Clinical Lecture

ON THE

OBLITERATION OF VARICOSE VEINS.

BY

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THERE is at present in the hospital a man named R. C., aged 23, who was admitted eleven months ago with varicocele of the left side. The left testis had then nearly wasted away, and the dilated veins were painful. He had for two years and a half been under the care of different medical men, and had taken large quantities of medicine without relief.

On February 5th, 1863, two needles were passed between the enlarged veins and the vas deferens, and slight pressure was applied to the veins by means of ligatures* passed over the ends of the needles. The veins, thus compressed by the ligatures, were then divided midway between the two needles by subcutaneous section.

On the day following the operation, the testis of the affected side was very tender. The next day it was swollen. The ligatures over the needles were removed.

Feb. 9th. The needles were removed. The patient was quite easy and free from pain.

Feb. 10th. A considerable amount of thickening had taken place in the scrotum on the left side.

Feb. 14th. The left testis appeared about twice as large as it was when he was admitted.

He now left the hospital, and went into the country.

Upon his re-admission, eleven months after the operation, the veins which had been then obliterated had not again enlarged; but the left testicle had nearly regained its original and natural size. He had experienced no pain in the part since leaving the hospital, and had remained without inconvenience. He had, however, within a few weeks, had some pain in the right testis. The veins on that side were somewhat enlarged, and the testis he believed had become smaller than formerly. Recognising the symptoms, as he believed, with which the atrophy of the left testis commenced, he came to town of his own accord in order to ascertain whether the disease would be arrested by the same means as had formerly been adopted on the left side.

The foregoing is one of a large number of cases of enlarged and varicose veins which have been operated upon within the last two years in this hospital; and an opportunity is now afforded to all those who are interested in the subject, of observing the results of the operation nearly a year after it was performed. My principal object, however, in the present lecture, is to review concisely the causes which have prevented this now apparently very simple operation from having been as safely practised in former times as at present; and what I have to say will apply equally to varicose veins of the leg or of the scrotum.

Sir Everard Home was at one time in the habit of applying a ligature to the vena saphena major in cases where the veins of the leg were varicose. In these operations, the skin was divided, and a silver needle with ligature was passed under the vein, and

the vessel was tied. It was supposed at that time that the lining membrane of a vein when irritated would secrete lymph just as a serous membrane might, and that the opposite sides of a vessel would thus be glued together.

Mr. Travers, in his very valuable observations on wounds and ligatures of veins, has expressed the idea generally prevalent in his day in the following words:—"The inner membranes of arteries and veins are susceptible of the adhesive inflammation. In veins the inflammation extends from the point irritated towards the heart..... The lymph coats the vein like a fringe."

More accurate observation has now demonstrated the fact that the lining membrane of veins does not readily produce lymph; and that the material which was formerly described as having thus been produced, was in reality fibrine deposited from the blood, and this, although it may adhere firmly enough to one side of the vessel, will seldom obliterate its canal.

Under these circumstances, it is not surprising that the attempt made to obliterate veins by pressure was not always successful, and that in some instances it was succeeded by the most serious results. The following account, taken from Mr. Travers's work above quoted, affords a description of the effects occasionally observed in his day after the operation of placing a ligature upon a vein:

"I remember about the year 1801, when the operation of tying the saphena major vein was frequently practised for varicose ulcers of the legs, an elderly woman being the subject of this operation, which was performed in Guy's Hospital, a little above, and on the inner side of the knee. Inflammation of the vein followed, and several abscesses formed in the direction of the vessel, below the ligature, on the inner side of the calf of the leg. It was accompanied with great constitutional disorder; some of the abscesses ulcerated, others advanced with great difficulty to the surface, and the patient died, worn out by excessive irritation. In a second case, that of a man who had drunk hard, two ligatures were made upon the vein, and the vessel was divided between them. In three days the man complained of pain in the course of the vein from the place of its division to the groin; an inflammatory blush appeared upon the leg, extending from the knee to the ankle, and on the succeeding day considerable swelling. The pain above the ligature extended to the bottom of the belly, and the thigh became swollen and tender upon pressure; the constitution sympathised with the local disease, and without the formation of abscesses, as in the former case, this man died, as it appeared, from extended inflammation of the vein."

Mr. Hodgson mentions two cases in which the division of the varicose vein terminated fatally; the first on the morning of the fourth day, the second on the seventh or eighth. The same author relates a case from the practice of Mr. Freer of Birmingham, in which the ligature of a varicose vein was followed by pain in the chest, hurried and laborious breathing, and vomiting of blood four hours after the operation, which symptoms were immediately relieved by the removal of the ligature. The operation was followed by fever and vomiting, and retention of urine, when performed on another varicose vein of the same patient six weeks afterwards, although the ligature was removed immediately after its application; and, again, by similar symptoms of constitutional disorder, when repeated upon two

* Elastic bands are now used instead of ligatures.

other veins, after an interval of nine weeks, the ligatures being cut away immediately after their application. The fever went further on the latter occasion; the patient was attacked with delirium and severe vomiting on the second day; the symptoms continued on the third and fourth days; on the sixth she was slightly delirious, and her respiration much oppressed. She was repeatedly bled. "In this case," says Mr. Hodgson, "the obliteration of the vein was the consequence of the application of a ligature, which was immediately removed."

In the fifth volume of the *Edinburgh Medical and Surgical Journal*, Mr. Oldknow, surgeon, of Nottingham, communicates the following important narrative.

"A young man, about 23 years of age, of plethoric habit, had been troubled for the last two or three years with painful ulcers about the inner ankle of the right leg, which repeatedly healed, and broke out again, so as to prevent, in a great measure, his attendance to business; he therefore became desirous, on my representation, of having the saphena vein tied, it being varicose to within a hand's-breadth of the knee. The operation was performed in the following manner. An incision three quarters of an inch long, and about one inch and a half above the distension, was made through the skin immediately over the vein, and in the direction of its course. The cellular substance was then carefully divided, the vein lying deeper than usual, until its upper surface was completely exposed. A probe armed with a double ligature was passed under the vein, taking care to include nothing with it, it being cleanly dissected from the surrounding cellular membrane upwards and downwards as far as the extent to the first incision, and then tied. The portion of the vein between the two ligatures being afterwards cut out, the lips of the wound were brought together by a suture and adhesive plaster, with a view of healing it by the first intention. The patient was then put to bed, and directed to use a cold embrocation.

"On the second day he took some opening mixture. Third day: the wound was dressed, and appeared wholly united, except when the ligatures came out. The suture was cut out, and a fresh adhesive plaster applied. On this day he complained of pain in the lower part of the limb—that is, from the lowermost ligature, along the vein down the foot; to use his own expression, as if the blood in the veins were endeavouring to overcome the obstruction caused by the ligature. This sensation was, however, entirely removed by applying a bandage moderately tight from the toes upwards. Fifth day: there appeared a little erythematous blush about the wound. He had a trifling epistaxis, and I thought proper to take from him sixteen ounces of blood, which was not inflamed; the purging mixture was repeated. Sixth day: he complained of a little pain on the inner side of the knee in the course of the vein; but there was no external inflammation at that part. The lips of the wound began to separate. In the evening he was suddenly seized with a violent rigor, succeeded by a hot fit and symptoms of great vascular action, and some tendency to delirium. Pulse 130, hard and full, therefore sixteen ounces of blood were taken from the arm; it gave instantaneous relief, and was followed by the sweating stage, which continued several hours, and was succeeded by a state of quietude, soon, however, interrupted by a recurrence of the same train of violent symptoms, at first about once in twenty-four hours, but gradually increasing in frequency, and diminishing in strength, till nature became exhausted; death closing the scene twenty-two days from the operation.

"For the first four or five days after the rigor, the wound discharged pretty freely, and, by making strong pressure about the knee, a little matter was forced from it. The inflammation crept gradually up the vein, which was evident from its peculiar cord-like feel, and from giving pain on pressure, until it reached the groin, the inferior part getting well as the superior became bad, so that the wound was nearly healed before death, the ligatures having separated about the fourth day. There was no tumefaction of the cellular membrane, no enlargement of the glands in the groins, no superficial inflammation on the thigh. There was, it is true, a slight redness of the skin when the poultice was removed (for the thigh along the course of the vein was covered with cold poultice), which entirely vanished on exposure to the air. The medical treatment was strictly antiphlogistic; the patient was repeatedly bled (!), and with apparent relief every time, the blood being extremely sizy ever after the first rigor. Two days, however, previous to his death, the vital principle was so exhausted as to need the use of cordials!"

Mr. Abernethy believed that it was the ligature that produced the inflammation of the veins in the cases in which such serious mischief followed; and he recommended that the vein should be divided instead of being tied.

Sir Benjamin Brodie adopted Mr. Abernethy's suggestion, and, instead of tying the vena saphena, cut it across and applied a compress and bandage. The patient had venous inflammation, attended with very severe typhoid symptoms, and died within four days after the operation.

Now, in all the cases to which I have alluded, the interior of the divided veins was closed by fibrine only deposited from the blood. Such a bond of union is constantly liable to give way, and the contents of the veins are then carried into the general circulation. Coagula in veins are in this way very readily removed; and if formed from healthy blood, appear to produce very little inconvenience to the system. But if these coagula have already begun to undergo morbid changes, or if they have already become mixed with other secretions in their neighbourhood, then the most severe symptoms of blood-poisoning may be produced.

When a vein is simply divided, a certain amount of hæmorrhage necessarily follows; and the blood thus effused may undergo morbid alterations as it lies at the open mouth of the vessel; and these same diseased actions may be readily communicated to the blood still within the vein, and be thus propagated to every part of the body.

The operation of tying a vein affords no security against such accidents; for, in accordance with an observation made by Sir Benjamin Brodie, as the ductus choledochus, or the intestinal canal, will heal after the application of a ligature, without the continuity of the canal being destroyed, so it appears to be with divided veins under certain circumstances. Whenever the circulation through a vein is thus restored, the coagula of fibrine which temporarily obstructed its canal are sooner or later carried into general circulation.

It appears to us strange in the present day, that so many centuries had elapsed before a simple mode of securing a bleeding artery was discovered. And it appears almost equally strange that, although surgeons of the highest intellect in the present generation have in successive years given their atten-

tion to the best mode of operating upon varicose veins, no method should have been adopted by them for effectually closing the vessels during and after the operation. As in former times, the actual cautery was used for the purpose of arresting hæmorrhage, so are there still in modern surgery those who prefer the actual cautery, or some form of caustic, in preference to the simple mode of closing a vein which I have described at the commencement of this lecture. There has very recently been in this hospital a young woman who had had, I believe, upwards of a dozen sloughs made on her leg by the actual cautery; and in a recent number of the *Lancet* the same mode of treatment is advocated by a distinguished surgeon attached to one of our metropolitan hospitals.

Sir Benjamin Brodie, some years ago, applied the caustic potash over clusters of smaller veins in order to produce their obliteration; and Mr. Mayo subsequently adopted the same treatment for varicose veins of a larger size. Sir Benjamin Brodie has left us the result of his experience in the following words: "The application was very painful; the slough took a long time to separate, and the sore took a long time to heal."

[To be continued.]

Lectures

ON

CERTAIN MUTUAL RELATIONS OF PHYSIOLOGY, PATHOLOGY, AND THE PRACTICE OF MEDICINE.

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LECTURE II.

Pathology in its Relations to the Practice of Medicine. On certain Pathological States as the Result of Impaired Nutrition consequent on the Imperfect Performance of Function. Diseases of Degeneration attacking the Heart, Lungs, etc. Fatty Disease of the Heart. Sudden Death in Relation to Diseases of the Heart. Emphysema of the Lungs, Phthisis, etc.

MR. PRESIDENT AND GENTLEMEN,—In a former lecture, I pointed out certain physiological principles; and I endeavoured to show their relations to pathology and the practice of medicine. I propose, in the present lecture, to confine my remarks, for the most part, to questions of pathology. As every physiological or healthy process goes on in the elementary particles of the body, so with every morbid action; and just as it is essential to the physiologist who would appreciate aright the function of any individual organ, that he should be acquainted with the minute structure of that organ, so is it alike essential to the pathologist that he should estimate the very earliest changes which diseased action produces, if he would form a correct view of the nature of that action. It is not simply necessary that he should be acquainted with the changes of structure effected by a disease when fully established, but tracking, as it were, the disease backwards, he should endeavour to seize upon

its earliest manifestations. It is thus that he will be led not only to a knowledge of the morbid anatomy of the disease, but to a correct appreciation of its pathology.

It is of great importance that we should have fully before our minds the object for which we study diseased structure; viz., that we may gain an insight into the nature of the morbid process which has given rise to it; for I think it may be fairly open to remark, that the profound and somewhat exclusive study of morbid anatomy, which characterised certain schools of medicine some years ago, led to an evil in reference to therapeutics which is perhaps only just passing away. In the examination of an organ, as it presented itself after death, the mere morbid anatomist was perhaps too apt to look upon the results of the disease as the disease itself; and the hepatised lung, the ulcerated intestine, or the prominent lesion of the disease, may have obscured his regard as to the constitutional condition, of which the local affection was only a manifestation. This may, perhaps, have caused him to direct his attention, in the treatment of such cases, too exclusively to the implicated organ, to the neglect of the general symptoms. I think it possible also that the refinement of diagnosis, which auscultation and chemical manipulation have enabled us to arrive at, may have had, with some, an influence in a similar direction. If, however, this error did exist, and if it led to a wrong application of therapeutics, I think the physicians of this country are as little open to the reproach as any; and that, at all events at the present day, no contracted views of the nature of disease regulate our practice, or direct the application of our remedial measures.

But let me be quite understood in this respect. Do I make these remarks with the view of disparaging the efforts of the physician in the direction of accurate diagnosis, or of the morbid anatomist in his search after the changes of structure which disease produces? Far from it; for all our hopes of advancing the science of medicine rest on our prospects of still further improving our means of detecting disease, and of being able to appreciate the exact nature of those pathological processes by which disease is produced.

We cannot, I think, expect that we shall ever discover for each specific disease a specific remedy; I mean a remedy as specific as that with which we can cure a neuralgia, or an ague. It may be that other diseases will admit of an absolute and definite cure by the agency of some single remedy; but the majority of diseases will probably always have to be met and relieved by treatment, and will never admit of cure.

It is, therefore, in the great mass of diseases, that a knowledge of the nature of those pathological processes from which they result is of so great importance. We may care little, and our patients may care less, what is the exact pathological process which produces a tertian ague, provided we can, by the administration of a few doses of quinine, effectually cure it; and it would, perhaps, be an useless waste of time to endeavour to explain the *modus operandi* of that same agent when it effectually cuts short the torments of a *tic*; but, in the management of a disease which admits of no definite cure, every pathological element is important; every symptom, whether local or constitu-