

peritoneum, and appeared to be of a nature to warrant operative interference, provided appropriate medical treatment proved after a fair trial ineffectual. Before venturing on any operation, I thought it but just to my patient to take a thorough survey of the field, making careful inquiry into the methods of the present day, in order to determine whether the results of surgical interference were sufficiently promising to induce me to make an attempt to cure the aneurism by operative procedure. I desire to lay the results of my investigation before the Society this evening, because I deem the subject of much importance. Sufferers from aortic aneurism are common enough unhappily. Not a year passes in our large city hospitals without the admission into the wards of one or more of these cases, which, as a rule, leave the hospital by way of the dead house. I have been astonished at the frequency with which cases of this sort have been reported in the journals. Every number of the *Index Medicus* for five years past has contained at least half a page of references to this subject, so that the cases which have been reported in that time must number several hundred, to which must be added the very numerous class which never reach the journals at all. All ages are the subjects of this affection. I have found a case recorded in the St. Petersburg *Medicinische Wochenschrift* in which an aneurism of the aorta appeared in a child of twelve years, and there has been another case published in which the age of the patient was 72. Four-fifths of all the cases, however, occur between the ages of 30 and 50. I was under the impression that the duration of life in patients suffering from aortic aneurism was much longer than it is, for I find on investigation that 75 per cent. of the cases die within two years, and that out of a series of 40 cases observed by Garland, but three survived for five years. Without interference, practically all these cases walk in that path which leads by a short cut to the grave. To this fact must be added another very important consideration, namely, that there is scarcely any disease which is the cause of greater physical pain, which is accompanied by so many crises of mortal agony. A patient with thoracic aneurism suffers all the pangs of dissolution a hundred times before death actually comes to his relief. The grim spectre is ever at his elbow. In the full possession of all his faculties he knows not what moment may be his last. Often he cannot lie down at all, but must seek his rest in a reclining chair. His breath comes in gasps. His body is racked with pain from the pressure of the tumor on sensory nerves. All his vital functions are compromised by the interference of the tumor with the phrenics and pneumogastrics. Even his voice is taken away. If any condition of prolonged and hopeless physical distress ever is a justification for suicide, then

such a condition we have depicted. At present it seems that the attitude of many of our hospital men is such as to discourage any attempt on the part of the surgeons to bring relief, if even but temporary, to these unhappy victims. If medicine does not relieve them, they are abandoned as hopeless cases. Perhaps they are, yet their condition is so pitiable, their fate so certain and so speedy, that it does seem to me to be one of those emergencies in medicine, where we are justified in taking exceptional risks for our patient. These are not of those cases, where with non-interference the patient may live a long time. Their lease of life, as has been shown, is but short, and in the event of the failure of medical treatment, which should always receive a fair trial, it does not seem to be an unjustifiable risk to resort to operative measures which promise even a remote prospect of relief, if not of eventual cure. I have said that I believe in preliminary medical treatment, that is, of all cases in which the duration of the disease has been but short and where there are no symptoms which point to early rupture.

The methods of medical treatment may be divided into two classes: first, that method by rest, diet and medication, which is a modification of the treatment of Valsalva. Second, that by medication alone with the iodide of potassium, the patient being left to follow his ordinary vocation. With regard to the methods of Bellingham and Tufnell, it may be remarked, that they depend for their success first, on the diminution in the number of pulsations, which the contractile force of the heart communicates to the sac. Tufnell's rule is that the pulse be reduced to sixty per minute. Let us consider to what extent this reduction must affect the hydraulic action of the blood on the aneurism. It is to be remembered that a sacculated aneurism communicating with the aorta by a comparatively narrow orifice, presents the physical characteristics of a hydraulic press. We have a large chamber communicating by a small orifice with the aorta, the heart being the source of the power. We know the immense multiplication of the initial force which is secured in this manner in the press. This explains the enormous destructive power of the sac on surrounding tissues. Now if we slow down our pump 20 strokes a minute, it is evident that we diminish the number of blows which the blood, a totally incompressible fluid, delivers on the walls of the sac 28,800 a day. I have assumed that a person engaged in the ordinary avocations of life will average about 80 pulse beats a minute. This includes the acceleration which is occasioned by extra muscular effect, and if from this estimate we deduct the 3,840 beats required by the average pulse of 72 during eight hours of sleep, we shall still have a reduction of over 25,000 beats per day, or to reduce this to percentage, we have the aggre-