

**REFRESHER COURSE FOR GENERAL PRACTITIONERS****THE MANAGEMENT OF PULMONARY TUBERCULOSIS**

BY

**F. H. YOUNG, O.B.E., F.R.C.P.***Consulting Physician, Charing Cross Hospital; Physician, Brompton Hospital  
Tuberculosis Officer, St. Bartholomew's Hospital*

Until recently the part played by the general practitioner in the management of a patient suffering from pulmonary tuberculosis was confined largely to diagnosis at the earliest possible moment, the care of the patient when quiescence had been achieved, and the palliative and symptomatic treatment of patients with advanced disease who were beyond the scope of radical treatment. The radical treatment was carried out institutionally.

The present position, in which patients have to wait for six months and upwards before admission to sanatorium can be obtained, has altered his role completely. He must now be prepared to undertake treatment in the home.

Among the very few facts that have been established beyond question is that, all things being equal, the fate of the patient depends on the stage at which the diagnosis is made. Early diagnosis is arrived at as the result of (1) mass and routine radiographs of symptomless patients, and (2) alertness of the general practitioner to recognize the possibility that certain very mild toxic and lesional symptoms may indicate the presence of pulmonary tuberculosis. Only the second concerns us here. If the practitioner has already in his mind that pulmonary tuberculosis is a likely diagnosis in any patient who complains that he is slightly below par, or has a cough for a month without an obvious cause, the disease will be diagnosed much earlier.

A few fundamental points must be emphasized :

(a) That blood in the phlegm comes from the throat so rarely, except in the presence of a definite epistaxis, that this source should never be diagnosed.

(b) That it takes a large number of cigarettes smoked over a long period to produce a smoker's cough.

(c) Young adults do not get persistently tired without reason ; a method of life which has not previously produced tiredness is not likely to be the cause.

(d) The patient's explanation of a symptom should not be accepted without investigation if the symptom is sufficient to bring him to the doctor.

(e) "Catarrh" is often caused by intrathoracic conditions.

(f) Pleurodynia is not a diagnosis. If it is called a pain in the chest no one will be misled.

(g) However expert the doctor is in the use of the stethoscope he can never exclude tuberculosis with it.

When tuberculosis is suspected it should not take more than ten minutes to scribble a card to a clinic or a hospital asking for a radiograph, to give the patient a special carton for collection of sputum and instruction what to do with it, and to estimate the erythrocyte sedimentation rate. If these are all normal few cases of pulmonary tuberculosis will be missed. From the point of view of pure economics it is cheaper to take 2,000 negative radiographs than to delay diagnosis of one case of pulmonary tuberculosis for three months. In young adults, by the law of average, five cases with x-ray shadows indicating a tuberculous lesion which requires full investigation will be found in every 2,000 cases x-rayed at random.

**Telling the Patient**

The method by which the diagnosis is conveyed to the patient is most important. He must always be told what is the matter as soon as the diagnosis is certain. To many patients the diagnosis will come as a crushing blow ; to some it will seem almost a sentence of death ; so it is advisable to point out that with adequate treatment and co-operation with the doctor the prognosis is good, but no commitment should be made on time. The patient should be informed that to get well is a full-time job : the important thing is to get him well once and for all and to make a good job of the treatment at whatever expense in time. He should be encouraged to ask questions even if the answers to them cannot be given : it will help the doctor to see his reaction to diagnosis and to understand how to handle him. Fears brought out into the open are less frightening than those which are brooded over.

When pulmonary tuberculosis is diagnosed the patient should be put to bed immediately. Frequently, owing to his commitments, this may be impossible ; so if the symptoms of toxæmia are minimal he may be allowed a few days during which he can make some provisional arrangements, provided he rests as much as possible when doing so. The object of insisting on bed rest without delay is to prevent the disease from getting worse while a plan of campaign is being arranged. Few patients who have any real chance of getting well will deteriorate during a month's rest in bed. Even if you could get the patient into a hospital or sanatorium it is unlikely that any specific method of treatment would be embarked upon profitably before he had had a few weeks' rest in bed.

**First Measures**

Having got the patient in bed the following should be done :

1. The clinical state must be assessed.
2. His temperature should be taken for at least five minutes in the mouth, on waking and at 2 p.m., 6 p.m., and 10 p.m. for a week : after this it need be taken only first thing in the morning and at the other time at which it has been found to be highest.
3. The sedimentation rate should be estimated.
4. If the temperature is 100° F. (37.8° C.) or more the patient should be confined strictly to bed, use a commode, and be blanket-bathed. If it be less, or after it has remained at normal for a week, he may be allowed up once a day for toilet purposes and twice a week for a bath.

The doctor must then go into details about

1. The food—its quality and service.
2. Ventilation and heating of the room.—There is no need to freeze the patient, but the room must be well ventilated and the lighting of his room must be adequate.

3. Visitors.—The daily number and length of stay must be laid down. No more than one, and for half an hour at a time, is the golden rule, unless the patient is atoxic.

4. Rest hours.—The patient should lie flat in solitude without doing anything except listen to the wireless for an hour before and after lunch and before supper.

5. Occupation.—Until the temperature has settled completely for at least 14 days his occupation should be confined to reading, listening to the wireless, and writing occasional letters.

6. Sleep.—A mild hypnotic should be given without hesitation to produce sleep if there is insomnia.

7. Prevention of infection to others.—All handkerchiefs must be put into a bag and soaked in 1/20 lysol before being sent to the laundry; if there is sputum, a proper container must be used with 1/20 lysol at the bottom. When bed-making, the attendants should wear a mask. No children should be allowed in the room, and adolescents should sit near an open window.

8. Small amounts of alcohol may be allowed. Smoking should be cut down without undue delay to about five cigarettes a day.

9. All the instructions must be discussed with the patient and family, and put down in writing. If the doctor does this the patient will realize that they are important.

### Main Plan of Treatment

The plan of treatment must then be worked out with the help of an expert—either the tuberculosis physician or a private consultant. Unless the patient is really ill, it will do him little harm to be taken in a car to the consultation, but his doctor should be present to discuss the plan. A place in an appropriate institution must be booked. It can easily be cancelled if not needed. Generally speaking, three months' bed rest will be the start. If cavities are present this will usually be followed by collapse therapy, for which institutional treatment is necessary. Provided that steady improvement in the reduction of toxæmia is taking place as shown by symptoms, fall in temperature, sedimentation rate, and reduction of sputum, rest may be carried on for three months.

At the end of that time the case should be reviewed, with fresh radiographs, sputum tests, etc., in consultation with the expert. There is no need to get the patient up before going to the consultation. There are three possibilities. First, all evidence of toxæmia, occult and manifest, may have disappeared and the radiograph may show much improvement; cavities if present may have closed and the sputum become negative. This indicates a short further period of bed rest to consolidate the improvement and a gradual increase in activity, preferably in an institution or sometimes, if the patient's temperament and home circumstances are satisfactory, at home. The older the patient the less well will he usually settle down in a sanatorium. Secondly, improvement in toxæmia has taken place but improvement radiographically is slow and/or cavities are present. Bed rest must not be relaxed and institutional treatment insisted on, though the latter is not urgent, as further improvement may be looked for. Thirdly, little improvement has taken place. In this event institutional treatment is urgent; for the patient will probably not improve without collapse therapy with or without streptomycin, etc.

### Collapse Therapy

The only form of collapse therapy that is normally applicable at home is a pneumoperitoneum with a phrenic

nerve interruption. If this is thought to be indicated the patient can be got into a hospital for a week to have the phrenic nerve crushed and the pneumoperitoneum started. A pneumoperitoneum can be kept up by a careful general practitioner who will take the trouble to learn the technique. The complications are very rare, and failure to sustain the optimum rise of the diaphragm is not very serious. Except in early and fortunate cases, this procedure will usually only prepare the patient for more drastic collapse therapy, but often a very marked improvement can be obtained. Artificial pneumothorax should never be handled except by an expert with an x-ray plant at his disposal: irreparable harm can be done by an incorrect choice of cases and errors in its conduct. Frequently the actual technique of refills is easy, but it requires long experience to be able to handle cases to the best advantage and to avert and deal with complications.

In recent years apical thoracoplasty has been used more often in cases with small cavitated lesions at the apex, and in skilled hands has a low mortality rate. It is no longer reserved for patients with extensive disease. Resection of part or the whole of a lung is being used on quite a large scale now that the theoretical objections have been found to be unfounded. It is attended, however, by much greater risks than thoracoplasty and should be attempted only by those with very wide experience.

### Chemotherapy

Streptomycin is now settling down to its proper place in the treatment of pulmonary tuberculosis. Broadly speaking, its use lies in the treatment of recent infiltrative or pneumonic disease, tuberculous laryngitis, or tuberculous tracheobronchitis, which is a much commoner condition than was previously assumed. In cavitated disease its value lies in getting a patient fit for collapse therapy. A useful simile is that of a boxing match in which you are getting the worst of the contest. If a friend can hold one of your opponent's hands you will be given the opportunity to knock him out. If you fail to do so during the time that the hand is held you will be beaten when your opponent gets the use of his hand again if he is still on his feet. Streptomycin plays the part of the friend, and its favourable action is limited in time. After a varying period the tubercle bacillus becomes resistant to it and your chance has been lost. Accordingly its use should always be part of a well-considered plan of campaign. Complications are by no means negligible, especially in old patients.

P.A.S. (para-aminosalicylic acid) is given in doses of 10–20 g. daily for a month and is used for similar types of case. The effects are less dramatic and certain than with streptomycin, but the development of resistance against it is rare under ordinary circumstances. Unfortunately its use has to be discontinued in a large number of cases because of vomiting and diarrhoea. There are hopes that the use of both of these drugs together may get over many of their disadvantages.

In most cases institutional treatment is necessary sooner or later, but the patient will have to be reassured that in a well-run place superinfection is not a practical risk.

### The Convalescent Patient

When the patient becomes convalescent the role of the general practitioner is very important. Even to the specialist it is often difficult to decide when the patient should be allowed to get up; the general practitioner should therefore keep on the safe side: it is much better for the patient to remain at rest for a month too long than to get him up

too soon. As a rule at least a normal temperature, a normal sedimentation rate, three negative sputa, and a radiograph showing no cavitation and only retrogressing shadows should be obtained before the patient is allowed up. When the patient is judged fit to get up the time out of bed and the amount of exercise are gradually increased, so that he is up for eight hours and walking a mile at the end of a month, and up all day except for two hours' rest and walking four to six miles a day at the end of three months.

When the patient returns from institutional treatment a full report from the hospital or sanatorium should be obtained and a full assessment of the case made, with the help of a new radiograph. Both for patients who have returned from sanatorium and those who have recovered at home a detailed programme should be drawn up with the assistance of the specialist who is going to help to look after the patient; gradual increase of activities should be permitted if the check-ups show healing of the disease. The temperature chart should be continued and monthly radiographs and sedimentation rate obtained until the patient is judged fit to return to work. Any deterioration of these should lead to careful review of the case and, if necessary, more drastic treatment. Return to work should, if possible, be gradual. Usually the patient should go back to his old job unless the hours are excessive, the work very strenuous, or the conditions unhealthy.

For the first six months a monthly check-up is essential and a comparative radiograph called for at least every two months. Relapse should be spotted as early as possible, but too much attention must not be paid to equivocal radiological changes; small differences in shadows are often due to differences of technique, but the appearance of a new shadow in a reasonably comparable film should be regarded as evidence of relapse. This often appears without any clinical change. Sputum, if present, should be examined regularly.

Any febrile catarrhal attack indicates the necessity for a new radiograph before return to work is allowed. When relapse has been diagnosed prompt treatment is indicated. A second period of bed rest seldom produces as good a result as the first, and collapse therapy is usually indicated. The intervals between the check-ups which have taken place every month for the first six months can be extended to two months, but this should be maintained for two years. After this, every three months will be sufficient for the next two years, but a radiograph should be taken every six months for an indefinite period if the disease has been extensive or slow to respond to treatment. If the patient remains well for two years the chances of healing improve steadily. It must be remembered that worry and strain and excessive activity at home are just as harmful as long hours at work, and are usually much easier to avoid.

#### Home Contacts

Examination of the home contacts following the diagnosis of pulmonary tuberculosis in a member of the household must not be neglected. All children under 10 should be tested for infection by a jelly test, or by the Mantoux test (up to 1/1,000 dilution) if over 10 years of age. A negative result, provided that six to eight weeks have elapsed since the last contact, indicates freedom from infection, and calls for no further action while contact is not taking place. All positive reactors and older contacts must be x-rayed. In contacts over 30 a single negative radiograph is sufficient unless contact is continued with an infectious case. Children who are positive reactors and adolescents should be x-rayed again after a further six months and annually for five years.

The use of B.C.G. on negative reactors must be considered if contact with infection is likely to be maintained. B.C.G. is a culture of living avirulent tubercle bacilli. It is used to give an individual who has never been infected with tuberculosis the acquired immunity which he would receive if he had been infected, without the risk of developing the disease. It is obviously not applicable if the Mantoux test is positive. The chances of serious complication are negligible. At present its use should be confined to infants, children, and adolescents who are living in tuberculous households, and medical students, nurses, and the like who are specially exposed to infection.

Arrangements are being made for it to be available at tuberculosis clinics.

#### Conclusion

The successful treatment of pulmonary tuberculosis depends largely on attention to detail and willingness to assess deviation from normal. Often a doubt will arise the clue to correct action is the decision whether serious harm will ensue if the solution of the problem is left until the next visit. If the answer is in the negative the patient should not be informed of the doubt, but action should be taken immediately a decision is made. The average tuberculous patient knows a great deal about himself, so the assumption by the doctor of knowledge which he does not possess is fatal, but it is equally bad to give the impression that the lack of knowledge leads to a lack of interest.

### THE ITALIAN HOSPITAL

The Italian Hospital in Queen Square, London, which has been closed since 1941 except for some out-patient activity during the last two years, was reopened on June 19. The Earl of Perth, vice-president of the hospital, received the guests, including many representatives of the Italian colony in London. Cardinal Griffin, Archbishop of Westminster, attended to give his blessing and inaugural speeches were made by the Italian Ambassador, Duke Gallarati-Scotti, and the Consul-General for Italy, Dr. Vita-Finzi, chairman of the committee of management. It was stated that this hospital, the only one of its kind in the United Kingdom, was founded 66 years ago by the generosity of an Italian, Commendatore Giovanni Battista Ortelli.

In accordance with its constitution, the hospital gives preference in its wards (58 beds) and out-patient department to Italian and Italian-speaking people, but actually it has always been open to the sick and injured of all nationalities, and its British patients have almost equalled its Italian patients in number. The hospital was damaged in the war and also suffered much from dilapidation, so that it became a mere shell, but extensive renovations and improvements have been completed throughout the building, which is now furnished and equipped as a modern hospital, although the structure is Victorian.

Cardinal Griffin spoke of the difficulties which had to be overcome in finding money to put the building in order and in enlisting both medical and nursing staff. The nursing is in charge of the Sisters of Verona, assisted by lay nurses.

A vote of thanks to the governors of King Edward's Hospital Fund for London was moved by Mr. H. P. Winsbury-White, chairman of the medical committee, who explained that the hospital had not been taken over by the Ministry of Health under the National Health Service Act and was still dependent on voluntary contributions. The generous help of the King's Fund was gratefully acknowledged.

Commendatore John Sperti moved a further vote of thanks to the Ministry of Health, the London County Council, and the Corporation of Holborn, in which borough the hospital is situated. The Mayor of Holborn spoke of the appropriateness of having such a hospital again functioning in a part of London which has many Italian associations. The proceedings concluded with the singing of the hymn of the Italian Republic, and the company made an inspection of the wards and departments.

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