LUMLEIAN LECTURES

ON THE

NATURAL HISTORY AND DIAGNOSIS OF
INTRATHORACIC CANCER.*Delivered before the Royal College of Physicians, 1870.*

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IN the admirable work *On Diseases of the Chest*, by Dr. Stokes, published thirty years ago, that accomplished physician observes, in reference to cancer of the lungs, "that as yet almost nothing has been done in establishing the diagnosis of this disease"; that "Laennec gives no case in which auscultation was employed, and that authors are silent on the subject." This certainly can no longer be said. A considerable number of carefully observed facts have now been recorded; and Dr. Stokes himself has enriched our literature by a valuable contribution since the date at which his classical work appeared. The clinical history of intrathoracic cancer is still, however, very imperfect, and fraught with interest to the practical physician; and the diagnosis is still so frequently beset with almost insuperable difficulties, that I have ventured to make it the topic of the Lumleian Lectures which I have the honour this year to give before the Royal College of Physicians.

Cancerous disease occurring primarily within the chest is not so rare as was at one time supposed, although there are probably many physicians who have never seen a case. Three cases of primary cancer involving the root of the lung, which Dr. Budd has recorded in the *Medico-Chirurgical Transactions*, are, he says, the only ones that had fallen under his observation at King's College Hospital during a period of nineteen years. I am not, however, able to give any precise information as to the relative frequency of cancer and other diseases of the chest in this country. Exclusive of a few cases of secondary cancer and of cancerous affections of the larynx and œsophagus, I find 23 cases recorded in the *Transactions* of the Pathological Society of London. I have myself met with upwards of 20 cases, and have notes more or less complete of 16. Without, therefore, seeking for any further evidence, it is manifest that intrathoracic cancer is of sufficiently frequent occurrence to render its natural history and diagnosis a study—not merely of curious interest, but of practical importance to the physician. My remarks will be based chiefly on my own cases—16 in number, and 23 others taken from the *Transactions* of the Pathological Society (in all 39), the latter not having, as far as I know, been made the subject of any general analysis or examination. There is reason to believe that cancerous disease in general is steadily on the increase in this country. Mr. Moore has shown, by reference to the Registrar-General's returns, that the increase in deaths from cancer in London, coincident with the increase of wealth and the well-being of the population, amounts to 200 *per annum*.

I have not been able to collect and compare the records of a sufficient number of cases of intrathoracic cancer, so as to make them available for any trustworthy statistics. But a brief comparison of the 39 cases, which have afforded me the principal facts for these lectures, does not accord with such statistics as I have met with in books. Thus it has been supposed that the right lung is far more frequently affected than the left. But of my 39 cases, the left was the principal seat in 14, the right in 9 only; whilst of the remainder, either both lungs were affected, or the disease was confined almost entirely to the mediastinum. As regards sex, 19 were females and 20 males. The age of the oldest patient was 72, and of the youngest 11. Four were between the ages of 20 and 30, 8 between 30 and 40, 3 between 40 and 50, and 7 between 50 and 60. The middle periods of life are therefore those in which the disease is most frequently met with.

Irrespective of mediastinal tumours, or such as originate in the bronchial glands, all the various pulmonary tissues may be the seat of cancerous disease—the investing serous membranes, the substance of the lungs, and the bronchi; so that the leading symptoms may present the characters either of pleuritic, pneumonic, or bronchial diseases, and their results. It is true that primary intrathoracic cancer is of much rarer occurrence in certain tissues than in others; but the records of cases that have fallen under my own observation show that it may originate in, or at least may early implicate, any of the intrathoracic tissues. As a secondary affection, succeeding to surgical operations for the removal

of cancerous growths in other parts of the body, there is much less variety, both as regards the symptoms and the course of the disease, within the chest. The pleural membrane is, in the secondary form, much more frequently and more early involved, and the signs of irritation and inflammatory action are much more prominent, as well as earlier developed. The diagnosis of these cases is, therefore, more easy; not that there is any thing distinctive in such signs of inflammation, but because, from our knowledge of the natural history of such cases, the occurrence of the phenomena in question may be assumed inferentially, but with confidence, in a large majority of cases, to depend on the presence of cancerous deposits.

The similarity in many of these cases to tubercular disease on the one hand, or simple bronchial irritation on the other, is no doubt very great; and the diagnosis, apart from the history of the case, would often be extremely difficult, if not impossible. I do not, however, propose to touch, except it be incidentally, on the diagnosis of cancerous disease within the thorax following on the removal of the disease in other parts.

But the aid to diagnosis which the previous history of the case affords us in the secondary forms of the disease is no less important in the primary. Indeed, in every case of obscure thoracic disease, a careful investigation and study of the anamnesis is of the utmost importance. This, by way of exclusion, if not directly, will often lead us to a correct diagnosis, where it would be impossible from a consideration of the existing physical signs and symptoms alone. The diagnosis must, therefore, be studied in connection with the natural history. In proportion as our experience enables us to accumulate materials for a more complete natural history of the disease, we may expect to render the diagnosis easier: and however great the difficulty in individual cases may be—and no doubt it still is very great—it may with confidence be asserted that it is far less than it was at the time when Dr. Stokes' work appeared.

Of the various species of cancerous disease, the encephaloid is the one which is by far the most frequently met with within the thorax, and next to this the scirrhus variety. I have myself met with but one case of scirrhus.

Cancerous deposits on the lungs may present analogous forms to all the varieties of tubercular deposits, and these forms may give rise to analogous changes, whether as regards the deposits themselves or the effects produced on the surrounding tissues. Thus we occasionally find cancer in the form of minute granular bodies closely resembling miliary tubercle, as well as in masses varying in size from that of ordinary grey tubercle to that of large growths equalling in magnitude a whole lung. Like tubercular deposits, cancer may be infiltrated through all the tissues, but usually it maintains the character of isolated masses, pressing on and pushing aside the surrounding textures without invading them. Rokitsansky thinks that, when infiltrated, it is the result of pneumonic inflammation arising in the course of cancerous dyscrasia. The tendency of these disseminated masses, whether large or small, to excite inflammation in the surrounding tissues, varies much. They usually remain apparently for an indefinite time (as is sometimes, though rarely, the case with tubercle) without exciting inflammation, or giving any indication, from deranged function, of their existence. The difference, however, in this respect between cancer and tubercle is considerable. It is seldom that we meet with any extensive diffusion of tubercular deposits through the lungs without evidence of more or less inflammation and its consequence in some parts. But it is common to meet with numerous cancerous masses equally distributed throughout even both lungs, and the intervening lung-tissue remain perfectly healthy, to all appearance. This remarkable and important fact no doubt goes far towards explaining the difficulty of detecting the existence, during life, of certain forms of pulmonary cancer; for it is not only the ordinary physical signs of irritation and inflammatory changes of which we are thus deprived, but also the corresponding constitutional disturbances.

In other cases, however, ulterior changes do take place in the lung and simulate very closely those which result from the progress of tubercular disease. There are various ways and means in which such degenerative changes are brought about. In some instances the cancerous deposit breaks down, and a certain amount of the surrounding lung-tissue is destroyed, and we have small cavities or vomices formed, as in the ordinary progress of tubercle. But true ulceration of cancer of the lung, it is generally believed, is very rare; destruction of lung-tissue and consequent gangrene is, however, less rare. Of such cases I have seen several, and shall have an opportunity of giving illustrations. But when extensive gangrenous destruction of the lung has been met with in connection with cancer, it has often been merely the result of progressive increase of a cancerous mass, entailing either obliteration of blood-vessels or destruction of nervous influence. But, whatever may be the true nature of the pathological processes by which all these changes are brought about, the result is that we have a variety of structural altera-

tions which are in no way distinguishable by their physical signs, during life, from those which characterise tubercle; and it is from the consideration of other circumstances, or from the progress of the case, that we must arrive at our diagnosis. This, however, will be best illustrated by adducing examples of the several forms of cancerous deposits that have been presented to my observation. For clinical purposes, the various forms of intrathoracic cancer may be conveniently arranged in three classes.

1. Those in which cancerous masses varying in size are disseminated through the lungs having more or less analogy with disseminated tubercle, but without inducing any change in the intervening lung.

2. Those in which the cancerous growth is more localised and leads to important ulterior changes, such as ulceration and gangrene.

3. Mediastinal tumours, inducing pressure on the tubes and vessels and veins, and all its important and very various consequences.

Cancerous deposits in the form of minute tubercular bodies scattered over the pleura or through the lungs are not infrequently met with, associated with other forms in some other part of the chest. Less often, however, do we meet with miliary cancer either as a primary disease of the lungs or unassociated with some other form of intrathoracic cancer. Where the cancerous cachexia is strong, and especially where the disease has already existed some time in one or more localities as a local affection, we occasionally find it developed by a rapid and almost simultaneous deposit throughout the system in the form of minute cancerous granules scattered over the most varied surfaces and through almost all the tissues of the body. And many of these cases have been characterised by all the symptoms of acute febrile disturbance, such as we find in connection with general acute tuberculosis. But, although as a strictly primary affection of either lungs or pleura, miliary cancer may be rare, it is not infrequently met with, associated with the earliest and sometimes the only symptoms of thoracic disease, and sometimes proves to be really the only form of cancerous disease within the chest. The following case will illustrate this remark.

A. L., a servant girl, 15 years of age, was admitted into St. Thomas's Hospital under my care on the 25th April, 1865. The history that was obtained of her previous health was that till three months previously she had been quite well. She had then suffered from debility and swelling of the hands and lower extremities. These symptoms were relieved by rest and medical treatment; but she had never regained her usual health and strength. The catamenia had not yet appeared. On her admission, she was feverish, and had a hectic flush on her face; the pulse was quick, and she complained of thirst. The right leg was a little swollen, and there was a line of redness and tenderness extending from the knee to the groin. The respiration was quickened, and she had some cough with slight mucous expectoration; but she had had no hæmoptysis. On examining the chest, the respiration appeared to be somewhat harsh in both apices, but the percussion-note was normal. There was a good deal of dry rhonchus heard in various parts. After slight superficial suppuration over the right knee, the swelling and inflammatory blush of the thigh disappeared, and the constitutional disturbance subsided. Her tongue became clean and the appetite good. On the 22nd May, it was observed that the hepatic region was enlarged, and both lobes of the liver could be distinctly felt some way below the ribs. On the right side, where the enlargement was greatest, there was pain and tenderness on pressure, and the superficial veins more enlarged. The bowels were loose, and there was no icterus. Her appetite was tolerable, pulse 80, and no general constitutional disturbance existed, nor any cough. The hepatic enlargement continued steadily to increase; and on the 2nd of June had extended to the umbilicus. The pulse was then 120, and the tongue dry, with anorexia and looseness of bowels. The thoracic symptoms had returned; the cough became very troublesome, and was attended by more or less of simple mucous expectoration. The respiration was hurried and shallow, and she complained of dyspnoea. There was, however, no dulness on percussion of the chest to be detected anywhere, but a good deal of diffused rhonchus and loose mucous crepitation. She died on the 17th June, having complained much of dyspnoea for some days before death, as well as of uneasiness of the abdomen. She had become much emaciated, having had much diarrhoea and entire anorexia.

Post Mortem Examination.—Both lungs were congested, and contained scattered throughout numerous small round whitish bodies closely resembling miliary tubercles. At the anterior edge of the right lung there was also a mass of yellow tissue, somewhat soft, about the size of a cherry. The right lung contained a patch of pulmonary apoplexy. The heart and its valves were healthy. The peritoneum contained some serous fluid and some shreds and filaments of partly organised lymph. The liver was greatly enlarged, weighing 7 lbs. 12 ounces. Its tissue was very fatty, and the anterior part of the right lobe which projected beyond the ribs presented an irregular rounded protuberance.

There was also a large tumour attached to the posterior and inferior part of the right lobe, which pushed the greater part of the liver forwards. Upon cutting into the liver, other tumours were found in its substance, which were either of a pale yellow colour or stained greenish from bile, or in other instances blood-stained. They were rather softer than the ordinary liver consistence, but nowhere pulpy or exuding milky juice. There was an enlarged gland about the size of a walnut adhering to the posterior part of the liver, presenting the same physical characters as the liver-tumours; also similar enlarged glands in front of the lumbar vertebræ. The spleen was rather large, and contained a few small yellowish nodules similar to the liver-tumours. The stomach and intestines were healthy. The kidneys presented several small white masses in their cortical substance, like miliary tubercles; they were otherwise healthy; the bladder was healthy; the uterus and ovaries small as in infancy. Portions of the tumours in the liver, the enlarged glands, the small masses in the lungs and kidneys, were examined microscopically, and were all found to present similar appearances; consisting mainly of a cell-growth, the cells being tolerably large, with a clear well-developed outline, varying greatly in shape, many presenting angular forms, some fusiform, and like broken fibres. They were mostly nucleated, the nuclei not being very large, but distinct, and often containing a nucleolus. These cells for the most part did not contain any fat-globules, whereas the ordinary liver-structure was loaded with oil. The appearances here described were most distinctly seen in the lymphatic glands, but were also sufficiently characteristic in the other parts to justify the conclusion that the various deposits were all of the same nature.

When first seen, there was every reason for supposing that in this young girl the symptoms referable to the chest depended on the presence of scattered tubercles. The age, the previous history of ill-health, and the non-appearance of the catamenia and hectic aspect, together with the general febrile disturbance, all seemed to point to tubercular disease. All this, however, was probably due in great measure to the constitutional disturbance excited by the local inflammation of the knee and thigh, as all the main symptoms disappeared on the subsidence of the local inflammation. There was no return of the thoracic symptoms till after the manifestation of extensive hepatic disease. That this was malignant in its nature, no doubt was entertained during life; but when, as the hepatic enlargement increased, the constitutional derangement became increasingly severe, and the thoracic symptoms returned, there was nothing in their character to distinguish them from the like symptoms which had formerly existed, and had entirely disappeared. Nor was there anything in the physical signs at all distinctive. It is, however, worthy of note, that the hurried respiration and the dyspnoea were much more marked symptoms in the later stage than in the earlier. But these are among the most characteristic symptoms of acute miliary tubercle; and in the present instance much of the dyspnoea was in all probability due to the pressure exercised by the enlarged liver and its encroachment on the thoracic cavity. Viewing also the general state of constitutional exhaustion, there does not appear anything that could with confidence be considered as in any way specially referable to the presence of the miliary cancerous deposits in the lungs. These, however, were very numerous and scattered throughout both lungs; and their microscopic characters and identity of structure, with the deposits in the liver and elsewhere, leave no doubt as to their true nature.

Recurrent signs of bronchial irritation without any sufficient assignable cause, Dr. Stokes thinks, are characteristic of disseminated cancer, and may often form sufficient ground for the diagnosis. This is a point to which I shall probably have occasion again to revert, because I have seen reason to believe that such signs of bronchial irritation may attend any form of cancer within the thorax.

A very interesting case of primary miliary cancer of the lungs is recorded by Dr. Hilton Fagge in the eighteenth volume of the *Transactions* of the Pathological Society. The subject was a man 50 years of age, who was admitted into Guy's Hospital under the care of Dr. Wilks. He had been liable to winter-cough for some years, and had been obliged to leave work for seven weeks before his admission, owing to debility and shortness of breath. He was a fine, well-built man, with a well-formed chest. When first examined in the Hospital, he was sitting propped up in bed, quite unable to lie down, and had some dyspnoea. The heart's sounds were perfectly normal, and the anterior surface of the chest fairly resonant; but there was dulness over each posterior base. The expiratory murmur was prolonged and loud at each apex, where slight sibilant *râles* were heard. Posteriorly, at the bases, sibilant and subcrepitant *râles* were heard, with slight bronchophony, especially on the left side. The legs were cedematous and the urine exalbuminous.

The case was regarded as one of capillary bronchitis, with more or less of pneumonia, and he was cupped and took a saline mixture with

small doses of antimony. The following day he appeared to be relieved, but his face was dusky and his heart irregular. The subsequent day he died suddenly, after passing a very restless night.

Each pleural cavity was found to contain a large quantity of clear transparent fluid of a brownish colour. In the pleural membrane were found a few minute plates, the cancerous nature of which was doubtful. The lungs were studded with small cancerous deposits, looking very like tubercles, but larger than the ordinary kind of tubercle. The two lungs were affected in exactly the same way and to the same degree. The apices were nearly free, containing only a very few of these deposits. The lungs themselves felt bulky and firm, and resisted section more than lungs affected with pneumonic consolidation or miliary tubercle. The appearance of the cut surface was peculiar. A few of the cancerous masses were as large as hemp-seeds, and looked quite white and like small tumours; but most of them were much smaller and closely set together. Similar small tubercle-like deposits were found in the heart and pericardium, and a few in the liver.

In this instance, as in my own case already given, we see how remarkably little tendency there appears to be to pneumonic inflammation as the direct result of cancerous deposits in the lungs. The symptoms, indeed, were those of capillary bronchitis, with more or less of pneumonia; but the immediate cause of death appears to have been passive effusion into the pleura, as the result of the general debility and cachexia and the actual condition of the lungs—not such as characterises inflammation resulting from miliary tubercle.

There can be no doubt, as the reporter observes, that the lungs were the primary seat of the cancer; and that a point of great interest in the case is, that the apices were much less thickly studded with the cancerous deposits than other parts of the lungs. Other instances, however, of disseminated cancer, afford no evidence for believing that the apices are less liable to cancerous deposits than other parts of the lungs. Thus, in a well marked instance of primary cancer of the lung recorded by Dr. Quain, both lungs throughout were studded with small hard masses, varying from the size of a pea to that of a walnut; and such pleuritic adhesions as existed were connected with the lower lobes. The symptoms during life were those of tubercular disease, with pleuritic effusion of the right side, which, after death, was found distended by three pints of sanguineo-serous fluid. On the other hand, Dr. Sieveking reports a case of cancer of the stomach with secondary melanotic deposits confined to the apices of the lungs. In this instance, the only positive sign elicited by percussion was dullness of the left subclavicular region; and the chief symptoms referable to the lungs, urgent dyspnoea.

In most points of view, we find tubercle to contrast with cancer, rather than to present any affinity. The mode of development and growth appears to be essentially different; but, as regards the affinity of cancer for one part of the lungs rather than another, there is nothing, I think, to show that in this respect it stands in any antagonism to tubercle.

I have not myself met with any example of the coexistence of tubercle and cancer. There is sufficient evidence that the two may coexist; but none, I think, to prove that this coexistence is anything more than a coincidence. It may not always be easy to distinguish the two from their microscopic characters alone; but there can be no reasonable doubt as to many of the cases cited in proof of the coexistence. Lebert states that he has never met with the supervention of cancer in the course of phthisis, and believes that it must be very rare; whilst Rokitsky thinks it more usual for cancer to follow tubercle, than the reverse. He, however, thinks that the two have no real relation beyond that of coincidence. Dr. Quain's case, related to the Pathological Society, and recorded in the third volume of the *Transactions* of that Society, appears to be an unquestionable instance. A large firm carcinomatous tumour occupied the mediastinum, and encroached on the right lung. It extended deep into the structure of the lung, but did not reach as high as the clavicle. The upper lobe was studded with tubercles, the left lung being healthy. On examining by the microscope the encephaloid mass and the tubercular deposit, the distinctions appeared to be well marked and decisive. This, however (with the exception, perhaps, of Pollock's case), appears to be the only unquestionable example among the thirty-nine which form the basis of my remarks. There are two others in which the real nature of the so-called tubercles was doubtful.

Another of the rarer forms of diffused cancerous deposit in the lungs that I am able to illustrate from my own practice offers an example of primary cancer in which the growths had in most instances undergone more or less disintegration and consequent contraction of the central portions, so as to afford a close resemblance to the appearances presented by obsolescent tubercle or a hob-nailed liver. The details of the *post mortem* examination, and the microscopical appearances of the deposits, are given by Dr. Bristowe.

Eliz. Wilkinson, aged 36, a servant, was admitted June 1st, 1858. She stated that for six months she had had cough, but no hæmoptysis; that the catamenia had been absent three months; and that since then she had had leucorrhœa. Although much emaciated, she had never been laid up till her admission. Three months previously, while drawing a hard cork, she felt a sharp pain in the left side; and to this she attributed her illness, having had shortness of breath ever since. She had not had any palpitation, nor any swelling of the extremities. There was considerable lateral curvature of the spine. There was dullness on percussion under the right clavicle, with large and fine crepitation. Respiration was harsh under the left clavicle. She had some mucous expectoration. Vocal resonance was not much increased. She had slight febrile disturbance and fleeting pains in the limbs. The treatment consisted of tonics, with expectorants, sedatives at night, and cod-liver oil; subsequently, antispasmodics, and liquor vesicatorius to the side (left), which became very painful. She had much irritability of the stomach before death, which took place on July 10th, 1858, apparently from exhaustion.

Post Mortem Examination, July 12th.—The heart and pericardium were healthy. Both pleuræ presented numerous firm cellular adhesions. The right lung was large; the left was small and misshapen, to accommodate itself to the distorted spine and contracted side. The whole surface of both lungs was remarkably fissured; and often the fissures were so deep as to give the lung a hob-nailed appearance. On section, the lungs were found studded with patches of greyish-white material, rather firm, but yielding, on pressure, large quantities of creamy juice. The sectional surface of these patches varied from an inch and less in extent, differing in shape, and for the most part distinctly margined, but giving clear indications that the material had infiltrated rather than displaced the lung-tissue. The fissures in the lung corresponded to the centres of these deposits. In some parts, the cancer, instead of forming distinct masses, infiltrated the lung-tissue without destroying it, giving the appearance of purulent infiltration. The lung-tissue between the masses was crepitant and tolerably healthy. The bronchial tubes contained a good deal of muco-purulent fluid. The pulmonary arteries and veins, and the bronchial glands, were healthy. The liver was large, pale, and for the most part healthy. It presented, however, three or four masses of cancer, of about the size of a horsebean, two of which reached the surface. The left kidney was increased in size, and congested, but healthy; of the right, no trace could be found. The left Fallopian tube formed an elongated cyst, the interior of which was sacculated and rugous, and contained clear fluid. The microscopic appearances were those of cancer. Where degeneration had occurred, numerous compound granular cells were seen. Pearly patches, seen here and there, contained earthy matter, which, when acted on by acetic acid, evolved bubbles of gas.

Here, again, notwithstanding the extent to which the lungs were implicated by the cancerous growths, we have it stated that the intermediate lung-tissue was healthy. Nor can we, I think, refer the old firm pleuritic bands to the consequences of the cancerous disease. They were more probably due to former pleuritic attacks, associated with the abnormal state of the thoracic organs from distorted spine. But the abundant muco-purulent secretion in the bronchi shows how generally, not to say invariably, the pulmonary mucous membrane is affected by all other morbid conditions of the lungs. As regards the diagnosis, I must confess that I was unable to refer the pulmonary symptoms during life to any other cause than tubercle and the deranged circulation consequent on the spinal disease. I was not, however, fully satisfied as to the existence of tubercle. The constitutional condition did not harmonise with this view of the case.

The bronchial tubes, although very frequently implicated in the progress of cancer originating in other parts of the lung, especially in the mediastinum and bronchial glands, are believed to be very rarely, if ever, the original seat of the disease. It would, however, appear that the bronchial tubes may be the channels by which cancerous germs are transmitted to distant parts of the lungs. Dr. Moxon has related an interesting example of this, in which the germs of epithelial cancer affecting the trachea were carried along the bronchi, and deposited in the centre of the lobules of the lung, where they gave rise to small rounded firm growths, which presented in very characteristic form the "bird's-nest" capsules of the epithelial cancer of the œsophagus and trachea, whence they appeared to have come.

My notes afford me an example of the scirrhous variety of cancer implicating mainly the bronchial tubes and their investing tissue, running along their course, and encroaching on and diminishing their calibre. The interlobular septa and the investing pleural membrane were also the seat of similar disease. In this case, the pulmonary disease was unquestionably secondary to cancer of the stomach. All the symptoms were such as might fairly be referred either directly to the disease of

the stomach and allied organs, or to the constitutional derangement and exhaustion resulting from the general dyscrasia. The chronic cough of which the man had for some years been the subject presented nothing unusual in its character, was not a prominent symptom during the time that he was in the hospital, and was not associated with any physical signs leading to the suspicion that the lungs were the seat of the very remarkable kind and amount of disease discovered after death. Especially is it to be observed, that there was no marked dyspnoea, and no true febrile disturbance.

W. H., a gardener, sixty-eight years of age, was admitted into hospital on June 16th, 1859. He stated that he had been ill six months; that previously he had had good health, with the exception of a chronic cough that he had had for some years. He complained chiefly of epigastric pain and distension, increased by taking food. For some time his appetite had been poor, and he had lost flesh rapidly. Only within the last day or two had there been any vomiting. The urine was abundant, and free from albumen; bowels regular; no febrile disturbance. His aspect was anemic and somewhat cachectic; the tongue red and furred in patches. On examining the abdomen, several tumours were observed in the abdominal integuments, one immediately above the umbilicus, which, he affirmed, had been there for many years, and which appeared to be attached to the sheath of the rectus muscle. He emaciated rapidly after his admission, having frequent vomiting and much epigastric pain, and subsequently jaundice.

The *post mortem* examination was made by Dr. Bristowe, and the following is his detailed description of the appearances presented by the lungs. The body was extremely emaciated and deeply jaundiced. There was a milk-patch on the front of the heart; otherwise the pericardium was healthy. The heart was healthy, but flabby. The valves were competent; but there was a little earthy deposit in the right angle of the mitral valve, and a little along the attached margin of the aortic, but sufficient, in connexion with one curtain, to render it somewhat rigid generally. The pleuræ were free from adhesions, and their parietal portions were generally healthy; the diaphragmatic surface of each was studded here and there with projecting lenticular patches of white cancer from a quarter of an inch in diameter downwards; and a group of similar formations, in an area equal to that of a five-shilling-piece, was seated over the central portion of the left seventh rib, which in this situation, and for about an inch of its length, was destroyed by cancerous infiltration. The lungs were somewhat large and heavy, and presented a very remarkable appearance. The general surface was congested, but thinly covered by what looked at first sight like a leprosy eruption. This consisted of flat whitish circular patches, from half an inch in diameter downwards, which had coalesced in many places, and formed sinuous patches or bands of various extent. The patches were pretty equally diffused over the entire surface of both lungs, and were so flat and little elevated as scarcely to be perceptible to the touch, or even the sight, except by their whiteness and opacity. It frequently seemed, too, that the edges were a little better defined than the central portions. In a very few instances, the central portion of a patch was elevated into a hemispherical tubercle. On cutting into the lungs, they were found generally but sparsely crepitant; but, on close examination, they were clearly ascertained to be studded rather thickly with cancerous material, which, however, was variously and somewhat peculiarly arranged. 1. In many parts, but by no means uniformly so, it existed in the form of scirrhus infiltration running along the bronchial tubes and vessels of the lung, surrounding them, apparently, in the first instance; then incorporating their parietes; and finally encroaching on and diminishing their calibre, though in no case distinctly obliterating them. The larger trunks were generally unaffected, or affected only in an early stage; the tertiary and subsequent divisions were those most obviously diseased. Constrictions arising in the manner indicated were discovered in both arteries and veins, but no nodulated or papillary growths into their channels. In those tubes in which the disease was most marked, the *mucous membrane was opaque, thick, and wrinkled*. 2. Numerous very distinct but thin bands (from half a line in thickness downwards) of scirrhus were found intersecting the lung-tissue in various directions. By tracing and examining them, it was rendered obvious that they were the result of cancerous growth along the septa separating the lobules from one another; and that they were, therefore, of the same nature as, and had originated in similar tissues to, the patches upon the surface of the lung. Besides the above, there were numerous spots, from the size of a lobule downwards, in which the tissue of the lung was more or less solid, and infiltrated with malignant growth. But it seemed clear that all these were secondary to the formations previously described, and due, as it were, to their outgrowth into neighbouring tissues. Many of them were subjacent to the superficial patches, and had obviously sprung from them. The relations of those seated in the substance of the lung were necessarily less distinct; but there was suffi-

cient reason to regard them as having a similar dependence on more central scirrhus tracts. A few of the bronchial glands were the seat of scirrhus infiltration. There was extensive ulcerated scirrhus of the stomach, with peritoneal cancer extending along the capsule of Glisson into the liver, and causing obstruction of the bile-ducts; but all other organs, as well thoracic as abdominal, were healthy.

Although, as has been stated, cancer affecting the bronchi, either primarily or independently of other parts of the thoracic organs, is, to say the least, extremely rare, if it ever occurs, cancerous vegetations from the inner surface or the tubes occur sufficiently often to give special aspects to the case, and sometimes to facilitate the diagnosis. In a case related by Dr. Peacock, considerable portions of cancerous matter, taking the form of bronchial casts, were from time to time expectorated; and in other instances expectorated matters have shown evidence of the cancerous nature of the disease. But the amount and character of expectorated matters vary greatly in different cases. Mostly, the expectoration is simply thin frothy mucus. Viscid, glairy, red-currant jelly-like matter is by no means so common or diagnostic a sign as has been supposed. The sputa not unfrequently are muco-purulent, but never, I believe, of the peculiar nummular character frequently seen in phthisis. Microscopic examination would probably, in many cases, give direct evidence of the cancerous nature of the disease.

CASES OF LONG-CONTINUED ABSTINENCE FROM FOOD.

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MANY conflicting opinions are held upon the possibility of the human subject abstaining from food for any lengthened period; and evidence of a positive nature is very much needed to establish the claims of genuine fasting cases.

Hufeland describes the case of a merchant who committed suicide by starvation, in consequence of having suffered from some serious losses. This unfortunate individual was found, after an abstinence of eighteen days, in a grave which he had digged for himself in a wood. He still breathed, but expired immediately after a little soup had been forced down his throat. A diary was found upon him, in which he had daily recorded in pencil all his sensations, from which it is evident he suffered greatly from exposure to cold and mental disquietude, as well as from the pangs of hunger.

Under more favourable circumstances, where external warmth and perfect repose of body and mind can be secured, or in such cases as lethargy or certain conditions of hysteria, where animation seems all but suspended, it is not difficult to conceive that the time may be greatly extended beyond that which sufficed to destroy the poor suicide just referred to.

The two following cases have come under my observation, and are introduced as concisely as possible, but with a careful attention to essential details. The first occurred about ten years ago.

Hysterical Vomiting and Abstinence.—M. B., aged 16, an intelligent and delicately constructed, but otherwise healthy girl, was seized with violent bleeding of the nose, and so weakened thereby as to be compelled to keep her bed. Shortly afterwards she began to vomit every description of food offered to her—solids at first, and then fluids. The rapidity with which everything was rejected—even cold water—made it necessary for her to have a basin in the left hand while she was drinking from a glass held in the right. A lump of ice was often kept in the mouth to relieve thirst; but if the water from it were swallowed, it was immediately brought up. Every remedy that could be devised was tried, without effect; and for a few weeks the patient was supported by nutrient enemata, until the bowels would not retain the smallest quantity, so that they had to be discontinued. The poor girl lay for eleven months in this condition, suffering no pain whatever beyond the pangs of hunger and thirst, and eventually died from sheer inanition. Her body was wasted to such a degree that she resembled a living skeleton; and her bowels were acted upon very slightly once in about eight weeks by means of hot fomentations over the abdomen. A *post mortem* examination was not permitted; but there was no evidence of organic disease of the stomach, the vomited matter never being anything more than the fluid taken. No tumour could be detected externally, and there was no pain anywhere. In this case I can rely fully upon the statements of the parents and friends, that whatever was administered was rejected in every instance in the same way as when I was an eye-witness. Beyond rubbing with cod-liver oil occasionally, nothing could be done to keep life going, but draughts of cold water or a lump of ice