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PULMONARY CAVITY: OPTIMISM SUR-  
ROUNDING ITS INTELLIGENT  
TREATMENT\*

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OUT of much discussion, now and then a truth is established which thereafter seems so self-evident that one wonders why it had not been recognized before. But knowledge is evolutionary. Only rarely is a fact promulgated which is not based on some other well-recognized fact or principle which is closely allied to it and which has been previously applied in daily use.

PRESENT-DAY UNDERSTANDING OF CAVITY  
FORMATION A RECENT CONCEPTION

Cavities have been suspected in tuberculosis ever since the disease has been carefully studied clinically, and have been proved to exist ever since the lungs have been studied postmortem. But the full significance of cavity as a focus from which the disease spreads in the body of the tuberculous patient; the manner in which it infects members of the community at large; and the problem which it presents in therapy is a comparatively recent conception. Formerly, when cavities were found in the lungs the prognosis was considered to be grave. In the minds of most clinicians their presence meant the death of the patient. Today, however, many cavities warrant a favorable prog-

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nosis under general hygienic treatment alone, and some of the most serious ones may be successfully treated by our newer methods.

An adequate conception of cavity could not possibly have been had prior to the discovery of the tubercle bacillus fifty-four years ago; and our present conception has been greatly influenced by studies made by means of the x-ray. So the real appreciation of cavity is of very recent origin, and specialists are just now giving out their conception to general medicine.

#### INFECTION SIGNIFICANCE OF CAVITIES

A fact that all medical men should appreciate and one that I desire to emphasize, is that, from the standpoint of scattering infection, any cavity which throws off bacilli (and nearly all of them do) may not only be dangerous to the life of the one who possesses it, but also to society. I say "may be" advisedly, for it is possible to remove most of the danger by properly directing the patient. Under no circumstances would I create unwarranted phthisiophobia among practitioners of medicine, for when they are imbued with fear intelligent interest lags. One of the great accomplishments of the modern crusade against tuberculosis is the mitigation of the fear of the disease, which formerly possessed the medical profession. To say eradication would be putting it too strongly, for fear still lurks in the background and comes out in the open at unexpected times.

#### CAVITY RESOLUTION AN INDIVIDUAL PROBLEM

From the standpoint of healing, cavities must be considered individually. Not every patient who has a cavity in the lung is going to suffer from metastases and death, whether or no. It is not a matter of fate. Some will heal readily; others with difficulty; others not at all. The presence of

cavity means that the patient must be treated with intelligence in order to afford him the best chance of cure, and those living intimately with him the best chance of escaping infection.

Cavities are not only amenable to treatment, but many of them heal spontaneously. This is especially true of the early cavities found in connection with acute exudative tuberculosis, particularly if situated sufficiently far away from the pleura so that their closure is not interfered with by adhesions; sufficiently far from the hilum to avoid the dense unyielding structures which make up the root of the lung; and sufficiently far from the diaphragm to avoid the pull of its repeated contractions. Other cavities will heal, too, but those just described heal quite readily when properly treated. This group includes many of those which clinicians have reported on favorably since hygienic living, with rest in the open air, has dominated treatment. Such cavities, if improperly treated, however, pass on to a state in which healing is more difficult or impossible of attainment.

#### FACTORS IN CAVITY REPAIR

Healing of cavity, whether with or without mechanical aid, depends on establishing, on the part of the patient, an adequate physiologic balance plus an adjustment of lung volume to the size of the thoracic cage. Specific resistance is probably nothing more than a heightening and quickening of normal physiologic action. Early in the course of the disease, when the greater proportion of pulmonary tissue is elastic and free from disease, the chief form of compensation is brought about by emphysema, particularly in the adjacent and near adjacent pulmonary tissues. This, together with the limited motion of the side, which is caused reflexly by the shortening of the apical muscles, particularly the sternocleidomas-

toideus, scalmi and subclavius above, and the crus and central tendon of the diaphragm below, will prove effective in many cases, provided the patient, through physical and psychical rest, reduces his respiratory and circulatory demands to a minimum.

Some of this type, however, will need further aid in order to bring about closure; and others which appear to be far more serious will yield to simple measures.

#### TUBERCULOSIS SYNDROMES

Tuberculosis is usually first seen by the family physician or by a specialist who devotes his study to some other phase of medicine whom the patient is led to consult because of the fact that the disease masquerades under symptoms which the patient interprets as belonging to a specialty other than that of the chest; for it must be remembered that tuberculosis often shows syndromes which simulate lesions in other organs and systems of the body so closely that we speak of distinct types. The neurasthenic (rundown condition), cardiovascular, gastro-intestinal, laryngeal, bronchitic, influenzal, pleuritic, and hemorrhagic types are all well recognized.

It is necessary for all physicians to be on the lookout when these syndromes present, and particularly if sputum is present, because this usually means a break in lung tissue with bacilli present; and quite often, if the onset is sudden, it means the presence of cavity. The future of the patient and the interests of the family both demand a diagnosis and the immediate institution of the proper treatment, and the application of the rules which protect other members of the family and society.

With this done, we approach both the healing of the patient and the security of those who come

in contact with him with confidence. Not unmindful of the fact that tuberculosis may spread from any focus within the body by way of the lymph and blood stream, yet cavity is the focus which carries with it the greatest danger to the patient, and is the source which furnishes most of the bacilli which infect others, so it is evident that its early detection is important to both the patient and others.

#### IMPORTANT RÔLE OF THE GENERAL PHYSICIAN IN CAVITY DIAGNOSIS

Since tuberculosis is usually first seen by physicians other than specialists in tuberculosis, if it is to be diagnosed early it must be diagnosed by them. This is not only their duty, but their privilege. In what way can a physician render a greater service to those patients who seek his advice than by detecting and treating such a serious disease as tuberculosis early, when it is curable, instead of allowing it to progress to a crippling and often a fatal termination? and in what way can he render a greater service to the friends of the patient than by protecting them from becoming infected?

There is nothing in the diagnosis of tuberculosis that lies beyond the capabilities of the well-trained physician, provided he assumes the same interest in it that he does in other diseases and, furthermore, provided he develops a proper diagnostic procedure. There should be nothing to prevent him from diagnosing a cavity when present, except a failure to examine sputum and take an x-ray of the chest; and the necessity of these should both be suggested by the clinical history.

#### IN CONCLUSION

A systematic method of approach, which consists of three procedures: (1) taking a careful

history; (2) examining any sputum that may be present by the concentration method or guinea-pig inoculation, if necessary; and (3) the reading of a good x-ray plate should detect tuberculosis in all but the most difficult cases, and in open cavity cases it should detect all. A tuberculosis-minded profession, and a profession with the confidence in itself which its training warrants, should become the greatest factor in the further reduction of the morbidity and mortality from tuberculosis.

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