ON SOME POINTS CONNECTED WITH THE TREATMENT AND PATHOLOGY OF PYÆMIA.

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THE occurrence in our wards of two well-marked cases of pyæmia—an extremely rare event—induces me to bring them before the profession, more especially because they illustrate some important facts in connexion with the treatment and the pathology of that affection. Both cases were under the care of Mr. Cant.

CASE I.—J. C., a young man aged 19, was admitted on April 15th. A profusely discharging sinus existed on the front of the shoulder-joint, which was extremely stiff, though not ankylosed. Posteriorly was a painful abscess under the deltoid. The disease began eighteen months previously, after a blow. The sinus had existed twelve months. He was enjoined rest, with tonics; and, on the following day (April 18th), the abscess was opened by a valvular incision, and discharged a large quantity of fairly healthy pus. Next day, he had severe rigors, followed by heat, perspiration, oppression at the præcordium; pulse 140, and breathing 30; a dry brown tongue, vomiting, and other symptoms of severe blood-poisoning. He was at once given one drachm of bicarbonate of potash, in combination with a little nitrate of potash and solution of acetate of ammonia every six hours; and fair quantities of stimulants. He passed a restless night; and the following day his countenance was dusky, almost livid. He complained of pain in the left axilla and the right hypochondrium. The abdomen was full and tympanitic, with great tenderness and increased area of dulness in the hepatic region. Both lungs were somewhat dull posteriorly, and moist bronchial *râles* were audible generally. There was a little mucous expectoration tinged with blood. At night, there was slight delirium, with subsultus tendinum. This occurred for several nights. It seldom, however, lasted more than a few hours; and in the morning there generally were slight symptoms of improvement.

In this state he continued up to the 25th of April, when the tongue began to clean, and the symptoms of pulmonary congestion to pass away. The pain and tenderness in the hepatic region continued, however, till the 28th, from which date he made a rapid convalescence. He was discharged on May 8th.

Many persons would, perhaps, feel inclined to doubt this case being one of pyæmia in its most general sense, from the favourable nature of its result. He was throughout kept well under the influence of alkalies, his excretions being fully alkaline; and with this was combined a full allowance of stimulants and support.

This method of treating cases of septic infection has been ably advocated by Mr. Savory. Whether it acts by neutralising or modifying the poison, or whether, by maintaining the blood in a fluid condition, it tends to prevent that first step of coagulation which, in its secondary effects, plays such an important part in the history of embolism and metastatic abscesses, is a matter of speculation. Of this there can be no doubt: that the alkalies, being readily dissolved, are rapidly absorbed into the blood, upon which they exert a powerful influence, indirectly stimulating the excretions. This action may be summed up under three heads: 1. Direct antagonism of the poison; 2. Protection against coagulation; 3. Promotion of secretion and excretion. Doubtless the stimulants also play an important part in keeping up the circulation; and thus we may say that the indications to fulfil are, to keep the blood fluid, and to keep it circulating.

The following case, terminating differently, occurred on the same day as the other, and afforded an opportunity of comparing the symptoms.

CASE II.—W. W., aged 54, was admitted on April 15th, with three of the outer fingers of the right hand gangrenous, in consequence of a severe contusion. The accident had occurred ten days previously, and already a well-marked line of demarcation was visible. On the 17th, he was seized with violent rigors, followed by sweats, præcordial oppression, and other symptoms precisely resembling the first case, but a little less urgent. The same plan of treatment was employed, and for some days he appeared to be doing extremely well. On April 25th, however, his abdomen became exceedingly tense and tympanitic, resembling in contour a severe case of ascites. In spite of stimulant enemata and the occasional removal of the air by means of an O'Beirne's tube, the symptoms became such a source of distress and annoyance as to materially accelerate his death, which took place upon April 28th.

A *post mortem* examination was made twenty-four hours after death. The lungs were healthy, but rather anæmic anteriorly, with slight hypostatic congestion posteriorly. The heart, of normal size and consistence,

was empty and contracted on the left side; but the right was relaxed, and contained a firm fibrinous clot, intimately mixed up with the chordæ tendinæ and the columnæ carneæ on the surface of the ventricle. It extended upwards into the pulmonary artery; and, at the junction of two large primary branches on the right side, it became increased in size, assuming a bulbous form, and effectually blocking up both branches. A section of it at this spot showed the thickening to be due to a plug of fibrine, evidently an embolus, the centre of which was softened, and of a yellowish colour. Beyond this spot, the clot was continued into the most minute branches of the pulmonary artery. I cannot doubt that, from this centre, the coagulation had gradually spread in both directions. The kidneys were healthy; the spleen was large and soft, and its capsule somewhat thickened. The intestines, especially the colon, were enormously distended with flatus; and all their coats seemed stretched and attenuated. No ulcerations could be discovered in the gastro-intestinal mucous membrane. The liver, in shape and size, was normal; but here and there upon its surface slight undulations were visible, denoting the existence of abscesses. On opening the inferior vena cava where the hepatic veins open into it, I found that it contained a quantity of healthy-looking pus, apparently issuing from one of the larger hepatic veins; and projecting from and closing the orifice of another was a softish clot, which, on removal, allowed pus to escape. A director was passed down the first vein, and its course was laid open. It contained a body resembling an organised clot, the centre of which was pervious; it lay free in the centre of the vessel until reaching a spot where the vessel divided dichotomously, when it could be traced down each branch, being intimately connected with their walls; and finally both branches terminated by opening directly into the cavity of an abscess. Thus there was an open and continuous channel between the interior of two abscesses and the general circulation in the vena cava inferior. The walls of the other abscesses, of which there were seven or eight, were very irregular and indistinct, giving the idea of a breaking up of the hepatic tissue; this was most marked on the sides of the abscesses, and gave them a honeycombed appearance. Here and there, behind the trabecule of this network, a small aperture might be discovered, through which a fine probe passed directly into a small branch of an hepatic vein.

Few will be disposed to regard this communication of the hepatic veins with the cavities of these abscesses as accidental. Putting aside the question of embolism, I feel inclined to look for its solution in some subtle change in the blood distributed to the liver, producing coagulation in the ultimate branches of the hepatic veins (intralobular), which gradually extended to the larger branches; the suppuration which subsequently occurred as a result of that coagulation making a way for itself through the softened centre of the clot. Be this as it may, we cannot but observe in these facts one more shoal in the sea of difficulties by which these cases are surrounded. In truth, a new source of infection arises, which converts a case of septicæmia into a case of genuine pyæmia, thereby materially increasing the risk of a fatal result. Thus, in this case, apart from the presence of pus in the vena cava, there can be no doubt that the embolus formed in the pulmonary artery had originally projected from the orifice of the hepatic vein; and that, finally, broken off by the current of the circulation, it had opened that direct conduit between it and the abscess which I have described. This view is corroborated by the discovery of one such embolus *in situ* projecting from the orifice of the vein, ready to be carried off at any moment, and which, when removed by myself, immediately liberated a stream of pus.

ABSTRACT OF CASES OF DELIRIUM TREMENS AND EBRIOSITAS TREATED BY DIGITALIS.

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CASE I. *Delirium Tremens*.—Gunner J. Wilkinson, 12th Battery, Royal Artillery, aged 32; service eight years. August 2nd, 1866. At 9 A.M. he attempted to commit suicide by shooting himself in the head, but failed. He had been drinking hard for some time, and had not slept for five days or nights. He was very wild indeed; he said that whenever he put his hands out of bed, numbers of black dogs came and licked them. There were numerous other delusions. He required two men to prevent his injuring himself. Pulse 80, very weak. He was so shaky that he was unable to hold a glass up to his mouth without assistance. He was ordered to have as much beef-tea as he could drink.—At 11 A.M. he had a draught of two drachms of tincture of digitalis with an ounce of water.—At 1 P.M. he appeared quieter. The digitalis draught was repeated.—5.30 P.M. He had slept for half an hour, and