

member that menstruation is a function performed during a part of life only, and that it is not necessary either to life, health, or fertility. In all cases attend first of all to the general condition. No efforts should be made at establishing the monthly hæmorrhage until health is more or less good. When serious organic affections, as phthisis, Bright's disease, &c., are present the treatment should be exclusively directed to their cure, and no attempt should be made to induce menstruation. When the general health is good even, you should refrain from direct treatment of the amenorrhœa if there be no efforts at menstruation, for by partial success you may render intolerable a life which otherwise would have been free from suffering. These rules are applicable to all cases of amenorrhœa.

Let us now briefly refer to the different forms of amenorrhœa.

Menstruation is and always has been absent.—The great majority of cases of this class which will come under your observation will be young girls between sixteen and twenty years of age. Many of them will suffer from anæmia, and disorders of the digestive organs. Your first object should be to treat these conditions, and by the time they are cured menstruation will probably be established. Time will indeed come to your help. Such cases are instances of late or tardy evolution of the generative organs. The form and figure may be well developed, but the uterus grows slowly, and the treatment consists in waiting and adopting all means that favour its growth. There will, after all, remain a few—very few—in which the discharge will not make its appearance. In these, it will be found that the uterus is small, and the best treatment is non-interference.

Menstruation is scanty or irregular.—If it be due to an undeveloped condition of the uterus, and if it be accompanied by no pain, the general health being good, it requires no special treatment. General means, which favour physical development, as exercise of all kinds, may be recommended. If the scanty or irregular menstruation be accompanied by pain, it comes under the head dysmenorrhœa, where I shall speak of it. If the uterus have attained its full size you will in almost all cases—in all cases that require treatment—find a disordered state of the general health. The most common condition is anæmia. In such cases you should regulate the bowels, for there is generally constipation. Give iron, iodine, salines; good diet, fresh air, and exercise in the open air are essential. Exercises of all kinds are good—riding, walking, swimming, dancing. If the monthly molimen be present, emmenagogues may be prescribed; emmenagogues should never be administered when indications of ovarian and uterine action are absent. The medicines supposed to have a direct action in bringing on the menses are numerous, but few of them are of much or even of any value. The best are electricity, aloes, and the stimulating diuretics—nitrous ether, spirits of juniper, and oil of turpentine. Hot hip-baths for five or six nights in succession before the expected return of the molimen are useful. Guaiacum, ergot of rye, oil of savin, cantharides, have proved successful in the hands of some. Dr. Atthill recommends the cold hip-bath for eight or ten evenings in succession before the expected time.

Suppression of the menses.—When the suppression has taken place suddenly during a menstrual flow, the patient should have a hot bath, go into a warm bed, and take a dose of Dover's powder. A stimulating diuretic, or a diaphoretic, should be at the same time prescribed. Should fever, heat of skin, vomiting, pain in the abdomen, and symptoms of local inflammation or of general peritonitis set in, they should be treated irrespective of the suppression. If the flow is not re-established, the case becomes one of chronic suppression.

Chronic suppression.—The general health should be attended to, and if menstrual molimena be present they should be encouraged, and efforts made to establish the flow by the means already enumerated. If molimen be absent, you should limit your aid to the treatment of the general health.

DRAINAGE OF CAMBORNE.—The inhabitants of Camborne, dissatisfied with the supineness of the local board in not remedying the defective drainage of the town, pointed out twelve months ago, recently addressed to the board a memorial, couched in terms at once plain and emphatic, which must, we should suppose, secure attention.

THE
RAPID CURE OF POPLITEAL ANEURISM
BY ESMARCH'S BANDAGE.

A CASE, WITH REMARKS.

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FOR the notes of the following case I am indebted to my house-surgeon, Mr. Archer, who was good enough to carry out the treatment from the time I applied the bandage.

R. F.—, aged forty-five, a bonnet-blocker from Luton, was admitted into Henry ward under Mr. Thomas Smith's care on March 7th, 1877, with an aneurism in the right popliteal space about the size of a hen's egg. The patient, a spare, healthy man, noticed the swelling three weeks since. He says it came of itself, and when first observed was about the size of a walnut. It has gradually increased, and is increasing in dimensions pretty rapidly. The aneurism pulsates very forcibly; the circulation can easily be controlled by pressure on the femoral, but flexion of the limb does not arrest the flow of blood through the sac. The patient complains of severe pain, especially at night, and in the recumbent position. Family history good; no personal history of syphilis; first sound of heart has a blowing character; urine healthy.

A few days' rest in bed diminished the tension of the aneurism and relieved the patient's pain considerably.

On March 17th, at 3 P.M., the treatment was commenced. The limb was rolled in a flannel bandage from the toes to the lower part of the popliteal space, and again from above the aneurism to the groin. Esmarch's india-rubber bandage was then applied, with only moderate firmness, from the toes to the aneurism, the patient being in bed; he was then made to stand up until the sac was well filled with blood, when the elastic bandage was applied from above the aneurism to the groin, where the limb was surrounded with the thick india-rubber tubing so as completely to arrest the circulation in the limb. The aneurism and popliteal space were thus left exposed, so that the least pulsation in the sac could be detected. In this way the circulation was stopped for one hour, during the last half of which chloroform was used on account of the pain. At the end of the hour, while the patient was still under chloroform, Esmarch's bandage was removed, and the Italian tourniquet was applied to the femoral and maintained in position for two hours. At the end of the first hour of the tourniquet pressure the patient began to complain of intense pain, and shivered a good deal, feeling, as he expressed it, "thoroughly cold." At 6.10 P.M., when three hours had elapsed, the tourniquet was removed on account of the intense pain, the patient refusing to take any more chloroform and being unable to bear the pain. The aneurism was found to be solid, and about half the size it had been at the commencement of the treatment. Towards night the patient complained of pain in the limb, and his temperature rose to 100.2°. Next morning he was still suffering from the effects of the chloroform, but had lost all pain in the limb, and in other respects was quite well. He was discharged from the hospital on April 6th, with the aneurism cured.

This case I believe to be of interest as adding to our knowledge of a method of treatment concerning which we need further experience before we can assign to it its proper function in the cure of aneurism. We are as yet ignorant of the precise details that may be advisable to adopt in carrying out this plan, and we do not yet know to what cases it may be best suited.

There can be no question that by Esmarch's bandage we can maintain a complete and continuous arrest of the circulation in a limb; an arrest that is not liable to interruption by the movements of the patient or the want of skill in his attendants—contingencies that are inseparable from the employment of a tourniquet.

Esmarch's bandage may thus be regarded as the most perfect means we at present possess of carrying out in certain localities the principles of Dr. Murray's rapid treatment of aneurism by pressure. It has been employed suc-

cessfully by Dr. Reid,¹ Mr. Wagstaffe,² Mr. F. A. Heath,³ Mr. T. Wright,⁴ and unsuccessfully by Mr. Bradley.⁵ It is likely that many others have applied this treatment to the cure of aneurisms, though, perhaps, with indifferent success, since it is probable that mostly the cures have been published.

My own experience of this method of treatment consists of three attempts to cure popliteal aneurism, two being on the same patient, and on both occasions I was unsuccessful. The first failure, as I believe, was chiefly due to my having nearly emptied the aneurism of blood by pressure on the sac, and in the second attempt I could not be sure that the circulation in the sac was completely arrested, as I had covered the part with a bandage. In addition to these errors in the application of the treatment, I am now convinced that the arrest of the circulation was not maintained for a sufficient time to give the blood in the sac a fair chance of coagulating, even if other circumstances had been favourable to this process, which they were not.

In Mr. Bradley's unsuccessful case, he also made two attempts on the same patient to cure popliteal aneurism. His method of applying the treatment seems to have been essentially the same as was employed with success by myself and others.

As regards the plan pursued in the cases cured by Esmarch's bandage, the following is a short summary of the chief points of interest.

In all, the aneurism was of the popliteal artery. In all but one case—Mr. Wright's—the treatment was commenced by completely arresting the circulation in the limb for *one hour* by means of Esmarch's bandage, pressure being kept up after this time by means of a tourniquet. The tourniquet pressure was maintained in Reid's case for twelve hours; in Wagstaffe's for seven hours and a half; in Heath's case for five hours; in my own case for two hours; in Mr. T. Wright's case, Esmarch's bandage was kept on for two hours and a quarter, and at the end of this time pressure was kept up with more or less completeness for five days by means of a shot-bag. As to the time occupied in the cure, pulsation in the aneurism was known to have ceased at the end of fifty minutes in Mr. Reid's case; in two hours in Wagstaffe's case; in one hour in Heath's case; in three hours in my own; and in twenty-four hours in Wright's case. In this last case the pulsation returned to some extent after being absent for a few hours.

It is probable that coagulation of the blood in the sac may have occurred in these cases before the fact was ascertained by observing the absence of pulsation; in my own case, at the end of one hour from the commencement of the treatment, when the bandage was being changed for the tourniquet, it was observed that coagulation had not taken place, while at the end of two hours from this time the sac had ceased to pulsate; but during these two hours the condition of the blood in the aneurism could not be ascertained, as the pressure on the femoral was rigorously maintained. It was observed, however, that at the end of two hours from the commencement of the treatment the patient complained of very severe pain, and was attacked by shivering. At this time, I believe, the coagulation in the sac occurred.

With reference to the manner in which the pressure was applied, it is to be noticed that in Wagstaffe's and Heath's cases the elastic bandage was applied to the whole limb—with moderate firmness below the aneurism, loosely over the sac, and tightly above the sac; no elastic ligature was used at the groin. In Mr. Wright's case and my own, in addition to the elastic bandage to the whole limb, excepting over the sac, the elastic ligature was used below the groin. In Dr. Reid's case an elastic ligature was used below the groin, and no elastic bandage was employed to the limb. In Mr. Bradley's case and my own the aneurism was left quite exposed, so that its condition could be freely examined as regards pulsation and solidity. In three of the cases recorded, during the continuance of the treatment and probably at or soon after the occurrence of coagulation in the sac, a small artery was noticed to be pulsating vigorously over the aneurism. In all the successful cases the bandage

was so applied that the sac was filled with blood at the time the circulation in the limb was arrested.

From the consideration of these cases, it seems that the conditions to be observed as most favourable to success are the following—namely, that the circulation in the limb should be for a time completely arrested, that the aneurismal sac should be full of blood, and that the circulation in the aneurism should be stopped for a sufficient time to allow the blood to coagulate.

For how long a time it may be prudent to exclude the blood from the entire limb by the Esmarch bandage, and when the more local effect of the tourniquet should be substituted for the Esmarch bandage, is a matter for further investigation. It is, however, probable, from the experience of long operations for necrosis performed under the Esmarch bandage, that we have not yet reached the limits of safety as regards the time during which the bandage may remain on the limb. One would suppose—though I daresay without sufficient grounds—that it would always be prudent to empty the arteries of the limb by the application of the elastic bandage before adjusting the elastic ligature above.

Stratford-place, W.

ON

THE TROPHIC CHANGES WHICH FOLLOW LESIONS OF THE NERVOUS APPARATUS.

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(Concluded from page 715.)

TURNING from experimental to clinical experience, and using the former class of facts for the interpretation of the latter, my position will be this—that *the vaso-motor disturbance in a part is proportionate to the degree in which its vessels are cut off from the possibility of reflex stimulation.*

There are many facts which serve to support this position. In ordinary hemiplegia, in which motion alone is affected, the vaso-motor disturbance is slight in degree, and is usually not more than may be accounted for by the want of motion in the part, which deprives the blood in the veins of the propelling power of muscular action, and partially deprives the vaso-motor nerves of that stimulation which they derive from afferent muscular nerve-fibres.

In some exceptional cases of hemiplegia, however, vaso-motor disturbance is strongly marked, especially in the early days of the paralysis, which may be due to the paralysing effects of shock upon the centres which reflect impressions to the vaso-motor nerves, or possibly to some actual damage done to the reflecting paths in the brain itself.

After complete division of a mixed nerve, such as the sciatic, or after a destroying lesion in the spinal cord, there is, as an immediate result, strong evidence of hyperæmia, which is shown by local elevation of temperature, and sometimes by vascular turgescence. This fact is well shown in the case of a man now in University College Hospital suffering from fracture of the dorsal spine with crushing of the spinal cord. The legs are devoid of motion (both voluntary and reflex) and sensation; they are preternaturally warm to the touch, and a thermometer between the toes gives a temperature of over 100° F. (axilla 102°.) The feet perspire, and here and there a cutaneous vessel is visible. There can be little doubt as to the hyperæmia of the part, but on performing Marey's experiment of scratching the surface no vascular reaction follows. Across the lower part of the abdomen the sensitive and anæsthetic regions of the skin meet. Above the border line vascular "reaction" is easily obtained, but nowhere below it.

Mr. Jonathan Hutchinson has also demonstrated the hyperæmic condition of, and the elevation of temperature in, the lower limbs after injuries to the cord.

In cases of complete division of mixed nerves or destruction of the cord, the vessels of the part are cut off from the possibility of all that reflex stimulation which they normally derive from cutaneous and muscular impressions, as well as

¹ THE LANCET, 1875, Sept. 25. ² THE LANCET, 1876, vol. ii., p. 461.

³ British Medical Journal, 1876, p. 570.

⁴ THE LANCET, 1877, vol. i., p. 163.

⁵ British Medical Journal, 1876, p. 171.