An old man aged 67 was admitted into Guy's Hospital on February 1st, 1854, and died on March 5th. He was an emaciated spirit-drinker, with ascites and with jaundice. His strength had only failed for three months, the date of the ascites and jaundice. The skin was hot and dry; the liver could not be felt; the legs were oedematous; there was a cachectic lichenous rash on the body; the urine contained colouring matter of bile; and there were several spots of purpura on the hands. On inspection, there were atheromatous condition of the vessels of the brain, and subarachnoid effusion; there was degeneration of the coronary arteries and of the muscular fibre of the heart. The peritoneum contained two gallons of clear serum, with flakes of lymph. The liver weighed 4 lbs.; its surface was roughened from contraction; its section was irregular, congested, and lardaceous. The kidneys were granular; their arteries rigid; their weight 7½ oz. On examining the acini of the liver, fibroid tissue could be seen between the cells of the liver in the lobules. This condition was one of general degeneration, and the cirrhosis was a part of that general atrophy.

The full elucidation of these diseases would be impossible in the limits of one lecture. I have sought to give such practical illustrations as may aid in the diagnosis, and to encourage the scientific treatment of those maladies which are especially connected with the vascular supply of the gland.

NOTE ON THE CURE OF INVETERATE ECZEMA IN CHILDREN BY VACCINATION*

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[From the Br. Medical Journal]

We are so often confronted by cases in which it is alleged that eczematous eruptions have been produced by vaccination because they have followed it, that it is somewhat encouraging to have met with two cases where the eruptions existed in unvaccinated children, had resisted all the usual methods of treatment, and finally were cured by vaccination.

The first was the child of a commercial gentleman of great intelligence, who allowed me to try vaccination after everything else had been done that could be suggested. It was a most obstinate case of eczema over the whole body, the scalp being the seat of its worst display. The glands of the neck were chronically enlarged, and at one time suppurated so seriously as to endanger the child's life. Temporary benefit was derived from change of air, but drugs had no effect. Acting on the usual rule, I put off the vaccination of the child for three several periods of nine months. The dread of vaccinating a case like this depends on the probability of the formation of glandular abscesses—an apprehension that certainly is not unreasonable. I told the father of the child that, if we accepted the risk of this misfortune, I believed vaccination might cure the child by exercising some influence on its nutrition. He agreed to the experiment; and, to diminish risk as far as possible, I used lymph which had passed through one healthy child from the heifer. The result was most remarkable, for in a few days a marked improvement was visible in the child; and in little more than three weeks all traces of the eruption had disappeared; save a roughness of the skin, which still exists. The hair grew rapidly on the scalp, and the child now is in all respects as fine an infant as I have ever seen.

At the same time I had under my care the child of a clergyman, for which many prolonged and various courses of treatment had been adopted ineffectually for an eczematous eruption affecting the whole body, but mainly the face and flexures of the joints. It was nearly two years old, and had never been vaccinated. I told the father of the case I have just related, and he consented to the vaccination. He has sent me the following note of the history. "To the best of my recollection, the symptoms of skin-disease in baby were first manifested when she was about two months old. The disease appeared in a virulent form for the space of nine months, at the end of which time she was vaccinated. After vaccination, the child improved rapidly, and in a month not a trace of the malady was left."

Two is too small a number from which to make a generalisation; but the consequent and antecedent had in both of these cases too immediate a connexion for me ever to believe that the cures were mere coincidences. In the last case, I used lymph directly from the heifer, kindly supplied to me by my friend Dr. Greene, of Friday Bridge. I have no doubt that this is more efficacious and safer than lymph which has gone through numberless children. The rationale of the cure can only be theorised upon, and this I do not care to engage in. Suffice it for me if I may induce others to try the remedy.

* Read before the Pathological Section of the Birmingham and Midland Counties Branch.

A LECTURE ON DISEASE OF THE VALVES OF THE HEART.

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The General or Functional Symptoms of Valvular Disease.—Prognosis.—Treatment.

GENTLEMEN,—In my last lecture (BRITISH MEDICAL JOURNAL, Jan. 13th, 1872) I described the physical signs, and discussed the diagnosis, of disease affecting the different valves of the heart. We have now to consider the *general or functional symptoms* of valvular disease. And first I may remark that disease of one or more valves, as indicated by physical signs, may exist for years, yet, so long as the walls of the heart continue to be well nourished, there may be few or even no symptoms of functional disturbance. This fact is so well known, that it is scarcely necessary to give examples; but I may mention that it has happened to me twice, in examining candidates for life-insurance, to discover the unmistakable signs of aortic regurgitation in men of middle age who believed themselves to be in perfect health, and who declared that they had never been ill. Moreover, in one of these cases the medical attendant of the applicant certified that he was sound and in good health. In each of these cases I chanced to hear that death had occurred within a few months after the discovery of the disease and the consequent rejection of the candidate by the insurance-office. It is a matter of common observation that, when valvular disease has been caused by an attack of rheumatic fever, the physical signs are unmistakably present; but years may elapse before any symptoms referable to the heart are complained of.

Amongst the earliest and most constant symptoms of valvular disease is an excited or irregular action of the heart on exertion, such as going upstairs or running or walking fast. With this there is often hurried and difficult breathing, the result of an impeded circulation through the lungs. As the impediment increases, the lungs become congested and oedematous; moist sounds are heard over the lower lobes; and the patient becomes liable to attacks of catarrh and bronchitis.

In the advanced stages, *hæmoptysis* is not an unfrequent symptom, the result of passive engorgement and rupture of minute pulmonary or bronchial vessels.

When we were discussing the subject of *vesicular emphysema* of the lungs (see BRITISH MEDICAL JOURNAL, June 27th, 1868), I explained to you the manner in which valvular disease of the left side of the heart tends to bring about that condition of the lungs.

In most cases of valvular disease there is a sense of uneasiness, and in some there is actual pain in the region of the heart. The pain varies much in degree. In some cases of aortic regurgitation, with dilatation and weakness of the left ventricle, severe pain comes on in paroxysms, and extends down the left arm, constituting one form of what is called *angina pectoris*. These attacks sometimes result in sudden and fatal syncope.

Most of the symptoms of valvular disease are the direct result of the interrupted circulation through various tissues and organs; this interruption of the circulation involving, as we have seen, a defective supply of arterial blood and an impeded return of venous blood. I have already described the result of this interrupted circulation upon the nutrition of the heart's walls, and I have just now spoken of its effect upon the lungs. The abdominal organs suffer from the same cause. The interrupted circulation through the walls of the *stomach* results in a defective or an abnormal secretion of gastric juice. The consequence is, that the food, not being fully acted upon by its natural solvent, decomposes and ferments. The patient is dyspeptic and flatulent, and the flatulent distension of the stomach increases the dyspnoea and the cardiac distress. A similarly impeded circulation through the *kidneys* brings with it a scanty secretion of urine (which is sometimes albuminous), a consequent

accumulation of urine in the blood, and then dropsical effusion into the areolar tissue and the serous cavities. In a former lecture on the Pathology of Dropsy (see BRITISH MEDICAL JOURNAL, March 7th, 1868) I discussed this subject fully, and pointed out the main points of resemblance and of difference between cardiac and renal dropsy. Let me remind you of this one fact: that, in cases of cardiac dropsy, the dropsical effusion is always preceded by a scanty secretion of urine, the result of an interrupted circulation through the kidneys. The impeded circulation through the liver has amongst its results a scanty secretion of bile, a jaundiced tinge in the eyes and skin, and an effusion of serum into the cavity of the peritoneum.

Extreme engorgement of the portal vessels sometimes results in hæmorrhage into the stomach or intestines, and blood is expelled either by vomiting or by stool.

The liver and the spleen are often visibly and palpably enlarged and indurated, in consequence of the continued passive engorgement of the portal venous system; and after death it happens not unfrequently that yellow fibrinous patches are seen in the liver, spleen, and kidneys, the result of capillary obstruction by minute particles of fibre which have been detached from the valves of the heart.

The functions and even the structure of the brain are often seriously affected. There may be vertigo, dimness of sight, headache, confusion of thought, delirium, and even insanity, ending perhaps in paralysis and coma, with *post mortem* evidence of cerebral softening or hæmorrhage. These symptoms and structural changes may occur as results of the general impediment of the circulation which valvular disease occasions, and quite apart from the accidental plugging of cerebral vessels by fibrinous concretions which have been detached from a diseased valve.

This plugging of cerebral vessels by masses of fibrine from a damaged valve is, however, a frequent cause of brain-disease. The symptoms, which vary according to the size and the situation of the vessels thus plugged, usually come on suddenly at the moment when the circulation is arrested. Sudden hemiplegia from a plug in the middle cerebral artery is not uncommon; and, when the obstruction is on the left side of the brain, aphasia may be associated with hemiplegia. Chorea is sometimes associated with, and apparently caused by, capillary embolism in some portion of the brain near the corpus striatum; and quite recently (January 1872) we have had in the hospital a woman with the physical signs of an incompetent mitral valve, who, in addition to plugging of the brachial artery by embolism, has had pain in the head, vertigo, mental excitement and illusions, the result, probably, of cerebral embolism.

The prognosis depends partly on the situation and the character of the valvular disease, partly upon the nature of the functional disturbance and the structural changes which have resulted from the diseased valve. In the order of gravity, mitral obstruction stands first, and aortic obstruction last, amongst the forms of valvular disease; for the reason that the feeble auricle has little power, and the strong ventricle much power, to overcome an impediment in front. Aortic regurgitation and mitral regurgitation are about equally grave, but aortic regurgitation is by far the most frequent cause of sudden death by syncope. In the great majority of cases of valvular disease, death occurs slowly, as a result of the impeded circulation through various organs. Amongst the most frequent causes of death are congestion of the lungs, with the resulting œdema; bronchitis; hæmoptysis; pulmonary apoplexy and hydrothorax; congestion of the liver, with jaundice and hæmorrhage from the stomach and bowels; congestion of the kidneys, with the resulting dropsy and its consequences, more especially inflammation and sloughing of the skin and cellular tissue; and, lastly, impeded circulation through the brain, with the associated nervous symptoms. Sudden death by syncope is an occasional result of aortic regurgitation, but it is rare in connexion with any other form of valvular disease.

In the treatment of valvular disease, the first lesson to be learnt and acted upon is, that no treatment can have the slightest beneficial influence upon a damaged valve. Mischiefs have often been done by a lowering and a so-called antiphlogistic treatment after the discovery of a bellows-sound, which has been supposed to indicate recent inflammatory disease, but which in reality has been the result of chronic degeneration of a valve. The main object of treatment is to prevent the mischievous reaction of a damaged valve upon the muscular walls of the heart: in other words, to promote hypertrophy of the muscular tissue, as the most effectual means of preventing dilatation of the cavities. For it may safely be assumed, as a general rule, that the duration of life in these cases depends upon the degree in which hypertrophy of the muscular walls enables the heart to overcome the impediment to the circulation which results from a constricted orifice or an incompetent valve.

The diet should be nutritious, including a good proportion of animal food. Fatigue and all depressing influences should be as much as possible avoided, as well as everything that tends to excite and hurry the circulation, such as mental or emotional excitement, running, or quick walking, and violent muscular exertion of all kinds.

Tonics are often useful: quinine, nuxvomica, and mineral acids, to help the appetite and digestion; iron, to counteract anæmia.

It has sometimes been said that one object of treatment is to prevent excessive hypertrophy of the heart; but it is doubtful whether this hypertrophy is ever in excess of what is required: doubtful, therefore, whether attempts should ever be made to lessen it. It is true that relief from pain, palpitation, and dyspnoea is sometimes afforded by a moderate venesection or by local bleeding, by purging, and by temporary low diet. But the probable explanation of this is, that by these means the volume of blood, and with that the work of the heart, is lessened, and not that the nutrition and the strength of the heart's walls are diminished. Small doses of digitalis are often very useful in checking an excessive and tumultuous action of the heart; and a combination of tincture of digitalis with tincture of the perchloride of iron is an efficacious sedative tonic and diuretic. The action of digitalis on the heart must always be carefully watched. It sometimes causes a distressing fluttering and depression, when, of course, it must be immediately discontinued. Extract of aconite appears to possess the power of relieving painful sensations and disquietude about the heart. One-eighth of a grain of the alcoholic extract may be given twice or thrice daily. The effect must be carefully watched. A belladonna plaster worn over the heart often proves an efficient local anodyne. Belladonna, remember, cannot be applied to an abraded surface without risk of absorption and alarming symptoms of poisoning.

The state of the circulation through the lungs and other internal organs must be watched and regulated. Exposure to cold and wet should be carefully avoided. The result of such exposure might be an attack of pulmonary congestion and bronchitis. The occurrence of such symptoms would be best met by the prompt application of the treatment for catarrh and bronchitis which I described fully in a former lecture (see BRITISH MEDICAL JOURNAL, Oct. 23rd, 1869). Congestion of the kidney, with a scanty secretion of urine, may be treated by the warm bath, or by the hot-air bath, dry cupping on the loins, mustard and linseed poultices, and an occasional purgative.

Diuretics are useful in cases of valvular disease, not only to lessen, but also to prevent, dropsy. Various diuretics may be tried in succession and in combination—broom, digitalis, juniper, squill, acetate of potash, spirit of nitric ether, compound tincture of iodine. A pleasant and often efficient diuretic is the so-called "imperial drink", made with cream of tartar, lemon-juice and peel, to which a small quantity of gin may be added. Another useful diuretic is a combination of powdered squill, digitalis, and calomel, a grain of each in a pill, repeated night and morning until six doses have been taken. The action of diuretics is often promoted by an occasional hydragogue, as, for example, one-sixth or one-fourth of a grain of elaterium, or half a drachm of compound jalap powder, or ten grains of compound gamboge pill. When the impediment to the circulation through the kidney has reached the point at which the urine becomes albuminous, diuretics are generally useless, and often mischievous. In some of these cases, as also in cases of renal dropsy, the best means of promoting a free secretion of urine, and so removing the dropsy, consist in keeping the patient for a time exclusively upon a diet of cold or tepid milk, of which six or eight pints may be taken in twenty-four hours. If there be a difficulty in digesting the cream, the milk should be skimmed. The diuretic action of the milk may be aided by giving twenty or thirty grains of acetate of potash three times a day.

When other means fail to prevent the increase of dropsy, the anasarous fluid may be allowed to escape through incisions or punctures in the legs. The drain of liquid usually affords great temporary relief, and is often followed by a copious secretion of urine. It is not to be denied—and the patient and his friends should be informed—that incisions or punctures are sometimes followed by inflammation and sloughing of the integuments; but then, on the other hand, distension of the skin by an excessive dropsical accumulation is not unfrequently attended with the same unpleasant results. In my experience, erysipelatous inflammation and sloughing have resulted more frequently from over-distension of the integuments than from punctures made to remove distension. On the whole, then, puncturing anasarous legs is an operation which, when done with proper precautions, is so advantageous to the patient, that we dare not shrink from the responsibility of advising it. Many instances have come under my observation in which this simple operation has prolonged life in comparative comfort for a very considerable period.