The early diagnosis of pulmonary tuberculosis is of paramount importance to the physician as well as to the patient. The patient with pulmonary lesion at its early stage, who seeks medical aid, has a better chance of recovery than the one with advanced pulmonary lesion. Also, the patient with incipient tuberculosis yields better to modern treatment and is usually cured; the one with advanced pulmonary lesion is not benefited at all.

Our several years' experience in phthisiotherapy has shown that, of the dispensary patients going to our tuberculosis clinics, only ten per cent have incipient pulmonary lesions; twenty per cent have moderate pulmonary lesions; and approximately seventy per cent have advanced pulmonary lesions.

This fact can be attributed to one main factor: LACK OF EDUCATION.

The public, in general, lacks the rudimentary knowledge about the disease of tuberculosis; its symptoms, dangers and mortality. It is necessary to educate the masses, to make them "Tuberculosis Minded" and train them to be alert, to seek prompt medical consultation for every ailment that they have, often-times simple colds, influenza, etc., which are frequently early manifestations of tuberculosis.

The attending physician must be well equipped with a knowledge of tuberculosis, its early diagnosis through clinical signs and symptoms and by means of the laboratory and the x-ray, to detect the pulmonary lesions in the early stage.

It is my opinion that the instruction given to medical students in all colleges of medicine in the Philippines about tuberculosis is deficient. And I think that this deficiency includes also the colleges of medicine abroad; that is why The American College of Chest Physicians has already recommended that the colleges of medicine give special courses in this disease, thus, giving emphasis in the instruction of tuberculosis to the medical students, as to its pathology, symptomatology and the different means of diagnosis, laboratory and roentgenology. In our country, the study of tuberculosis taken in the regular courses of medicine in the universities includes the undergraduate internship of one month in observing and practicing a half day in the Quezon Institute. This is not sufficient to give the students a full instruction in tuberculosis.

When and how do we suspect that a person is a victim of pulmonary tuberculosis?

Ordinarily, a person with pulmonary tuberculosis shows the following symptoms: persistent hoarseness, obstinate cough or pharyngo-tracheitis or frequent and protracted colds (tuberculous bronchitis). At other times, it may be anorexia, sensation of oppression in the epigastric region, nausea, sensation of fullness in the stomach, constipation or diarrhea, painful defecation or other gastro-intestinal trouble associated with progressive loss of weight. In the female, but very rarely in the male, chloranemia or anemia is observed which is not confirmed by blood examination, as the blood examination may be normal or there may be only a slight diminution of hemoglobin or a slight diminution of the red cells.

The rise of temperature is a very important symptom, as it may develop into a real fever, sometimes with a rise, in the afternoon or in the morning, oscillating from 37° to 39° C. and accompanied occasionally with night sweats, lassitude or general weakness. A surprising disparity between the fever with its symptoms, and the general condition of the patient may still induce us to suspect a tuberculous focus in the body. It is, therefore necessary to control the temperature for several days in order to determine the nature of the disease.

In the tropics, like the Philippines, it is very important to differentiate the tuberculous fever from the malarial.

On many occasions, I met patients in my clinic who were previously diagnosed as tuberculous patients due to the afternoon fever.

* Quisumbing's Tuberculosis Clinic.
but the blood examinations have shown them to be simple cases of malaria of the subtertian type. At other times, they were diagnosed as malarial, but turned out to be cases of pulmonary tuberculosis.

In view of the aforementioned elucidation in diagnosis, I suggest that the phthisiologist who is practicing in the tropics, be well trained in the blood examination for malaria, so that in case of doubt, he himself can examine the blood of the patient and not send the specimen to any laboratory and leave it in the hands of someone who is not an expert in the blood examination for malaria. And from personal experience, it is not an easy matter to search for malarial parasites in the blood. To be an expert in the blood examination for malaria requires training and experience in drawing the blood with the utmost care, in staining the specimen, the right choice of the materials and the best method of staining. Also, a great amount of experience is needed to be able to distinguish the different types of malarial parasites in the thick films as well as in the thin ones.

It has been observed that in those cases with tuberculous fever, the appetite is sometimes increased. This is not observed in other cases of fevers with different natures.

There are cases in which the presence of a tuberculous lesion is manifested by the appearance of dry pleurisy or pleurisy with effusion and these are usually accompanied by intercostal pain or backache, especially when they are associated with pyrexia, which does not yield to ordinary antipyretics.

A very important clinical symptom is the spitting of blood (hemoptisis) which is recorded in the history of patients in ten per cent of cases, and according to our experience, it may appear without any prodromic symptoms. However, it is not rare for a traumatism on the chest to produce the same symptom.

The clinician who desires to diagnose pulmonary tuberculosis in its early stage, should take, carefully and thoroughly, the history of the patient and check on the causes of the gastro-intestinal troubles like anorexia, symptoms of gastritis, constipation or diarrhea, etc. . . . loss of weight, the presence of palpitations or tachycardia, the fever, especially if afternoon fever, the diminution or absence of menstrual flow in the young women, etc. . . .

. . . the presence of reflex pains, intercostal pains, pains in the side between the two axillary lines, pains in the abdominal region which may simulate a hepatic or gastric lesion or appendicitis, or intercostal neuralgia, etc. . . . pains that may be attributed to a latent cortico-pleuritis, or pains due to irritations of the sympathetic or pneumogastric nerves. General malaise, lack of endurance, loss of strength, night sweats, loss of appetite . . .

The clinician must be acquainted with the early signs of pulmonary tuberculosis, the signs of Bacelli, the rachialgia of Neisser's and Petruschky's, of Ringer, of Kuthy, and of Sergent. He must know also the interpretation of every exploratory sign that comes to his attention. For instance, the presence of a rough inspiration in the right side and the diminution of vocal fremitus, when it is widely detected throughout the lung, does not always mean the presence of a pulmonary tuberculosis, although we must always suspect it.

It is very valuable for the clinician to know the presence of a limited focus of softening and surrounding this with an area of condensation, when it is located in the internal part of the supraspinous fossae, or in the upper third of the internal border of the scapula which is the "Zone of Alarm of Stephen-Chauvet and of Sergent."

One of the most brilliant achievements of the x-ray is the discovery of the tuberculous lesion in its early stage, manifested by shadows or signs in the x-ray picture, which in by-gone days could not have been detected by a thorough clinical examination. Clinical examination should not be disregarded in any way, but early diagnosis of pulmonary tuberculosis is almost admitted by the phthisiologists of the world as dependent on the x-ray findings. When the clinical examination is supplemented by an x-ray examination, the early diagnosis of tuberculosis is more reliable.

Brown and Sampson's statistics, compiled in the Trudeau Sanatorium and based on 280 cases of minimal tuberculosis, show the following results:

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<th>Evidence</th>
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Upon what means can we depend to discover early cases of pulmonary tuberculosis?

There should be a periodical examination of all individuals who are exposed, by contact, to positive tuberculous patients, especially to those cases which are far-advanced and have open cavitory lesions. There should be a systematic investigation or physical examination of groups of school children, teachers, factory laborers and employees, etc.

For the examination of a large group, the tuberculin test and the x-ray are of great value. All individuals that are positive to tuberculin testing should be examined by fluoroscopy and, if necessary, this should be supplemented with radiography.

Summary of the Different Means for Early Diagnosis of Pulmonary Tuberculosis

Doctors James Alexander Miller and Arvid Wallgreen summarize the early diagnosis of pulmonary tuberculosis as follows:

1. **CLINICAL HISTORY** — Family antecedents of tuberculosis should be traced, exposure or contact with a tuberculous patient. These conditions can be detected by tuberculin test or by fluoroscopic examination or x-ray picture of the chest. It is important to investigate a history of hemoptysis or a pleurisy.

2. **SPUTUM EXAMINATION** — The presence of B. Koch in the sputum specimen is a convincing proof of the existence of a tuberculous process. It is necessary in the early stage of the disease to have frequent examinations of the sputum, stomach contents, feces, etc., with the use of different laboratory methods such as the concentration method, cultures and inoculation on susceptible animals, etc.

3. **PHYSICAL EXAMINATION** — The examination should be thoroughly performed, embracing all the areas of election and systematically the provocation of cough as it is necessary to “elicit rales”. The areas of election are the following: (a) the apex of each clavicle; (b) the apex of the sub-clavicular fossae; (c) the first intercostal space between the clavicles, especially the external and internal thirds; (d) the apex of the inferior lobes which are located in the intercostal space immediately below the level of the fourth dorsal vertebra; (e) the interlobar septum along the internal border of the scapula, when the arms are separated with the hands lying on the back of the opposite shoulder; (f) in the children, the 5th and 6th intercostal space outside of the mammary line.

An important fact to know is that there have been many cases of tuberculosis detected by sputum and x-ray examinations, when no physical signs had been elicited by foremost clinicians.

4. **ESTIMATION OF GENERAL CONDITIONS** — These conditions are manifestations of tuberculous toxemia, and involve the slight rise of temperature every afternoon, with or without night sweats, tachycardia, fatigue on slight exertion, progressive loss of weight, loss of strength, gastro-intestinal and nervous troubles.

5. **CORRELATION OF DATA** — It is the conclusion established by the physician after the studies of the clinical history, the results of physical examination, laboratory, etc.

Recommendations

Based on the foregoing experiences are:

1. **Educational Campaign:** Instruct the public about pulmonary tuberculosis: its symptoms, dangers, mortality, curability, etc.

2. **Special instruction in the colleges of medicine on Tuberculosis:** its pathology, clinics, radiology and treatment.

3. **Examination in groups of school children, teachers, factory laborers and employees, etc.** with tuberculin testing or the x-ray.

References