The Early Diagnosis of Pulmonary Tuberculosis

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The subject of the diagnosis of active pulmonary tuberculosis has been presented repeatedly for many years and the general practitioner has been criticized with varying degrees of severity for failure to make such diagnosis earlier. Hippocrates has been dragged in by his venerable ears with his apt remark on the difficulty of the recognition and the ease of the cure of phthisis in the early stage and the reverse in the late stage. The failure of physicians of the older generation to realize the significance of symptoms and signs of minimal and moderately advanced involvement is not entirely their own fault. It dates back to the discovery of the bacillus, with the consequent segregation of patients in special institutions, often at considerable distance from teaching centers.

Well do I remember, as a student, the few extra-mural ward-classes attended in the prison-like structure which was the last refuge of the city’s defeated army of poverty and disease. I took a long breath before entering its forbidding doors and tried to breathe as little as possible as I penetrated its densely malodorous atmosphere. We were asked to gather around the beds of the dying and listen to amphoric breathing and cracked-pot sounds! I held back, lingering near the window, feeling too ill to be attentive and wishing my stethoscope were two yards long! The result was that as an interne in a hospital, which like the majority, strictly excluded cases of tuberculosis, I was harshly reprimanded for failure to recognize and refuse admission to such cases. This experience was so humiliating that I determined at the end of my service to learn something about this ubiquitous and treacherous disease on my own account.

Accordingly, I joined the staff of a chest clinic, where for years were seen, chiefly, advanced cases, most of which had become hopeless because of delay. On asking that most important question “when were you last perfectly well” the reply was frequently “so long ago I don’t remember”. When asked as to the first symptom, that of fatigue easily led the list. I have found this true throughout the twenty-seven years that have followed, in state, federal and private work. “That tired feeling” from which the sufferer thinks he will soon recover or that it may be due to his work or his habits but to which he gradually becomes accustomed and pays less attention until other symptoms appear, is by far the “chief complaint”. Of course it has become a by-word with our advertisers who profit by it and add to it by their billboards and radio and it may be a symptom of the great American neurasthenia or the great American indigestion, but they in turn are often symptoms of tuberculosis. Weir Mitchell’s famous “rest cure” of forty years ago, doubtless checked in it’s incipiency many a case of tuberculosis. All three conditions, together or separately, are the result of what Mr. Dooley, the Will Rogers of the other Roosevelt regime, termed our “strenouselous life”.

Once I heard an amusing discussion, which fortunately took the place of a game of bridge between a neurologist, a lung specialist and a cardiologist. The last, being from Virginia did most of the talking, in the delightful mildly bantering manner of the experienced raconteur. He said, “a tired business man or a worn out society dame comes to see us. If they walk into Barlow’s trap here, they are sure to be full of rales, if they see Bledsoe over there, they will be the victims of nervous prostration. If they drift toward a surgeon or a gastroenterologist, why of course it’s visceroptosis, while if they come my way I am very likely to find an
interesting murmur, which may be systolic or pre-systolic! Fortunately for them, however, regardless of the diagnosis we all do the same thing—we insist on rest—we put them to bed, preferably in a quiet, pleasant place away from the irritations of home and friends and business. After three months, six months, a year, what has happened? The rales or murmurs are gone, the nerves have regained their tone. The digestive functions have been restored!

"Associated closely with fatigue, really a part of it, is weakness. There is an actual loss of the power to do accustomed work. This is mental as well as physical. Slight tasks are dreaded and performed only with increased efforts, even the involuntary work of digestion, circulation and respiration are affected. Loss of appetite and loss of weight are consequences frequently accompanied by some abdominal distress. The results of the mental fatigue are irritability and insomnia. Pallor and on exertion, dyspnea, develop with impairment of the vascular system. The menses become scant or fail. All this may happen before cough appears.

"Cough," after it has become persistent is the symptom which usually brings the patient to the physician, but even it may be disregarded with the general, immoderate use of cigarettes and the frequency of the common cold. It is slight and dry at first and the patient may not notice it for a time, thinking he is merely "clearing" his throat. Later sputum appears (usually mucoid and negative for tubercle bacilli) which in turn may be neglected, unless it is blood streaked. The cough and expectoration appears characteristically upon waking in the morning or for a little while after retiring, often during or shortly after a meal. All authorities stress the suspicious significance of such symptoms continuing beyond six weeks. Hemoptysis is a "lucky break" if it comes sufficiently early, as it hurries the patient to the doctor or the doctor to the patient. This golden opportunity, however, is sometimes missed by our natural dislike of facing unpleasant facts and too often the patient is falsely reassured that the blood did not come from the lungs. Cabot's words should be remembered here "The spitting of pure blood in any considerable quantity means pulmonary tuberculosis in the vast majority of cases, no matter what other symptoms are or are not present. The commonest mistake is the assumption that it is not tuberculosis in origin merely because the lungs show no abnormal signs and the patient feels perfectly well."

Fever arises as the activity of the disease advances but is usually slight at first, occurring in the afternoon or early evening and increased by exercise or excitement. Text-books written ten years before the World War and influenza pandemic, insisted on a five minute registration of the thermometer. Ever since the exhaustion of the stock of such instruments at that time and their subsequent sale before proper ageing (formerly two years) there has been difficulty with even the best thermometers, so that the original injunction is more important than ever and the time might be doubled in all doubtful cases, particularly, as the patient may be entirely unconscious of the presence of slight fever. He may feel better during his elevation of temperature, more inclined to mental activity, a contrast to the morning when he usually feels tired and suffers from the depression of a subnormal temperature. During the fever the patient's cheeks may be flushed and his eyes bright, with dilated pupils which may be unilateral, corresponding to the side of the involvement. It is common for the pulse to be rapid before the fever appears. It also continues it's acceleration after the latter subsides. While night sweats are not likely to occur until later, there is a tendency to perspire easily, even without exertion. Pain in the chest may be simply a slight soreness, a burning sensation or a dull ache usually behind one border or the other of the sternum or in the region of the apex, shoulder, or between or below the scapulae.

Hoarseness is common and may be the result of coughing or an expression of fatigue. The quality of the voice has con-

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Considerable significance in some cases as an indication of the patient's general condition. Of course, the hoarseness may indicate the early complication of laryngeal involvement, often with a history of frequent "colds".

All the symptoms mentioned should be brought out as fully as possible in the first interview. They should be inquired into definitely if not given voluntarily. It is generally agreed that a thorough history, elicited by one who is alert to it's significant features is of greater value than any other procedure in the examination of the early case. In addition to the points already mentioned, exposure to an advanced case, especially in early childhood, is extremely important. The previous occurrence of measles, whooping-cough, influenza, pneumonia and pleurisy are suggestive, highly so, if followed by protracted convalescence. More than one attack of pleurisy should justify suspicion.

The laboratory findings at this stage are largely negative, except for some anemia. The blood-pressure is usually low. The stethoscope may reveal nothing or there may be prolongation of the expiratory sound, with a suggestion of fine rales, or "stickiness", especially in the apex. Subsequent examination may bring out actual rales, on inspiration, after cough, which, if localized and persistent are practically pathognomonic. Other methods of examination than auscultation are of little use here. The X-ray, however, is of such invaluable assistance, that it should never be omitted and with the history, may be all that is necessary to make the diagnosis. So the general practitioner need not be an expert in physical examination but should be able to detect early cases by the use of his usual good judgment and dependable X-ray films.

The tuberculin test should be limited to young children and performed only by those who have had abundant experience in it's technique and interpretation. Much needless anxiety has resulted from lack of skill in these respects.

As to differential diagnosis, while there are lists of considerable length in most text-books, setting forth various pulmonary and non-pulmonary diseases, which might be mistaken for tuberculosis, the actual experiences of this clinic, over a period of many years, is that the chief conditions which are referred to us for such consideration are focal infections from teeth or sinuses, intestinal parasites (particularly hook-worm, syphilis and thyrotoxicosis.

As a tribute to the late Thomas McCree, who for so many years carried on the work of Osier, may I quote in conclusion, the final paragraph of the chapter on tuberculosis in their famous text-book:

"A last word on the subject of tuberculosis to the general practitioner. The leadership of the battle against this scourge is in your hands. Much has been done, much remains to do. By early diagnosis and prompt systematic treatment of individual cases, by striving in every possible way to improve the social condition of the poor, by joining actively in the work of the local and national anti-tuberculosis societies, you can help in the most important campaign ever undertaken by the profession."