THE EXAMINATION OF TUBERCULOSIS CONTACTS*

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As the years pass, defects in our tuberculosis schemes become manifest and lines for improvement are indicated, although there is always room for a difference of opinion as to what modifications are best. The routine examination of tuberculosis contacts, persons living or in close contact with a known case of tuberculosis, was begun at Edinburgh in 1887, and still continues on much the same lines to-day all over the country. It is seldom that all contacts are examined. The examinees are selected, partly by doctors and health visitors on account of some definite defect, mainly by the patients themselves—a few adults who are anxious about their health or are persuaded by others to attend the dispensary or to stay at home to meet the tuberculosis officer—but the very large majority are children of school age, who often enjoy a day's absence from school for the purpose. These children are examined clinically, and occasionally radiographed.

Difficulties

It was thought that by the examination of all home contacts as soon as possible after the notification of a case of tuberculosis secondary cases in an early stage would be discovered, and, being early, would respond to treatment and not become sources of infection later. These expectations have not been realized. Though it is true that some unsuspected cases in an early stage are discovered, their number is small; secondly, they do not necessarily respond well to treatment; and, thirdly, contacts who are healthy at the time of examination may become tuberculous later.

SOME ILLUSTRATIVE CASES

A boy of 10 was seen as a contact in August, 1928. He had always been delicate, but clinical and radiographic examinations were negative. Nevertheless, his brother had died from phthisis at 21, a short time previously, so this boy was sent to a children's sanatorium, where he remained for two years and three months. After leaving school he went to work, and remains at work to-day, but a skiagram taken in February, 1935, showed coarse mottling in both upper zones. Precautionary measures which might be called extreme have not prevented tuberculosis.

Dr. Hebert has reported the case of a child of 9, examined as a contact in 1919, who subsequently attended regularly at the dispensary, being seen at least three times a year. At her thirty-ninth attendance she was found to have active extensive pulmonary tuberculosis.

In January, 1919, a woman aged 43 with a positive sputum was seen, and was kept under observation and treatment until her death ten years later. Four years after this her daughter, aged 29, seen for the first time at her doctor's request, was found to be suffering from acute tuberculosis, and died within two months. In this instance the contact, who was 15 when the mother was first visited, did not stay at home at any time to be inspected, and it is even then doubtful if measures taken during those fourteen years would have avoided acute tuberculosis in 1933.

A woman of 37 with a negative sputum and scanty radiographic pulmonary tuberculosis was seen in March, 1926. Her daughter, then aged 13, was in good health, yet in August, 1933, seven years later, she suddenly developed a pleural effusion. She was found to have a somewhat extensive tuberculosis on the side of the effusion, and her sputum contained tubercle bacilli.

A girl of 11 was first seen as a contact in July, 1921, and nothing important was detected. She was seen subsequently

at intervals for three to four years, then not again, as she had passed school age, until April, 1934, when she was discovered to have advanced active disease.

Another girl was similarly seen on September 19th, 1921, at that time 9 years old, and was similarly supervised. Now, in April, 1934, seen at her doctor's request, she has extensive disease.

It is not claimed that the contact supervision in these cases was ideal, but they are instances of contact examination as usually carried out, and serve to illustrate some of the difficulties. Not only did such routine contact examination fail to prevent tuberculosis, but it is quite doubtful if a more assiduous supervision would have detected the disease earlier. A supervision, enduring fourteen to fifteen years, of people who are in good health and at work is entirely impossible, and if it were possible it is likely that a number of patients would be sent to institutions unnecessarily. It is not the object of the examiner to discover whether a person has been infected with tuberculosis, but whether he is suffering from tuberculosis, a much more difficult matter. Experience of such work brings home to the observer how frequently, on the one hand, tuberculosis will infiltrate a patient without giving rise to pyrexia, cough, or any of the standard signs or symptoms; and, on the other hand, how frequently a few symptoms due to tuberculosis may be present and yet the patient loses them and becomes restored to good, and permanently good, health within a few weeks without any specific treatment.

A girl, aged 17, whose mother died of tuberculosis, was seen on January 18th, and had then been ailing for two weeks only; her doctor suspected tuberculosis and had sent her to bed. A skiagram revealed a somewhat dense tuberculosis over both lungs, with a large cavity in the right upper zone. This patient was not even then very ill, and had not wasted, yet it is hardly possible that such a large cavity and such an extensive infection had appeared within fourteen days.

Discussion

In 1932, according to the returns made to the Ministry of Health, the number of child contacts examined was 28,118, and of adults 20,413. Among the children 887 cases of pulmonary tuberculosis were discovered, and 526 non-pulmonary; among the adults 2,014 cases of pulmonary tuberculosis and 118 non-pulmonary. The whole gives some 7 per cent. disclosure of undetected tuberculosis, and although we do not know what would be the result of examining a non-contact population, such figures encourage the belief that the effort is well worth while. But attention must be directed to the large number of adult contacts found to be affected. A number of these are undoubtedly young adults, but a large number are older, often middle-aged or elderly tuberculous persons, who have continued at work for many years without treatment. Although themselves tuberculous, these are the tuberculosis "carriers," the most dangerous sources of infection, more dangerous to others than to themselves.

Carriers are commoner than many realize. A man of 26 was seen in September, 1928. His sputum contained tubercle bacilli, and the skiagram showed definite disease on both sides of the chest, with a cavity the size of a golf ball in the right middle zone. The patient refused all treatment, and has continued at work uninterruptedly since first seen, a period of nearly seven years.

Another point, perhaps psychological, which vitally concerns contact examination, is that it is easier to persuade contacts to attend by appointment for the purpose of radiography than to go through the usual attendance, plus clinical examination, plus a skiagram. A patient who feels perfectly well and has no radiographic evidence of tuberculous disease can for the time being be called negative and can be left alone.

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Suggested Improvements

The following modifications in our methods are now suggested:

1. To omit the routine overhauling of children. Children should not be in any sense neglected, but they are already amply covered by the activities and anxieties of parents, teachers, health visitors, school medical officers, and practitioners. The clinical examination of a child's chest is of little, if any, value, and tuberculous disease among children is rare. Delicate children to whom attention is directed should be sent to a preventorium, and children so selected should certainly be examined and radiographed.

2. Careful attention should be paid to all contacts over school age, and appointments made for radiography. If the skiagram shows disease or gives rise to suspicion this should be followed up appropriately. The radiography should be good and reliable: a poor skiagram is worse than useless.

3. The practitioner should take more part in the tuberculosis campaign than at present. It is easy to destroy his sense of responsibility by assiduous departmental work,

and with the loss of responsibility goes all interest in our campaign. He could help by securing radiography for wayward contacts, by securing radiography for adult members of other families whose appearance or history gives rise to suspicion, and also by securing the investigation of workshop or office contacts. It may be here repeated that a free skiagram is far easier to obtain than a visit to the tuberculosis officer, entailing a complete overhaul. Any suspicious x-ray findings can be followed up without difficulty.

Summary

Difficulties and defects in the routine examination of tuberculosis contacts are discussed. It is pointed out that the Ministry of Health returns indicate a far larger finding of tuberculosis among adults than among child contacts, and that it is easier to obtain a skiagram for individual contacts than a complete overhaul. It is suggested that our attention in future should be directed less to the children of the household and more to the young adults and middle-aged potential carriers of the disease. In this campaign the general practitioner should play a larger part.

Clinical Memoranda**Unilateral "Winged Scapula" following Measles**

The case described below is of interest owing to the rarity of the condition and the difficulty of prognosis.

A nurse, aged 20, was recovering from an attack of measles of moderate severity. Fifteen days after the appearance of the rash she noticed some discomfort over the right scapular region, and had great difficulty in raising the right arm above the horizontal. There was no actual pain and no fever or malaise.

Examination revealed the right scapula to be nearer the vertebral column than the normal. A compensatory scoliosis was present, and there was some drooping of the right shoulder. On raising the arms in front the right scapula took up the characteristic "winged" position, with the vertebral border sticking out at an angle of about 45 degrees from the normal (see figure).

One could easily insert the fingers between that bone and the chest wall. The patient could raise the arm above the horizontal with difficulty. The scapula on abduction rotated slightly about a central axis so that the upper part of the vertebral border, to which the rhomboid minor and the levator scapulae are attached, deviated medially and upwards, and the lower part of the border laterally. Reaction to degeneration was present in the right serratus magnus, but the deltoid, rhomboids, trapezius, latissimus dorsi, and all other muscles gave a normal response. Sensation was unaffected. No enlarged glands were found, and the heart and lungs were normal.

The case is being treated by the infra-red lamp and salicylates. Sixteen days after the onset there seems to be a slight recovery of power, and the serratus magnus is beginning to respond to electrical stimulation.

Unilateral "winged scapula" of sudden onset is due to paralysis of the serratus magnus muscle supplied by the long thoracic nerve. The muscle arises from the upper eight or nine ribs and is inserted into the ventral surface of the vertebral border of the scapula; it is concerned with the action of pushing, and also helps to steady the scapula when the deltoid is raising the arm. The long thoracic (nerve of Bell) arises from the fifth, sixth, and seventh cervical roots, and supplies only the serratus magnus.

Macdonald Critchley (*Medical Annual*, 1932, p. 480) gives a full description of the condition, and shows that it can arise in two types of case: (1) following certain fevers—for example, enteric, measles, puerperal, and influenza—the lesion being right-sided except in one case; and (2) following over-use of the arms—for example, in swimmers—or following injury.

The prognosis as given in Price's *Practice of Medicine* (1933, p. 1738) is: "Recovery is always slow and the defect may be permanent." This apparently applies, however, only when the lesion is traumatic; toxic paralysis following a fever is not alluded to. On this account I have deemed it best to report the case at this early stage in the hope that any reader who has had experience of similar cases might like to correspond with the writer concerning the progress and ultimate result of the paralysis.

I am indebted to Dr. E. C. Hadley, medical superintendent, for permission to publish these notes.

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Bee Ointment Dermatitis

There are multitudinous reports of substances which cause the development of sensitivity in the human body. The following case, reported from the dermatological department of the West London Hospital, is the first to come under the notice of Dr. Hugh Gordon, the head of the department, or under mine, nor have we seen any mention of such a case in the literature. Inasmuch as bee ointment is being used widely in the treatment of rheumatism it would seem worthy of note.

A male, aged 62, a battery repairer, was under treatment by his own doctor for sciatica. He was given a supply of an extensively advertised bee ointment to massage into the thigh. This he continued to use for three weeks, with, one may add, benefit. At the end of that time he developed a widespread dermatitis involving the trunk and legs, the face and hands being spared. The skin was red, thickened from oedema, hot, and painful. The right thigh, to which the ointment had been applied, became so swollen that he was unable to put on his trousers. A patch test was done on the arm with a prompt positive result. The use of the ointment was stopped, soothing lotions applied, and glucose given by the mouth. Within a week the swelling of the tissues had disappeared, the colour was fading, and desquamation had begun. Further healing proceeded normally.

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