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[Introduction]

CLINICAL ASPECTS OF PNEUMOCONIOSIS

Chairman: William S. McCann, M. D.

Incidence of Clinically Manifest Diffuse  
Obstructive Emphysema

Leonard J. Bristol M. D.

Discussion

Pulmonary Function Studies in Men Exposed for  
Ten or More Years to Inhalation of Asbestos Fibers

Fernand Gregoire, M. D.

Discussion

Maximum Ability for Physical Work of Moderate  
Duration Correlated with Various Tests of Pulmonary  
Function

George W. Wright, M. D.

Discussion

Cardio-Circulatory Aspects of the Pneumoconioses

William S. McCann, M. D.

Discussion led by James J. Waring, M. D.

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BY DOCTOR McCANN:

Ladies and Gentlemen, since the title of this morning's meeting is the Clinical Aspects of Pneumoconiosis, I should like to take the Chairman's privilege of making a few introductory remarks to this session.

There have been several points which have come up in the course of the recent meetings which seem to me worthy of comment. First of all, it was a great pleasure to learn

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BY DOCTOR MIDER:

Any further questions?

(No response).

If not, this symposium will adjourn to 9:00 A. M.  
tomorrow.

(Adjourned at 5:45 P. M.)

TAKEN FROM PAGE 477.

*See Dr. Mc Cann's  
Chairman's Remarks*

BY DOCTOR MC CANN:

Ladies and Gentlemen, since the title of this morning's meeting is the Clinical Aspects of Pneumococcosis, I should like to take the Chairman's privilege of making a few introductory remarks to this session.

There have been several points which have come up in the course of the recent meetings which seem to me worthy of comment. First of all, it was a great pleasure to learn

from Doctor Philip Hugh-Jones that there is so much validity in the clinical estimation of disability. He was, of course, speaking of clinicians. I wish I could be sure that his remarks applied equally to us here in America, where, it seems to me clinical medicine has fallen to a lower state due to our national penchant for gadgeteering and simon-pure specialization.

Naturally the question arises in your mind as to why I think there's something wrong about specialization. The answer to this is simple. As one learns more and more about less and less, he tends to become unable to see his patient as a whole person against his whole environmental background. This, it seems to me, is the very essence of understanding the nature and meaning of disease and as one becomes more and more specialized, he becomes the very antithesis of the clinician.

Now, the other day, the question came up of trying to make a definition of disease. I made a very lame attempt at it, and I should like to devote a moment or two to an attempt to define disease. Diseases may be recognized or classified by certain criteria. First, there are simple - there are symptoms and signs; second, their causes, third the nature of the pathological processes underlying them, fourth, the character of the environmental setting in which they occur, and fifth, the personality or constitution of

the patient who suffers disease. These are the pigments with which the pictures of disease are painted.

Tracing the history of nosography, Sydenham said: "Symptomata se habent ad morbum ut folia et fructus ad plantam." Symptoms are to disease as the leaves and fruits are to plants, and following Linnaeus, he tried to classify them.

Auenbrugger, Laennec, Stokes, Corrigan, Graves, Bright, Addison, Louis, Andral, Brettoneau, all related signs to morbid anatomical changes. Pasteur and Koch began the concept of specific causes. People like William Harvey, Magendie, Claude Bernard laid the foundation for pathological physiology.

Localized environmental settings were first taken into account by Ramazzini and the first great clinician to take account of entire personality of the patient was Charcot.

To Claude Bernard we owe the basic concept of disease, the effort to maintain constant internal environment for the individual cells of the body.

To this end, aggregations of cells, which we call organs or systems of organs, have specialized functions in maintaining this constancy, this homeostasis.

These functions are integrated and regulated by the mediation of the nervous system, central, peripheral and

visceral, and by the balance in hormonal activity, which determine the character and constitution of the person or as we say individual personality.

Each individual must adapt himself to his environment, not only that which is immediate or local, but the entire environment, physical, climatic, religious, moral, every influence, with which each person must strive for a survival in peace and comfort or what we call health.

When environmental factors cause stress, the strain on the individual to adapt to it produces the symptoms of disease. Normal individuals develop symptoms and signs only when the stress is unusually great. Abnormal individuals, whose adaptive functions are limited or damaged by pathological processes, show strain when the stress is not unusually large or even when it is less than usual.

Disease may occur then in both normal and abnormal persons depending upon the degree of stress relative to the capacity to adapt. As William Harvey said, there are two kinds of death, failure from a lack and suffocation from an excess. By this preamble, I will now venture to suggest a definition of the pneumoconioses.

They are a group of diseases characterized by shortness of breath and diminished capacity for exertion and the performance of mechanical work caused by the prolonged and repeated inhalation of particles of substances which, in

sufficient amounts, are capable of producing morbid anatomical changes in the lungs and circulatory apparatus, such as fibrosis, emphysema, lymphatic obstruction, pulmonary or pulmonic arterial sclerosis, hyper... right heart hypertrophy, adhesive pleuritis, and so forth, in varying degrees and in varying permutations and combinations. They are classified by the character of the dust, by the nature of the occupational environment, such as mine, foundry, quarry, sandblasting, and so forth, and perhaps within these categories, local designations such as Welch coal mines or Lancashire coal mines or Pennsylvania hard coal area, and so forth.

In evaluating the degree of disability resulting from these diseases, one must consider the constitution of the whole personality of the individual patient including his motivation and his capacity to compensate for injury in one organ system by improved use of another. It must also take into account organic impairments which are not the result of occupational stress, such as age, habits, nutrition, inheritance and environmental stresses outside the occupation. This involves a thorough general diagnostic study.

In closing these remarks, I would like to comment on the physical diagnosis of emphysema. I have heard it said that there is no pathognomonic sign of emphysema and I

do not believe this. I think there is one sign and that has to do with auscultation. The breath sounds in emphysema are low intensity and pitch and the expiration is of longer duration than the inspiration. Now, in appreciating these characteristics of the breath sounds in emphysema, I believe that a stethoscope is a handicap. A stethoscope is, after all, a good deal like the receiving set of a certain radio. It will separate bands of frequencies of sound and very often certain bands are cut out or blocked by the stethoscope. I, therefore, think that one should routinely listen to the chest with the ear directly, in order to appreciate this and to pay attention to intensity, pitch and duration of sound. In this manner, the presence of emphysema may be detected when the X-ray picture is so full of density that it is obscured.

Now, the role of the clinician in the study of disease is like that of man trying to put together the pieces of a picture cut by a jig-saw. He is first to examine the pieces in order to guess at the nature of the assembled picture. The clinician must guess, he must speculate, he must postulate as to the final pattern if he is to put the pieces together quickly, quickly enough to be of any use.

He must have something like cat whiskers in his mind which enables him to develop a diagnostic hunch as to how this picture is going to turn out. This is the great

short-cut and time is of the essence, as Hippocrates said: "The occasion is instant."

This attribute of the clinician is often not appreciated by the scientist, until he himself becomes a patient and has reason to thank a good doctor for the speed of his skill and acumen.

The methods of science are like the old three decker, which took a watch to steer and a week to shorten sail. They are applicable to the study of diseases, but not very applicable to the study of the patient.

One final word I would like to say about the teaching of clinical medicine. Someone said, very wisely, that if teaching consisted only of transmitting factual knowledge, there wouldn't have been any excuse for universities or professors after the discovery of printing. The job of the teacher is to endow the facts with their imaginative consequences. Young pupils are often skeptical and they're often starting investigations just to prove the master is wrong and in this way, whether he is right or wrong, knowledge advances unless the weight of magisterial authority is so great that no one dares to challenge it.

I was moved to make this last remark because, in my own presentation, I have allowed my imagination to work on the facts to some extent. (Applause).

Now, I think I have taxed your patience over long.

TAKEN FROM PAGE 484.

We will proceed to the first paper on the program by Doctor Leonard Bristol, on the incidence of clinically manifest diffuse obstructive emphysema. Doctor Bristol.

Chairman's Remarks

Thursday, September 25, 1952

Seventh Silicosis Conference

Clinical Aspects of Pneumoconiosis - W.S. McCann

It was a pleasure to learn from Dr. Philip High-Jones that there is so much validity to the clinical estimation of disability. He was, of course, speaking of British Clinicians. I wish I could be sure that his remarks applied equally to us here in America, where, it seems to me clinical medicine has fallen to a low estate, due to our national penchant for gadgeteering and for simon-pure specialization.

This leads me to address myself to answer the question - which naturally arises in your mind - what is so wrong about specialization? The answer is simple - as one learns "more and more about less and less" he tends to become unable to see his patient as a whole against the background of his whole environment. This is the very essence of understanding the nature and meaning of disease. As one becomes more and more specialized he becomes the very antithesis of the true clinician.

Let us attempt a definition of disease.

Diseases may be recognized and classified by:

- (1) Their symptoms and signs; (2) Their causes; (3) The nature of the pathological processes underlying them; (4) The character of the environmental setting in which they occur; and (5) The personality or "constitution" of the patient who suffers "dis-ease."

These are the pigments with which the pictures of disease - nosography - are painted.

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To Claude Bernard we owe the basic concept of disease - the effort to maintain constant internal environment for the individual cells of the body.

To this end aggregations of cells, which we call organs or systems of organs, have specialized functions in maintaining this constancy - this homeostasis.

These functions are integrated and regulated by the mediation of the nervous system, central, peripheral, and visceral; and by the balance in hormonal activity, which determine the character and constitution of the person or as we say, individual personality.

Each individual must adapt himself to his environment, not only that which is immediate, or local, but the entire environment - physical, climatic, religious, moral - every influence with which each person must strive for survival in peace and comfort or health.

When environmental factors cause stress - the strain of the individual to adapt to it produces symptoms and signs of "dis-ease."

Normal individuals develop symptoms and signs only when the stress is unusually great.

Abnormal individuals, whose adaptive functions are limited or damaged by pathological processes, show strain when the stress is not unusually large or even when it is less than usual.

Disease may occur then in both normal and abnormal persons depending upon the degree of stress relative to the capacity to adapt.

**Clinical Aspects of Pneumoconiosis - W.S. McCann**

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With this preamble I will now venture to suggest a definition of the ~~pneumo-~~  
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In evaluating the degree of disability resulting from these diseases one must consider the constitution of the whole personality of the individual patient, including his motivation and his capacity to compensate for injury in one organ system by improved use of another. It must also take into account organic ~~impairments~~ which are not the result of occupational stress, such as age, habits, nutrition, inheritance, and environmental stresses outside the occupation. This involves a thorough general diagnostic study.

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# Clinical Aspects of Pneumococci - W.B. Hoar

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The clinician must have something like "art whiskers" in his mind, which enable him to develop the "diagnostic hunch", which is the great shortcut to the truth. This is of the essence as Hippocrates implied when he said, "The occasion is transient."

This attitude of the clinician is often not appreciated by the scientist, until he himself becomes a patient and has reason to think a good doctor for the speed of his skill and common sense.

The methods of science are like the old three degrees, which took a man to flower and a week to shorten sail. They are applicable to the study of disease, but much less applicable to the study of patients.

One finds word about the teaching of clinical medicine. Some are wisely said that if teaching consisted only of imparting factual knowledge, there would have been no use for universities and professors after the discovery of printing. One would then need only libraries. However, the great teachers are those who can endow facts with their

**Clinical Aspects of Pneumococcalis - W.S. McCall**

imaginative consequences. Young pupils are usually sceptical and will often start investigations to prove the Master wrong and in this way, whether he is right or wrong, knowledge advances., unless the weight of magisterial authority is so great that no one dares to challenge it.

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OCTOBER 1, 1952

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DEAR ARTHUR:

DO YOU WANT CUTS OF THE SLIDES USED FOR THIS PAPER?

IF NOT, HERE IT IS READY FOR PRINTING.

WITH KIND REGARDS.

SINCERELY YOURS,

*William S. McCann*

WILLIAM S. MCCANN, M.D.

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