Clinical Lecture

ON

CASES OF FAILURE OF THE HEART.

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(Concluded from p. 268).

CASE 5.—R. W—, aged sixty-one, was, according to the testimony of his wife, apparently quite well and in very good spirits on the morning of his death. He ate a hearty breakfast, and walked with her from Bayswater to the Marble Arch. There he left her, saying he would overtake her immediately, and went down to the urinal. He was seen running up the steps from thence, and on reaching the fourth he fell down and died almost immediately; he was unconscious from the time he fell. A medical man who was passing by examined him and pronounced him dead. I saw him ten or fifteen minutes later, and he was quite dead then. His brother states that he was quite well, except a little deafness, when he last saw him, two days and a half before his death. At the autopsy I observed well-marked rigor mortis of the lower limbs, but not of the upper, no evident sign of putrefaction having commenced. The body was that of a robust male in good condition. No sign of violence externally. Neck short; hair black. Nothing morbid was found in the skull, except that the encephalon was soft and rather wet. In the thorax the lungs were healthy, except some old induration at the apex of the right, some adhesions, and congestion of their posterior parts. No fluid in pleuræ. The pericardium appeared normal. The heart was extremely flaccid and flabby in every part, its tissue of a pale colour and quite uncontracted. All its valves were quite healthy, but the endocardium was more or less stained by dark blood. The left ventricle was quite empty; the right contained a little blood. There was not any great amount of adipose tissue about the heart; there was some at the base, and some at the apex of the right ventricle, where the muscular tissue was almost or quite absent, and the wall of the cavity consisted almost solely of fat and of the endo- and peri-cardium. On microscopical examination, the muscular fibres of the left ventricle were well seen: they were not broken up; their transverse striæ were sometimes evident, more often not; the whole substance of the fibres was beset with more or less refracting granules, and exhibited in many places streaks of oily-looking molecules running in the course of the fibre. Acetic acid reduced the fibres to an amorphous granular mass, but did not make the oily matter more conspicuous. In the septum the change in the muscular fibres was exceedingly well marked, and also in the tissue of the right ventricle. The change in the heart was probably the granular form of degeneration; it seemed to affect every part of the organ. On repeating the microscopy after the specimens had lain in dilute chromic acid, I found that very many fibres exhibited the transverse striæ very distinctly, and appeared fairly healthy; very many also contained large streaks or patches of orange-coloured refracting granules, and many were yellow-tinted throughout their whole substance. It seemed as if the chromic acid had altered the fibres. In the first examination I noticed that, in all the specimens from the heart, numerous rod-like bodies, having more or less distinctly spontaneous movements, were seen in the water surrounding the torn-up fibres; they were seen also in scrapings from the fresh cut surface of the left ventricle, but were absent from the water used to float the specimens. These rod-like bodies—bacillaria—seem therefore to have been generated in the tissue of the heart itself. Unfortunately I am unable to say whether they existed in other organs of the body, as I had only taken home with me portions of the heart. The inner surface of the aorta, from its origin to the lower part of the thorax, was stained of a deep blackish-red colour, but the coats appeared texturally healthy, and were elastic. No fibrinous coagula were seen anywhere. The abdomen was covered by a thick layer of fat. There were old adhesions between the liver and the

No. 2844.

under surface of the diaphragm, the anterior wall, the stomach, and some of the intestines. There was softening—probably post mortem—of the splenic region of the stomach; but this viscus, and the intestines, liver, kidneys, and spleen appeared fairly healthy. The spleen was rather large and soft. No traces of irritant poisoning.

The condition of the heart in this case, as judged of by the hand and the unaided eye, was positively that of well-marked fatty degeneration. The evidence of the microscope was scarcely so positive. As the man certainly died from sudden syncope, and as the heart was the only organ found in a diseased state, there can be no question that its disease was the direct cause of death. How long this disease had lasted is a most interesting, but insoluble, problem. There can be no doubt, however, that it must have existed at the very least some days. Yet, to all appearance, it caused no subjective sensations of cardiac distress. Objective signs there must have been, as weak pulse, loss or attenuation of the first sound, and a tracing probably like those found in the preceding cases. As to the nature of the disease, I doubt whether the terms “fatty” or “granular” degeneration are sufficiently descriptive. That such a state existed there is no doubt, but whether it was the primary and essential change is, to my thinking, not so clear. The remarkable staining of the thoracic aorta in its whole length and the absence of any fibrinous coagula are suggestive of the existence of some general disease, as low fever, or, at any rate, of some blood change. If it could have been shown that the bacillaria existed only in the heart, this would have been a considerable argument in favour of the morbid process being local; but, failing this, the probability is the other way. It is tolerably certain, I think, that the bacillaria were not the result of ordinary putrefaction.

The foregoing history has a bearing on Case 3, where it is referred to, as showing how grave lesions may exist in the heart without the individual having any presentiment of his imminent danger, and without his being rendered incapable of active exertion. It is very important to bear in mind, with regard to prognosis, that in very many cases of severe illness the result is largely dependent on the validity of the heart. Given a sound organ, the patient recovers; with the reverse, he dies. The unsoundness which comes of valvular disease is not likely to be overlooked, but that which depends on latent degeneration of the muscle is very apt to be.

CASE 6.—E. B—, female, aged forty-two, cook, admitted October 7th, 1876. A widow with ten children. Has always had good health; never had any fainting up to present time. Taken ill a month ago with aching pains in various parts. She appeared to have a mild attack of rheumatic fever. A mixture of salicylic acid and carbonate of soda, of each twenty grains, to one ounce of water, every four hours, was ordered, and a blister to the right knee. On the 10th she felt very weak and low, but had no rheumatic pains. Pulse 92; respiration 32; temperature 101°.—11th: No pain. Bowels confined. Tongue dry and red. Temperature 102.2°; pulse 108; respiration 30. Urine light-yellow, not albuminous. Breath-sounds normal in both backs. Mind wandering. Calomel, three grains; aloes, four grains, in two pills, at bedtime; effervescent citrate of potash mixture, one ounce every four hours.—12th: Better this morning; not so light-headed as yesterday. Temperature 100.2°; pulse 96; respiration 24. Breathing easy. Urine clear, very pale, sp. gr. 1020, acid, not albuminous.—13th: Better. Temperature 100.2°; pulse 84. Heart-sounds normal. Tongue moist, brown in middle. Bowels open. No cough. Feels very sinking and feeble, but answers questions much better than she has the last two days.—At 1 A.M. of the 14th the house-surgeon found her in a state of collapse, almost moribund. He ordered brandy and milk. In the afternoon I added carbonate of ammonia, four grains; tincture of chinchona, one drachm; decoction of chinchona, one ounce, every four hours. Her lips were anæmic and presented a few purpuric spots. Pulse 100; temperature 100.6°.—16th: Tongue clean, pale at side, dry and red in middle. Feels very thirsty. Pulse 84; temperature 98.6°. First sound of heart very feeble. Pulse arrested by pressure of 250 grammes. Urine contains much alloxantine. To have two grains of reduced iron to a sufficient quantity of confection of roses in pill every third hour.—17th: No pain. Heart-sounds feeble. Pulse 104; temperature 98°. Brandy, twelve ounces.—18th: Skin of hands cold, clammy; pulse at wrist of fair force, left arrested by 206 grammes; veins scarcely visible.

Prolabia pallid, purpuric spots gone, buccal mucous membrane of pretty good colour. Sounds of heart at midsternum and apex pretty normal. Temperature 97·6°; pulse 84; respiration 20.—19th: Temperature 97·4°; pulse 80. Skin

Pr. 56. Oct. 19th. Collapse after mild rheumatic fever.

of body warm, hands cold. Both backs resonant, but breath-sounds weak.—26th: Has been improving steadily. Pulse now of good force, 90; temperature on 24th, 99°.—Nov. 1st: First sound of heart very weak, even when binaural stethoscope is used. She does not feel faint when she gets up to have her bed made. Hands fully warm and moist. Temperature 98·2°; pulse 84, of good force. No trace of alcohol found in the distillate of her urine the other day while she was taking twelve ounces of brandy daily, nor was there any smell of it in her breath. Ordered six ounces of port in place of brandy on the 30th ult.—10th: Second sound of heart loud at second right cartilage, midsternum, and apex; first sound weak. Tracing shows a marked flat top. Pulse 96, of good force, not cordy. Went out next day.

Pr. 40. Nov. 10th. Heart recovered.

Remarks.—It is not clear what was the cause of the remarkable failure of the heart's action which occurred in this patient. One view would be that fatty degeneration of the heart had existed for a length of time, though latently, and that it declared itself overtly when the system was deranged by the rheumatic fever. The weakness of the first sound is in favour of this view; but against it are the facts that no sign of failure of the heart had occurred prior to this illness, and that, as it passed away, the heart regained its former vigour, and carried on the circulation efficiently. A second view is that thrombosis of the pulmonary artery or of one of its main divisions occurred, and caused the symptoms by lessening the supply of blood to the left ventricle. Against this, however, is the absence of any notable dyspnoea or lividity of the surface, and, it may be added, the recovery. A third view is suggested by the circumstance that the articular affection disappeared rather suddenly, and was succeeded by mental wandering and a great sense of sinking and prostration, not dependent upon copious pericardial effusion or any other discoverable internal mischief. Metastasis of rheumatism to the cerebral hemispheres is not infrequent, and as the same cause so commonly affects the other constituents of the heart, it does not seem an improbable assumption that it attacked in this instance the cardiac ganglia. The delirium and collapse may thus be rationally accounted for. Had myocarditis existed, there would have been pain and probably friction sound.

With respect to the first four accompanying tracings, I am not quite satisfied that they truly represent the pulse form. Yet, as they all agree in their principal features, I have thought it worth while to append them to the cases. It will be seen that the rise in all is markedly sloping and low, that the fall is gradual, and that dicrotism is absent. The tracing is by no means that of mere cardiac debility, as in the convalescence from pneumonia, nor yet that of the exhausted heart of low fever. It indicates slow and languid contraction of the ventricle, and a similar mode of resilience in the arteries. It does not necessarily imply any want of power in the heart, for it may be present in young persons of excellent physique, in whom smart exercise renders the tracing much ampler with the same spring pressure. I have found very much the same condition in cases of morbus Brightii, and have seen it replaced after an interval of five years by the more usual form of vertical rise, flat top, and moderate dicrotism. Here the ventricle on the first occasion was probably fatigued and rendered languid by its efforts to overcome the increased resistance in the arteries. I have seen also a similar tracing in a case of aortic obstruction, and in one of aortic aneurism. Both these conditions will delay or prolong the cardiac systole.

Lecture ON

METALLOSCOPY AND METALLO-THERAPY APPLIED TO THE TREATMENT OF GRAVE HYSTERIA.

Delivered at La Salpêtrière, Paris, December 30th, 1877,

BY PROFESSOR CHARCOT.

(Concluded from page 159.)

I WOULD remind you of what I have told you of the action of ether, which produces symptoms similar to those of an hysterical attack when the patient is still under the influence of the diathetic condition. "It seems," I said, "that ether is a reagent suitable to bring out the latent phenomena of hysteria." With metalloscopy, in the conditions I have described, you obtain a similar result. If, on the other hand, the patient is completely and permanently cured, she is no longer affected by the metallic applications to which she was sensitive before. This remarkable fact seems to result from our most recent observations, and it would form a sort of criterion, the importance of which will not be overlooked by practitioners.

I now present to you a young girl who does not belong to our wards, but who has been directed to us by Dr. Fieuzal, the well-known ophthalmologist, and who, after a set of common hysteric attacks, became affected, some four or five months ago, with hemianæsthesia and *ovarie* of the right side. She is affected with amblyopia, which, unlike what is observed in hysteric patients, is almost as marked in the left eye as in the right. Besides this weakness of sight she had lost the power of distinguishing colours, so that she was unable to continue her calling as a mercer. Dr. Fieuzal had already found out that the application of plates of gold on the side affected with hemianæsthesia caused a return of sensibility, and he sent us the patient to have our advice touching the advisability of administering gold to her internally. We found that metal appropriate. She has now been taking it for a month, and at present the little patient is able to distinguish perfectly well all the colours. The anæsthesia which affected the right side, and the hysteric fits, have disappeared. This is certainly a remarkable result, and yet I do not consider her cure to be permanently established. We have had recourse to the criterion which you know, and on applying a string of gold pieces to the patient's forehead we found, after the lapse of a quarter of an hour, that numbness was produced, whilst the perception of colours disappeared successively according to the usual order, beginning with violet and ending with blue. We will now perform the same experiment before you, and we shall witness once more the disappearance of perception of colours in a determinate order, and the other fact that when a patient is still under the influence of her diathesis you can, by applying the same metal which formerly removed the disorder of sensibility, excite the recurrence of the morbid symptoms, and thus bring out the hidden diathesis.

We have now, I think, seen enough of metalloscopy, and it is time to pass on to metallo-therapy.

We have already stated that certain hysterical patients are sensitive to applications of gold, others to copper, iron, &c. These are facts which, I think, I am able to vouch for, and to which Dr. Dumontpallier, Dr. Luys, and myself bore witness before the Society of Biology. You have yourselves seen the greater number of them. They are, indeed, most interesting and curious. We have, up to this point, studied them in relation to the diagnosis of what Dr. Burq calls "metallic idiosyncrasy." Now we have to investigate the problem of metallo-therapy, or, in other words, the treatment of grave hysteria by metals. Here we have to deal with most serious difficulties, and here there exists a difference in the view entertained on the subject by Dr. Burq and myself.

I shall not dwell on external metallo-therapy, as Dr. Burq has, I believe, a tendency to place it second in importance to