

A CASE OF
ANEURYSM OF THE RIGHT SUBCLAVIAN
ARTERY, THE FIRST PART OF THE
AXILLARY ARTERY BEING ALSO
INVOLVED.

LIGATURE OF THE SUBCLAVIAN ARTERY; RECOVERY.

BY W. CAMERON MORRIS, M.B.ED., M.R.C.S.

JANE W—, the wife of a collier, of spare habit of body, aged forty-six years, married twenty-six years. Has had nine children, the eldest being twenty-five years old, the youngest four years; and two miscarriages—one seventeen years since, the other twelve years since. Two children died in infancy of bronchitis. Has never been ill except from attacks of bronchitis, to which she has been subject, having had one or more attacks every winter since she was seventeen years of age. No history or indications of syphilis; menstrual functions normal.

Family history.—Father died of bronchitis, aged seventy-three years; mother from “softening of brain,” aged fifty-six years. Had two brothers and two sisters, of whom one brother is still living and well; the other brother died of “an enlargement of the liver”; and the two sisters are said to have both died of cancer of the womb, aged respectively forty-five and forty-four years.

History of present illness.—In December, 1883, the patient first felt a pain, which she describes as if produced by the piercing of a hot needle, in the palm of the right hand. The pain gradually extended to the base of the thumb, passing out at the back of the hand, and thence to the elbow and shoulder. The pains were of a boring, burning character. From the first appearance of the pain to the implication of the shoulder was about two weeks. At this time she began to find difficulty in raising the arm, and had to use the other hand to assist. From January to September, 1884, the pain steadily increased in intensity, and the patient found it more difficult to raise the arm, but attributed the stiffness and discomfort to rheumatism. During October and the early part of November the arm became very much worse; the pain and stiffness rapidly increased, and the patient found that when the hand or arm was put into water, especially cold water, it “went white,” and the power of moving even the fingers was entirely lost.

I first saw the case on Nov. 23rd, 1884, the hand at that moment having been removed from hot water. The hand and forearm were waxen in appearance and perfectly cold. The fingers were stiff and contracted, and the patient could not raise or otherwise use the limb. Tactile sensation was absent; nor could she discriminate between hot and cold fluids, except that the hand went “more dead” in the cold than the hot. She complained of numbness from the shoulder downwards. The facial expression was one of great suffering, worn and anxious, and any movement of the arm seemed to cause great pain. She could not raise the arm or move it without the assistance of her left hand. This may have been to avoid pain. On opening her dress a pulsating tumour above the clavicle in the course of the subclavian artery was immediately noticed. There was no oedema above the clavicle; no bruit either at the seat of the tumour or in the course of the vessel. The tumour itself was, as before said, pulsatile and distensible (to the touch) in its pulsations. Strange to say, the patient had never noticed the existence of the swelling. The right radial pulse was distinctly weaker than the left, and the difference was more emphasised after the patient had walked upstairs. The heart-sounds and breath-sounds were normal.

The diagnosis arrived at was aneurysm of the subclavian artery in its third part. The immediate treatment adopted was perfect rest to the limb, keeping it constantly wrapped in cotton; and endeavours were made to improve the general health. Circumstances delayed the operation until the beginning of the year, and on January 8th the patient was removed from her house, and placed under other conditions more favourable for operation. On January 11th the patient had a sharp attack of spasmodic asthma, which easily yielded to remedies.

On Thursday, January 13th, I ligatured the artery. Chloroform was administered by Mr. Lyon Smith. At the

moment of complete anæsthesia the heart's action became so markedly depressed that there was no obvious pulsation in the aneurysm. Ether was then administered, and the mixture of chloroform and ether was continued during the operation, which lasted an hour and five minutes. The operation from beginning to end was conducted under the strictest Listerian conditions; the sublimated gauze was used for dressings, and the ligatures were of No. 1 chromo-carbolised catgut. The patient being in the usual position, the ordinary incision was made along the clavicle. With the aid of a grooved director and a probe-pointed bistoury, the structures lying over the aneurysm were carefully divided, and the aneurysm itself exposed. The aneurysm was truly fusiform, and measured at its widest part about three-quarters of an inch. It tapered off as far as could be exposed in the continuity of the axillary artery, and apparently involved that artery for more than an inch. As it was obvious that no ligature could be applied in this direction, I made an incision at right angles to the original incision, commencing at about its middle point, and extending upwards about two inches and a half. The tissues were dissected up, and the artery exposed to the point at which it appeared at the outer edge of the scalenus anticus. (The external jugular vein was drawn upwards and inwards to a very slight extent.) This point of emergence was, in the position of operation with the shoulder depressed, about an inch and three-quarters or two inches from the scalene tubercle. The whole fusiform aneurysm was now clearly in view, and it was also clear that there was about half an inch of apparently healthy artery between the outer edge of the muscle and the commencement of the aneurysm. A point midway in this healthy part was selected for the ligature, the sheath opened, and a double ligature of No. 1 chromo-carbolised catgut was passed from within outwards, or, more accurately, the aneurysm needle was passed in this direction and then threaded, and the needle withdrawn. This, I think, caused less disturbance to the parts than passing the entire bulk of the ligature under the artery. The ligature was tied firmly but not forcibly, and the resistance of the artery gave the impression of healthy coats. Pulsation in the tumour entirely ceased. There was no hæmorrhage, one small superficial vein at the outer angle of the primary incision alone requiring ligature. The edges of the wound were adjusted with a continuous suture of No. 1 chromo-carbolised catgut, a drainage-tube passing through the wound from the external to the internal angle of the primary incision. The dressings of sublimated gauze were then adjusted. The arm had been well wrapped in cotton-wadding up to the shoulder before the artery was tied, with the idea of preventing the surface being at all chilled.

The after-history of the case may be briefly given. On the day after the operation the hand, carefully exposed and looked at, was blanched, but quite warm to the touch. There was for the first twenty-four hours a little vomiting, but no retching. There was likewise a considerable amount of bronchial irritation, which lasted for a week. On Jan. 15th, about fifty hours after the operation, there was distinct though feeble pulsation in the radial artery. On the 18th the wound was exposed under the spray, when it was found to have entirely healed by primary union, with the exception of the outer and inner angles of the primary incision, through which the drainage-tube passed. There was considerable inflammatory effusion under the skin at the seat of operation, so much that the aneurysm could not be dissociated from it. There was a little blood-stained fluid on the dressings. The drainage-tube was shortened by half and left at the external angle of the wound. On the 19th the patient complained of a pain which she spontaneously described as of “something shooting from the shoulder down to the elbow.” On feeling the radial artery at the wrist there was no pulsation, and the radial pulse after this was not felt for a month, and at the end of that time only unsatisfactorily. The brachial pulse was during this time present, although feeble, and there was well-marked tenderness in the course of the brachial artery. On the 25th the dressings were again removed under the spray, when the shortened drainage-tube was found lying in the gauze, the wound being absolutely healed. The continuous suture had not been touched, and gradually disappeared, undergoing absorption or assimilation, the points of its insertion being even now marked by white dots. The inflammatory lymph had undergone considerable absorption; the aneurysm, well consolidated, being now obvious. The temperature never rose above normal. On

Feb. 4th the patient was allowed to leave her bed for the first time, and returned home on the 16th of the same month. Her recovery had been slow but steady. The patient could move the arm with considerable freedom, backward, forward, and upward to the head—the backward movement being, however, the most restricted. She could feel and pick up a pin with ease, and said that the numbness and pains had quite left her. The radial pulse was fairly good, but much inferior to that of the left wrist. There was still some tenderness in the course of the brachial artery. The arm and hand required additional coverings when exposed to cold.

Remarks.—The points of interest in this case are many. (1) The sex of the patient; (2) the entire absence of any apparent cause for the aneurysm, traumatic or otherwise; (3) the character of the aneurysm itself; (4) the height to which the arch of the artery reached; (5) the application of the ligature at the outer edge of the scalenus (it is worthy of notice that the ligature was of small catgut and double); (6) the rapid healing of the wound of operation, with the absorption of the large inflammatory effusion, without rise of temperature or other untoward circumstances; (7) the embolism, as I believe, of the radial artery at some point of its course by the dislodgment of a portion of the clot from the aneurysm. The difficult part of the operation was the first stage—that of dissecting down on the aneurysm; from the moment that the aneurysm was laid bare the operation was comparatively easy. There was no difficulty in the application of the ligature. Doubtless the anatomical conditions of the artery and the form of the aneurysm rendered the operation simpler than it usually is.

Chester-le-Street, Co. Durham.

A CASE OF LATENT PERICARDITIS AND SUDDEN DEATH.

By F. STURGES, L.R.C.P., AND J. F. WILKIN, M.D.

THE following case seems worthy of being placed on record, since it illustrates, in a forcible though painful manner, how very obscure and latent the symptoms of fatal pericarditis may be, even in a subject who up to the moment of his death was leading an unusually active life. I have reason to believe, however, that cases like this are extremely rare.

Harry E. B—, a dark, rosy-cheeked boy, aged seven years, and one of a large family, with a perfectly healthy history, had never suffered from rheumatism, scarlatina, or in fact from any illness except chicken-pox, and was accustomed to indulge freely with his brothers in athletic games, no suspicion having ever crossed the mind of his parents that he was not in perfect health. On May 6th, 1884, after returning from morning school, he dined heartily at 1 P.M., and immediately afterwards commenced to play cricket. This he continued to do until it was time to go to afternoon school, about 2.15 P.M. He then ran with two of his brothers a distance of about a quarter of a mile, and on arriving in the playground he suddenly fell down. The master, who saw him fall, ran to pick him up, and, finding he was insensible, carried him into the house and laid him flat on a table, undoing his collar and bathing his face with cold water, while medical aid was sought. Mr. F. Sturges arrived about five minutes afterwards and found him apparently dead, and, perceiving the many difficulties of the case, sent for Dr. Wilkin, meanwhile performing artificial respiration by Silvester's method. A few minutes later Dr. Wilkin arrived, and after about ten minutes artificial respiration was given up, there being no sign of returning life. We were told that the boy had breathed heavily two or three times after he fell. This fact negatived the momentary surmise of possible complete occlusion of the larynx by some foreign body. Death from the brain must also be excluded in a subject so young. Sudden failure of the heart's action was therefore the only conclusion we could come to under the circumstances. But why the heart should fail in this boy, who looked the picture of health and vigour, we could not explain, and there was no history or reason to suppose he had sustained any blow or shock over the solar plexus.

A death-certificate without a post-mortem examination was out of the question, and we were therefore requested to make this examination as soon as possible. This we did on the following day (May 7th), twenty-two hours after death. The pupils were widely dilated, and rigor mortis was well marked; post-mortem discolouration had also set in. On opening the abdominal cavity we found a full stomach; the colon was distended with flatus, and the sigmoid flexure was loaded with fæces; the kidneys and other abdominal organs appeared healthy. On opening the pericardium, a fibrous band was found, about an inch broad and the same in length, forming a connecting link between the left apex of the heart and the pericardium, covering the surface of the diaphragm. Numerous other string-like adhesions were seen, particularly on the left side and base of the heart, and there was also some recent lymph, but no serous effusion. These bands were evidently of recent date, as the heart required careful handling to avoid breaking them down. The left ventricle was decidedly hypertrophied, making every allowance for rigor mortis; it was completely empty, as was also the left auricle. The right side of the heart contained some liquid blood, but there was no clot either there or in the pulmonary artery. The valves were all perfect and there was no endocarditis. The lungs were normal in every way. The cranium was not opened. We were unfortunately not able to obtain any urine for examination, though we have no reason to suppose it would have given anything but negative results. The immediate cause of death in this case must no doubt be attributed to defective innervation of the heart, which was very greatly embarrassed, not only by the adhesions and impediments within the pericardium, but also by the loaded and distended condition of the abdominal organs, and thus it succumbed under the unfortunate strain it was subjected to.

It is difficult to avoid speculating as to the possible origin of the pericarditis in this case, unsatisfactory though it must be; seeing that the boy had never shown a symptom of any diathetic disease whatever, and was, up to the hour of his death, supposed to be in perfect health. Neither is there any clue to a possible traumatic origin. There is, however, the fact that this boy, full of life and spirits, led an unusually active life; and thus it becomes a question whether this inordinate activity may not have induced the hypertrophy, and likewise the disease which terminated so painfully in this instance.

Beckenham, Kent.

THREE CASES OF SUNSTROKE (HYPERPYREXIAL FORM).

By MAURICE KNOX,

SURGEON-MAJOR, ARMY MEDICAL DEPARTMENT.

THREE cases of sunstroke occurred amongst the troops stationed at Bareilly during the summer of 1884. All recovered under treatment. The highest temperature recorded was 110°.

Private R—, aged twenty-three years, was brought to the hospital at 5.30 P.M. on the 16th of June. He had been drinking hard. On admission his temperature in the axilla was 105°; pulse 100; action of the heart fluttering; pupils contracted; quite insensible. He was freely doused with cold water. After twenty minutes his temperature was reduced to 99°, the action of his heart became more regular, and he was able to swallow. Fifteen grains of quinine were given him, the douche was discontinued, and ice was applied to the head. At 10.30 P.M. he became conscious, and another similar dose of quinine was administered. He afterwards recovered without any unfavourable symptoms.

Private L—, aged twenty years. The patient had been exposed to the sun on June 27th, and afterwards felt feverish. He was admitted into the hospital on the morning of June 29th as a case of ordinary febricula. At 4 P.M. he was observed to be in convulsions; the temperature in the axilla was 106°, and shortly afterwards reached 110°. Pulse very rapid; action of the heart fluttering; quite insensible. The patient was quickly sponged over with iced water, and ice was applied to the head and spine. At 6 P.M. his temperature had been reduced to 104°; the convulsions were not so violent; action of the heart more regular; pulse 100. Application of ice continued. At 7 P.M. the temperature was 104°. He was packed in the wet sheet, ice was occasionally