CLINICAL LECTURE ON GANGRENE OF THE LUNG.

DELIVERED AT THE
LIVERPOOL NORTHERN HOSPITAL.

BY A. T. H. WATERS, M.D., F.R.C.P.,
Physician to the Hospital.

GENTLEMEN,—We have in the wards a man who has suffered from the symptoms of gangrene of the lung. He is now convalescent, and will be soon discharged. Although his recovery prevents us from verifying the opinion which I have expressed of his case, I have no hesitation in speaking of it as one of pulmonary gangrene. I will read to you the notes.

Wm. B., a sailor, fifty-five years of age, was admitted into the hospital, under my care, on the 28th May last. He told us that he had suffered slightly from cough for some time, but that he considered himself quite well up to about a fortnight before his admission. At that time, his cough became worse, and he began to expectorate. He had a dull heavy appearance, and a somewhat dusky countenance. The pulse was quiet; the urine 1,030, and free from albumen. On examining the chest, we found the physical signs of slight general emphysema, especially of the left lung. He was ordered etherial tincture of the acetate of iron, with a pill of squill and henbane at bedtime. He improved somewhat under treatment. The sputa were slight, and simply bronchitic. On the 8th of June, however, he spat up some dark-coloured fetid matters mixed with blood. The pulse was only 80; he complained of no pain, and there was no constitutional disturbance. From the character of the expectoration, I suspected that we had a case of gangrene of the lung to deal with; and, in order to meet the depression which I knew would come on if my diagnosis were right, I ordered a table-spoonful of brandy every two hours, and as much beef tea and milk as could be taken. I also gave some sulphuric acid. On the following day, the pulse had risen to 112, and the patient was heavy and listless. On examining the chest, I found some dullness under the right clavicle, extending down to the nipple, with diminished movement and increased vocal fremitus. Moreover, there was crepitation over the same region and over the upper part of the lung behind. The left lung was free. He had brought up a quantity of prune-juice coloured and very fetid expectoration. He had taken the brandy and food regularly. On the 10th, the pulse was 90; he said he felt better. The expectoration was still of a dark colour and extremely fetid. It had exactly the odour of carious teeth. He had slept, and there had been no delirium. The tongue was moist and tolerably clean. He was ordered creasote inhalations, and some quinine, the brandy being continued. On the 11th, the general symptoms were about the same; the pulse was only 100, but the man seemed very low. He had slept badly. The sputa were somewhat less fetid. I ordered him a grain and a half of opium at bedtime, and five grains of carbonate of ammonia, with fifteen minims of chloric ether every four hours. He took his food and stimulants very well. On the 12th, the pulse was 88, and the sputa were free from fetor. On the 14th, I found him with a pulse of 80; the sputa were purulent, but no longer fetid: they had quite lost their dark colour. He steadily improved from this date; but, on the 21st of June, after getting up and moving about, he had a return of the dark-coloured fetid expectoration, and, although the dark colour soon disappeared, the fetor remained for about ten days. He continued to take stimulants and to inhale the creasote vapour. On the 3rd July, I ordered chlorate of potash, with bark, and he is taking this now (July 10th). He appears quite well. There is scarcely any dullness over the upper part of the right lung, and there are no moist sounds. I propose to send him to the Convalescent Hospital, at Southport, on Thursday next.

Now let me say a few words about the diagnosis of this case. You may have fetid expectoration where there is nothing more than bronchitis, and, also, where a tubercular cavity becomes gangrenous, as well as in true gangrene of the lung. What, then, has been the nature of this case? My belief is, that there has been a low form of pneumonia, with circumscribed gangrene. The character of the sputa was not that of bronchitis. There was no evidence of the existence of a tubercular cavity. It is true that the pulse never became very rapid, and that the depression was never very great, not so great as in other cases which I will relate to you; but, still, for a few days, the man was in a very precarious condition. How far the stimulating treatment which was adopted early, may have contributed to check the progress of the malady and to

limit the disease, I am unable to say, but I will give you the history of some other cases in which a similar mode of treatment has appeared to be of as much value as in the one I have just referred to.

Some of you, perhaps, recollect the case of John R., twenty-seven years of age, a labourer, a tall, strongly built man, who was admitted into the hospital on the 2nd of March, 1866. Three days before he came to us, he had coughed up some blood, and it was for this that he applied to the hospital. I saw him first on the 3rd March. His pulse was then a little over 100. He had expectorated some dark grumous bloody matter, but I perceived no fetid odour. The front of both lungs was resonant on percussion, and the breath sounds were good; the back of the chest was not examined. I prescribed morphia and sulphuric acid, and, subsequently, gallic acid, but the patient got daily worse. On the 8th, the pulse was 120, with symptoms of exhaustion coming on. On the 10th, I found him exceedingly weak, with an anxious expression, sunken cheeks, and a feeble pulse of upwards of 120. Moreover, he had brought up a large quantity of dark, bloody, fetid expectoration. I had now no doubt as to the nature of the case. I found, on examining the chest, deficient movement of the left side, crepitation in the left axilla, with dullness, bronchial breathing, and bronchophony at the left base. This examination convinced me that we had to deal with a very serious form of pneumonia, accompanied with gangrene. I, at once, stopped the sulphuric acid and morphia, and ordered stimulants, with as much nourishment as could be taken. I put the man on a table-spoonful of brandy every two hours, with carbonate of ammonia and chloric ether every four hours. After three days of this treatment, viz., on the 13th, the pulse was 96. A large quantity of chocolate-coloured, tenacious, fetid matters had been expectorated. The patient said he felt rather stronger, and had rested better. The brandy was increased to eight ounces daily, and the ammonia mixture was continued. On the 15th, he expectorated about two pints of dark-coloured fluid, and on the 16th, about a pint and a half; but the expectorated matters were lighter in colour and less fetid than before. On the 17th, there was further improvement in the sputa. On the 18th, the pulse was 92. A steady improvement followed from day to day. On the 24th, the brandy was reduced to six ounces, and a pint of porter was ordered. On the 26th, the pulse was 80; the sputa were scanty, purulent, and nearly free from fetor. On the 28th, quinine was substituted for the ammonia mixture. The brandy was continued till the 7th of April, when eight ounces of port wine were given. He took his food well, and was allowed a liberal diet. Under this treatment, together with quinine and iron, he made steady progress to recovery. On the 28th, the breath sounds were normal over the base of the left lung. The man remained in the hospital till the 17th of May, when we sent him to Southport. On his return, he came here and appeared in excellent health.

The next case I wish to call your attention to, is that of Patrick F., who was admitted into the hospital on the 4th of March, 1867. He was thirty years of age, a porter, and of very intemperate habits. He complained of cough and dyspnoea, and we found the physical signs of deposit at the upper part of the right lung, with bronchitic *râles*. He was ordered cod-liver oil and iron. The pulse, on admission, was 96, but it fell after he had been in the hospital for a few days, and on the 20th March, it was 88. About the end of the month, the patient began to expectorate very freely. The sputa were of a greenish colour, somewhat frothy and offensive; the breath was also offensive. I pointed out, at the time, the peculiar odour of the breath and sputa. It resembled very much the odour of carious teeth. On the 30th of March, I ordered six ounces of brandy daily, and on the 9th of April I gave, in addition, some carbonate of ammonia. The man was allowed a liberal diet. The symptoms continued without much change for about three weeks; the sputa were copious and fetid, and the breath, at times, very offensive. Further, the pulse became very rapid; there were profuse perspirations, and great prostration of the patient's strength. The area of dullness at the upper part of the right lung increased, and coarse, moist *râles* were heard over a large part of the front of the lung.

Although the patient was taking a fair amount of stimulants, brandy and ammonia, I thought he was getting scarcely enough, and, accordingly, on the 23rd April, I increased the quantity of brandy to ten ounces a day, continuing the ammonia and good diet. An improvement almost immediately set in; the expectoration diminished in quantity, became less fetid, and, later, free from unpleasant odour. The pulse fell, the perspirations ceased, and the *râles* almost entirely disappeared, although dullness and deficient movement remained; the patient gained in strength and spirits, and I was much surprised at the condition of his chest when I examined him on the 2nd May. Here are the notes.

Dullness still persists at the right apex. There is more expansion of the lung, but the movement is still deficient. The breath sounds are

improved, and are nearly free from moist *râles*. On the 9th of May, we sent him to the Convalescent Hospital at Southport.

In speaking of this man's case when it occurred, I said that, although I believed it to be one of gangrene of the lung, connected with a low form of pneumonia, yet the symptoms might possibly be connected with tubercular deposit. As you will now learn, we subsequently had an opportunity of seeing the condition of the lung.

The man was readmitted into the hospital on the 2nd January, 1868. He told us that, after his discharge in May, 1867, he remained tolerably well, and *quite free from fetid expectoration* for about four months, when the fetor returned, and continued, more or less, up to his readmission. We found dulness over the right lung, with coarse *râles*, and gurgling at the apex. There were, also, coarse *râles* and bronchial breathing at the back. The expectoration was copious and very fetid, and the breath was fetid. He was ordered carbonate of ammonia and bark, a chlorine gargle, and eight ounces of brandy daily, with beef-tea and milk.

He did not improve under the treatment. His pulse was quick, 120 to 130; he had profuse perspirations; he slept badly; but the fetor became somewhat less, although it did not disappear. The ammonia was continued till the 10th, when quinine was ordered, but, on the 13th, the ammonia was resumed. The brandy was continued, and opium was given at bedtime, almost every night. He died on the 14th, and the body was examined on the following day. The left lung was emphysematous throughout. The right lung had a large gangrenous cavity at the upper part, the walls of which were soft and easily broke down. A small part of the anterior edge of the lung was emphysematous. The remainder of the lung was the seat of chronic grey hepatisation, and, on section, there was a copious flow of purulent matter. The areolar tissue between the lobules was much thickened. There were no tubercles.

These cases will tend to shew you the kind of pneumonia with which gangrene is usually associated. It is a very unfrequent sequence of the acute form, and it probably rarely occurs except in connection with some cachectic state of the system.

The diagnosis of gangrene of the lung turns on the peculiar fetor of the breath and expectoration. Neither the general symptoms nor the physical signs present any pathognomonic features. The prostration is usually very great, and quite out of proportion to the physical signs. The pulse generally becomes very rapid and feeble, the face sunken, and the aspect anxious.

In the treatment of the disease, you must be guided by the general condition of your patient, and you must give stimulants, tonics, and nourishment in proportion to the depression which exists. The medicines to be most relied on are carbonate of ammonia, quinine, chlorate of potash, and the mineral acids. In the cases I have referred to, especially in those of R. and F., I gave a considerable quantity of brandy; and from the success of the treatment in R.'s attack, and the first attack of F., you may be encouraged to hope for a favourable issue even in the most unfavourable-looking cases.

Chlorine has been recommended in the disease, but I have no experience of it except when used as a gargle, and it has not seemed to me to have much influence in removing the fetor of the breath and expectoration. I see no objection to its use internally, provided that, at the same time, you give stimulants and tonics; but if it interfere, in anywise, with the functions of the stomach, you must not persevere with it. It is of the first importance to get your patients to take plenty of nourishment, and you must, therefore, try to keep the digestive organs in good condition.

The inhalation of the vapour of creasote is, I think, very useful, and should always be tried.

FARADAY ON TITLES GIVEN TO MEN OF SCIENCE.—I cannot say that I have not valued such distinctions; on the contrary, I esteem them very highly, but I do not think I have ever worked for or sought them. Even were such to be now created here, the time is passed when these would possess any attraction for me, and you will see, therefore, how unfit I am, upon the strength of any personal motive or feeling, to judge of what might be influential upon the minds of others. Nevertheless, I will make one or two remarks which have often occurred to my mind. . . . A Government should, *for its own sake*, honour the men who do honour and service to the country. The aristocracy of the class should have distinctions which should be unattainable except to that of science. . . . But, besides, the Government should, in the very many cases which come before it having a relation to scientific knowledge, employ men who pursue science, provided they are also men of business. This is, perhaps, now done to some extent, but to nothing like the degree which is practicable with advantage to all parties. The right means cannot have occurred to a Government which has not yet learned to approach and distinguish the class as a whole.

ON CERTAIN CAUSES OF MAMMARY CANCER.*

By CHARLES H. MOORE, F.R.C.S.,

Lecturer on Surgery; Surgeon to the Middlesex and St. Luke's Hospitals.

IN a paper formerly read to the Association at Leamington, I endeavoured to distinguish the antecedents of cancer, according as they might reside in a general cause, or in one belonging to the site of the primary tumour. There appeared to me reason to give greater prominence to those causes which act upon or within the misgrowing part itself, than to those which might belong to the whole body in common. The search for the causes of cancer became, therefore, more likely to be successful if prosecuted in the organ first diseased, than in peculiarities which, being indefinable, are designated constitutional. Causes, indeed, are peculiarly difficult to demonstrate in respect to any new growth. Their obscurity arises mainly from the fact, that they influence the faulty textures gradually and imperceptibly. Like the forces evoking the development of organs, they are seen in their results, but they act, however energetically, without themselves attracting observation. Moreover, there is no one cause for all new growths. On the contrary, similar tumours appear to me to proceed from different causes, while the same cause, operating at one time, may issue in an innocent growth, at another, in a growth which is malignant.

In the instance of the female breast, which is, on various accounts, the organ most convenient for the study of tumours, there appear to be liabilities to new growths of all kinds from causes which cannot be included amongst those hitherto in question, whether they be local causes or causes innate. There is apparently a third source by which tumours arise out of a relationship of even distant organs to one another—a relationship which, as it normally associates the functions of those organs, is capable, also, of perverting them.

It is to illustrate this subject, that the following brief paper is designed; and, especially, not so much to call attention to the frequency with which uterine or ovarian ailment precedes the development of mammary disease, a fact already familiar, as to suggest that some, even of the cancers of the breast, may be induced by such previous distal irritation.

Practitioners who have to observe the great prevalence of uterine diseases, may possibly not deem it reasonable to attribute any of the tumours occurring in the breast to an irritation reflected from the generative organs in the pelvis, since the large majority of the cases which pass under their notice, make complaint only of the uterus, and are not attentive to the less irksome ailment, when there is any, in the breast. Yet, as a matter of fact, mammary disease does so often arise with a relation to previous disturbance of the womb or ovary, as to impress a surgeon with the conviction that they are connected. The very track by which the mischief passes may even be indicated by an observation in Mr. Birkett's Treatise on the Breast, which shows that, in a patient having uterine disturbance, pressure on the nerves issuing from intercostal spaces on their way to a spot of chronic induration of the breast, is sometimes as painful as the swollen spot itself.

It is by no means uncommon to find dysmenorrhœa and leucorrhœa attended by tumefaction of the breasts. In young women having difficult menstruation, the induced disease may be a chronic mammary glandular tumour; at a later age, many of the acini of the gland may enlarge and become dense from the same cause, the breasts feeling beset, more or less generally throughout, with grains or nodules, some of which are as large as cherry-stones. When uterine symptoms are much protracted, irregular indurations of larger size appear, which are not confined to the acini, are unevenly dispersed in one or both breasts, and, if more prone to occur in one part than another, are rather frequent in the depth of the organ beneath the areola. Even these masses may subside upon the removal of the uterine ailment; but it may also happen (and this is the chief point to which I invite attention) that, though most of such apparently similar tumours disappear, yet one of them eventually becomes hard, enlarges, infects the axillary glands, gives rise to the growth of similar tumours outside the mamma itself, and, in fact, runs the course of unmistakable cancer.

Besides these, there are other cases of prolonged uterine or ovarian disease, during which there arises, unobserved, in one of the breasts, a tumour, which is cancerous from the first. Without disregard to other causes of the same disease, this sequence is yet traceable often and markedly enough to suggest a connection between the genital and the mammary disease—a connection of cause and effect which, if recognised in the instance of chronic induration of the breast, may be allowed, also, in that of cancer. It is true that, on account of the

* Read in the Surgical Section before the Annual Meeting of the British Medical Association in Leeds, July 1869.