Surgery in Tuberculosis of the Lung, (VIII)

Tuberculosis is a disease which should never be seen by the Surgeon.

Essentially, every patient with tuberculosis, including those with advanced disease, is curable with standard triangle therapy (Streptomycin, INH + PAS or thiacetazone given over 18-36 months) when first seen. Why is it then that here in Nepal more and more patients are dying of the disease or are, acquiring the efforts of the lung surgeon for cure? The answer is drug resistance — and we physicians are at least greatly responsible.

When the patient with the tuberculosis is first seen he must be started on a minimum of 18 months continuous therapy:

- Streptomycin 1/2–1 gram i. m. daily for one month
- then biweekly for 5–10 more months
- PAS or Thiacetazone daily for 12–24 months
- INH daily for 18–36 months.

If we prescribe less than this, or if we do not impress the patient with the necessity of continuous treatment for at least 18 months, no matter how well he feels, we become responsible for the emergence of drug-resistance strains of acid-fast bacillus.
This is of terrible significance not only to that particularly patient, who may have lost his only chance for health, but also to his entire society.

Surgery is indicated, then, only in those tragic cases where drug therapy has failed.

What are the specific anatomic indications for surgical therapy?

(a) Open cavities with positive sputum.
(b) Bronchiectatic lung (especially if accompanied by recurrent hemoptysis).
(c) Destroyed lung.
(d) Trapped lung.
(e) Empyema.
(f) Tuberculosis.

Of these, only some cases of open cavity or of empyema can be treated by collapse therapy—the reminder requiring resection.

The physiologic indications for surgery require that the patient have adequate pulmonary reserve to withstand the temporary limitation of that accompanies any thoracotomy. In general clinical examination is as valuable in determining physiologic risk as the more sophisticated methods of determining pulmonary function. If the pulse rate, and, the rate and character of respiration are determined pre and post standard exercise (at Bir Hospital we walk the patient two flights of stairs) the risk for thoracotomy can be quite accurately predicted.

Surgical procedures, in general, play their part in re-treatment rather than initial treatment. This is because the second-line drugs are much less likely to cure the disease than the first line drugs.

Chemotherapeutic control may also determine the type of surgery to be carried out. In general, resectional therapy should be carried out when chemotherapeutic control is complete (the sputum is negative). Collapse therapy is necessary in case of incomplete control (the sputum is positive for AFB).

An additional indication for surgical therapy is that groups of psychologic, social and economic factors which indicated that the patient will or cannot afford or be relied upon to take his medication as directed. In such situations, where the patient becomes a danger to himself, to his society, surgical therapy must be considered.

What types of surgery are we considering? Basically three: resection, collapse and decortication.

Resection: ideally resectional therapy should be carried out when the disease pre-
cess appears stable by X-ray examination and the sputum is negative for AFB. The complications in resectional surgery carried out with positive sputum is prohibitive (in lobectomy, for instance, the complication rate with negative sputum is 1/20 that where the sputum is positive). For this reason resection should generally be considered only when the sputum is negative. The conversion of sputum to negative is probably the outstanding use of the "second-line drugs", which are usually not curative themselves. Often the second-line drugs will temporarily convert the sputum to negative usually one to two weeks after being started. This is the time that resection should be carried out. If too much time is allowed to go by after starting second-line medications the sputum may revert to positive and the chance for curative resection lost.

Collapse therapy is indicated where an open cavity is associated with positive sputum; it is effective only when the cavity is located above the level of the posterior aspect of the fifth rib.

The basic type of collapse therapy are thoracoplasty, phrenic nerve crush, pneumothorax and pneumoperitonium. The last three are rarely used today but may be considered in patients with severe hemorrhage who do not appear well enough to tolerate resection or thoracoplasty. Thoracoplasty is usually of the type where the posterior lateral positions of the seven ribs are removed in three stages (one to two weeks apart). Tailoring thoracoplasty may also be done when future resection is to be carried out and residual surface is effected; in this case usually the major three ribs are removed and the resection carried out about three weeks later.

Thoracoplasts, where a prostatic material (paraffin, etc.) is placed within the chest wall to collapse the lung, is becoming a more popular method as it is carried out in one stage and is less deforming than the thoracoplasty.

Decortication involves removal of fibrin peel from the surface of collapsed lung. Every attempt should be made, as soon as possible, to expand collapsed lung with the use of large chest tubes. If this is unsuccessful decortication will expand the lung increasing pulmonary function: and also obliterating the pleural space where empyema is otherwise almost inevitable.

The results of surgical therapy are most encouraging, in particularly considering that the patients are usually those most seriously ill with the disease. At the present time, of all patients treated in the United States by surgical means only 3% will require readmission to the hospital for further treatment. The overall mortality rate is approximately 24%. The success rate, then, is in the range of 94-95% a remarkably fine record in a group of patients most of whom would otherwise have remained hopelessly ill.
with the disease.

To reiterate, the important message here is that the patient who contacts tuberculosis is curable with medical means alone if he is treated with triple therapy for 18-36 months. If he is not properly treated and develops resistant organisms and the complications of tuberculosis surgery as described here, is available and offers good hope of success.

(Michael L. Small)

REGIONAL MOBILE MEDICAL TEAM FOR NEPAL (IX)

The concept, the purpose and the objectives of the national health service vary in different countries depending on their different level of social and economic development. The concept of our health service is still in the fluid state, though our objectives to provide basic health care and our emphasis in the public health measures are clear and explicit. Any future planning of this service should consider these basic objectives aimed at broadening the scope of application of these objectives, and visualise the state of our health service seen in prospective over the next 20 years or so on the background of our present state of affairs, the possible inputs, variables and constraints. This long term plan then should be phased out over 3 to 5 years term, no change at the basic plan is done at random unless there is good reason for doing so.

The biggest constraint in our development, and in our effort to make available to the people the effective basic social services like education and health at economic price is our geography – the mountainous terrain with difficult communication and the widely and thinly scattered pattern of habitation in the hills. Because of it, anything being done in the hills – providing developmental potentials, schools or health facilities becomes uneconomical in terms of the number of people benefited by these. The concept of Regional Development Centres have focused and underlined the need of the multicentric and parallel development in different regions. The resettlement areas like Kha- jura in Nepaljung has made possible for concentration of the people from widely
scattered and economically depressed areas in the hills in a well nit community or villages which can be economically provided with agricultural and other community facilities and social services causing more human happiness at less cost. If these benifit are to be acheived and at the same time encourage people to remain in the hills and thus create developmental potential there, simillar human resettlement areas has to be initiated in different areas in the hills-in a way developing multiple developmental centres within the Regional developmental area. Building roads, schools and providing health facilities within such centres will be more economical and at the same time more benificial in terms of the number of the people involved.

Till such time or even after that the only way to provide any preliminary special medical care to the hilly areas at best can be done effectively only by mobile medical team. The mobile medical team has in recent decade become very popular in Nepal. These mobile team are however often sent for the provision of one particular special service and often to place which already have fairly good medical facilities. The advantage of the mobile team is enhanced at comparatively less cost if multiple services is excluded and should be mainly for the remote hilly areas the people of which have otherwise no where to turn for such services or any other basic medical facilities. Now that we have at least 50 beded hospitals staffed with specialists in the four developmental regions, these hospitals in the outlying regions should be given the budget and the responsibility to organise their own mobile team within the regions, in collaboration with the Department of the Health. The hospitals of Nepalganj, Pokhara and Biratnagar will be the bases of the mobile medical service of the Surkhet, Pokhara and the Dhankuta Development Regions. These mobile team instead of going to one place and returning to their bases could economically visit more than one place in the areas staying for a week to 10 days in each place. In this way mobile team can be more effective, less costlier and in the long run help to develop a system more adoptible to the need of our country.

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Dr. S.M. Shrestha is transferred to Nepalganj as physician to the Bheri Anchal Hospital from October 1973. As it is not possible to bring out the Journal from Nepalganj at present, he has resigned from the post of the Editor of this journal effective from December 1973.