

Hospital, I challenged Professor Virchow to re-examine the point and retract his mistake. I am not aware, however, that he has done so. It is amusing to contemplate how people shut their eyes to nature's work, pretending at the same time that they see things which do not exist—a line of conduct which King Lear sarcastically recommends, thus:

“Get thee glass eyes,
And, like a scurvy politician, seem
To see the things thou dost not.”

And all this passes under the name of “experimental research.” But it is still more amusing to see how one blunderer improves on the mistake of another. Thus, a former editor of Kirkes' *Manual of Physiology*, having heard of Schiff's *discovery*, but not taking the trouble to read Schiff's account of it, much less to look on the original, tells his student readers that Schiff had discovered rhythmical contractions of the vein of the rabbit's ear, whereby the flow of blood therein was expedited as in the bat's wing. I called the attention of Mr. Marrant Baker, the present editor of the book, to the blunder, whereupon he struck it out and substituted a true account of what is seen in nature. I here call upon the authors and editors of the text-books on Physiology which I have been criticising to follow the example of Mr. Marrant Baker, and would recommend students to require a demonstration of the real facts in nature instead of the loose assertions made in lectures. They will thereby be saved from the strain and perplexity of mind they undergo in trying to understand what is unintelligible. May I also ask examiners to contribute their assistance in the matter, by inquiring of the candidates whether they have had demonstrated to them such and such facts in nature before asking any questions thereon. On the other hand, it might be suggested to examiners not to propose questions on a subject with the facts of which they have not made themselves acquainted by observations of their own.

To conclude. “Hear now this, O foolish people and without understanding; which have eyes and see not; which have ears and hear not. The prophets prophesy falsely and the priests bear rule by their means; and my people love to have it so.”

Ventnor, Isle of Wight.

ANEURYSM OF THE UPPER THIRD OF THE BRACHIAL ARTERY.

LIGATURE OF AXILLARY; HÆMORRHAGE; AMPUTATION
AT SHOULDER.

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SPONTANEOUS aneurysm of the upper part of the brachial artery is very rare. I have consulted the most recent contributions to the subject, and can find only three cases recorded. The most complete and concise account is to be found in the *American Journal of Medical Science* for 1882, in an article by Dr. L. Emmet Holt of New York, to which I refer the reader for details. One case of his own in 1881 was cured by an ingenious instrumental compression. A second case is quoted from the *Buffalo Medical Journal* for 1870, reported by Dr. Kibler, in which the axillary artery was tied in its lower third. Hæmorrhage occurred on the eighth day; the axillary artery was tied higher up, and the patient recovered. The third case was reported by Scarpa in 1809. No operation was attempted, and the patient died of hæmorrhage. A few other cases are recorded, in which the aneurysm was situated at the middle or lower third; for these I refer to the paper above-named and to the recent works on surgery. Cases of traumatic aneurysm have been reported of every part of the brachial artery, in some of which the axillary artery has been tied, but the present paper refers only to spontaneous aneurysm. It is curious that, except Scarpa's case in 1809, no case should be reported till 1870, and the two recorded since have been in America.

The following is a report of what appears to be the fourth case of aneurysm at the upper part of the artery:—

Francis A—, aged thirty-one, a labourer, was admitted on Dec. 3rd, 1884, to the medical wards of the Western Infirmary, under Professor McCall Anderson's care, complaining of numbness and loss of power in the right arm. He stated that about four months ago, without any assign-

able cause, he felt this sensation for the first time, and that it came on suddenly and continued and increased. About three months ago he found a swelling on his arm beside his armpit, and felt that it was beating, but he had no pain in the spot. On admission he was found to have partial loss of sensation and motion in the right hand and forearm and a continuance of the tingling. The right hand was soft and clammy, and the temperature 94° ; while the left was 95.6° . The right radial pulse was almost imperceptible, but that on the left side was full and bounding, as, indeed, was that of every other artery accessible to the finger. The apex beat of the heart was displaced downwards and to the left side. There was a diastolic murmur over the aortic cartilage and a systolic murmur over the aorta. He had a cough and spit, and complained of shortness of breath, and had night-sweats. He admitted that he was habitually intemperate. Dr. Anderson's opinion was that he had a much enlarged heart with aortic disease and some general deterioration of the system owing to his habits of life. The aneurysm being discovered, he was transferred to my surgical wards on Dec. 15th.

The aneurysm was about the size and shape of a hen's egg; the upper end came close up to the axilla and felt very soft, just as if it would give way on the slightest manipulation, but it could be lifted off from the artery, which could be felt beating distinctly in its normal situation just where the axillary ends. When pressure was made with the finger on the third part of the axillary artery pulsation in the tumour completely stopped, but the patient complained bitterly of the pain of the pressure even for a few seconds. The third part of the subclavian could be pressed against the first rib with ease, but the pain was even more severe.

It was quite obvious that there were only two courses open to me, amputation at the shoulder or ligature of the axillary, and I determined to adopt the latter, if there seemed any reasonable hope of success. The two dangers to be feared in ligature of the axillary, even when successfully accomplished without any complications, are gangrene from want of sufficient collateral circulation and hæmorrhage. I was perfectly aware of the anatomical disadvantage of the axillary artery, but I judged that the imperceptibility of the radial pulse proved that the blood was reaching the hand and forearm by some channels which had become established during the existence of the aneurysm. With regard to hæmorrhage, it is true that the vicinity of the great branches of the axillary artery would cause a current which would militate against the formation of a clot above the ligature, and so favour the occurrence of secondary hæmorrhage. But catgut ligature applied with antiseptic precautions acts in a very different way from the ordinary silk ligature, and I hoped, by disturbing the parts as little as possible, to apply a catgut ligature in such a way as to secure consolidation of the wound and included ligature by first intention. If the patient should take chloroform well, if the operation were performed rapidly, and if union by first intention should occur, but little shock would be given to a patient very unable to bear it. On the other hand, amputation at the shoulder-joint in a man enfeebled by excess was a most unpromising alternative.

Accordingly, on Dec. 19th, I ligatured the axillary artery. The patient was put under the influence of chloroform with very great care and anxiety, owing to the known disease of the heart. No inconvenience arose, although he took a large quantity. The arm was stretched out at an obtuse angle to the trunk, and the skin of the axilla thus put on the stretch. The pulsation of the axillary artery could be felt from the upper end of the aneurysm to where it was covered by the anterior fold of the axilla, a space of about two inches. I made an incision about three inches long obliquely across the course of the vessel, and along the lower border of the pectoralis major muscle. After dividing the subcutaneous tissue at the distal end of the wound, I felt the vessel beating directly under the deep fascia, with the median nerve superficial to it. A slight division of this fascia enabled me to put a blunt hook under the nerve, by which it was held aside. A few touches of a director disclosed the artery, the great vein having slipped down out of danger whenever the fascia was divided. Without exposing more of the arterial wall than to allow the introduction of the aneurysm needle, this was passed round and a strong chromic catgut ligature drawn through. It was tied firmly but not too tightly, and the arterial wall proved to be quite elastic and apparently strong. The operation was bloodless, and the wound was

rendered aseptic by the application of carbolic acid solution. The sides were drawn together with four thin silver wire sutures, and carbolised gauze dressing applied. Pulsation was found to be completely arrested in the aneurysm. Cotton-wool was wound round the limb, and the patient was placed in bed with the arm supported on a pillow.—8 P.M.: The patient complains of heat. Temperature 101° ; hand and arm quite warm. One-sixth of a grain of morphia given subcutaneously.

Dec. 20th.—9 A.M.: Patient had some sleep, feeling fairly well, but hot. Temperature 99° . No sickness or pain; hand and arm quite warm. I changed the dressing; edges of the wound apparently cohering; no discharge. 8 P.M.: Feels very warm; temperature 103° . Subcutaneous injection of morphia.

21st.—Was restless first part of the night, but after a draught of thirty grains of bromide of potassium quieted and had a good night's rest. Temperature 100° .

22nd.—The patient feels so well that he asked to be allowed to sit up in bed to dinner, but was enjoined the most absolute quiet and rest. I dressed the wound again. To all appearance it was united, with no discharge, but I did not disturb it to ascertain if it were consolidated at the bottom. The aneurysm was much reduced in size, and felt quite solid. Temperature of hand and arm good. At noon the man felt a sudden sensation of pain and called the nurse, who found the bandages soaked with blood. Dr. Somerville, my house-surgeon, was at hand and took off the dressing. He found the wound bulged with clot, but no active bleeding. He obtained the assistance of Mr. Maylard, one of the dispensary staff, who grasped the arm over the wound ready to compress if the flow should recommence. Meanwhile Dr. Somerville telegraphed for me, and by 1 o'clock I arrived at the hospital. The man had been put partially under the influence of chloroform to allow of the pressure on the axilla without pain, and in this state I had him removed to the theatre. On opening the wound and turning over the clots which filled it I found that the blood came with great force from a small opening, a short way above the ligature, which was felt by the forefinger to be firmly tied and still grasping the artery. The vessel did not seem to have given way at the ligature, but a short way above it, so that when I pushed the point of my forefinger against the bleeding spot, I could easily arrest the flow, and had a small part of the vessel under my finger above the ligature. Keeping my left forefinger on the bleeding spot, with my right hand I split the fascia with a director about an inch further up than at the first operation. The median nerve and musculo-spiral were lying close together on the surface of the artery, but with two blunt hooks they could be easily held apart, and the trunk of the vessel brought into view. The aneurysm needle was passed and a catgut ligature brought round the vessel. This was tied by Mr. Maylard, but was just over the aperture in the artery and failed to check the hæmorrhage. The proceedings were repeated, and this time the ligature was firmly placed half an inch above the bleeding point, and effectually arrested the bleeding. To prevent all risk of hæmorrhage from the lower end of the vessel, I applied, with ease, another catgut ligature between the sac and my first ligature. Antiseptic dressing was then applied as before, and the patient was removed to bed, and ordered to lie absolutely quiet. My house-surgeon watched himself by the bedside till 4 P.M., and thereafter he was watched continuously by my clinical students, who kindly volunteered to take that duty in rotation. At night he was feverish and restless. A quarter of a grain of morphia was given subcutaneously.

23rd.—Passed a good night, and is very easy this morning. Partakes freely of iced milk. In the evening, again, a hypodermic injection of morphia was given.

24th.—Again a good night. Looks much calmer and easier this morning. Dressings not changed. At 1 P.M., when two students were on duty, they noticed blood on the dressings. My house-surgeon was on the spot at once, and, removing the dressing and opening the wound, he placed his thumb on the bleeding vessels and arrested the hæmorrhage. Dr. Beatson, one of the dispensary staff, was sent for, and without delay he took charge of the vessel while the man was put under chloroform. As a further precaution, a door-key, the ring of which was padded with lint, was put over the subclavian. I was summoned by telegraph, and, fortunately, happened to be at home at the time, so

that I arrived within twenty minutes of the occurrence. The patient was removed in his bed to the theatre without loss of blood and still under the influence of chloroform. I amputated at the shoulder-joint, making a large semilunar flap above, and completed the operation with very little loss of blood. In two hours after the patient had rallied so as to be able to tell us he was feeling easier, and later on he drank a cup of tea. He slept a good deal during the night, but was restless and feverish from 5 A.M.

26th.—At 9 A.M. he was better, but was very feeble; it was obvious he would not completely rally from the shock of the two hæmorrhages and the amputation. He continued in the same state during the day, but became weaker in the evening, and died at 8 A.M. on the 27th.

Anatomical examination of the arm.—I am indebted to Dr. Bruce Young, anatomical demonstrator in the University, for a careful dissection of the extremity after its removal. It was quite obvious that the capillary circulation was perfect, with no tendency whatever to gangrene. The vessels were injected with great care from the radial artery; but even though gentle pressure was used, the coats gave way in the middle of its course, and the wax became extravasated, but about the elbow the vessels were well filled. The aneurysmal sac was full of dark clot, very firm, and no doubt in process of complete fibrination. The aneurysm was in the upper third of the artery, just about where the superior profunda is given off, that vessel being found injected adjoining the sac. The whole of the arteries entering the biceps and coraco-brachialis muscles were abnormally large, and one unusual branch, the size of a crowquill, pierced the coraco-brachialis and could be traced running up evidently into the deltoid, where it would insinuate with the anterior circumflex. The whole of the superficial arterioles were unusually enlarged; still it seemed to me strange that when the artery was tied above the superior profunda the blood should pass by these small channels so readily as to secure the limb against even temporary coldness.

Post-mortem examination of the stump.—In the amputation the knife had divided the upper end of the aneurysm, and the aperture of entrance of the artery into the sac was clearly seen. It seemed to have been a fusiform aneurysm, one side of which had become distended into the ovoid shape it subsequently assumed. At the seat of ligature the parts had been matted together, and the relations of the vessels and nerves much altered by the application of the thread ligatures to numerous points at the time of the amputation. The artery from the innominate to the axillary was dissected out from the surrounding parts. It was soft and apparently in the first stage of fatty degeneration, but quite tough enough to bear considerable pulling about. The last ligature which I had applied to the trunk of the vessel on the 22nd was found firmly tied in its place, compressing the sides together, and no appearance of giving way of the coats was to be found. The part of the artery from which the hæmorrhage had occurred on the 22nd had been destroyed in the manipulations necessary to ligature the main vessels at their amputation.

The heart was found to be nearly twice its normal size, the aortic orifice greatly encroached upon by numerous and tough vegetations. The lungs were cedematous. The other organs presented no special features.

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ON FUNCTIONAL AND FALSE MURMURS.

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(Concluded from p. 102.)

5. *Changes in the Pericardium.*—It is quite unnecessary to give the ordinary rules for distinguishing a pericardial friction sound from a valvular murmur. I may, however, point out that these morbid sounds are most frequently heard at one particular spot—viz., the sixth left interspace and over the seventh rib close to the base of the ensiform cartilage. Here the right ventricle is in contact with the chest wall, and it is on its anterior surface that the "white patch" is most commonly found. The sound produced by the movement upon each other of the pericardial surfaces at this spot is systolic in time, usually short, sharp, localised