of film analysis and radiographic pathology seen therein.

PHASE III: *The organization of the criteria in Phase II to reach a definitive diagnosis, or to suggest a limited number of clinical possibilities.* This text will probably be of greatest assistance in this regard for the post-graduate groups. It is also suggested that the chapter and paragraph headings in this text be used as a basis for an index for the routine classification of films. By frequent reference to such a cross index system the panorama of differential diagnosis will be impressed upon the students' minds.

This three-phase organization of our teaching program in diagnostic radiology is different from the usual approach which has often tried to demonstrate to the student the radiographic changes manifest in particular diseases without preliminary training. Our belief has been that this latter approach is undesirable for the student because he gains the impression that a disease entity can usually be specifically diagnosed by roentgen findings alone, without integration of the radiographic pathology and the clinical aspects of the individual patients. Moreover, the student is overwhelmed by the multiplicity of roentgen appearances for any specific disease and does not think systematically about the subject.

Our approach to the teaching of radiology gives the student the viewpoint toward roentgen diagnosis which the radiologist himself uses: first, an objective description of the aberration from the normal; and second, an integration with the known clinical data to arrive at an impression or differential diagnosis.

It has been our aim to make the present text independent of our *Atlas of Normal Radiographic Anatomy*, and it must stand alone as an elementary and intermediate type of presentation of the subject material. We have not hesitated to borrow from the *Atlas of Normal Radiographic Anatomy* when the major purpose of the two books overlapped. Needless to say, the objectives of these two texts are complementary but different, and each stands alone as a separate didactic presentation for medical students, residents in radiology, and practicing clinicians.

It has been impossible in the limited scope of this single volume to include all objective roentgen criteria, nor would it necessarily be desirable to do this for the above categories of medical trainees. Indeed, in certain areas, arbitrary discussion of diseases under one of their main roentgen appearances has been made, when an alternative choice might have been just as valid. This is particularly true of diseases such as bone tumors and tuberculosis, where the roentgen signs are manifold and the description must be arbitrarily made in one section, but reference to the diseases made in many. This has of necessity given rise to some repetition. It is our concept that the main purpose of the book is better served by this expedient.

The bibliography given in the text is intentionally limited, with the purpose of providing the student with "key" articles which will provide additional references.

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