Treatment of Tuberculosis in a Neuropsychiatric Hospital*

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The prevalence of tuberculosis in a Hospital for the mentally ill is an accepted fact. Anderson¹ in a recent review of this problem cited prevalence rates of 30 to 50 per thousand for psychiatric hospitals generally. Tompkins² reports prevalence rates in all Veterans Administration Neuropsychiatric Hospitals for World War I veterans of 9.5 per thousand and World War II veterans of 4.3 per thousand. The prevalence rate among all in-patients at our hospital has averaged 4 per thousand for the past five years and 3 per thousand for 1951. The latter figures cannot be compared with those from other hospitals for we have not included in this group patients having acquired pulmonary tuberculosis prior to admission to this hospital. However, these figures suggest that an active case-finding program in psychiatric hospitals in conjunction with a complete treatment program can be expected to result in decreasing prevalence rates in these hospitals, rates which can be expected to approach the rate for the general population.

Case-finding is the most important procedure in the program for control of tuberculosis, but it is of little value unless active cases brought to light are immediately isolated on a ward which fulfills all criteria for good aseptic techniques. All facilities must also be available for any indicated active therapy for both the tuberculosis and the particular mental illness. Further, these patients should not be permitted to return to a general psychiatric ward until the criteria for inactivity, as established by the National Tuberculosis Association, are fulfilled.

Difference of opinion exists as to whether or not these patients can be treated by the same criteria as are acceptable for treating non-psychotic patients. In the past, some few have believed that the treatment of these patients differed in no way from the treatment of the non-psychiatric patient with tuberculosis.³ ⁴ On the other hand, others felt that even pneumothorax was not suitable for mentally ill patients.⁵ Radical chest surgery was not attempted by some,⁶ whereas others⁷ carried out all forms of collapse therapy but reserved major chest surgery for patients with “a favorable prognosis for remission of psychoses or those who have made a satisfactory adjustment with maximum privileges and minimal supervision.” Recent reports⁸⁻¹¹ indicate a trend to more active therapy. This has been the result of finding that not only can psychiatric tuberculous patients be successfully treated in the same way that non-psychotic patients

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are treated, but that failure to utilize this type of therapeutic approach leaves the mental patient as a serious source of infection for other patients.

Five years ago, a tuberculosis neuropsychiatric unit was established in this hospital to care for an in-patient population of approximately 2,000 neuropsychiatric patients. It was planned to provide simultaneous active therapy for the patients' tuberculosis and mental illness. One hundred twenty seven cases of active tuberculosis have been treated during this period. Although final results are not available, the experience gained shows that many of the problems which were formerly considered as deterrents to active therapy can be resolved by the close supervision of the internist, psychiatrist, and thoracic surgeon.

Patients found on x-ray surveys to have lesions suspected of being tuberculosis should be isolated for study on the tuberculosis ward irrespective of mental reactions. They are usually found to be asymptomatic insofar as their tuberculosis is concerned. It is to be noted in this connection that mentally ill patients frequently do not complain of distress even though they are quite ill physically, whereas others may offer symptoms that may be mistaken for those of somatic illness but actually have no somatic basis.12

It is generally accepted that the physical examination is of little help in the mentally normal patient in evaluating the extent of tuberculosis. It is of less help in the uncooperative psychotic patient. One must also be aware of the fact that in many instances, the sputum examinations are not satisfactory since the obtaining of adequate specimens requires some cooperation on the part of the patient, and this is not always given by the psychotic patient. Therefore, the routine use of gastric washings becomes necessary. Also, bronchoscopic examinations should be performed in most cases to complete the studies. We have been able to do these without difficulty through the use of mild sedation and local anesthesia.

Specific bed-rest therapy cannot usually be obtained in psychotic tuberculous patients. Excessive physical activity in these patients can be curtailed by occupational therapy, group psychotherapy, and various types of sedentary entertainment in the form of movies, audience participation entertainment, ward parties and television. Religious services should be made available on the wards. A few hyperactive patients will require hydrotherapy, neutral pack treatment, or maintenance electroshock. An exceptional problem is presented in the catatonic, stuporous patients. These patients will remain at absolute bed rest, but this is of little real value in treating the tuberculosis because the catatonic state precludes an adequate intake of food. Electroconvulsive therapy, to relieve or alleviate the stupor, is indicated in this type of patient. In general, about 10 per cent of our patients can be encouraged to take bed rest as prescribed. About 40 per cent of them will rest for two hours in the morning and two hours in the afternoon. The remainder fall into the hyperactive or uncooperative group, and their activities may be curtailed by the adjunctive therapies mentioned above.

Pneumothorax and pneumoperitoneum can be given to most psychotic patients without difficulty. The uncooperative, hyperactive patient can be
treated with these measures after he has received electroconvulsive therapy and has become more easily manageable.

The indications for major surgery, thoracoplasties, or resections are the same as in a non-psychotic patient. The type of thoracoplasty operation used by us seemed especially adaptable for psychotic patients. Modified muscle-split thoracoplasty is routinely performed, using small incisions at different sites at each stage, thus obviating the necessity of re-opening any wound and insuring more adequate and rapid wound healing. The removal of seven ribs in three stages is routine. This type of thoracoplasty, because of the limited amount of surgical trauma in each stage, permits the subsequent stages to be performed at weekly intervals so that surgical intervention may be completed in three weeks.

It is not feasible to transfer psychotic patients to a general hospital or a tuberculosis hospital for surgery. The patient often becomes disturbed in strange surroundings and with strange personnel, particularly where

| TABLE I: THERAPY USED IN TREATING PULMONARY TUBERCULOSIS IN 121 PSYCHIATRIC PATIENTS |
| I. Rest Only in 52 |
| II. Special Procedures in 69 |
| 1. Pneumothorax (10 not therapeutically effective) | 35 |
| 2. Pneumonolysis | 14 |
| 3. Pneumoperitoneum (6 not effective) | 29 |
| 4. Phrenectomy | 15 |
| 5. Thoracoplasty (9 patients) | 27 stages |
| 6. Pneumonectomy | 2 |
| 7. Lobectomy | 4 |
| 8. Segmental Resections | 2 |
| 9. Decortication | 3 |

| TABLE II: PULMONARY TUBERCULOSIS IN 121 PSYCHOTIC PATIENTS (Preliminary Results 5 Year Period, 1947-1952) |
| Extent of Disease | Progressive | Improved | Arrested | Inactive | Died |
| Minimal, 14 | 1 | 1 | 12 |
| Moderately advanced, 78 | 2 | 35 | 12 | 22 | 7 |
| Far advanced, 29 | 5 | 7 | 3 | 14 |
| TOTAL, 121 | 7 | 43 | 13 | 37 | 21* |

* 7 Patients were in a terminal stage of tuberculosis on admission.

7 Patients died of non-tuberculous conditions.

7 Patients, despite treatment, progressed and died.

| TABLE III: ELECTROSHOCK IN 27 PSYCHOTIC PATIENTS WITH PULMONARY TUBERCULOSIS (Preliminary Results 5 Year Period, 1947-1952) |
| Initial Status of Tuberculosis | Improved | Arrested | Inactive |
| Active | 24 | 6 | 5 (1 relapse) | 13 (1 relapse) |
| Arrested | 3 | 2 | 1 |
there is no psychiatric orientation. We, therefore, strongly urge that necessary surgical facilities exist in the parent mental hospital.

We have, as noted above, treated active tuberculosis in 127 psychotic patients during the five years 1947 to 1952. We have not included patients who following appropriate studies, were found initially to have inactive lesions. One hundred twenty one cases had active pulmonary tuberculosis, and the remaining six included three cases of bone tuberculosis, one of glandular tuberculosis, one renal tuberculosis, and one tuberculous psoas abscess.

Table I shows the type of therapies used in treating 121 psychotic patients with pulmonary tuberculosis.

Table II lists the results in the pulmonary cases. It should be noted that these are preliminary reports as some of the cases have been under treatment a relatively short time. Nevertheless, the table gives indication as to what can be expected in the treatment of the tuberculous neuropsychiatric patient.

The use of electroshock therapy in treating psychiatric patients with associated pulmonary tuberculosis should no longer be considered a problem in psychiatric hospitals. One of us reviewed this problem a few years ago, reporting case material in detail, and concluded that "cases reported in the literature as developing tuberculosis following electroshock therapy had not been adequately controlled by x-ray film or clinical studies to an extent warranting definite conclusions." Earlier observations by Moore, Kalinowsky and Hoch indicated that patients with active tuberculosis could receive electroshock without danger of spreading their tuberculosis. Jeftoft and, recently, Clark have shown electroconvulsive therapy can be given without adverse effect on healed or active lesions. Clark reported on 110 such cases and found no evidence of adverse effect. He recommended that "further long term studies of treated cases are most desirable." Since our initial report, we have treated additional cases with the result shown in Table III. Altogether 27 patients have received electroconvulsive therapy at some time during the period of treatment for their tuberculosis. The table indicates the stage of their tuberculosis at the time the shock was given and their present condition. These 27 patients have received a total of 1,273 electroshock treatments. Details of the two cases showing relapses are given below:

Case I: C.S. This 25 year old white male veteran of World War II was admitted to the hospital January 5, 1945 with a diagnosis of schizophrenia, mixed type. On September 1, 1948 a routine chest x-ray film showed a minimal tuberculous lesion of the left upper lobe. Sputum examinations were negative but gastric washings were positive for acid-fast bacilli. He was treated by bed rest, but it was necessary to give him electroshock therapy in order to gain his cooperation. The tuberculosis improved and by January 1950 had met the criteria for inactivity. From September 1948 to June 1950 he received a total of 91 electroshock treatments. On April 18, 1951, chest x-ray film showed an increase in the size of the lesion at the left upper lobe. Planigraphic studies revealed a small cavity. A gastric washing was positive for acid-fast bacilli. This relapse occurred nine months after the last electroshock treatment. Subsequently, he received streptomycin and para-aminosalicylic acid, and finally segmental resection was performed. The resected specimen consisted
of a small fibrotic mass with a central thick-walled cavity 1 cm. in diameter. His postoperative course has been good, but it is too early to give the final results.

Case 2: N.B. This 24 year old white male veteran was admitted to the hospital May 15, 1934 with diagnosis of schizophrenia, simple type. A routine chest x-ray film March 1947 showed evidence of a minimal lesion in the left upper lobe. Sputum and gastric washings were negative for acid-fast bacilli. There was no symptom. Sedimentation rate was normal. He was uncooperative in taking bed rest; however, in spite of this, the lesion became smaller and appeared fibrotic. By June 1950 the disease was classified as minimal, arrested. In October 1950 he was started on electroconvulsive therapy because his mental condition seemed worse. In June 1951 the chest x-ray film showed some increase in the left upper lobe lesion. Sputum studies were negative for acid-fast bacilli, but a gastric washing was positive. Electroshock therapy was continued until August 1951, and was discontinued when his mental condition showed some improvement. He received a total of 39 treatments. He has now been given pneumothorax on the left side, and with the aid of a pneumonolysis has a good collapse. Sputum studies and one gastric washing have been negative on culture and guinea pig inoculation.

We do not believe electroshock should be considered a factor in the relapses of these two patients. We are of the opinion that the initial lesions, although appearing stable on x-ray film inspection had remained active, and the subsequent changes on x-ray films represent the normal progression of the tuberculosis. Their current treatment is more definitive, and we anticipate better results.

Many of these patients, in addition to the initial course of electroconvulsive therapy three times a week for six weeks or a total of 18 treatments, required weekly maintenance electroshock therapy. This was necessary in order to gain the patients' cooperation in taking treatment and adequate nourishment. One patient with moderately active disease received a total of 142 electroshock treatments in order to gain his cooperation in taking pneumothorax and sufficient nourishment. His tuberculosis has been inactive for one year.

The decision to give electroconvulsive therapy to psychotic patients with tuberculosis is based upon weighing the anticipated advantages against the risks. For example, in a tuberculous psychotic patient, who is acutely disturbed, physically hyperactive, and refuses to eat, the chances are that these symptoms will result in a spread of the tuberculous lesion. Shock can be expected to make this patient less physically active, more amenable to suggestion, and to improve his appetite. In all cases, the decision to use shock is reached by professional collaboration and agreement between the internist and the psychiatrist. The indications for giving electroshock in the presence of tuberculosis can be summarized as follows: 13 "(1) Acute psychiatric illnesses with associated tuberculosis, if delaying the shock therapy would reduce the possibilities for a good prognosis in the mental illness. (2) Whenever there is a possibility of alleviating symptoms which interfere with treatment of the tuberculosis. This refers principally to gaining cooperation of the patient in obtaining proper nourishment, bed rest, or collapse therapy where indicated."

No discussion of the tuberculosis-neuropsychiatric problem is complete without mention of the part played by the nursing service. We believe that
proper control and care for these patients would be impossible without nurses trained in psychiatric, medical, tuberculosis, and surgical nursing. The nurse in charge of the tuberculosis psychiatric ward should be qualified in all of these nursing specialities. She should be sufficiently able to take care of patients' needs so that it is not necessary to bring in strange nurses or transfer patients to other sections of the hospital for special procedures. Once a psychiatric patient becomes accustomed to the same ward nurses and personnel, cooperation is definitely enhanced. Neuropsychiatric tuberculosis nursing should be recognized as a highly specialized branch of nursing, requiring combined skill in specialized nursing.

SUMMARY

1) Our experience suggests that the high incidence of tuberculosis in hospitals for mental patients can be reduced by a continuous case finding program followed by adequate therapy of active cases.

2) Neuropsychiatric patients with tuberculosis should receive all types of therapy available to mentally normal patients inclusive of major surgery. The indications for temporary and permanent collapse procedures and resections are the same as in the non-psychotic patient.

3) The patients' mental conditions should be treated concurrently and electroconvulsive therapy should be used when indicated in the presence of active tuberculosis.

4) It is emphasized that the treatment of neuropsychiatric tuberculous patients requires the active supervision of the internist, psychiatrist, thoracic surgeon and nurses trained and experienced in caring for them.

5) Preliminary data in the treatment of 121 psychotic patients with active pulmonary tuberculosis confirm these conclusions.

RESUMEN

1) Nuestra experiencia sugiere que la elevada frecuencia de la tuberculosis en los hospitales para enfermos mentales puede reducirse por medio de un sistema continuo de investigación seguido de una terapéutica adecuada de los casos activos descubiertos.

2) Los enfermos mentales con tuberculosis deben recibir todas las formas de tratamiento que hay para los enfermos mentalmente normales incluyendo la cirugía mayor. Las indicaciones para los métodos de colapso temporal y permanente así como las resecciones son las mismas que para los enfermos no psicóticos.

3) Los padecimientos mentales deben tratarse al mismo tiempo y la terapéutica convulsivante eléctrica debe usarse cuando esté indicada, en presencia de tuberculosis activa.

4) Se reclama que el tratamiento de los enfermos neuro-psiquiátricos tuberculosos requiere la supervisión activa del internista, el psiquiatra, el cirujano de torax y de las enfermeras preparadas para estos cuidados de ellos.

5) Los datos preliminares de 121 enfermos neuro-psiquiátricos con tuberculosis activa confirman estas conclusiones.
RESUME

1) Les auteurs, d’après leur expérience, pensent que le grand pourcentage de tuberculose dans les hôpitaux psychiatriques peut être réduit par une recherche systématique ininterrompue de ces cas suivie du traitement convenable des formes actives.

2) Les malades de neuropsychiatrie atteints de tuberculose devraient être traités exactement dans les mêmes conditions que les malades mentalement normaux, y compris par la grande chirurgie. Les indications de la collapsothérapie temporaire ou permanente et des exérèses sont les mêmes que chez les malades n’ayant pas de troubles psychiques.

3) L’affectation mentale des malades devrait être traitée parallèlement et on peut utiliser l’électro-choc quand il est indiqué, malgré l’existence d’une tuberculose active.

4) Les auteurs insistent sur le fait que le traitement de la tuberculose chez les malades atteints d’affectations neuropsychiatriques demande un contrôle actif du médecin de médecine générale, du psychiatre, du chirurgien thoracique, et d’infirmières mentées dans les particularités qui concernent leur traitement.

5) Les résultats préliminaires obtenus par le traitement de 121 tuberculeux atteints de troubles psychiques sont la confirmation de ces conclusions.

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