

**A case in which aneurisms of the two popliteal arteries were cured by digital pressure : the one in twenty-four hours by students, the other in four hours and a half by the patient : with remarks / by Thomas Bryant.**

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A CASE IN WHICH  
ANEURISMS OF THE TWO POPLITEAL ARTERIES

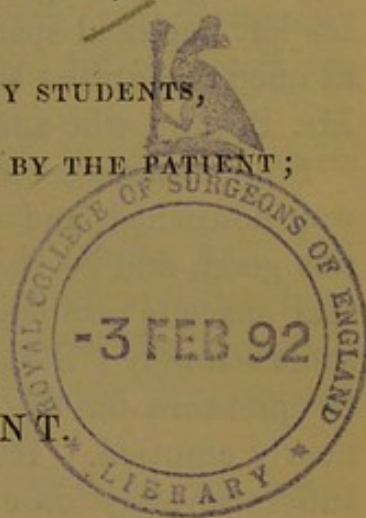
WERE

CURED BY DIGITAL PRESSURE;

THE ONE IN TWENTY-FOUR HOURS BY STUDENTS,  
THE OTHER IN FOUR HOURS AND A HALF BY THE PATIENT;

WITH REMARKS.

BY THOMAS BRYANT.



*A case in which aneurisms of the two popliteal arteries were cured by digital pressure.*

(Reported by Mr. C. E. WING, dresser, and Mr. J. H. EWART.)

C. B—, æt. 32, a policeman, was admitted into Guy's Hospital on May 25th, 1867, under the care of Mr. Bryant, the case having been sent up to him by Mr. W. H. Wright, of Clapton square. The patient, who was formerly a soldier, gave the following history. He had always enjoyed good health, had lived readily, and never had syphilis. In January last he got wet one night whilst out on duty, and had subsequently what he called rheumatic pains in his *left* knee-joint. He sought advice and had his knee painted with iodine, and the pain went away in a couple of days. With the exception of this attack he has never had anything the matter with his knee.

About March 15th, 1867, he was taking a prisoner to the police station, when he was tripped up three times; he fell on his hands and knees, but did not hurt himself, he only felt a

little shaken. Next morning, however, he felt slight pain in his left popliteal space. This pain continued off and on for two months, till May 15th, but was not enough to interfere with the daily performance of his duties. On that day the pain increased, and was of such a severe shooting nature that he at once applied to Mr. Wright, his divisional surgeon. He was ordered to rest his leg and to apply a poultice, no swelling at that time being detected. On the second morning after seeing Mr. Wright, the patient noticed for the first time a swelling in his left popliteal space; he pointed this out to the surgeon, who at once recognised the true nature of the case, and sent him to Mr. Bryant, who admitted him into the hospital.

*State on admission, May 25th.*—He is a strong muscular man, well nourished, and healthy-looking. His appetite, however, is not good, and he does not sleep well at night. His left popliteal space is occupied by a tumour the size of a fist; this pulsates strongly; the pulsation can, however, be entirely arrested by pressure on the femoral artery, and the aneurismal cyst nearly emptied. He has no pain in the leg when at rest, but suffers severely on exertion. The right popliteal space is quite healthy.

29th.—The pulsation of the tumour is increased and the swelling larger. He now complains of pain in his left popliteal space and leg when at rest.

30th.—At 9 a.m. (Thursday) digital pressure on the femoral artery was commenced by students—each one taking an hour at a time; at 3 p.m., or after six hours, the sac seemed somewhat harder.

Friday, 31st.—Digital pressure has been irregularly kept up all night; the pulsation is less violent. At 3.30 p.m. pressure by means of a weight was substituted for digital pressure, and this was continued until 7 a.m. on Saturday morning, June 1st, when, on account of the pain being so severe in the left knee and leg, it was found necessary to stop the pressure. The sac at this time was somewhat hardened; the pulsation was also much diminished in force; the left leg was a good deal swollen. Digital pressure was again tried, but it could not be tolerated on account of the tenderness of the parts over the vessel. Pressure had been irregularly kept up for seventy hours. The patient was restless and a good deal

exhausted, having only had three hours' sleep since the Thursday morning.

June 1st.—Mr. Bryant saw this patient this morning at 9.30, when he was in a good deal of pain, and ordered him a subcutaneous injection of morphia; also Tinct. Hyoscyam. one drachm, Liq. Ammon. Acetat. two drachms three times a day.

2nd.—Towards evening he complained of great pain in his knee and leg. The house surgeon injected subcutaneously twenty minims of the solution of morphia, which eased the pain and gave him some sleep.

5th.—The patient sleeps better of a night, and is now quite calm again.

15th.—To-day Mr. Bryant bandaged the man's leg from foot to thigh, and flexed both the leg upon the thigh and the thigh upon the pelvis. This position entirely arrested the pulsation in the sac, but after the lapse of five minutes the pain became so great that the bandage had to be removed.

19th.—This morning at 9 a.m., digital pressure was again had recourse to; but on this occasion three experienced students were on duty at the same time for two hours, each man pressing on the femoral artery for ten minutes, Mr. Bryant wishing the entire flow of blood into the sac to be arrested. When the pressure was recommenced the tumour was hard and pulsating very strongly. 10.30 p.m.—The pain in the patient's knee and leg was so severe that pressure could hardly be tolerated; thirty-five minims of solution of morphia were consequently injected beneath the skin; this relieved the pain, and at 11 p.m. the pulsation in the tumour ceased for the first time. Pulsation, however, recommenced about 12 o'clock, and continued to cease and to reappear in the tumour till 9 a.m. on Thursday the 20th, when the pressure which had been well kept up for twenty-four hours was stopped, for the tumour had completely ceased to beat. Uninterrupted pressure had been kept up for fourteen hours, and with occasional momentary intermissions to test pulsation for another ten. About 1 o'clock in the morning of the 20th, or fourteen hours after pressure had been applied, a small cutaneous artery was felt beating over the centre of the tumour, and another also on the outer side of the sac.

21st.—This morning the man is very comfortable; he has no

pain, and there is no pulsation in the tumour. Towards evening he complained of his right leg feeling cold and numb—a hot water bottle was applied.

22nd.—Complains of headache; bowels not open. Ordered saline rhubarb powder, half a drachm at bedtime.

23rd.—The powder acted freely and the patient feels comfortable. The aneurismal tumour is quite hard and free from all pulsation.

July 11th.—Has been going on well in all respects. Mr. Bryant allowed him to sit up in a chair this evening; he also walked with the aid of crutches.

20th.—Allowed to walk about for the first time.

22nd.—He is in the grounds to-day and can walk pretty well with the aid of a stick.

24th.—Walks well; does not complain of any cold feeling in his foot, except in the big toe.

27th.—Can walk quite naturally and bend the leg upon the thigh as freely as he ever could. He has no pain. Occasionally the great toe of the left foot feels cold after exercise. The aneurism feels like a hard solid tumour, about the size of an egg.

The man was discharged to-day cured.

*Report of aneurism of the right popliteal artery cured by pressure in four hours and a half.*

The following report of the aneurism of the popliteal artery of the right leg, and the history of the case after the man left Guy's, are from the pen of Mr. W. H. Wright:

After leaving the hospital the patient went into the country for a month, and on his return was put upon light duty for another month. At the end of this period he resumed ordinary duty, the leg being now perfectly well, and at this he continued until May 4th, 1868, a period of seven months, when he became incapacitated and went upon the sick list. On presenting himself for examination, he stated that three weeks previously, while walking on the kerb at night, he slipped, and felt at the time as if something had given way in his *right leg*; it caused him some slight pain at the moment, but he took no further notice of it, and continued on duty day after day, until gradually increasing pain in the leg and difficulty of walking compelled

him to desist. He complained much of pain on the inner side just below the knee, and on the outer side as far down as the ankle, and upon examining the leg, this was found to be due to an aneurism of the popliteal artery about the size of an ordinary hen's egg. He was sent home, ordered to keep perfectly quiet in bed, and opium was given to relieve the pain, which was particularly severe at night. As digital pressure had been so successfully employed in the first instance, it was determined to resort to the same method of treatment again; as this, however, generally required more than one pair of hands, and more are not always available in private practice, some days elapsed before the necessary arrangements could be made; and one evening whilst suffering more pain than usual, and recollecting how he had been cured on the former occasion when in hospital, the patient determined to commence the treatment himself; he, therefore, began by pressing with two fingers on the artery in the groin, and using alternately the right and left hand, he kept up pressure firmly, steadily, and uninterruptedly for four and a half hours, when from sheer exhaustion he was obliged to desist. His efforts, however, had been successful, for pulsation had at that time ceased,<sup>1</sup> and when seen the following morning, it was found that the aneurism was cured. Not the slightest pulsation was to be detected in the ham; he was free from pain or uneasy sensations in the leg. At the end of a week he complained only of slight stiffness in the knee, and in ten days he was able to walk a little about the room. After the lapse of a fortnight he could walk about two hundred yards, when he would feel a dragging sensation or cramp in the calf of the leg; this, however, gradually passed off, and he was able to resume duty on the 31st of July, somewhat less than three months from the date of treatment, and has continued perfectly well up to the present time (Oct. 24th).

I may add that through Mr. Wright's courtesy I had an opportunity of examining this man after his recovery. He had at that time a solid tumour, the size of a large egg, occupying the right popliteal space, and in the left the original aneurismal tumour was about half that size. In all other respects he was quite well.

<sup>1</sup> The truth of this fact is supported by the patient's wife.

I strongly advised him, however, to look out for some light employment; the risks of a constable's life being too severe for a man clearly disposed to arterial disease.

*Remarks.*—This case of aneurism of both popliteal arteries has been deemed well worthy of record from the fact that the disease was cured in both instances by digital pressure; in one instance the pressure having been applied by trustworthy and educated senior students; in the other by the intelligent, and I may add educated, patient. In the former case the pressure was applied for twenty-four hours; in the latter for only four hours and a half.

In the treatment of the first aneurism there is little to be remarked upon, with the exception of the method by which the practice was carried out—three good men having been selected to take charge of the case for two hours at a time; no one being called upon to apply pressure for more than ten minutes together. By this arrangement the fingers of the students were never fatigued, and the flow of blood through the aneurismal sac was completely arrested.

I believe that three men might readily take charge of such a case for four hours at a time without fatigue.

That aneurism can be cured by pressure is now a truth that needs no proof, but that a greater success than has yet been obtained is to be acquired by a better mode of its application is, I believe, equally recognised by all surgeons.

That digital pressure, when well applied, is better than instrumental can scarcely be disputed, although when it is indifferently carried out it is probably less to be relied upon and less efficient.

To expect any one of ordinary physical power to keep up a steady pressure sufficient to arrest the flow of blood through a large artery for many minutes consecutively is altogether vain, and for an uneducated student to make the attempt is clearly an error, for he will, to a certainty, worry the patient with his anxiety to do what is right, and pain him by the diffused and uncertain pressure of his fingers, and the friction resulting from their continual movements. He will press on veins and nerves, as well as artery, and thus cause distress.

What is wanted is the steady equal pressure of a finger or

thumb applied directly over the vessel which is to be compressed; the pressure being so regulated as to be just sufficient to arrest the flow of blood through the artery, but no more. Neither vein nor nerve need be much pressed upon as a rule nor much pain generally produced.

Greater pressure than that indicated above is a waste of strength on the part of the surgeon, and is a needless cause of distress to the patient.

In London hospital practice it is doubtless from the want of attention to the above requisites that the treatment of aneurism by pressure has been so unsuccessful; it has been too frequently inefficiently practised, and has consequently failed.

Beyond pointing out the way in which pressure should be applied for the cure of aneurisms, the details of the case above fairly prove it to be essential for a speedy cure, that the flow of blood through the aneurism should be completely arrested, and that an intermittent flow of blood through the sac is unsatisfactory and unsuccessful; for in the early treatment of the case when the intermittent method was practised, failure followed; in the later, when the flow of blood was completely arrested, a speedy cure ensued.

The main interest of this case lies, however, in the fact that the patient himself was the successful operator in the cure of the second aneurism, and that only four hours and a half were required to complete the cure. In these points I believe the case to be almost unique. It is true there is another case recorded by Mr. Holmes in his 'System of Surgery,' vol. iii, p. 422, in which the patient cured himself of a popliteal aneurism by pressure, but in that instance the cure required three days for its completion.

In the case I now publish I have no doubt that the pressure was constant, and that the flow of blood through the aneurism was completely arrested for the four hours and a half, for the man knew too well, from former experience, what was required to effect a cure, and had the power and energy to carry it out.

It is—as Mr. Wright has well remarked in his notes on the subject—"a remarkable case of self help, and fairly illustrates the advantage of digital pressure over the less manageable and more complicated treatment by instrumental compression."



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