Clinical Notes on Some Common Ailments.

SOME FORMS OF HEART DISEASE.

By A. Knyvett Gordon, M.B. (Cantab.).

In considering the disease, or rather group of ailments which comes next on the selected list—namely, disease of the heart—we will direct our attention chiefly to the mechanism of the process, and to the explanation of the symptoms which it produces; the treatment of the patient will then be dealt with, with special reference to the occasions on which the nurse will have to act on her own responsibility in time of emergency.

As we all know, the heart is a muscular pump, which may be likened in shape and action to an enema syringe; at each beat, or compression of the bulb, blood is sucked in through one tube and propelled out through the other. Now, when we compress the bulb (if the syringe is a new one and is acting properly), the fluid comes out through the one tube only, and not through both ends, this being due to the fact that the valve at the end of the tube which is immersed in the basin from which the fluid has to be withdrawn is in working order. But if the syringe is an old one, there will probably be some regurgitation of fluid through the suction tube when the bulb is compressed.

Coming now to the heart itself, the only real difference is that it is practically a double syringe, there being two sets both of suction and delivery tubes; the blood is sucked in from the system through the inferior vena cava, and from the lungs through the pulmonary vein, and is propelled to the lungs through the pulmonary artery, and to the system through the aorta, and there are many valves placed at intervals throughout the circulatory system instead of the single one on the suction tube of the enema syringe. One half of the heart, the right, propels the blood through the lungs, while the left side forces it into the blood vessels of the rest of the body; inasmuch as it has more work to do than the right side, its walls are much thicker, and —probably for the same reason—it is much more frequently the site of disease, so much so, in fact, that in these notes we need not consider the right side at all. We shall have to remember the position of two valves on this left side, one of which, the mitral, is placed between the upper and lower halves (the auricle and ventricle), and the other (the aortic valve) guards the passage from the ventricle to the aorta, and thus prevents the return of blood from the system to the heart before it has gone on its proper course round the body.

The heart may become diseased in various ways, but the only kind of illness which we will take at present is that which occurs when its valves become affected so as to act imperfectly.

Valvular disease is most frequently started by an attack of rheumatism, though some other ailments, such as scarlet fever, typhoid fever, and influenza, may have pretty much the same effect in some cases. The valves become inflamed and pieces of fibrin are deposited on their surfaces, so as to prevent them from closing properly. What happens at first is that there is an obstruction at the orifices of these valves, but sooner or later this is masked by the more important change above mentioned, and we get regurgitation, or blood going partly backwards, instead of entirely forwards. For our purpose, we can neglect the results which follow from obstruction only, and take those symptoms which are due to regurgitation.

Now, in disease of the heart there are two sets of signs, those which show what is happening to the heart itself, and those which indicate what effect the disease (of the heart) is having on the circulation. From the physician's point of view, the former are of considerable interest, as they throw some light on the mechanism of the heart's action, but it cannot be too clearly laid down that the important point as far as the patient is concerned is whether or not the circulation through the various organs of the body is being maintained. It is surprising, for instance, how well an extensively diseased heart will do its work in some patients, while others will endure a life of misery, and on *post-mortem* examination the heart will appear to have had very little the matter with it.

It is, therefore, only necessary to refer very briefly to the signs of disease in the heart itself. When a valve becomes obstructed, the first thing that happens is that the blood makes a noise on passing through the narrowed orifice. This noise, or murmur, as it is called, is heard by the physician with the stethoscope when he makes his examination. The next event is that, as the heart muscle has to work harder to propel the blood through the damaged valve, it increases in size and strength accordingly, and becomes "hypertrophied"; this increase in size can be measured by percussion of the chest wall, and the increase in force of the impulse can be felt with the hand laid lightly over the site of the heart itself.

So long as the increase in strength is sufficient to enable the heart to keep the blood stream going as before, nothing happens, and

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