HISTORY
OF A
SEVERE AFFECTION
OF THE
ORGANS OF RESPIRATION,
WITH THE
APPEARANCES ON DISSECTION, AND REMARKS.

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COMMUNICATED BY

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THE subject of the following detail was a gentleman residing about ten miles from Worcester, sixty-three years of age. In the early part of his life he had served in the American war, in which, before he was thirty, he lost his right leg. He was of a fair and florid countenance; about five feet ten inches high, and of a strong and manly figure, his chest being particularly capacious and well formed. He was a man of quick feelings, but of

great resolution and benevolence. His habits were temperate. The loss of his limb prevented his walking much, but he generally spent many hours in the day on horseback.

For sixteen or eighteen years, he had occasionally hawked up a little mucus, tinged with dark coloured blood, without cough, to which he had never been subject. He had had several attacks of rheumatic fever; and was so much troubled with indigestion, that for some years he had been obliged to regulate his diet with great care. He had also been several times affected with a peculiar kind of dyspnœa, which I shall presently have occasion to describe, and which was most violent after his first attack of acute rheumatism. The dyspnœa was never attended with cough, but always with more or less expectoration of mucus tinged with dark coloured blood.

In the early part of last winter, he was much troubled with rheumatic pains, which prevented his usual exercise on horseback; and at the same time the symptoms of indigestion increased, and the dyspnœa returned, which last uniformly came on early in the morning, and obliged him to sit up in bed. These symptoms soon yielded to the use of rust of iron, extract of gentian, and infusion of bark, with gentle aperients, chiefly magnesia; and for a week or ten days seemed wholly to have left him.

They again returned however, notwithstanding the continued use of the medicines, and the dyspnoea began to be more troublesome, and to harass him during the day. It was now attended with some frequency of pulse, but without any other symptom of fever. He said the dyspnoea was always least after dinner, and seemed relieved by eating animal food and drinking a few glasses of wine. He complained much of a sense of sinking and debility at the stomach, and stated that he could relieve the dyspnoea by pressing hard on the epigastric region, or by a fuller inspiration than usual. The pulse was never either intermitting or irregular at any period of the disease*.

The character of the dyspnoea was very peculiar. It consisted of about twenty full, deep, and quick inspirations, succeeded by perfectly free breathing, for perhaps a minute, when the paroxysm returned. After several such alterations, the dyspnoea, in the earlier periods of the complaint, often ceased for many hours. In these intervals, as well as in the short intervals between the paroxysms, the patient could lie in the horizontal position without bringing on the dyspnoea, till within a very few weeks of his death.

* Unless it be regarded as an exception to this, that in the latter part of his illness, it was slower during the paroxysms of dyspnoea, than in the intervals between the paroxysms.

Various antispasmodic and other medicines were now tried without effect.

Having exposed himself to a cold wind on the 22d of last March, (for he still continued to ride out occasionally,) he experienced a sudden increase of the dyspnœa, and the pulse was for the first time rather hard. Although there was no cough, I advised the application of leeches, and afterwards of a blister to the chest, which gave considerable relief. This, however, proved of short duration, the sense of debility and fits of dyspnœa evidently increasing, though unattended with cough or fever, and the pulse becoming more frequent.

On the 30th of March, Dr. Edw. Johnstone of Birmingham was requested to see him, with me. It was agreed that he should take stomachic draughts with a small quantity of the vitriolated iron, and occasionally an anodyne draught, with tincture of opium and camphorated mixture, which he had been using.

Within two days after this, he was attacked in the night with so alarming a train of symptoms, that Mr. Ricketts (the surgeon under whose care he had been from the commencement of his illness) hardly expected him to survive till morning. When I saw him early in the morning, I found the dyspnœa extreme, but still appearing in paroxysms as

above described, unattended with either cough or fever. The pulse was very feeble but regular, and appeared to be about 160, though it could not be accurately counted. Laxative medicines and the occasional repetition of the anodyne were advised. Next day, (April 3d) the symptoms having by no means abated, Dr. Johnstone was again requested to meet us.

We now considered the case as hopeless, but on account of the great frequency of the pulse, agreed to make a cautious trial of the foxglove, hoping that it might, by lessening the frequency of the pulse, produce some mitigation of the symptoms. This we added to the anodyne draught; and directed two grains of ipecacuanha and four or five of rhubarb to be given occasionally, for the purpose of exciting the bowels.

While the pulse and breathing continued in the state here described, the sense of anxiety was extreme, and the feelings of the patient such, that he said he would rather die twenty times, than pass one such night as the two last. He was now occasionally affected with a degree of delirium. It is one of the peculiarities of this extraordinary case, that even when the fits of dyspnoea were worst, the patient never had any swelling of the jugular veins, unusual beating of the carotid or temporal arteries, or other symptoms of impeded return of blood from the head.

Soon after the first dose of rhubarb and ipecacuanha was given him, he was seized with vomiting and violent straining, which, although there was but little brought up from the stomach, continued for a considerable time. I was not displeased at this effect, as I had been long in vain urging him to take an emetic. The change of symptoms which ensued was very singular. The pulse at once lost its great frequency and feebleness, and became a good steady pulse of from 96 to 100. All appearance of dyspnoea ceased, the patient conceived himself almost restored to health, and said that if he recovered, the emetic had saved him.

I remained with him several hours after this, during which he continued perfectly easy, and the pulse was strong and good. I left him about six o'clock in the morning, telling him, that, as he was so much better, I should not see him again till next day.

On my return next day, I found that soon after I was gone, the dyspnoea had recurred with great violence; but the pulse, instead of being feeble and extremely frequent, was now only about 110 or 120; and not only very strong, but, as Mr. Ricketts, and Mr. Jukes, surgeon at Stourport, (who had seen him on the preceding day for the first time,) informed me, decidedly hard. Under these circumstances, they very properly took eight or ten ounces of blood from his arm, and repeated the

blood-letting on the following morning, to about the same extent, by which the symptoms were greatly relieved. The first blood drawn, shewed a little of the buffy coat; but there was no appearance of it in any of the succeeding blood-lettings. As mid-day approached, the fits of dyspnœa again returned, but by no means to the same degree. They had now, for many days, shewn a periodic tendency, being evidently worst about one or two o'clock, both in the day and night.

We then gave the patient a scruple of ipecacuanha, which produced repeated vomiting with much straining, and another very complete remission of the symptoms. Towards midnight, however, the fits of dyspnœa again returned, still, as usual, with perfectly free breathing between them, and without cough or fever. The pulse was a little above 100, strong and good, and in some degree hard.

On the 6th of April, I wrote to Dr. Baillie, giving a full detail of this very unaccountable train of symptoms, stating that blood-letting and emetics were the only means which had latterly afforded much relief, and that the relief from emetics had been the most complete. I was not then aware, that, although more immediate, it was of shorter duration than that from blood-letting, and that, at an earlier period, the symptoms had been wholly removed for a little time by bark, gentian, and rust of iron. Dr. Baillie advised the repetition of the

emetic, and the use of such tonic medicines as at the same time possessed some antispasmodic power.

Before I received Dr. Baillie's answer, the patient refusing to submit to the repetition of the emetic, we again had had recourse to blood-letting; and as Dr. Baillie had not mentioned blood-letting, I wrote to him on April 10th mentioning what had happened since my last letter. In his answer, he observed that the symptoms could neither arise from inflammation nor water. He recommended the repetition of blood-letting in the more severe, of emetics in the slighter attacks, and the use of such tonic medicines as had formerly been found useful.

The patient would on no account again submit to the operation of an emetic, and such symptoms of debility soon began to shew themselves, as deterred us from a frequent repetition of the blood-letting. After the third blood-letting, (which was to the extent of about six ounces, and was performed on the morning after the last emetic,) the relief was more permanent than on any former occasion. Within the succeeding ten days small quantities of blood were occasionally taken from the arm. At first the loss of two or three ounces gave relief; but at length little or no advantage was derived from bleeding to this extent: and as the leg and stump began to swell, and symptoms of water in the chest appeared, the patient being now unable at any time to lie in the horizontal position;

and the secretion by the kidneys, which had for some time been diminishing, being now very scanty, we were afraid to have recourse to more copious blood-letting.

About this time a medical friend of the patient, Mr. Charlton, surgeon to the late Duke of Gloucester, came on a visit to him. He recommended the combination of James's powder with opium; and from this the patient derived so much temporary advantage, that he continued to the last to take half a grain of opium, and two or three grains of James's powder, two or three times a day.

As the foxglove had been discontinued from the sudden aggravation of the disease, after only one or two doses had been taken, we thought it proper to make another trial of it. For the first week it appeared to be of considerable service; but as we continued to give the opiate, it was difficult to say how far the relief was to be ascribed to it. The foxglove certainly produced no diuretic effect, nor could we succeed by other diuretics in at all increasing the secretion of urine. After the first week of its employment, the symptoms again began to increase; and we at length laid it aside.

We now again made a cautious trial of the rust of iron, from which so much advantage had formerly been derived; but a single grain almost immediately occasioned an aggravation of the symptoms.

A few days after this, we attempted to relieve the dyspnœa by taking blood from the chest by cupping. This procured an easier night but its good effects extended no further.

The strength now declined rapidly, and there was almost constantly more or less delirium ; but without any increased beating of the carotid and temporal arteries, or fullness of the jugular veins. During the delirium, and when the fits of dyspnœa were extreme, I put my finger on the temporal artery, and felt its beats with some difficulty. It was considerably more languid than natural. The countenance latterly was for the most part shrunk and pale, with a red well defined spot on each cheek, inclining to purple. His other medical attendants occasionally observed the face flushed ; but this must have arisen from temporary causes, as it never occurred to me to observe it.

The last time I saw him, (which was two days before his death) the pulse was about 110, perfectly regular, and by no means feeble. During the last week, to relieve the delirium, a blister was twice applied to the head, with some temporary advantage. A short time before death, the breathing in the intervals of the dyspnœa appeared to be wholly suspended, and he expired on the 21st of May without a struggle.

The body was examined about forty-eight hours

after death. On a general view of the abdominal viscera they appeared healthy, with the exception of a greater degree of redness and a more vascular appearance of the small intestines than is usual. Our time for the inspection of the body being rather limited, we proceeded immediately to the examination of the thoracic viscera, where it was evident that the immediate cause of the disease had existed.

On opening the thorax, about three quarts of water were found, chiefly occupying the right side. The right lobe of the lungs appeared diminished in size; but not more than was to be expected from the quantity of water found in this side of the thorax. The whole of the lungs appeared of a darker colour than usual, the pulmonary vessels being in a state of great congestion with very dark coloured blood. Part of the right lobe, for the space of about an inch and half in diameter, was converted into a substance like liver, and at this place only, there was an adhesion of the pleura. A small part of the edge of this lobe was of a white colour. In all other respects the lungs were healthy.

The pericardium was found every where firmly adhering to the heart, and the heart itself, especially on the left side, appeared of a dark red colour. There was no other indication of disease in it. The semilunar and other valves appeared in the natural state.

Most of these morbid changes were apparently the consequences, not the cause, of the disease. That the fluid found in the chest is to be regarded as a consequence of the disease is obvious; for the patient, till within about a month of his death, could, even in the shortest intervals of the dyspnœa, lie in the horizontal position without any inconvenience. That the inflammatory affection of the heart must be regarded in the same point of view, appears from a variety of circumstances; and particularly from this, that, at an early period, the symptoms were wholly removed by the use of bark, iron, and gentian, and the patient always found himself easiest after eating animal food, and drinking wine.

It is almost unnecessary to observe, that, had the dyspnœa arisen from the inflammation of the heart obstructing the passage of the blood through the lungs, it was impossible that the patient could, every five minutes, have had an interval of perfectly free breathing.

The pericardium every where adhered closely to the heart, giving reason to suppose that the adhesion had been of late date*. It may appear at first view very surprising, that inflammation of the heart should have existed, for however short a time, without betraying itself by any of its diagnostic symptoms. There was no fever, permanent dyspnœa,

* See Dr. Baillie's Morbid Anatomy, page 6th.

or cough*; and the symptoms, which occasionally attend inflammation of this organ, were also absent; viz. irregular pulse, palpitation, and syncope. In the collections of Bonetus and Morgagni, the reader will however find cases related, which prove that there is a chronic inflammation of the heart, which, not impeding its functions, may exist without betraying itself by any symptom; and can only be detected by dissection.

We might at first view be inclined to suppose, that the heart is subject to this species of inflammation from its being an organ of very dull feeling notwithstanding its importance; for it has met with severe wounds†; worms and other extraneous bodies have lodged in it‡; and abscesses and ulcerations have formed in it§, frequently without the production of any painful sensation, and what is still more extraordinary, of any material derangement of its functions. But we find the same species of inflammation occasionally existing in organs of the greatest sensibility.

The reader will see instances in which the intestines were inflamed, with little or no sensation of pain, in the 35th epistle of Morgagni, in Van Swieten's Commentaries on the aphorisms of Boer-

* Dr. Cullen's Synopsis Nosol. Method. genus xiii.

† Medico-Chirurgical Transactions, Vol. ii.

‡ Sepul. Anatom. of Bonetus. lib. 2. sect. 8. and 19. obs. 39.

§ Sepul. Anatom. lib. 2. sect. 10. Additamenta obs. 2.

have, Sir John Pringle's Account of the diseases of the army, and in the fourth volume of De Haen's *Ratio Medendi*. The case before us, may be regarded as another instance of the same kind ; evident marks of inflammation appearing on the small intestines, although the patient had never complained of pain in them, nor had their functions been any further deranged, than to require the use of small doses of magnesia. The same species of inflammation has been found in the stomach itself, of all our organs perhaps the most sensible. De Haen, in the work just alluded to, mentions one case, in which the stomach was found inflamed after death, where there had been no vomiting ; and another in which there had been neither vomiting nor pain.

Such cases lead to a curious inference, that the derangement of function in an inflamed part, depends more on the irritation of its nerves, than the distension of its vessels : for it appears from these cases, that, if the latter exists without occasioning the former, the function of the part is often little, if at all, impaired. The nerves appear to perform a part in the production of inflammation, which is, and probably ever will be, but little understood. In extracts from a work by Pedratto, in the 21st epistle of Morgagni, and in the *Historia Hepatica* of Bianchus, the reader will find cases and dissections related, in which the cause that produced the inflammation, was wholly confined to

one organ, and the inflammation to another. The interesting nature of the subject will apologize for this digression.

It is difficult to judge of the kind and degree of inflammation by examining the inflamed part after death. In the case before us, the appearance of the heart seemed to all present but myself to indicate a state of active inflammation. To me it appeared too flaccid, and of too dark a hue to afford this inference; and its colour seemed to me in a great degree to depend on the same cause, which gave the dark colour to the lungs, the vessels carrying very dark coloured blood. It is well known that, in highly inflamed parts, the blood retains a very florid colour long after death*. That inflammation had existed to a considerable degree, there can be no doubt, from the general adhesion of the pericardium; but chronic inflammation of the heart, as appears from the dissections just alluded to, is capable of producing even abscess and ulceration.

We cannot conceive that any great degree of dyspnœa could be occasioned by the diseased portion of the lungs, which was comparatively so small. Besides we may say of this, as of the inflammation of the heart, that had the dyspnœa arisen from such a cause, it must have been permanent. We cannot tell whether this change of struc-

* Dr. Baillie's *Morbid Anatomy*, page 2. and other passages.

ture in the lungs had existed from the commencement of the disease, because it might have existed, without betraying itself by any sufficiently marked symptom. But I think we may very positively say, that it was not the cause of the disease.

On reviewing all that has been detailed concerning this extraordinary case, the following observations naturally arise. The explanation which they afford must be admitted to be in several respects conjectural; but I know of no other which can at all account, either for the symptoms, or the effect of the means employed.

It appears, from the whole course of the symptoms, that no permanent course of obstruction to the circulation through the heart or lungs existed; and, in the dissection, no such cause could be found: for, that the inflammation of the heart only supervened in the latter stage of the disease, and that, when it did supervene, (as in the cases mentioned by Bonetus and Morgagni) it occasioned no obstruction to the circulation, as I have already had occasion to observe, are proved by the history of the disease. It follows then, that, without organic derangement, spasm, or any other cause capable of obstructing for the space of a minute the circulation through the heart and lungs, (for the fits of dyspnœa never lasted so long as a minute) some cause existed capable of occasioning such fits; and consequently of impeding the oxygenation, or, we

ought rather to say, from the late very accurate experiments of Mr. Ellis *, the decarbonisation of the blood in the lungs ; and that such a cause did exist to a greater or less extent, from the commencement of the disease, appears from the blood hawked up having always been of a dark colour. This state of the lungs being admitted, does it not afford a ready explanation of the peculiarities of the foregoing case? We know from direct experiment, that the left side of the heart cannot be excited by venous blood. This does not seem surprising, as arterious blood is its natural stimulus. And may we not safely infer, that the smaller ramifications of the pulmonary artery, and the trunk, as well as all the ramifications of the pulmonary vein, which, in the natural state, carry only arterious blood, are also insensible to the stimulus of venous blood, which is the natural stimulus of the right side of the heart, and of the trunk and larger branches of the pulmonary artery. As soon, therefore, as the decarbonisation of the blood began to be impaired, the action of the former set of vessels would be impaired in the same porportion. Would not the consequence of this be, that these vessels would require a greater degree than usual of the stimulus of distension to excite them to carry

* An inquiry into the changes induced on atmospheric air by the germination of seeds, the vegetation of plants, and the respiration of animals, by Daniel Ellis, 1807.

Farther inquiries into the changes induced on atmospheric air, &c. by the same author, 1811.

on the same quantity of blood, and that they would become subject to a constant repetition of temporary congestion, i. e. of such preternatural distension as was necessary to excite them to vigorous action *, by which means their power could not fail to be gradually impaired.

Emetics would necessarily give immediate relief, by forcibly compressing the lungs, by which the congested vessels would be emulged, and at the same time excited to a more vigorous action. It was evidently the effort of straining which gave relief. Little was brought up, and what was brought up was of an inoffensive nature. In the same way, relief was obtained by pressing on the epigastric region.

Blood-letting would necessarily relieve, by lessening the quantity of blood thrown into the debilitated vessels. The effects of the blood-letting would prove more permanent, because they would continue till the increasing quantity of blood, or increasing debility of the vessels, again called for a diminution of the blood. The good effects of the emetic would be more transitory, but more immediately felt, because, by it, the distended vessels would be immediately enabled to contract; but, the quantity of blood to be circulated remaining

* The unusually distended state of the vessels of the lungs with dark coloured blood, was evidently a necessary consequence of the continuance of this state of them.

the same, they would in a short time again be oppressed. Now all this was exactly what we repeatedly witnessed. The circumstance of the patient obtaining immediate ease, in slight paroxysms, by a very full inspiration, seems to indicate, that nothing was wanting for the free circulation through the lungs, but a more perfect decarbonisation of the blood.

It may also be seen, why there was no impediment to the return of blood from the head. For as the right side of the heart and larger pulmonary arteries possessed their natural stimulus, it is evident, that, long before congestion could take place in them, from the cause I have mentioned, death would ensue.

It may also be observed, that the deficient decarbonisation of the blood could never, in this way, go so far, as greatly to affect the whole mass of the blood. In the case of a blue boy it does so ; because there, arterious blood is, to the last, supplied to the left side of the heart and pulmonary system, although this may be in too small quantity. But here, the defect is first felt in these organs, and consequently cannot go to any great length without destroying their action.

If these observations be just, the foregoing case affords an instance of a diseased state of the lungs, which, as far as I know, has not been noticed by

writers. And indeed the symptoms were such as it seems difficult to suppose could have arisen from any of the common causes of pulmonary disease.

It is not unlikely that this diseased state of the lungs, whatever it was, had given rise to the change of structure observed in one part of them, and which, could the functions of life have gone on, would probably have spread to the rest.