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CLINICAL LECTURES.

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LECTURE V.

DISEASE OF THE HEART AND LUNGS.

The protracted illness from which I have lately suffered has necessarily occasioned a serious interruption to the course of our clinical observations. I now resume my duties with renewed health, and in doing so must direct your attention to two cases which have recently terminated in death.

The first case which I shall mention has already been twice under our review. You will, doubtless, anticipate that I allude to Hannah Flinn. On visiting this poor woman one morning shortly after the last lecture, we found her comatose; she was, however, easily roused, and then correctly answered the questions which were asked. She said that she was unable to keep awake, had no pain, and no complaint to make. The pupils were natural, and readily contracted under the influence of light; the pulse was very feeble; the face pale; the respiration rather louder than natural; sensation unimpaired. She stated that the drowsiness had come on the day before. The bowels had been freely moved, with consciousness, but she had passed no urine during the last forty-eight hours. On examining the hypogastric region there was no fulness, and firm pressure was borne without the slightest inconvenience. A blister was ordered to be applied to the nape of the neck, and sinapisms to the calves of the legs; she was also ordered to take a dose of a stimulating diuretic mixture every two hours. On the following day she was better; there was much less drowsiness, the pulse was improved, the countenance more natural, and she had passed a considerable quantity of urine. There was no return of the stupor, but the breathing became more oppressed; she was unable to lie down, the action of the heart was more laboured, and she gradually sank, five days after the attack of coma. We had an opportunity of examining the body after death, but before detailing the morbid appearances which were observed, it will be proper to make one or two remarks respecting the cause of the symptoms already noticed.

There need be but little hesitation in asserting that the extreme drowsiness with which our patient was affected for two days was caused by the abnormal state of the cerebral circulation—most probably by venous congestion. But then it is important to ask, what occasioned the congestion? Now, on this point, we must necessarily be, to some extent, in the region of

conjecture; but yet I think we may confidently attribute it to the suppression of urine which existed for a period of forty-eight hours. We are the more confirmed in this belief from the disappearance of the comatose symptoms being coincident with the return of this most important secretion. But why, it may be asked, should suppression of urine give rise to cerebral congestion? If you consult medical writers on this subject, you will find that the disturbed state of the brain, in cases of suppression of urine, is generally attributed to the retention of urea.

Urea, you are aware, is essentially an excrementitious matter: rather more than half an ounce of it is excreted by a healthy man every twenty-four hours, under ordinary circumstances; it is separated from the blood as soon as it is generated, and when it is retained it is supposed to operate as a poison, and to induce coma and death.

Now, that death begins at the brain, or in other words, that the fatal issue of the disease is generally preceded by coma where suppression of urine exists, there can be no doubt; but whether the cerebral symptoms, in such cases, are altogether attributable to the presence of urea in the blood, may perhaps admit of question. Into the full discussion of this topic, however, it is not my intention to enter at present. I would only remark, that the fact of urea being absent from the urine in several diseases which are not of rare occurrence, without coma being present, naturally leads us to enquire whether there may not be some other agency which is capable of producing the effect at present under consideration. We must bear in mind that the urine is not only the medium by which the more highly nitrogenised particles of effete matter are carried away, but also that by this secretion the system is relieved from a large quantity of fluid. It is evident, therefore, that a state of hyperæmia must necessarily result from a suppression of the secretion of urine.

Now, a hyperæmic condition of the blood-vessels of the brain would be sufficient to produce symptoms of coma; or the state of general hyperæmia might so disturb the balance of the cerebral circulation as to induce venous congestion, which would also be accompanied by coma.

In the case immediately under consideration, my opinion is that the latter was the cause of the extreme drowsiness under which our patient suffered for two entire days. We have already seen, that as soon as the urinary secretion was restored by the use of stimulating diuretics, all the comatose symptoms at once disappeared.

I must not omit to remark that the symptoms of cerebral disturbance we have been considering might have arisen altogether independent of the suppression of urine, or even whilst the secretion was perfectly normal, both in quantity and quality. A very brief consideration will be sufficient to convince you of this. The free regurgitation which manifestly existed on the right side of the heart would necessarily occasion an obstruction to the return of blood from the jugular veins, and therefore from the vessels of the brain. A predisposition at least to cerebral disturbance would be thus occasioned, and congestion or rupture might easily result from a comparatively slight irregularity in the general circulation. It will be well to bear in mind, however, that in cases where considerable disturbance in the cerebral circulation depends immediately upon organic disease of the heart, such disturbance is generally permanent, and results in apoplexy or paralysis. Now this was not the case in the present instance, and as we have already noticed a cause amply sufficient to account for the effect we have been considering, I shall pass on to notice the appearances which were observed on examining the body after death.

I must remind you, however, of the diagnosis which was given several weeks ago, when she was first admitted into the hospital, in order that you may perceive how exactly the morbid appearances corresponded with the symptoms.

When I first directed your attention to the case of Hannah Flinn, I stated that there was some amount of condensation at the summit of the right lung, and that I did not regard it as tubercular in its nature, but rather as the consequence of the effusion of some of the natural constituents of the blood into the pulmonary tissue. In the second lecture which I gave you on this interesting case, I pointed out to you the indications which it afforded of disease of the heart, and I drew the following inferences respecting the nature and situation of the morbid changes which were supposed to have taken place. I quote the words which were then used—"I infer, in the first place, that the heart is enlarged, and occupies a greater space in the chest than it ought to do.

"Secondly, I infer that although the heart is larger than natural, this enlargement is not excessive; in other words it is moderate.

"Thirdly, I infer that the walls of the heart are not abnormally thick; and fourthly, that there is double regurgitation—regurgitation through both the mitral and tricuspid openings, whilst there is no disease of the semilunar valves."

I now proceed to show you how exactly this diagnosis was verified by an examination of the body after death.

Post-mortem examination. On opening the chest there was a considerable quantity of clear transparent fluid in each cavity; there were slight adhesions between the pleuræ, chiefly posteriorly, and evidently of long standing. The left lung was free from disease. At the summit of the right lung the pulmonary tissue was very much condensed; it resembled the masses we frequently meet with in the lungs of grinders, but was not quite so dark coloured; this portion of the lung was altogether impervious to air and was about the size of a hen's egg. The rest of the lung was free from disease,

and not a trace of tubercular deposit could be detected. The pericardium was healthy and contained about the normal quantity of fluid. The heart was larger than natural, and weighed rather more than eleven ounces; the parietes of the ventricles were not thickened; the auricles were considerably dilated. The right auriculo-ventricular opening was large enough to admit three fingers with ease, whilst the posterior portion of the tricuspid valve was more closely tied down than usual by the shortness of the cordæ tendinæ; the valve itself was healthy. On the left side the auriculo-ventricular opening was partially surrounded by large vegetations; the mitral valve was extensively diseased, it was greatly indurated, and loaded with vegetations. The semi-lunar valves of the aorta and pulmonary artery were in every respect natural. There was slight effusion into the cavity of the abdomen; the abdominal viscera were healthy. The brain was not examined.

It is scarcely necessary for me to offer any observations on these morbid appearances, but yet there are one or two brief remarks I will venture to make.

In the first place you notice in this case regurgitation on both sides of the heart depending on different causes, being on one side connected with extensive valvular disease, and on the other with simple enlargement of the auriculo-ventricular opening. This is by no means uncommon.

Secondly, it is probable that the disease existing in the auriculo-ventricular opening on the left side, would afford some degree of obstruction to the entrance of the blood into the ventricle as well as permit free regurgitation into the auricle, and yet there was no murmur heard with the second sound of the heart. From this and a number of other cases, I am quite satisfied that considerable contraction of the mitral orifice may exist without giving rise to any abnormal sound. This is doubtless owing to the very gentle manner in which the blood usually passes from the auricle into the ventricle. In these cases it often happens, that if anything occurs to quicken the circulation, the abnormal sound, which was before inaudible, becomes distinctly heard.

Thirdly, there was a considerable quantity of fluid in the chest, and yet no allusion was made to it in the diagnosis to which I have before adverted. Was this effusion then overlooked? By no means; for at the time when that diagnosis was given there was no fluid in the chest. I believe the effusion took place only a few days before death, and subsequent to the state of coma, to which we have already alluded. It is by no means improbable that this was one of the methods which nature took to relieve the state of hyperæmia, which I suppose to have occasioned the coma.

Having now sufficiently noticed the particulars of the case of Hannah Flinn, I will proceed to direct your attention to another of the fatal cases which we have recently had.

DISEASE OF THE BRAIN.

Thomas Innis, aged 32, a stout muscular man, was admitted into the house, February 12th, complaining of headache, which he said had troubled him for about eight weeks. The pain was referred to the occipital region, and was occasionally accompanied by vertigo. The countenance was anxious and the man looked ill.

There was no sickness, no affection of the senses, no convulsive movement, and no impairment of intellect. His appetite was tolerable and bowels regular. The pain in the head was constant and sometimes very severe, and the pulse was quick and feeble. A careful consideration of the case led me to infer that the symptoms depended on the existence of some organic disease of the brain—most likely of the cerebellum. He was ordered to be cupped, to have the head shaved, the cold douche was to be used every four hours, and he was to take some aperient mixture. At the next visit he stated that the cupping had afforded him some slight relief, but of very limited duration; the pain and uneasiness very soon returned. He was ordered to be cupped again, to continue the cold douche, (which he said was very grateful to him,) and to take two grains of calomel every four hours. A blister was applied to the nape of the neck two days after the second cupping, and he continued to take the mercury till it affected his mouth. He was on the whole decidedly better, and the pain in the head was so much improved that I abandoned the intention I had previously had of requesting my surgical colleague to make an extensive incision of the scalp over the seat of pain. I was then unable to get down to the Infirmary for more than a week, and on visiting our patient again, I was informed by the House Surgeon, that a day or two after the last visit the pain again became more severe, but had assumed an intermittent character, the periods of its return were not regular but the intervals were complete. Under these circumstances he had prescribed the sulphate of quinine in doses of two grains three or four times a day. At the period of my visit he was suffering from an attack of diphtheritic inflammation; the mouth and fauces were covered with albuminous deposit, the skin was hot, the pulse very frequent, and he still complained of considerable pain in the head, which, however, he said, had changed its seat—it had left the occipital region and had become fixed at the top of the head. The quinine was immediately discontinued, and he was ordered to take a mixture with mucilage and the carbonate of soda. The febrile symptoms speedily left him, but he remained extremely feeble, lost his appetite, and continued to complain of his head. About this time he first complained of vertigo, from which he continued to suffer occasionally. On the 12th of March he was again ordered to take the sulphate of quinine in consequence of the symptoms of cerebral disturbance having once more assumed an intermitting character; during the early part of the day he was free from pain, but it returned about noon and continued till bed-time. On the 13th he had no pain till evening, and then it continued only for a short period, and was much diminished in severity. On the 14th the pain was more severe, and the dose of quinine was increased. Early in the morning of the following day he was seized with convulsions, and died in less than an hour afterwards.

Post-mortem examination. There was nothing remarkable in the appearance of the membranes. The arachnoid was moderately milky; the veins on the surface of the brain were congested, but not more so on one side than the other. There were not more bloody points than natural on incising the brain. The lateral ventricles were completely distended with clear transparent fluid. The central parts of the

brain were softer than natural, but the substance of the hemispheres was firm. In the left lobe of the cerebellum there was a circumscribed portion, rather larger than a shilling, which had a ragged appearance and was soft and pulpy to the touch; a small clot of coagulated blood was found in this situation. The rest of the cerebellum was healthy.

This case is neither devoid of interest nor instruction, but at present I have not time to enlarge upon it. The following particulars which it illustrates, demand your attentive consideration.

1st. Formidable disease of the brain may give rise to no urgent symptom but severe pain.

2ndly. The pain occasioned by organic disease, at first constant, may assume an intermittent character during its progress.

3rdly. The mode in which chronic diseases of the brain often terminate.

Several other points of interesting enquiry will also doubtless suggest themselves, especially whether the softened state of the circumscribed portion of the cerebellum was the cause or the consequence of the extravasated blood which existed in the midst of it, and what occasioned the large effusion of serum into the ventricles.

With respect to the treatment, you will remark that although he was to some extent benefitted by the cuppings, blisterings, cold, and calomel, yet the relief was neither perfect nor permanent; it was, in fact, of very short duration. A more active mode of treatment was obviously altogether inadmissible in a person whose constitution was so greatly shattered, and in whom the symptoms had existed for so long a period. Whether he would have derived any benefit from the long incision over the seat of pain is very doubtful, but I confess I have some feeling of regret that I was induced to abandon the employment of this remedy.

REMARKS ON AN EASY METHOD OF STOPPING PROFUSE HÆMORRHAGE FROM THE NOSE, ESPECIALLY IN ADVANCED AGE.

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Before entering upon the immediate subject of this paper, I deem it right to say a very few words on the principal causes of cerebral congestion, and on the remedial character of nasal hæmorrhage in such cases.

A congested state of the blood-vessels of the brain would undoubtedly be an every day occurrence from the mere excitement of the human mind, but for a beautifully contrived physical arrangement of the chief cerebral arteries—the internal carotids and vertebrals—just before they enter the cranium. At this point they make several coils or turns, evidently for the purpose of moderating the force of the arterial jet upon the brain; the main causes of cerebral congestion are, therefore, rather to be sought for in obstructions to the venous current, on the right side of the heart, or to its passage through the lungs, than in an excited action of the cerebral arteries. Accordingly in morbid obstructions in the cavities on the right side of the heart, we shall frequently perceive a fulness of the face, and a dark hue of the lips; and during a paroxysm of vehement coughing, the head and neck will be turgid and