Penicillin Sensitivity

Nathan Steinberg, *University of Pennsylvania*
PULMONARY ANGIOGRAPHY IN THE DIAGNOSIS OF THROMBOEMBOLIC DISEASE

ARTHUR A. SASAHARA, M.D.,† MYRON STERN, M.D.,‡ MORRIS SIMON, M.D.,§ and DAVID LITTMAN, M.D.¶

WEST Roxbury and Boston, Massachusetts

PULMONARY angiography is potentially the most positive means for diagnosing thromboembolism of the lung. The importance of such a procedure can hardly be overstated when one is dealing with a diagnosis that is missed more often than it is made and in which recurrences may subsequently prove to be fatal. Since current therapy has been shown to improve prognosis significantly, early diagnosis becomes especially important.

The present report was prompted by the successful use of pulmonary angiography in 9 of 11 patients in whom the diagnosis of thromboembolic disease was suspected. Five cases of the group studied are presented in detail.

CASE REPORTS

Case 1. A 65-year-old lawyer was hospitalized because of shortness of breath. Two months earlier there was the gradual onset of persistent and progressive exertional dyspnea that increased suddenly 16 days before admission. There was cough but no hemoptysis, wheezing, nocturnal dyspnea or peripheral edema. A physician diagnosed pneumonia and treated him unsuccessfully for 6 days. An electrocardiogram interpreted as showing myocardial infarction prompted referral to the hospital.

Physical examination the patient was in no distress although respirations were shallow at 22 per minute. Examination of the chest, heart and lungs revealed only accentuation of the pulmonary 2d sound.

The white-cell count was 10,900, the serum glutamic oxalacetic transaminase normal, and the lactic dehydrogenase elevated to 190 units. A film of the chest (Fig. 1.4) revealed prominent main pulmonary arteries, peripheral vessels of reduced caliber consistent with pulmonary hypertension and an enlarged right ventricle. An electrocardiogram was thought to be consistent with pulmonary embolism.

*From the Medical Service, West Roxbury Veterans Administration Hospital; the departments of Medicine and Radiology, Beth Israel Hospital; and the departments of Medicine and Radiology, Harvard Medical School.
†Supported in part by grants (1-H10059 and HE-05517) from the United States Public Health Service.
‡Assistant chief, Medical Service, West Roxbury Veterans Administration Hospital; instructor in medicine, Harvard Medical School.
§Chief, Thoracic Clinic, and associate in medical research, Beth Israel Hospital; instructor in medicine, Harvard Medical School.
¶Radiologist-in-chief, Beth Israel Hospital; assistant clinical professor of radiology, Harvard Medical School.

[Normal values at this laboratory, up to 120 units per milliliter.]

After heparin and during chronic anticoagulant therapy with hydroxyurea (Dissuesso), repeat studies of pulmonary function (Table 1) showed a return to normal except for the 1-second vital capacity. The single-breath carbon monoxide diffusing capacity was slightly decreased. Arterial-blood gas studies (Table 2) also showed marked improvement, and another electrocardiogram demonstrated disappearance of the T-wave abnormalities. Repeat x-ray films of the chest showed no change.

Case 2. A 58-year-old Negro was hospitalized because of right axillary pleuritic chest pain of 1 week's duration. He felt mildly feverish but had no cough or hemoptysis. Three years earlier he was admitted to the hospital for a similar pain on the left side, with fever, shaking chills, pleural effusion and pulmonary consolidation. Sickle-cell C disease was also diagnosed. After clinical study it was concluded that the radiographic findings were due to pulmonary infarction secondary to either embolism or thrombosis. Episodes of "pleurisy" requiring hospitalization had taken place on 3 previous occasions.

On physical examination the patient was in mild distress, with splinting of the right hemithorax and a respiratory rate of 22 per minute. The temperature was 100.6°F. The base of the right lung was dull to percussion, with coarse rales, diminished tactile fremitus and breath sounds. The pulmonary 2d sound was accentuated.

Pertinent laboratory data included a hematocrit of 45 per cent, white-cell count of 13,100, positive sickle-cell preparation and bilirubin of 1.2 mg. per 100 ml. A film of the chest showed pleural effusion and consolidation at the base of the right lung consistent with pulmonary infarction. Pulmonary-function studies (Table 1) showed a marked restrictive defect as well as bronchostenosis. The total lung resistance was also elevated. The arterial-blood gas studies (Table 2) were normal with the patient breathing room air and 100 per cent oxygen. The difference in arterial and alveolar carbon dioxide tension was 6 mm. of mercury.

Pulmonary angiograms were obtained by the simultaneous injection of 40 ml. of contrast substance into the antecubital vein of each arm and taking of rapid serial films. These
In 1961 and 1962, the low-net winners were Drs. Robert A. Driscoll and Adrian C. McNamara. Drs. Hill and Ryan were low-gross winners.

There no longer being enough space on the existing bowl to inscribe appropriately and artistically the winners' names, the bowl has been retired and will remain at Society headquarters.

With the wholehearted approval of Dr. Walter S. Burrage, the Society has purchased a new "Burrage Bowl," upon which will be inscribed the names of both low-net and low-gross winners, averting perhaps the confusion evidenced in the 1961 and 1962 inscriptions. Such a compromise will also adequately recognize the skill of the more adept golfer (low gross) and the low-net winners whose doctored scores, resulting from handicapping real and fancied and determined by various handicap systems, often place them in the winners' circle.

The new bowl will remain on display at Society headquarters. Each winner will receive a miniature model, properly inscribed, which will be his very own — too small perhaps for champagne, but large enough for a cheese dip.

Several other valuable prizes will be awarded at this year's golf tournament, under the chairmanship of John S. Wheeler, M.D., of Framingham. The tournament will be held at the Pleasant Valley Country Club in Sutton on May 21. (May 21 is a Thursday.)

MASSACHUSETTS MEDICAL SOCIETY

BEQUEST FROM DR. OBER

The Massachusetts Medical Society has received from Welch and Forbes, Trustees, the sum of $500 in fulfilment of an unrestricted bequest in the will of the late Dr. Frank R. Ober.

ELIOT HUBBARD, JR.
Treasurer

DEATH

Robinson — Howard Edgar Robinson, M.D., of Concord, died on April 27. He was in his fifty-third year. Dr. Robinson received his degree from Boston University School of Medicine in 1937. He was medical examiner for the Middlesex District and a member of the surgical staff of Emerson Hospital. He was a member of the American Medical Association.

He is survived by his widow, a daughter and two grandchildren.

CORRESPONDENCE

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they should be typewritten double spaced, should be of reasonable length and will be subject to the usual editing.

MEDICAL EDUCATION IN COMMUNITY HOSPITALS

To the Editor: Dr. Goodwin's Special Article on the community hospital in the January 16 issue of the Journal emphasized "educational opportunities at community hospitals" that "are going begging owing to the pressure applied to students by university authorities to go to a "teaching hospital." He implies that hospitals such as his have much to offer the intern. Yet St. Luke's Hospital has found it necessary to fill its house-staff quota with foreign graduates whose "evening courses in the English language are paid for by the hospital."

The loss of medical residency accreditation because of lack of private-patient use can, in my experience, be attributed to the attending physicians. Seldom is patient care the reason. The fact that his hospital has been without a director of medical education since 1950 further points to lack of attending-staff interest in a teaching program.

I have no doubt that the present staff would take a full complement of interns, but so long as the university educators are blamed and the hospital program left unexamined, few interns will be attracted.

MARBELLJ. MARZ
Senior Student
University of Illinois

Chicago

Mr. Marz's letter was referred to Dr. Goodwin, who offers the following reply:

To the Editor: Mr. Marz's letter indicates deep thought. It dwells on problems that have provoked much discussion within our hospital, as well as with others. The fact is that university authorities do influence students to seek services in university hospitals. I did not mean to imply that community hospitals are not without blame. Some staff members do not have the ability, time or interest to teach.

Good directors of medical education are not easily come by. At last we have obtained the services of one to start in July. The director of medical education organizes, coordinates and stimulates, but the teaching is primarily the responsibility of the members of the hospital staff.

Without belaboring his other point my article points out that although many physicians are not interested in teaching there are enough well trained, dedicated practitioners to carry out an excellent program in the community hospital and that such a program can best be worked out in combination with a program at a university hospital. This is a long-range program. It will not be solved overnight.

R. H. GOODWIN, M.D.
New Bedford, Massachusetts

AUTOPSY PERMISSION

To the Editor: The subject of this letter is autopsy permission. There is no need to review the importance of autopsy material for an understanding of the nature of medical problems and for the evaluation of the attempts to treat them. Truly, when John Donne said, "Every man's death diminishes me," he should have added that death itself, if permitted to reveal the secrets that led to it, may still not diminish mankind but actually enlarge him. So important is this source of knowledge that all qualifying boards demand a minimum percentage of autopsies for the acceptance of a residency program.

The present methods of gaining autopsies are obsolete. Emotional, religious and sociologic resistance makes consent by the living for examination of the dead a difficult decision. In an effort to overcome this resistance we, as doctors, and our residents, as students, create methods by which to achieve our objective. The truth — namely, that this is a contribution to man's future, that I am my brother's keeper and owe this to him, — often fails. Objections of truth are then resorted to. Veiled threats of dangers of possible congenital factors that may affect other members of the family, of possible future legal complication and of insurance matters are brought up as half-truths and quarter-truths, and sometimes to truths, in an effort to succeed. Hospitals have laid a bounty on successful persuasion for an autopsy by actually paying the resident who purports to goad him.

I believe that if it becomes in any way to descend to the latter's trick to hope to arrive at this acceptance by the inevitable responsibility and emotional application of this source.

It is suggested all deaths in in the source of knell plicable directly from a moment of me achieving such finding to the origins societies. Acade an educational sitative bodies.

BRONX, NEW YORK

To the Editor: By Boshell, K. Insulin-Secrecy the authors of insulin-like material which weighed with their at this size would more of plasma with some care store certain to insulin in the that seems a necrosis could imm. Unless insulin-like bome hormone general to as secrect a bit. To prove hormone radioactive tagging activity in vivo.

Omaha, Nebraska

Dr. Lemon's the following it.

To the Editor: calling attention contained 3 should be equivalent activity of the 1 and 1 to 4000 micro gm. of tumor. However, our insulin-like act
REED-STERNSBERG CELLS

To the Editor: Dr. Alan C. Arenberg, in his Medical Progress Report on Hodgkin’s disease in the March 5 issue of the Journal, discusses the importance of recognition of the hydantoin-induced lymphadenopathy syndrome. Although the absence of Reed-Sternberg cells has been stated to be a characteristic of this phenomenon it is of interest that Doyle and Hellstrom reported the appearance of cells of the Reed-Sternberg type on histologic examination in a patient with adenopathy after methylenephenvylly hydantoin (Meantoin) therapy (Ann. Int. Med. 59:363-368, 1963). It becomes evident that histologic differentiation of lymphoma from hydantoin-induced lymphadenopathy may be possible in certain patients, and the necessity of a thorough history, always including drug ingestion, must be re-emphasized.

RAYMOND S. KOFF, M.D.
Assistant Resident
Ward Medicine
Barnes Hospital
St. Louis, Missouri

PENICILLIN SENSITIVITY

To the Editor: I have instituted a method that I hope will prevent the occurrence of an anaphylactic reaction to penicillin as reported by James and Austin in the March 19 issue of the Journal. Every patient is asked whether he has had any sort of reaction from penicillin in the past. If he has, then, after a few minutes wait, procaine penicillin is injected a few inches below the site of the epinephrine solution. Since anaphylactic reactions are fortunately quite rare but when they do occur are quite serious, I should like to know whether this technic is of any value. Has any research work been done on animals to determine in which way an anaphylactic reaction could be prevented once it has occurred? Would epinephrine given before the sensitizing dose that would cause an anaphylactic reaction prevent this type of occurrence? Any information you can give me on this most interesting and vital subject.

NATHAN STEINBERG, M.D.
Philadelphia

Dr. Steinberg’s letter was referred to Dr. Austen, whose reply is as follows:

To the Editor: It is extremely difficult to “desensitize” a laboratory animal, but two approaches are theoretically possible. The first involves a series of low-grade antigenic exposures to produce a series of subclinical anaphylactic reactions, with a resultant pharmacologic exhaustion. This procedure takes time and patience and, of course, is followed by restoration of sensitivity after an appropriate interval. In clinical situations this procedure has been carried out with apparent success, however, it is possible and even likely that patients who tolerate this potentially dangerous procedure really are not significantly sensitized in the first place.

A second approach is to immunize the patient with the antigen in question so as to build up an appreciable titer of neutralizing antibody. Such an antibody could theoretically trap the offending antigen so that it would not reach the critical tissue sites carrying sensitizing antibody. Although this is theoretically possible the fact that the sensitizing antibody has a much greater tissue affinity than the neutralizing antibody makes this an unequal contest at the tissue level. Nonetheless, this approach has been valuable in certain selected clinical situations in which exposure to a parenterally administered antigen, such as bee venom, cannot be eliminated.

In general, then, the most reasonable course is that suggested — namely, to avoid the administration of an agent like penicillin if the history suggests a previous reaction. Since, as Dr. Steinberg points out, even a negative history is not sufficient to protect the patient population against a serious penicillin reaction, it might be reasonable to consider the use of penicillin prophylaxis. This efficacy of this material in detecting sensitizing antibody to penicillin in man is under investigation in a number of centers, and it may prove valuable in indicating whether a patient is capable of receiving the drug despite a negative history.

I doubt if prophylactic administration of epinephrine will really protect the highly sensitive patient against serious anaphylactic symptoms.

K. FRANK AUSTEN, M.D.
Boston

MALE NURSES

To the Editor: The editorial concerning the present shortage of nurses in the April 9 issue of the Journal deplored the lack of encouragement of young men to enter this career field. Nursing, it is recognized that they welcome qualified male applicants to their schools.

A man has rapidly expanding opportunities for advancement in the nursing profession. He need not be bedside nursing prepare him for positions in psychiatric hospitals, Veterans Administration facilities, selected clinics, rehabilitation centers and geriatric or chronic hospitals. Industrial clinics and accident rooms, as well as the specialized surgical areas of operating rooms, recovery rooms, anesthesia and central material supply, can use the male nurse to advantage. He can advance in nursing administration, assume teaching responsibilities in nursing schools or enter into hospital administration. Medical-research teams could use qualified male nurses in selected projects.

Men will stabilize the nursing profession, much as they already have the teaching profession. Salaries will permit them to pursue their careers as well as raise their families. We know that salaries are ever increasing, but this increasing income has not greatly decreased young women from returning to rear their young. The male nurse, as a head-of-family, should greatly decrease the current high personnel turnover and dropout rates.

Military nursing offers a special career field for a young man, which includes all these opportunities, as well as a few that are unique because of the military mission. The Army has recently (February, 1964) announced the establishment of a school of nursing at Walter Reed Army Medical Center, Washington, D.C. The first class, including the nurses, will enter training in the fall of 1964. Tuition and other educational costs will be defrayed by the Department of the Army. This four-year course leads to a baccalaureate degree in nursing and a commission as an officer in the Army Nurse Corps. The graduate may advance to a rank of colonel and may pursue other courses leading to a master’s degree. Retirement should serve as a way to our early fifties, probably can be experienced and able to step into any civilian nursing or medical position.

The young man can find help in any recognized nursing school that is Army Student Nurse Program, which will give him an enlisted man’s pay for his last two years, let him fulfill his military obligation on active duty during his graduation and then later gain retirement benefits by serving with us in the United States Army Reserve.

Let us tell our young men of the career opportunities available in nursing now. They can get training in a wide open profession, college degrees, salaries while training and complete their military obligations — all at the same time.

Dr. W. C. Long, U. S. Army

ASTHMA IN AMERICAN INDIANS

To the Editor: The allergy textbooks (Urbach and Gottlieb, 1946, and others) usually refer to Coca, Waltzer and Thompson (1941), who state that asthma is almost unknown in American Indians. These authors print a number of reports of physicians then in charge of Indian hospitals in various parts of the United States. These 10 physicians state indepen

...