C A S E
OF
ANEURISM OF THE ASCENDING AORTA,
BURSTING INTO THE RIGHT VENTRICLE:
WITH
A COMMUNICATION BETWEEN THE TWO VENTRICLES.

By THOMAS S. BECK,
LECTURER ON SURGERY AT SYDENHAM COLLEGE.

COMMUNICATED BY ROBERT LEE, M.D., F.R.S.

READ, NOVEMBER 23RD, 1841..

F——— B———, Surgeon, aged 31, of sanguine temperament, tall, (near 6 feet) and considerable muscular development, though the chest was slightly contracted in proportion to the other parts of the body.

From his earliest recollection he was unable to run or walk quickly any distance, without suffering from violent palpitations of the heart, which also occurred during any particular excitement. He always enjoyed a continued good health, never suffered from rheumatism or other illness until about six years ago, when, being unfortunate in his profession, he

endured great anxiety of mind, and great privations. To his difficulties at this and succeeding periods, he attributed his present illness. About three years ago, being much exposed to the weather, and liable to late hours, he was attacked with a cough, which continued, and, to use his own expression, gradually reduced him "to a skeleton." The palpitations of the heart and the dyspnoea on exertion also greatly increased.

In the beginning of November 1840, anasarca appeared in the legs, and gradually extended to the thighs; and near the end of this month, after enduring great fatigue in the City, he was seized with a violent fit of coughing, which brought on syncope, oppression, and terminated in hysterical symptoms: from this period he grew rapidly worse, and considered it to form an important epoch in his illness.

About Christmas, ascites was noticed, the cough continuing to increase, and the difficulty of breathing became very distressing whenever he attempted to ascend or descend the stairs. At this time he described himself as being occasionally attacked with a peculiar sensation in the heart, which he was unable to define in words. He never expressed himself sensible of any rupture in the cardiac region, nor am I aware that the question was ever asked. In the middle of January, he was attacked with an acute pain in the region of the heart, which was relieved by diuretics, and the external use of acetate of cantharides, whilst under the care of Dr. James Johnson.

On April 27th, 1841, I first visited him, in company with Dr. Walker, when his symptoms were as follows :—

Great anasarca of the lower limbs, extending to the groin. Ascites, the abdomen much distended, and the fluctuation very evident. The pulse firm, wiry, and jerking. The countenance anxious, and the complexion and white of the eye yellow-coloured. The lips and mucous membrane of the mouth of a natural florid colour. Bowels torpid. Urine very scanty and high-coloured; when tested with nitric acid, no change was produced, and boiled in a test tube it gave only a slight cloud of white. The stomach was very irritable; few things but what induced vomiting; strong palpitations of the heart, occurring without exertion, though not so violent as a few months previously. Great dyspnoea. Sputa yellow and viscid, though not coloured with blood. He also suffered under a severe feeling of oppression and sinking, which was slightly relieved by fits of weeping.

Stethoscopic signs.—Dullness on percussion over the whole of the chest. Vesicular murmur distinct, yet diminished in intensity and mixed with bronchial *râles*. The sound of the heart's action heard over the whole anterior and posterior parietes. The impulse increased. Both sounds of the heart were distinctly audible, and following the second sound, a continuous, very superficial, sawing sound with tremor, most distinct at the base of the heart, near to the sternum. This sound was very disagreeable to

the ear, being so distinct and apparently close to it. It was continuous throughout the whole of the action of the heart, but loudest directly after the second sound.

These symptoms continued with little change to the period of his death ; the dullness on percussion increased, the vesicular murmur diminished, and ten days before his death the total dullness on percussion at the lower part of the chest gave evidence of the existence of fluid.

The anasarca increased from the limbs, to the walls of the abdomen, and finally to those of the chest, rendering punctures in the scrotum necessary, which healed, and required to be repeated.

The treatment adopted was palliative. Diuretics were prescribed, but without benefit—elaterium, with small doses of calomel, was next given, which produced copious watery evacuations, and a temporary diminution of the anasarca and ascites. This medicine was continued till his decease, from the great inconvenience he experienced, whenever it was intermitted, from the increase of the anasarca and ascites.

Examination twenty hours after death.—The head and abdomen were not examined. On opening the chest, the lungs filled the cavity of the thorax, and even protruded beyond the cut extremities of the ribs : they were of a purple colour, and a quantity of bloody fluid exuded from an incision made into them. Each pleura contained upwards of a pint of bloody serum—no lymph was found, nor were the

lungs adherent to the costal pleura. The pericardium contained from three to four ounces of red-coloured serum. The heart was much enlarged: taking the fist of the subject as an approximate measure, it was more than $2\frac{1}{2}$ times that size. After removing it, laying open the right ventricle and part of the ascending aorta, and washing with a stream of water, the lining membrane presented a thickened pearly white appearance, particularly marked near the orifice of the aorta, the right and left semilunar valves were thickened, whilst the posterior had undergone little change. On the valves, and at the commencement of the aorta, were several opaque spots. In the centre of the right valve existed an osseous deposit, beginning at the corpus aurantii, and extending to the walls of the ventricle, so as to keep it constantly distended, and although the action of the other valves was impaired, yet they were sufficiently free as to prevent regurgitation, except to a slight extent. The right sinus of Valsalva was enlarged, and presented a round open communication between the aorta and right ventricle, sufficiently large to introduce the end of the little finger. On laying open the right ventricle, the lining membrane presented the same white appearance, though in a less marked degree, the valves were little changed from their natural state, whilst immediately beneath them lay the collapsed sac of an aneurism, resembling the end of a finger of a glove, about three quarters of an inch in length, and bursting in the extremity in a large ragged opening with two small openings at the

side, the edges of all of which were worn and rounded as if the blood had passed for some time by these openings. The mitral valves were healthy, excepting a white tinge in their colour. No coagulum was found in the sac. The right side of the heart was filled, but not distended, with coagulated blood. Immediately at the base of the sac there existed a communication, the size of a goose quill, between the two ventricles. There was no communication between the auricles.

Observation.—It has been questioned whether the opening between the aorta and right ventricle was an original malformation, having the same probable origin as the opening between the ventricles ; or whether it was the remains of an aneurismal sac ; but from the history of the case, the situation of the openings, the extent and nature of the disease found around it, being the same as is found around other aneurismal sacs, the latter appears the most probable conclusion, which is considerably strengthened by a reference to the cases detailed by Mr. Thurnam, in vol. xxiii. of the Transactions of this Society, page 348, and from an examination of some of the preparations there referred to.