A CASE
OF
DOUBLE ANEURISM
AFFECTING THE
RIGHT EXTERNAL ILIAC AND FEMORAL, AND THE
RIGHT POPLITEAL, ARTERIES,
CURED BY
PRESSURE UPON THE COMMON ILIAC AND THE FEMORAL
ARTERIES.

BY
JOHN HILTON, F.R.S.,
SURGEON-EXTRAORDINARY TO H.M. THE QUEEN; SURGEON TO, AND LECTURER
ON CLINICAL SURGERY AT, GUY'S HOSPITAL.

Received April 2nd.—Read June 22nd, 1869.

J. C—, æt. 45, was admitted into Luke Ward, Guy's Hospital, on October 15th, 1868. He was a carpenter, living at Chelmsford, and had always been a steady man, accustomed to hard work. He said that nearly two years since he first noticed a swelling about the size of a pea in the right groin, which gave him neither pain nor inconvenience; about nine months ago he felt a tumour of small size in the right popliteal space, but it caused him no discomfort until recently, when, after a day's work, the right leg became stiff, so that he could not properly extend it; in the morning,

however, the leg was as strong as usual, and he was able to do his usual work. He has been accustomed to walk long distances, and about once a week as much as thirty miles in the day; this he has done more or less regularly for the last nineteen years.

On Admission.—He was a strong, well-developed man; his muscles, however, were wanting in tone, and he had arcus senilis of both corneæ.

At the upper part of the right thigh, situated about an inch and a half below Poupart's ligament, and two inches from the spine of the pubes, was a pulsating tumour by which the skin was very slightly raised. It measured rather more than two inches in the long diameter (which was from above downwards), and one inch and a half in the transverse. Manipulation proved that this aneurism extended also about two inches above Poupart's ligament into the right iliac fossa. The pulsation was very forcible, and was increased by the patient assuming the erect posture. In the right popliteal region there was also a pulsating tumour which was softer than that in the groin, and the pulsation more apparent; it was oblong rather than globular, and uneven to the touch; it measured three inches in the long diameter, and two and a half transversely.

There was no murmur or bruit audible over either aneurism; hence it was concluded that they were aneurisms by dilatation. When that in the popliteal space was emptied by compressing the femoral artery, the tumour could scarcely be felt. There was cedema of the limb and, although the foot sometimes felt colder than natural, it was quite free from pain.

The patient was rigidly confined to bed, with the limb placed in an easy position, flexed, and supported on a pillow. Full diet was given and, as he was restless, an opiate mixture ordered.

On the 27th the tumours appeared to be somewhat more solid, and a mixture, containing twenty drops of tincture of digitalis with thirty of tincture of iron, was given every six hours, and on November 2nd every four hours. This was,

however, discontinued on the 19th in consequence of a severe catarrhal attack.

On December 7th, as there was but little alteration in the condition of the tumours, I examined him carefully and found that, although the abdomen was somewhat prominent, yet by careful manipulation the right common iliac artery could be felt pulsating about two inches below the umbilicus and half an inch from the median line. At this spot the vessel could be completely compressed without in any way interfering with the pulsation of the left common iliac artery. I therefore directed that a purgative should be given to the patient, and that he should be kept on spoon diet until the 10th, on which day chloroform was to be administered, and a tourniquet applied over the right common iliac artery, and kept on for about five hours.

The point of intended pressure by the tourniquet was accurately marked by the application of nitrate of silver.

I clearly ascertained by digital pressure that without chloroform the patient could not bear complete compression of the common iliac artery even for one minute.

The man was now in good health and expressed himself ready to undergo any operation for his benefit.

10th.—At 10 a.m. chloroform was administered by means of Junker's apparatus, and the patient was under its influence in ten minutes. At 10.45 the tourniquet pad was screwed upon the right common iliac artery, and at 11 o'clock all pulsation in the right iliac and femoral arteries had completely stopped. He was kept under the influence of chloroform, administered by the two house-surgeons, Messrs. Sells and Rendle, until 5 p.m., when it was discontinued, in accordance with my previous desire. Four or five times during its compression the artery slipped from beneath the pad of the tourniquet, and pulsation became again apparent in both aneurisms; but on each occasion the tourniquet was quickly and effectually readjusted. The patient's limb was covered with cotton wool and lightly bandaged during the whole period of pressure. At 5 p.m. the chloroform and tourniquet were both withdrawn. Both

aneurisms seemed slightly harder, yet the pulsation was apparently as distinct as before the application of the tourniquet. About 6 p.m. he was quite conscious and said that he felt "all right."

11th.—He seemed very well, except that he had slight frontal headache and no appetite. There was no pain, except a little soreness on pressure upon the surface of the abdomen, where the pad of the tourniquet had been placed. He was ordered to take beef-tea and milk diet. He had some little difficulty in passing water.

18th.—Has been going on well since the last report, but there was no improvement in either aneurism. The bowels were opened to-day for the first time by an injection, and he was allowed to return to his usual diet.

21st.—After a careful examination of the patient I desired that chloroform should again be given to him, and the tourniquet applied over the right common iliac artery, and that another screw tourniquet should, at the same time, be placed on the femoral artery; these measures to be persevered with until it was ascertained that all pulsation had ceased in both aneurisms.

22nd.—The patient's bowels having been freely opened the previous day, chloroform was again administered by the house-surgeons, in the same manner as before, at 10.10 a.m. At 10.30 the patient was under its influence, and a screw tourniquet was placed upon the abdomen over the right common iliac artery. Another screw tourniquet was also fixed over the femoral artery at the apex of Scarpa's triangle; this having been screwed down, all pulsation ceased in the popliteal aneurism. The large upper tourniquet was now screwed down on the common iliac, and pulsation was stopped in the ilio-femoral aneurism at 10.40 a.m. During the day this tourniquet had to be rectified about twelve times, because slight pulsation was observed in the upper aneurism.

At 4.40 p.m. both tourniquets were removed: there was not the slightest pulsation in the popliteal aneurism, and it was hard. The upper aneurism also felt firmer, but there

was distinct, although feeble, pulsation in it. The pulse at the wrist was good, 72.

At 6.30 p.m. the tourniquet on the common iliac artery was again removed, but slight pulsation was still manifest in the tumour. Both tourniquets were immediately re-applied, and the pulsation stopped. The left femoral artery was beating vigorously, and had done so throughout the day. The conjunctiva had been kept continuously just insensible. The patient's respirations had varied considerably; at one time they were tolerably strong, at another hardly perceptible. The pulse had kept at about 72; it had, however, varied greatly in force.

At 8 p.m. both tourniquets were removed; and no pulsation could be detected in either the ilio-femoral or the popliteal aneurism; the chloroform was accordingly stopped. The right limb was not so warm as the left. Nearly two pints of clear urine were drawn off by the catheter.

23rd.—No pulsation could be discovered in either the femoral or popliteal artery, whilst both aneurisms had a feeling of solidity. The right foot (which was invested in cotton wool) was cooler than the other, but not cold, and the patient said that it felt somewhat numb. The tongue was swollen, so that he could neither speak nor swallow well; this was caused by the tongue forceps. He had taken some ice and milk only.

In the evening I found the temperature so low, and the sensation so imperfect, in the right foot, that I directed the whole extremity to be wrapped in oiled lint and cotton wool, and a hot bottle to be placed near the foot. An ounce of brandy was ordered to be given every four hours.

24th.—His pulse was 72, and he felt comfortable. The foot was rather cold and numb; slight pressure upon it caused pain, yet he could recognise a touch on any part of its surface. As he was very restless last night, a subcutaneous injection of gr. $\frac{1}{3}$ of morphia was ordered.

25th.—Nearly three pints of urine were drawn off from his bladder. He had great pain in the foot, but not confined to any definite part, which had made him very

restless during the night, although four morphia injections of gr. $\frac{1}{2}$ each had been given to him. These had diminished the pain in the foot, but, nevertheless, he had hardly any sleep.

26th.—Had slept but little, the pain in the foot being constant, and most marked about the ankle. His diet was bread and milk, with some brandy. He had an injection of morphia last night.

27th.—There was still considerable pain in the foot, and he could not move it freely. Two injections of morphia were given last night. There was no pain in the abdomen or thigh. He had taken a chop and some beef-tea.

28th.—He could not sleep without a morphia injection. The foot and leg were still very tender, but although he had great pain occasionally in the foot, its sensation was perfect, and he could move it in all directions. Temperature 5° higher than on the other side.

29th.—He suffered much pain in the foot last night, but had been nearly free to-day, although slight pressure upon it caused pain. The limb was still invested in cotton wool. Bowels freely open spontaneously.

February 5th.—His general health had improved, and he had gained flesh. His appetite was good, and he could sleep well. The tenderness over the whole of his right lower extremity still continued, but it was less than formerly, although pain, increased upon pressure, was felt about the instep and knee. Ordered—Quiniæ, gr. iij; Liq. Opii Sedativ., $\mathfrak{m}\mathfrak{xv}$; Inf. Rosæ Comp., $\mathfrak{z}\mathfrak{j}$ ter die.

17th.—The medicine had relieved the aching pain in the knee and ankle, but the leg was still more than normally sensitive. He could place some weight upon it, but not that of his whole body.

20th.—The circumference of the right thigh, taken eight inches below the anterior superior spinous process of the ilium, was fifteen inches; that of the left in the corresponding position seventeen and a half inches. For the last week he had been able to sit up in the ward during the greater part of the day.

March 8th.—He managed, with some help, to walk downstairs. The measurements of the two thighs were unaltered.

16th.—His general health was good. He felt stronger, was eating and sleeping well, and was very desirous to go home.

The ilio-femoral aneurism in the groin could now be felt as a fibrous band about three quarters of an inch broad, deeply situated and ill-defined. That in the popliteal space was rather larger (about an inch in breadth) and more distinct. They were both much less than they were six weeks ago. There was no pulsation in them, nor could any be detected about the right lower extremity. He could extend the thigh perfectly, but not the knee, and he stated that he was prevented doing so by the remains of the popliteal aneurism.

The foot and leg were warm, and the tenderness in them had almost ceased. There was no œdema even after the limb had been allowed to hang down. He complained of occasional pain through the ankle and the head of the tibia, especially at night. He could not yet support the weight of his body on the leg, and the difference in the size of the two legs still continued, the circumference of the right calf being eleven inches, whilst that of the left was twelve and three quarter inches.

April 2nd.—A note from the patient, residing at Chelmsford, reported him well, except that he had painful sensations occasionally in his leg and foot.