Causes of Death in Carcinoma of the Lung
in a Large Public Hospital
An Analysis of 186 Fatalities

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Carcinoma of the lung is not a cheerful disease at the present time. A physician who undertakes the analysis of a series of fatalities caused by it should therefore be prepared for what he may find. Because I have had my share of losses and have made my share of errors in this disease, I had thought that a review of 186 recent fatalities from Charity Hospital of Louisiana at New Orleans would hold few surprises for me. It held a great many. The concentration of medical and surgical errors and missed opportunities, combined with the fundamentally unfavorable circumstances which, in the light of our present knowledge, there seems no way at all of overcoming, has made this analysis one of the most depressing experiences of my professional life.

Basic Data

The record library at Charity Hospital has on file for the period 1947-1951, 750 individual histories of carcinoma of the lung (Figure 1). Considerably less than half of these patients were considered suitable for exploration of the chest, considerably less than half of those explored could be submitted to either palliative or presumably curative pneumonectomy, and less than three-quarters of those submitted to pneumonectomy left the hospital alive. I have made no attempt to follow up these surviving pneumonectomized subjects, but my analysis of the 186 fatalities which occurred over this same period throws light upon what happened to some patients submitted to this operation. Twenty-two of the 33 patients who underwent pneumonectomy died during the immediate postoperative period. Eleven others, who survived the operation, later died in the hospital. Only four of the 11 lived for two years or more, and only one of these lived as long as five years.

Though I am not concerning myself in this review with the general incidence of carcinoma of the lung, a word might be said about its incidence at the New Orleans Charity Hospital. Between 1910 and 1927 no case of carcinoma of the lung or the bronchus is listed in the record library files. Only 21 cases are recorded from 1928 through June 1934. The first exploration for pulmonary malignancy at the hospital was performed in 1934 and the first pneumonectomy two years later. Since that time the number of cases has steadily increased. Between 1947 and 1951 the increase was more than 30 per cent, although the increase in hospital population over the

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same period was only 18.3 per cent. From the standpoint of the clinical surgeon, the debate over the incidence of carcinoma of the lung is merely academic. His problem is not the number of patients he is seeing, but how to see them earlier, while their disease is still operable.

The Charity Hospital figures bear out the overwhelming male predominance in this condition. Negro males, who furnished 69 per cent of the male hospital admissions for the 1947-1951 period, furnished over the same period 61 per cent of the cases and 64 per cent of the deaths from carcinoma of the lung. The concentration of negro patients at the New Orleans Charity Hospital, which is not equaled in any other institution of similar size in the country, gives these figures whatever importance they may possess.

The age incidence at Charity Hospital parallels that in most other series. The greatest concentration of cases was between 51 and 70 years, and the age range in the 186 fatal cases was from 37 to 88 years inclusive. Operation was not performed in any of the fatalities in patients under 40 years of age; as so often happens in malignant disease, cancer was apparently not suspected in these younger patients until it was too late to do anything about it.

Factors of Mortality

The Mortality of Pneumonectomy:

Over the past five years the hospital mortality for carcinoma of the lung treated by pneumonectomy has been 28 per cent. This is no higher than the mortality in certain other reported series, but it still requires explanation.

One obvious reason for it is the extension of indications for the operation to borderline cases and to patients who presented somewhat doubtful risks, even after preoperative preparation. All surgeons, I think, would agree that the lethal nature of this disease in the absence of radical resection fully warrants this policy in properly selected cases, which most of these fatal cases seem to have been.

Twenty-six of the 33 fatal pneumonectomies were palliative, which means that the risk was greater in them than it would have been in curative operations. In spite of the greater risk, however, palliative pneumonectomy is fully justified when it can be performed, if only on humanitarian grounds. Even if life is not greatly prolonged, the elimination of necrotic and infected tissues, foul exudation and sepsis makes the period of survival
Relatively comfortable, or actually useful and enjoyable. Churchill is entirely correct when he says that it is not fair to term palliative pneumonectomy futile because it does not effect a lasting cure. Rather, as he emphasizes, the operation should be judged by the fact that "it makes the best terms possible with a disease that is already hopeless."

An analysis of the 750 cases by years is not reassuring. One might confidently have anticipated that with the passage of time the percentage of surgical explorations and of pneumonectomies would have increased and the mortality of resection would have decreased. That did happen, in general, in the period 1947-1950 (Figure 2). In 1951, however, the percentage of surgical cases was almost 10 per cent lower than in 1950, there was a small decrease in the number of pneumonectomies, and the hospital mor-

**FIGURE 2:** Yearly distribution of surgical cases, pneumonectomies and post-pneumonectomy deaths, 1947-1951.
tality for that operation rose by more than 7 per cent. The total number of cases treated in 1951 was only 180, which makes the figures in the various categories small and perhaps not really representative. Nonetheless, any backward step in carcinoma of the lung is not one which a surgeon can contemplate with equanimity.

The 22 postoperative deaths from pneumonectomy which occurred in this series of fatalities include five from causes which must always be deeply regretted, the mischances of operation and the technical errors which should not have occurred. All five deaths occurred in patients who presented good risks, whose growths were resectable, and who had no nodal or other extensions or metastases. Some of the operations were performed by surgeons with a wide experience in chest surgery. Others were performed by residents with limited experience, who were, however, operating under supervision. Pneumonectomy is a potentially dangerous operation, and, provided that the proper care and judgment have been exercised, there is nothing for the surgeon to do but to accept these mischances and accidents as part of its inevitable risk.

Duration of Illness:

Some of these fatalities illustrate again the unhappy and paradoxical fact that the shorter is the duration of symptoms, the shorter also is the duration of life after their onset (Figure 3). The details are even darker than the tabulated data indicate. In the 20 nonsurgical cases, for instance, in which the duration of symptoms before medical consultation was a
month or less, two patients lived for a year after they became clinically ill, but two others lived for only two weeks, three others for less than a month, and five others for less than two months.

The correlation between brevity of symptoms and of the total illness is also clear in many of the 23 patients submitted to exploration (Figure 4). It should be noted, however, that the duration of life in each chronologic category in this group is slightly longer than in the corresponding category in the nonsurgical group. It is worth emphasizing that, granting equality of risk, exploratory thoracotomy is not in itself a lethal procedure. As I shall stress later, one of the few practical methods of increasing the salvage in carcinoma of the lung in the light of our present knowledge is a prompter and far more universal resort to exploration of the chest.

About 40 per cent of the patients whose growths were considered inoperable or proved nonresectable had undifferentiated neoplasms. Only a few in this group lived longer than a year after they became aware of their illness and several of them died within a few weeks. Practically all of those who survived longest (a year or more) had epidermoid carcinoma or, in few instances, adenocarcinoma. The four patients with anaplastic carcinoma who underwent pneumonectomy lived for an average of 5.4 months, against an average of 13.6 months for those with differentiated types of growths. Most patients with undifferentiated carcinoma of the lung are not candidates for surgery when they are first seen, and some authorities consider the mere identification of this cell type as, in itself, a contraindication to surgery.

![FIGURE 4: Duration of total illness in relation to duration of symptoms in 23 cases of bronchogenic carcinoma in which only exploration was possible.](http://journal.publications.chestnet.org/pdfaccess.ashx?url=/data/journals/chest/21242/)
Extension and Metastases:

These 186 fatalities illustrate again the extraordinarily wide extent and rapid development of extensions and metastases in carcinoma of the lung. In addition to the numerous instances of local spread to the regional and mediastinal lymph nodes, the pleura and the contralateral lung, there were 21 instances of metastases to the liver, 18 to the brain, 16 to the bones, 13 each to the adrenal glands and the heart and pericardium, 12 to the cervical lymph nodes, 11 to the aorta, seven to the superior vena cava, six to the supraclavicular nodes, four to the kidneys, three to the pancreas, and two each to the intestines and the thyroid. Actually, the spread of the disease must have been very much greater than these figures indicate, for they are based chiefly on the 73 cases in which autopsy was done and the 34 others in which exploration or pneumonectomy was performed. Exploration was necessarily incomplete in many of the surgical cases, while examination of the head was seldom permitted at postmortem examination.

Diagnostic Errors and Delays

From what has already been said, it is clear why the status of treated carcinoma of the lung is so often discouraging. Only when pneumonectomy can be carried out promptly—promptly in respect to pathologic process, not symptoms—are the results of treatment rewarding. Unfortunately, even when their duration of life is long enough to permit exploration and pneumonectomy, few patients are operated on promptly. Overholt and Schmidt, who speak from a wide experience, have estimated that the average period of survival after medical consultation is 4.2 months when no treatment is instituted, 7.0 months with exploration, 9.6 months when pneumonectomy is performed in the presence of extensions to the regional lymph nodes, 10.0 months when there is gross evidence of extension, and 11.3 months when the growth is still local. They explain these depressing statistics by a still more depressing set: The average patient waits 3.8 months after the onset of symptoms to see his physician, undergoes his first roentgenologic examination 1.6 months later, and waits another 4.6 months for the diagnosis.

The figures for these 186 fatalities from the New Orleans Charity Hospital closely parallel Overholt and Schmidt’s estimates. They show, just as does the experience of most other observers, delay by the patient, delay by the physician or physicians whom he first consults, and delay by the hospital which he finally enters.

Sixty-nine patients, 13 of whom were later submitted to pneumonectomy, consulted a physician, and sometimes two or three others, at longer or shorter periods of time after the onset of symptoms. Ten were promptly referred to Charity Hospital, in several instances with the diagnosis already made. The other 59 were admitted only after they had been treated for periods ranging from three weeks to two years. The majority were given cough medicine. Vitamins were prescribed liberally. Most of them received penicillin, with or without a sulfonamide. A few received all the antibiotics presently available. Some were treated for cardiac disease, which some of
them had also. A number, understandably, were treated for asthma, which they had had over long periods of time. A number were treated for tuberculosis, one of them in a sanatorium for five months, although in no instance does the diagnosis seem to have rested upon the demonstration of acid-fast bacilli in the sputum. One man was told that there was nothing the matter with him. Another, who complained of chest pain, was treated by local injections of novocaine.

Two patients deserve special mention. Both were told that they had chest tumors. Both were treated by deep x-ray. When one of them entered the hospital 10 months later, nothing could be done for him. The other, who was seen 12 months after he had been given 35 treatments, died four months after palliative pneumonectomy.

In 27 of these 59 cases, and in 53 others in which the patients applied directly to the clinics or the admitting room, diagnosis, treatment, or both were delayed in the hospital from two weeks to nine months. Many were treated symptomatically, just as many had been treated outside of the hospital. One was given emetine, in the belief that he had pulmonary extension of an amebic liver infection; he had neither. Several were treated for tuberculosis, in one instance for 259 days in the hospital before the correct diagnosis was suspected. Another was treated in the clinic for 18 months, during which time he was offered, and refused, thoracoplasty.

I do not mean to imply that it would have been possible to make a prompt diagnosis of carcinoma of the lung in all of these cases upon which I have been commenting, or in some instances to make it at all. In the 182 cases in which any sort of history could be secured, the story was completely typical in 55 and strongly suggestive, or suggestive to some degree, in 86 others; diagnosis was delayed, or missed entirely, in a number of these. In the remaining 41 cases, about 22 per cent of the total, the story was atypical and sometimes was so completely unrelated to the chest that only constant recollection of the insidious nature of carcinoma of the lung could have led to any suspicion at all that it might be present.

In a few cases the clinical picture of pulmonary malignancy was overshadowed by more urgent symptoms and signs. Three patients died of hemorrhage from the gastrointestinal tract, one of them after gastrectomy for duodenal ulcer. Another died after closure of a ruptured peptic ulcer, which was followed by evisceration. Still another died of mesenteric vascular occlusion. Two patients actually had pulmonary tuberculosis, in both instances advanced, and another also had primary carcinoma of the stomach. In two other fatalities the growth was an incidental finding at autopsy, though in both it had metastasized, in one instance to the adrenal glands.

Excluding these cases and some of the completely atypical cases, it seems fair to comment upon the complete absence of suspicion evident in numerous other cases treated both inside and outside of the hospital. Sometimes, too, the delay in instituting active treatment after the diagnosis was made is beyond explanation. In one case pneumonectomy was delayed for 10 months after bronchoscopy had revealed a granulating tumor. That
patient, inexplicably, lived for more than five years after operation, eventually dying from widespread metastases. In several cases in which the diagnosis was either positive or strongly positive, the patients slipped away from observation, only to return months later with inoperable disease or actually moribund. These patients do not include those who signed their own death warrants by delaying medical consultation too long. They also do not include two who refused pneumonectomy when it was offered to them. One of them accepted it two months later, but when the other returned, after 11 months delay and five bottles of hadacol, nothing at all could be done for him. Incidentally, the period of this study covers the period of violent advertising of that deplorable remedy, and more patients than the one just mentioned treated themselves with it, with equally disastrous results.

Several considerations in the management of the patients, both in and out of the hospital, deserve special comment:

1) Only a few roentgenograms were taken outside of the hospital, all of them, apparently, routine anteroposterior films. If they were negative, as they are likely to be early in the disease or in neoplasms in certain locations, that seems to have ended the matter. A number of patients who were investigated in the hospital with carcinoma of the lung in mind also had negative roentgenologic, bronchoscopic and cytologic reports, and that frequently ended the investigation in their cases too. The concept of thoracotomy as a diagnostic aid was overlooked altogether in many such cases in this series.

2) The promiscuous use of the antibiotics, and to a lesser extent of the sulfonamides, is apparently becoming a major problem in carcinoma of the lung. Waterman,3 in a discussion of one of Overholt's4 contributions, said that two of the greatest enemies of correct diagnosis in this disease are cough syrup and antibiotics, especially penicillin. This series of fatalities supports his opinion. Jones,5 in discussing a paper by Paulson and Shaw6 in 1948, said that there was then a longer delay in the diagnosis of this disease than there had been five years before, because five years before there had been only the sulfonamides to prescribe and in 1948 there was penicillin too. The result, he continued, especially if the patient went from one physician to another, was exposure to a great deal of therapy but very little diagnostic acumen. With the additional antibiotics available today, and the growing tendency to prescribe them casually and indiscriminately, the situation is even more serious now than it was when Jones called attention to it in 1948.

It is easy to see why these agents are prescribed, and why the error is so serious. The infections which are often a part of the pathologic process in carcinoma of the lung respond satisfactorily, and sometimes dramatically, to antibiotic therapy. The primary disease, as a consequence, is masked, and diagnosis is further delayed. I think it perfectly fair to say that in a number of these 186 fatalities the patients lost their lives because the symptomatic results of incorrect methods of treatment were so good.

3) Another consideration stands out in many of these 186 deaths. A large
number of the patients had been under intermittent observation in the clinics, and some under almost continuous observation, over periods of time when they must already have had carcinoma of the lung. Some of them were treated in the hospital. They were under treatment for cardiac disease, hypertension, skin, eye and orthopedic conditions. One underwent hernioplasty and two prostatectomy. One was under regular observation after a resection for carcinoma of the cecum. Re-reading of many of these histories brings to light stories which clearly pointed to trouble in the chest but which were ignored because of the concentration on other conditions. Two chest roentgenograms actually showed abnormal shadows, one in a patient hospitalized for cardiac disease. In all of these cases the pulmonary neoplasm developed while the patients were under direct medical observation. The opportunities for early diagnosis and treatment could not have been more favorable, but almost no use was made of them.

4) One particularly dangerous tendency in the management of these patients is also evident in a series of cases of carcinoma of the stomach which I have been studying from the New Orleans Charity Hospital over about the same period of time. I refer to the increasingly frequent habit of explaining symptoms on psychosomatic grounds. Many illnesses are, of course, entirely functional, and there is often some psychosomatic element even in organic diseases. But surely we are treading on very dangerous ground when our internes and residents, and even our medical students, reach for such explanations before they have excluded physical disease. I find it distinctly alarming that in at least 10 of these fatalities nervousness, hysteria, and other neuropsychiatric causes were advanced to explain symptoms, many of them clearly referable to the chest, before carcinoma of the lung was considered and excluded. These explanations were seriously advanced in three cases in which the patients were first seen 10, nine and eight days, respectively, before they died of this disease. One of them was refused admission to the hospital when she first applied; her diagnosis was hysteria, caused by the menopause and trouble with her mother-in-law. Neuropsychiatric elements and functional overlays were mentioned in several other cases. One patient was treated for conversion hysteria by reassurance therapy for six months before carcinoma of the lung was considered. Another was repeatedly referred to the neurologic clinic for psychiatric evaluation. The great good that neuropsychiatric medicine can accomplish will surely be destroyed if it is used in this dangerous and reckless manner.

5) Finally, it was disconcerting to observe how many times bronchogenic carcinoma was omitted from the list of diagnostic possibilities after the admission work-up. It would seem more reasonable to consider it, for instance, in a 71-year-old man with the complaint of cough, dyspnea, wheezing, voice changes and weight loss of 32 pounds over a three-month period than to list as possible diagnoses atypical thrombosis of the posterior inferior cerebellar artery versus a tumor of the posterior fossa. I suspect that one reason for the omission was that often the details of the history were merely recorded, not digested. Another reason may be that the physi-
lical examination in carcinoma of the lung is often negative and that the patient, as the recorders are accustomed to write, "does not look seriously ill." Of course, when a patient with malignant disease does look seriously ill his condition is usually hopeless. To exclude carcinoma of the lung because a man does not look as if he had it is, to quote an irritated British observer, "ignorant, stupid, and almost contemptible."

**Diagnostic Considerations**

There was no lack of diagnostic investigation in most of these 186 cases. Roentgenologic examination was particularly rewarding. It is often stated that an x-ray shadow characteristic of cancer is never observed and the generalization is probably warranted. Nonetheless, in the 170 cases in this series in which roentgenograms of the chest were made, only seven were reported negative, and in 126 the radiologist stated that the condition was malignant or probably malignant. A less emphatic suspicion of malignant disease was raised in 16 other reports. In the remaining cases atelectasis, pleural effusion or abnormal densities called loudly for clarification and for exclusion of bronchogenic malignancy.

Fifty-eight of the 104 bronchoscopic examinations were diagnostic of carcinoma of the lung, chiefly because material for a satisfactory biopsy was thus obtained. In the remaining cases the examination was suggestive, inconclusive, or entirely negative. Direct visualization of the tumor was, as in most series, relatively infrequent. Bronchoscopy is a method which has not fulfilled its first promise in carcinoma of the lung, one reason being that most neoplasms are located where they cannot be visualized. There is small point to using this method in patients with obvious metastatic or terminal disease, and excellent reasons for not using it: Two patients in this series died almost immediately after it had been performed, apparently because they were too near the end of their journey to tolerate it.

The cytologic studies carried out in 79 cases, usually on bronchial secretions, were positive in 30 and suggestive in six others. This is an extremely useful method when the results are positive, particularly when they are positive on the first examination. A negative report, even when examinations are made serially, means nothing at all. Furthermore, to be of any value, every cytologic examination must be made by a thoroughly trained cytologist, who must be prepared to spend a great deal of time on each specimen. The usefulness of the method is greatly enhanced by the observation by Farber and his associates\(^8\) that the sputum is equally as satisfactory for examination as the bronchial secretion. Examination of the sputum is 90 per cent accurate in their experience when as many as five specimens are studied. One questions, however, whether the patient's interests would not be better served by prompt exploratory thoracotomy in such cases. There seems considerable delay implicit in five cytologic examinations.

Only one patient in the Charity Hospital series was subjected to aspiration biopsy, a 75-year-old negro man, two months before he died. This is an unwise procedure in early cases of carcinoma of the lung, and an unnesse-
sary one in advanced cases, in which no use can be made of the information even if the specimen is reported as cancer.

In a number of cases in this series the work-up was perfunctory and inadequate. It seems ungrateful, therefore, to complain that in a good many others there seemed far too much effort to establish an incontrovertible diagnosis. Roentgenograms, bronchoscopic examinations and cyto-
logic studies were repeated again and again, with an apparent reluctance to accept what seems, in retrospect, clearcut evidence of pulmonary malign-
ancy. In some cases, in fact, one received the impression that the perfectly conclusive results of the investigation were either not comprehended or not utilized. In other cases repetitious studies consumed time that might better have been spent hurrying the patient to the operating room.

The reverse of such excessive care was also apparent in this analysis, as has already been intimated. One diagnostic error, observed both in and out of the hospital, can be traced to the facile conclusion that if exam-
inations and tests are negative, a disease can positively be excluded. Carcinoma of the lung certainly cannot be. Even in the face of negative roentgenologic and laboratory reports, a suspicious clinical history, if it is evalu-
ated by a competent clinician, is ample reason for thoracotomy to establish or exclude the diagnosis. If this group of fatalities teaches any-
things at all, it is that suspicious lesions in the chest must be explored on suspicion alone, without delay for a time-consuming positive diagnosis. If the lesion is found to be a tuberculoma, a lung abscess, or a benign lesion, surgery is the procedure of choice. If the exploration is entirely negative, the surgeon may still feel that he has done what is best for the patient.

Present Possibilities of Improvement in Diagnosis

Perhaps the most tragic fact in the errors and delays which have just been discussed is that in the great majority of cases in this series they made little or no difference in the end results, at least so far as the hospital was concerned. Partly because of their own delay, but very often because of the insidious nature of their disease, nothing at all could be done for most of these patients when they were first seen. Only 33 were submitted to pneumonectomy, which was palliative in 26 cases. Only 22 others were explored. The symptoms which most of the patients presented when they were first seen—chest pain, hemoptysis, which was sometimes massive, wheezing, weakness, weight loss—indicated the advanced stage of their disease. Fourteen presented a typical superior vena cava syndrome. Ten had involvement of the vocal cords. In 14 cases headaches, disorientation, hallucinations and convulsions pointed to cerebral metastases. Cranialotomy was performed in two of these cases and a trephining operation in another. In a number of cases dysphagia indicated involvement of the esophagus. Virchow's nodes, involvement of the cervical nodes, roentgenologic evidence of bone metastases, these and other observations all indicated the utter hopelessness of the disease in well over half of the patients when they were first seen in the hospital.

One indication of the stage of their disease is the brief time many of
DEATH IN CARCINOMA OF THE LUNG

them lived after they were registered in the clinics or admitted to the hospital. Some of them were actually moribund. Thirteen died within five minutes to 24 hours after admission. Sixteen others died within a week. Thirty-six others died within a month. In all, 89 of the 186 patients died within two months of the time they first applied to Charity Hospital for treatment. Only terminal care is possible in such cases as these.

One circumstance associated with many of these fatalities seems to invalidate the arguments of those who plead for government-controlled medicine on the ground that medical services are not available to much of the underprivileged population. A number of these 89 patients, as well as a considerable number of others who applied for treatment too late to be helped, had been regular attendants at the hospital clinics over long periods of time prior to this illness. Some of them can be described only as clinic habitués. They had been registered for years, in one instance for 20 years. They had been treated for innumerable ailments, some of them serious, some of them trivial. It testifies to the insidious nature of this disease, as well as to the tendency of patients to ignore symptoms until they become severe or incapacitating, that many of these men and women, with full knowledge of where medical care was available, simply failed to take advantage of the opportunity until the hour was so late.

Obviously, the problem in carcinoma of the lung is case findings and early diagnosis. Once the cases are found, therapy offers no problem, at least when pneumonectomy is still feasible and will probably be curative.

Ivy,9 in listing possibilities of investigation and research in carcinoma of the stomach, wondered whether more attention should not be paid to serologic diagnosis. I think he put his finger upon our greatest need in carcinoma of the lung. I am convinced that the solution of the problem of both these diseases is the development of some biologic test which will do for them what the blood serologic test has done in syphilis and what the tuberculin test has done, somewhat less perfectly, in tuberculosis. I quite appreciate the importance of research along other lines, including a search for the causes of carcinoma of the lung, but I am nonetheless certain that until such a test does become available, early, curable cases will continue to elude us. When such a test has been devised we shall be confronted with the problem of persuading our patients to be tested by it, but at least we shall have a means of early identification of silent malignant disease which we do not now possess.

In the meantime, there are a number of other things which we can do to improve the situation in carcinoma of the lung. This series of 186 fatalities might have been very different if they had been done more often.

1) We can continue the campaign of public education, trying to get word to our private patients and to the lay public in general that any departure from the normal, including a persistent cough or repeated respiratory infections (one patient in this series had five attacks of pneumonia in 18 months), demands prompt investigation.

2) We must stop trying to relieve symptoms until we determine causes. This is not going to be easy. Patients who apply to us for relief of pain and

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discomfort are going to resent it when relief is not the first order of business. They are also likely to resent it when they are not given penicillin or some other antibiotic. We shall have to speak very bluntly to them. We shall have to make it clear to them that they may lose their lives if their coughs are relieved or their upper respiratory infections are cured before the possibility of bronchogenic carcinoma is excluded.

3) We must put our own professional house in order. Chest physicians now know that carcinoma is perhaps the most frequent malignant disease in men, at least in middle and later life, and is far more frequent than virus pneumonia or, if such a condition exists, than unresolved pneumonia. Physicians who do not specialize in diseases of the chest either have not yet realized what has come to pass or, if they have, do not yet appreciate the potentialities of pneumonectomy when it is employed under optimal circumstances. It is seldom so employed at this time. In many of these histories I observed what other writers have also mentioned, a sort of reluctance on the part of physicians, even in the face of strong or actually conclusive evidence, to admit that the diagnosis in any given case was carcinoma of the lung.

We must teach the real facts of this disease to interns, residents and medical students. We must make them understand that this is an insidious disease, that it can exist with no symptoms at all, and that the symptoms to which it gives rise are not necessarily related to the chest. We must teach them that symptoms referable to the chest, even if they amount to no more than a persistent cough, require investigation, not symptomatic treatment. Finally, we must lose no chance to emphasize that the optimal time for surgery is the period of latency.

4) We must insist that a patient whose symptoms are not clarified by one method of diagnosis must be studied by another and must not be allowed to slip from observation until we can say positively that carcinoma of the lung is not present.

5) We must, however, also take the position that diagnosis in any suspected case of bronchogenic carcinoma is a matter of extreme urgency, as urgent, comparably, as is diagnosis in an acute abdominal emergency. In the review of these fatalities from the New Orleans Charity Hospital I was impressed with, as well as depressed by, the leisurely pace of the investigative routine and the inertia that so often failed to surmount the niceties of clinic red tape and hospital protocol. We must teach and preach that this is a disease of relentless progression, in which there is no time for repeated re-examinations and the "return in two weeks" method of investigation. A loss of weeks, or even of days, may convincingly mean the difference between life and death. In this disease who can say when a bloodborne metastasis or a regional extension may vitiate the effect of the pneumonectomy planned for next week or even for tomorrow? As Overholt has put it, the study of carcinoma of the lung must be geared to the cancer potential, with the surgical amphitheater regarded as the highest court of appeal. As matters stand now, prompt diagnosis, with exploratory thoracotomy regarded as an integral part of the diagnostic
DEATH IN CARCINOMA OF THE LUNG

Vol. XXIV

639

routine, is the best that we can do in this disease. At the present time we are not doing our best, nor shall we be doing it until we resort to exploration far more often on mere suspicion, or on the basis that it is impossible to say that bronchogenic carcinoma is not present.

5) We are making scarcely any use at all of one method of case finding which is readily available to us, utilization of the data secured in mass chest surveys. The special effort made along these lines in the survey conducted in Boston in 1949 turned up 43 primary carcinomas of the lung, 20 of them resectable.10 Last year, with no provision for special screening, 16 films taken in the mass chest survey in New Orleans showed shadows regarded as suspicious.11 An analysis of these cases is instructive: Eight patients are at present under investigation. One has been lost from observation. One consulted his private physician. One exploratory thoracotomy revealed a tuberculoma, which was removed. The five remaining patients were hospitalized at the New Orleans Charity Hospital, where one promptly died, of bronchogenic carcinoma complicated by a bronchopleural fistula. Another was explored and found to have inoperable disease. But the three other patients have undergone resections which there is reason to believe may be curative.

This is a small harvest, it is true, 43 cases in 537,012 examinations in Boston, five proved cases, at least to date, in 50,624 examinations in New Orleans. In both cities some of the fruit has been bitter indeed. These observations, however, open up a new and hopeful field of investigation. If the various organizations and government agencies concerned with cancer can combine their forces with those concerned with tuberculosis, more cases of silent, resectable carcinomas of the lung will be found than, in the present state of our knowledge, can be found by any other means.

As I said in the beginning of this paper, carcinoma of the lung is not a cheerful disease. Most thoracic surgeons will agree with me. In 1937 I prepared to perform my own first pneumonectomy, after a great many rehearsals on cadavers and dogs, with the confident expectation that I was dealing with early, operable disease in a good risk patient. The man was a good risk but his disease was inoperable. I have entered many other chests since then with the same high expectations, only to find the same hopeless situation. On the other hand, I can remember other patients who have survived pneumonectomy for five and seven and 10 years, and who are still well.

Graham's first surviving pneumonectomized patient, operated on in 1933 and still alive and well 18 years later, appears in most papers on bronchogenic carcinoma. He should. As Churchill1 says, the chest surgeon who is tempted to despair would do better to remember him than to draw any conclusions at all from the preliminary analyses of data on carcinoma of the lung now recorded in the literature.

SUMMARY

A distressing picture emerges from the analysis of 186 fatalities from carcinoma of the lung at Charity Hospital of Louisiana at New Orleans.
Patients often delayed seeking treatment. Private physicians and hospital staff often failed to suspect the diagnosis or were slow to recommend surgery. The investigation was sometimes perfunctory, sometimes unnecessarily repetitious, and sometimes enmeshed in hospital routine and protocol. Appallingly often the clinical course was far too brief to permit any positive action. If the mortality is to be lowered in this disease, which is now of major importance among malignant diseases, the profession must (1) develop a far higher index of suspicion concerning it; (2) explore the chest on suspicion much oftener; (3) stress the urgency of diagnosis and treatment; (4) investigate the whole man rather than limited fields whenever adults seek medical care for any reason whatsoever; and (5) make the fullest possible use of data available in mass chest surveys.

RESUMEN

Del análisis de 186 defunciones por cancer del pulmón en el Charity Hospital de Louisiana, en Nueva Orleans, resulta un cuadro desalentador. A menudo los enfermos buscaron el tratamiento con demora. Los médicos particulares y el personal de hospital frecuentemente no sospecharon el diagnóstico o fueron morosos para recomendar la cirugía. La investigación fué a veces superficial, a veces innecesariamente redundante, y en otras ocasiones enredada en la rutina y la documentación del hospital. Es sorprendente ver que con frecuencia la evolución clínica fué demasiado breve para permitir una intervención activa. Si se ha de lograr bajar la mortalidad por esta enfermedad, que ahora es de la mayor importancia entre las malignas, los médicos deben: (1) estar alerta para sospecharla; (2) explorar el torax mas a menudo, al sospechar la enfermedad; (3) reclamar la urgencia de diagnóstico y tratamiento; (4) examinar todo el organismo cuando un adulto busca atención médica por cualquier causa, y (5) aprovechar tanto como sea posible los datos que las investigaciones en masas proporcionan.

RESUME

Une analyse de 186 décès par cancer du poumon faite à l'Hôpital de la Charité de la Louisiane (New-Orléans) dessine un tableau alarmant. Souvent les malades ont trop attendu avant de se faire traiter. Les médecins de clientèle privée et les médecins des hôpitaux ont souvent méconnu le diagnostic ou ont trop tardé à recommander l'acte chirurgical. L'examen du malade fut parfois trop léger, parfois des recherches furent répétées sans nécessité et parfois accaparées par la tradition et la routine hospitalière. D'une façon affreusement fréquente, l'évolution clinique fut trop rapide pour permettre aucune action efficace. Si l'on veut abaisser la mortalité de cette maladie que est maintenant de la plus grande importance parmi les affections malignes, il faut: (1) faire en sort qu'elle soit beaucoup plus facilement suspectée; (2) faire beaucoup plus souvent une exploration du thorax quand on la redoute; (3) insister sur le caractère urgent du diagnostic et du traitement; (4) faire un examen complet plutôt que des investigations partielles chaque fois qu'un adulte vient consulter un
médecin pour une raison quelconque; (5) se servir au maximum des données de l'examen systématique du thorax dans les collectivité.

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