Teaching of Chest Radiology
to Medical Students*
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The method of teaching chest roentgenology to medical students at the University of Oregon Medical School is based upon the premise that useful knowledge cannot be attained without practical experience. In a medical school, brilliant teachers cannot serve in lieu of actual patients. Lectures, though superbly organized, illustrated and delivered do not constitute an adequate substitute for realistic clinical experience, no matter the student enthusiasm engendered. X-ray films comprise the bulk of the actual working material of the radiologist insofar as chest disease is concerned.† If for no other reason, this is fortunate for teaching purposes since, unlike the patient, radiographs are easily carried home for study by the student. They can be duplicated at will and each copy retains the reality of the original clinical problem. To fail to exploit this advantage is to do injustice to both the student and academic radiology.

Classes at the University of Oregon Medical School are composed of approximately 70 students. The course in diagnostic radiology is given at the third year level and consists of 33 hour long exercises at weekly intervals. Eleven weeks are devoted to radiology of the chest. In three introductory lectures, an attempt is made to present to the student a three-dimensional concept of the chest as it is reconstructed on two-dimensional x-ray films. Following these lectures, students are assigned cases from the departmental teaching file. These carefully selected cases are prepared as they might appear awaiting routine dictation in a radiology department or radiologist's office. A requisition containing clinical data is supplied with the films. In the interest of reality, the clinical information on this requisition varies markedly in quantity and quality. Generally, it is determined by the radiographic findings. Students are allowed to keep the films in their possession for one week. Thereafter and at seven weekly intervals, sessions are held in six small groups, each of which meets with a faculty radiologist. Students, cases and instructors rotate each week. Cases are assigned to the students in bright blue envelopes, a maneuver in the interest of departmental advertising which has to this date not been branded unethical (although the medical school orthopedists are rumored to be

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†Despite widely-held delusions to the contrary, direct radiographs are far superior to fluoroscopy in the ability to detect diseases of the chest. Fluoroscopy's inferiority to radiography in terms of the ability to reveal detail is easily shown. While fluoroscopy is of permanent usefulness only through the fluoroscopist's subjective interpretation of what was noticed, the radiograph shows what was actually there (even though missed). It can be evaluated by many, compared with subsequent or previous films, measured, studied at leisure, reproduced, and even sold for scrap.

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considering purple casts). In addition to handing in a written report, students informally present their radiographic findings and interpretations. Lively discussion, at times bordering upon actual battle is customary. That the teaching is retained is evidenced by examinations held at the end of each trimester. These examinations consist of multiple choice questions asked in connection with the projection of slides made from the teaching films used during the trimester.

In addition to the informal conferences, each week a public x-ray quiz is conducted using viewboxes in the medical school library. Members of the class in radiology place their diagnoses in a convenient ballotbox. Interest is favored by knowledge that the student scoring highest on these quizzes will be excused from final examination and given an “A” for the trimester.

The departmental teaching effort is not limited to contact with the medical student during the formal course in radiology. Infiltration tactics are employed in that radiologists assist in the anatomy dissecting room, give short weekly lectures in conjunction with the formal course in pathology and in general are audible contributors to all relevant clinical conferences. These conferences are particularly important in the teaching of diseases of the chest during the fourth year of the curriculum. Often taken for granted, the radiologist’s presence at such conferences actually results in a many-fold increase over the number of formal curriculum hours allotted to the Department. An elective in radiology is offered at the fourth year level. Through the reporting of current cases, the elective goes a step farther than the third year home study course in enhancing learning through a realistic practical approach to x-ray diagnosis. In both programs, the faculty-student contact is at the individual level. For teaching programs where this individual relationship is not achieved, it would be equally effective, far cheaper and therefore preferable to replace the faculty with rolls of recording tape.

Although mildly unorthodox, the method of teaching chest radiology at the University of Oregon Medical School appears to be more effective than formalized lecture-demonstrations given in darkened rooms to students rendered drowsy by their inability to see clearly the actual radiographic findings being discussed. Requiring no more preparation than that which is afforded by their every day practice, participation in the conferences of the third year course has proved to be interesting and rewarding to faculty members. It has tended to improve and cement relations between part and full-time faculties. Without imposing a burden, the small conference method gives all members of the volunteer faculty an important role in the teaching of their specialty. The scope of this discussion does not warrant development of this important aspect of medical teaching.