

during the first seizure, but it never gave him any trouble until four years ago. This was shortly after his fifth and last attack. We have here a period of twenty years during which he undoubtedly had a heart lesion, but it is only during the past four years that he suffered from the effects of this lesion. The compensation during the first sixteen years of the life of the diseased heart was so perfect that it gave rise to no marked symptoms. Four years ago, however, this compensation began to fail, and we have from this time onwards a history of all that results from such failure.

You see that the aortic valves are badly deformed and their surfaces studded with a great number of vegetations.* You can readily understand how incompetent these valves were during life to fulfill their functions of closing the aortic orifice. On further examining the heart we find it greatly enlarged, and that this enlargement is due for the most part to hypertrophy of the muscular fibres of the left ventricle. In addition to an increase in the thickness of the ventricular walls, we have also a great increase in the size of its cavity. The left ventricle is both hypertrophied and dilated. For our purposes there is no need of noticing any further changes, with the exception of dilatation of the mitral valve, present in this heart. I will now endeavour to explain how these different pathological conditions were induced.

The thickening, the vegetations and the deformity of the aortic valves were caused by rheumatic inflammation of their structures during the first and probably also during the subsequent attacks of acute rheumatism. As a result of the incompetency of the valves, the left ventricle received during its dilatation blood from two sources, in place of from one—from the aorta as well as from the left auricle. The result was an over-filling of the ventricle. The immediate result of the over filling was dilatation of the ventricular cavity. This dilatation, however, could only for a very short time relieve the altered conditions. If it were all that had taken place the man would not have lived

*About a year ago he was suddenly seized with left hemiplegia, due as was proved at the post-mortem by Dr. Sutherland to plugging of his right middle cerebral artery by an embolus carried from his warty aortic valves.