A C A S E
OF
ANEURISM OF THE FEMORAL ARTERY
TREATED BY
LONG CONTINUED COMPRESSION OF THE COMMON
ILIAC;
WITH REMARKS.

BY
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THE man, a carpenter, forty-one years old, was admitted into Guy's Hospital under my care on the 5th of February, 1869. He had wandered about the provinces in pursuit of work, his recognised abode being Vauxhall. He had been a hard-working man, although much addicted to intemperance and other irregularities at intervals, as circumstances enabled him to indulge in excesses; he had once shown signs of delirium potatorum. He was of middle stature, with a well-formed thorax, but his muscles were not firm, and his facial aspect indicated the wear and tear of many more years than he had actually passed through. The

surface of his body was pallid, and sufficiently inclining to a yellow tinge to be termed jaundiced, although bile was not detected in the urine; this was high coloured and free from albumen. His pulse was weak, of normal frequency under repose, but easily excited. No organic disease of the heart could be discovered. His mother was living and well, aged fifty-eight years; his father died at sixty-four. The man had evidently inherited a good constitution, which had been abused by intemperate habits, although it had not been injured by any serious illness.

I have thus minutely described the constitutional condition of the patient at the moment of admission for the treatment of the local complaint, and also his personal history, because the termination of the case was probably hastened by the facts above related; and because the state of the blood may have been one cause why such slight progress was made in the arrest of the aneurismal tumour, as will hereafter be narrated.

I shall now describe the local complaint. On the 12th of January, 1869, twenty-four days before admission, whilst walking quickly, he suddenly felt a sensation in his left groin, which he describes as "a bursting of a vein." He had not been previously exerting himself in any way, nor was he given to active walking. For eighteen days subsequently he thought himself quite well, but on the 30th he noticed a swelling in the left groin, and that it "throbbed;" it became very painful, so that he was unable to work, and he could neither eat nor sleep.

There was a pulsating tumour of a triangular shape, with its base above corresponding to the line of Poupart's ligament, and its two sides in relation with the sartorius and adductor longus muscles in the upper third of the left thigh. It extended over the spine of the pubis and to within an inch of the anterior superior spinous process of the ilium, but it did not appear to pass into the iliac fossa. The peculiar dilatation of the sac at each contraction of the left ventricle was very marked, as well as a thrill perceptible both to the hand and ear at the same time. The current of blood in

traversing the sac likewise produced an audible sound. Pressure on and above it caused much pain, a circumstance which rendered it almost impossible to arrest the current of blood entirely; when, however, this was accomplished, the tumour was but slightly reduced in size, and it led to the inference that the contents of the sac were mostly solid. The limb below the tumour was slightly œdematous.

General constitutional treatment was ordered, absolute repose enjoined, and a nourishing diet allowed, with tonics. The leg was slightly elevated and cold applied to the tumour.

February 7th.—Two days after admission, as the tumour was painful, and had not diminished by the rest, position, and application of cold, the first attempt to arrest its pulsation completely by pressure was commenced at 11.32 a.m. and continued until 8 p.m.; that is to say, for about eight hours and a half. The pressure was made by means of a tourniquet upon the common iliac artery, and compression of the femoral below the tumour was likewise made. The man was unconscious the whole of the time. Junker's apparatus was used in the consumption of 57 drachms of chloroform. Very slight change took place in the tumour during this long time, and at its conclusion, when the pressure was taken off the iliac artery, the sac pulsated as strongly as ever. During the eight hours the pulse never rose higher than 112 beats, nor fell below 90. Trifling variations in the number of pulsations occurred at irregular intervals during the time. He vomited once a few drachms of clear fluid, and at times he was restless.

8th, noon.—There was slight nausea and depression from the effects of the chloroform. His tongue was coated with a thick brown fur, but he took food. Pulse 104.

15th.—The aneurismal tumour pulsated quite as strongly as on admission, and had become slightly larger during the last seven days. At 11.5 p.m. he was again brought under the influence of chloroform, and pressure was made as before on the common iliac artery, which entirely arrested the

passage of blood through that vessel. Unconsciousness and pressure were maintained until 8.15 a.m. of the 16th, or for nine hours and ten minutes; but at the expiration of that time no progress had been made towards the cure of the disease; 46 drachms of chloroform were used. In the afternoon he was still very drowsy. There was slight ecchymosis in the abdominal walls at the site of the pressure.

17th.—The day after the inhalation of the chloroform he complained of pain in the foot and dulness in sensation, it was therefore enveloped in cotton wool. He slept last night; pulse 92. Appetite good. Anxiety of countenance rather increased.

18th.—Complained of pain in the foot, but it was warm, and no untoward change had taken place. He ate food without difficulty, and slept fairly. Pulse 96. Tumour unchanged.

22nd.—Spoke of a painful sensation, as of burning, over the tumour, which had not, however, undergone any manifest change. Appetite good; pulse 84. He had slept badly, even after a subcutaneous injection of morphia.

25th.—Again submitted to the influence of chloroform, and pressure upon the iliac artery was carefully maintained from 10.20 a.m. to 8.40 p.m., or for ten hours and twenty minutes, without intermission; 44 drachms of chloroform were consumed. The pupils were contracted during the whole time; respirations 32 in a minute, and they varied very slightly; the pulse fluctuated between 100 and 150. He did not vomit. The results at the end of this time were not more satisfactory than on the former occasions, for after removal of the tourniquet the tumour pulsated as strongly as ever. It may be here stated that Mr. Richard Rendle, the house-surgeon, and Mr. Mallam, the dresser, attended to the treatment most assiduously upon each occasion.

26th.—In the morning he was sleeping heavily. At 3 p.m. he was low and drowsy, but sensible when aroused; pulse 122, compressible, jerking; respirations 43; temperature 100.5; circulation much enfeebled.

27th.—His powers were lower; pulse 140, weaker; temperature 102. He expectorates dingy, rusty sputum. There was deficient resonance on the left side of the chest in front, and tubular respiration with slight crepitation. The surface of the body was generally yellow.

He became gradually weaker after this date, and died on March 3rd, having survived the last administration of chloroform nearly nine days.

I have confined the report to a detail of the symptoms of the disease, the effects of the prolonged inhalation of chloroform, and the results of the continued pressure on the aneurismal tumour. But I may briefly state that the condition of the general health was carefully watched; that tonics, sedatives, and stimuli, were administered, and that all kinds of food likely to suit his wants were carefully selected for him and duly given.

Necropsy.—The following description is from notes by Dr. Moxon. The surface of the body generally was yellow. In the abdominal integuments, at the spot where pressure had been made with the pad of the tourniquet, there was slight ecchymosis and infiltration of inflammatory deposit, but no suppuration.

The cerebral arachnoid was rather more thick than usual, and liquid had accumulated beneath it. The brain itself was wasted.

The upper lobe of the left lung was uniformly infiltrated with pus, which came away from it without pressure. This was pure pus when examined under the microscope. The upper half of the lower lobe was in an earlier state of the same condition, the colour red and grey finely mingled, and pus came away on pressure, even in parts where the change was earliest.

The upper lobe of the right lung was covered with lymph, but there was no effusion into the pleura; it was everywhere crepitant, and greenish from early decomposition of blood.

The heart weighed ten ounces, and was of normal size. The right cavities contained tough fleshy fibrine, but there

was no correspondence between it and the state of the exudation in the lung. The tissues of the right side were rather flaccid. Both coronary arteries healthy. The left side contained a small quantity of black clot.

The ascending aorta, its arch, and thoracic portion, were much disfigured with endarteritis in the caseous stage; rounded elevations, about three quarters of an inch in diameter, and about one tenth of an inch in prominence, being very numerous.

On the sigmoid flexure of the colon there was a little lymph. The colon and rectum contained much fæcal matter.

The liver weighed sixty-four ounces; its size normal.

Both kidneys were coarse and large.

The aneurismal sac, which I dissected myself, was situated along the outer border of the left external iliac and femoral arteries. Consequently, it occupied the lower portion of the iliac fossa, and extended higher and deeper over the brim of the pelvis than could be felt during life. The external iliac artery for about its lower half was very firmly adherent to the tumour, so much so that the adhesions would have offered great resistance to the passage of a ligature around the vessel. Besides this the lymph-vessels and glands of the region were firmly united together by old inflammatory adhesions and formed a leathery covering to the sac and artery. The dissection required to prepare the specimen for a drawing of course precluded the retention of these coverings and adhesions.

The division of the sac below Poupart's ligament, which was larger than that above it, burrowed deeply amongst the muscles of the upper third of the thigh; indeed, around the base of the trochanter minor, the femur was slightly roughened by its pressure. Branches of the anterior crural nerves traversed the outer border of the tumour. Doubtless the stretching to which those trunks were subjected will explain the pain complained of in the course of the distribution of their peripheral filaments. The external

circumflex artery neatly bounded the inferior and outer border of the sac.

The general outline of the tumour was ovoid. The sac was formed but little at the expense of the tissues composing the outer wall of the arterial trunk, but by the neighbouring structures. Yet the tissues of the artery were perfectly intact and distinctly defined as they traversed the inner border of the tumour, and did not differ in appearance from those of the trunk of the vessel above and below the disease.

The contents of the aneurismal sac were fibrine and coagula. The clotted blood, which had gravitated to its posterior region, was in large quantity, very soft, almost semi-fluid, scarcely retaining any form, and very black; these were post-mortem coagula. There was much laminated fibrinous deposit strengthening the superficial or cutaneous parietes of the aneurism; and a rounded, irregular deposit of it, having a shaggy surface, projected from the margins of the walls close to the aperture through which the blood flowed into the sac, and especially from the anterior one. Such indications were sufficient to show that an attempt to repair the rent, and to obstruct the circulation of blood through the sac, had been made. Those fibrinous formations which were situated superficially could be felt during life. The hole by which the blood entered the sac was oblong, sharply defined, and about three quarters of an inch in its longest axis. Described with accuracy, it was in the outer wall of the femoral artery, immediately below Poupart's ligament.

Remarks.—The history of this case affords abundant evidence that the patient, although actually in the prime of life, and with the inheritance of a robust constitution, had become prematurely aged and functionally weakened by indulgence in depraved habits and the consequences of a vagabond mode of living. At the time of his admission into Guy's Hospital he was slightly jaundiced; the heart was readily excited to increased action; the nervous system

was depressed ; the powers of nutrition were defective ; and the blood was in an unhealthy state.

The aneurism was believed to be of short duration, as observation was attracted to the disease, for the first time, only twenty-four days before the man came to seek surgical treatment, and the pulsation had been felt for six days only. But the tumour was large, and at some parts of it there was much solid matter formed ; it therefore was not unreasonable to assume that the disease was probably of longer standing than its history might at first sight induce one to conclude. The post-mortem examination also favoured this view. It is even open to the suggestion that the "bursting of the vein" (to use the sufferer's own words), the sensation which first attracted his notice, was caused by the tearing of the posterior wall of the already formed aneurismal sac, when forcibly distended by the pressure of its fluid contents. Before this had taken place the tumour would not be large, and being situated only on the outer side of the femoral artery the blood flowed readily into and out of it. But so soon as the tumour had burst at its posterior part the blood would fill a space, the deeper parts of which must lie considerably below the plane of the main channel of the diseased arterial trunk ; and as that fluid gravitated among the femoral muscles, the size of the tumour would not be so much affected on arresting the flow of blood through it, as commonly happens. Thus the intermuscular division of the sac retained the blood, whilst the more superficial part was felt forming the solid tumour in the inguinal region.

In the treatment of this case I rejected all the operations requiring incisions and necessitating loss of blood, for reasons it is idle to mention here. The successful issue of Mr. Hilton's case induced me to select the treatment adopted, considering that it was the safest under all circumstances. The untoward results obtained in this case do not, however, impugn the advantages of the treatment employed, for the prolonged inhalation of chloroform vapour did not injuriously influence the health of the man upon

the two occasions when it was used for eight hours and a half, and nine hours, an interval of eight days having elapsed between each occasion.

It may certainly be suggested that the fatal illness commenced very soon after the third inhalation, and I admit it is possible that the pulmonary disease may have been excited by the chloroform vapour; yet it requires more evidence, I think, before the fact is finally accepted.

The aneurismal tumour was not of the fusiform variety, but it was developed amongst the neighbouring tissues, and its interior communicated with the calibre of the femoral artery by a clear breach in the coats of that vessel. The quantity of fibrine found in the sac after death admits of the inference that, had the man survived a longer time, the sac would eventually have become entirely filled with it, and the disease cured. The want of it at last in sufficient and larger quantity must be attributed to the unhealthful state of the blood and partly to the size of the sac.

A drawing representing the recent dissection of the aneurism, and the preparation itself, are in the museum of Guy's Hospital.