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A CLINICAL LECTURE ON SYMPATHETIC OR SPONTANEOUS GANGRENE.

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(CASE REPORTED BY MR. BRAITHWAITE, DRESSER.)

Mary Daybury, aged 27 years, was admitted into the Leeds Infirmary May 16, 1845, under the care of Mr. Teale, on account of gangrene of the left leg. She had long been subject to palpitation, irregularity and deficiency of the catamenia, and epilepsy. At the time of her admission the left foot was black and shrivelled, and the whole of the left leg was of a mottled red and violet colour, the discoloration terminating in an abrupt line, a little below the knee. Several vesications existed on the discoloured portion of integument. No pulsation could be detected in the left femoral artery, and pressure in the course of the femoral sheath produced pain. The patient was in a state of great exhaustion: her pulse extremely feeble, disappearing under slight pressure of the finger; countenance sunken and pallid, and the skin cool and clammy. She was evidently in a hopeless condition.

Mr. Teale especially directed the attention of the pupils to the case, as one in which they might soon have the opportunity of observing the peculiar condition of the blood-vessels upon which this form of gangrene depends. The patient lingered until the 30th of May, by which time the discoloration had extended to the knee.

On dissection, (which was limited to the investigation of the blood-vessels connected with the affected limb, on account of the objections urged by the friends of the patient, who were waiting to remove the body,) it was found that the left common iliac artery and the external iliac were in their natural condition, but the femoral artery at its commencement exhibited an annular contraction, as if it had been embraced by a ligature, and its cavity at this part was completely obliterated. For a few inches below the contracted part, it was filled with fibrinous coagula, which adhered to the coats of the artery. The femoral vein, at the middle of the thigh, was completely obstructed by

adherent fibrinous clots, intermixed with dark-coloured coagula.

After reading the notes of the case, and exhibiting the morbid parts which had been removed, Mr. Teale addressed the following observations to the pupils:—

Gentlemen—The form of gangrene which you have witnessed in this case, has been variously named senile, dry, sympathetic, and spontaneous gangrene. It was formerly supposed to depend upon a state of debility, more especially as regarded the circulation, and was therefore treated with tonics and stimulants; but the result of this mode of treatment was anything but satisfactory. The first great advance towards a more correct pathology, as well as to a more successful treatment of the affection, was made by M. Dupuytren, who advocated the opinion that the gangrene was dependent upon *inflammation and consequent obstruction of the arteries*.

This view of the subject is advanced by Dupuytren in the third volume of his "*Leçons Orales*," where he brings forwards five cases to establish his opinion. The subject of the first case was a female, aged 71 years, affected with gangrene of the left leg. The heart was diseased; the arteries, particularly those of the affected limb, exhibited numerous ossific patches, and at the middle of the thigh the vein was filled with dark coloured clots, interspersed with masses of fibrine. In the second case, a man aged 60 years, there was gangrene of the penis and scrotum; the heart was diseased; the aorta affected with earthy deposits, and the iliac arteries were obstructed with coagula. The third case, a man aged 69 years, exhibited gangrene of the nose and fingers; the heart was diseased; the coronary arteries were ossified; the arch of the aorta, and the vessels arising from it, were the seat of ossific patches, and of red discoloration. In the fourth case, a female, aged 40, there was gangrene of the right leg; the femoral artery, at the middle of the thigh, was contracted, and contained a filiform rose-coloured clot; near the crural arch the artery resumed its natural size, but was converted into a solid cord, by being filled with a firm fibrinous adherent clot, which extended

to the origin of the common iliac, and was slightly prolonged into the iliac of the opposite side. The right femoral vein was also filled with a red-coloured coagulum. The fifth case, a man aged 63 years, was an example of phlegmonous erysipelas of the right arm, terminating in gangrene. The axillary and brachial artery, and its sub-divisions, are described as having been inflamed at various points, and affected with earthy deposits; the heart and large vessels were also diseased.

If we exclude the last case, which was evidently not one of senile or dry gangrene, but a totally different affection, the four other cases afford evidence of the co-existence of arteritis, acute or chronic, with gangrene; and upon this, and similar evidence, M. Dupuytren advanced the opinion that inflammation of the principal arteries of the part, attended with coagulation of the blood, and consequent obliteration of the cavity of the artery and obstruction of the circulation, was the cause of the gangrene.

The morbid condition of the arteries, observed by Dupuytren, undoubtedly performed an important part in the production of the gangrene; but I imagine that this distinguished surgeon has taken only a partial view of the subject, and has overlooked the importance due to a similar obstruction of the venous trunks in the production of gangrene. We know well, that if we obliterate an arterial trunk by ligature, the circulation is continued by the collateral vessels, and the vitality of the limb is preserved, provided the veins remain pervious. We also know, that when the large venous trunks are obstructed with fibrine, an oedematous condition, usually named phlegmasia dolens, is produced, but gangrene does not occur if the arteries are able to perform their functions. When, however, from any cause, the arterial and the venous trunks are simultaneously obstructed, gangrene results.

Now, gentlemen, if we refer to the cases of M. Dupuytren, we shall find that, in two of them, no notice whatever is taken of the state of the veins; we are therefore unable to decide, as far as these cases are concerned, upon the condition of the veins; but in the other two cases, it is expressly stated, that the venous trunks, as well as the arterial, were obstructed with coagula; but this fact is passed by without comment by M. Dupuytren. So frequently, however, have I observed this coincidence, that I have been induced to regard the *simultaneous obstruction, both of the arterial and of the venous trunks*, as the essential cause of this form of gangrene. The case which has given rise to these remarks is an additional illustration of the fact.

Although I would thus desire to extend the views of M. Dupuytren, as far as the pathology of this affection is concerned, yet I am unable to do more than to add my humble testimony in favour

of the therapeutic principle which he has advocated, namely, the substitution for the tonic and stimulant treatment, formerly in vogue, of a moderate antiphlogistic system, combined with soothing and emollient applications. The value of the treatment, recommended by M. Dupuytren, I have had repeated opportunities of verifying. Frequently have I witnessed, even in aged subjects, most evident and immediate relief of pain from the abstraction of a few ounces of blood, when opiates, stimulants, and tonics had proved unavailing; and by the same treatment I have not unfrequently seen threatened gangrene averted, and existing gangrene arrested in its progress. But I need scarcely tell you, that in adopting this moderate antiphlogistic treatment, regard must be had to the condition of the patient. If the skin be of somewhat higher temperature than natural, the cheeks flushed, the pulse not deficient in force, although the patient be advanced in years, and apparently much shattered by the disease, the repeated abstraction of small quantities of blood may be employed with safety and advantage; but if the powers of life be flagging, as in the case which you have lately witnessed, we have no alternative but to endeavour, by the use of stimulants and cordials, to prolong life for a brief period.

The pathological principle which I have now been explaining, has an important bearing upon the operation for popliteal aneurism. Few operations are more simple and easy of execution than the application of a ligature on the femoral artery at the part where it is about to pass behind the sartorius; but if you consult the records of surgery, you will be surprized to find, when the free anastomoses of the arteries of the lower extremity are considered, how frequently this operation has failed from the occurrence of gangrene. This is undoubtedly owing to the close proximity of the femoral artery and vein, from which circumstance the coats of the vein are liable to suffer violence during the operation, or they may subsequently become implicated in the inflammation excited in the vicinity of the ligature. From these causes the vein may become obstructed with fibrine, whilst the cavity of the artery is obliterated by ligature, and when both the arterial and venous trunks are obstructed, we have already seen that gangrene is produced.

The knowledge of this fact strongly inculcates the importance of our using the utmost care to avoid doing violence to the vein whilst we are applying a ligature to the artery; and should the parts implicated in the operation hereafter become painful or tense, it is equally important that we should guard against purulent matter being pent up within the wound, by allowing it the opportunity of escaping freely in the course of the ligature.

I have also known gangrene follow the operation for popliteal aneurism from a cause which, I believe, is altogether beyond our control. A few years ago I tied the femoral artery for a popliteal aneurism of unusually large size. The tumour pulsed strongly in every part; its contents were almost entirely fluid, as there had been but little deposition of fibrine. The ligature was applied without the slightest delay or difficulty, and with the least possible disturbance to the surrounding parts. On the following day the tumour was very little reduced in size, but the pulsation had entirely ceased, and the tumour was perfectly consolidated. The patient complained of severe pain in the leg. On the next day the foot was discoloured, and gangrene was evidently commencing. After a few days the foot and half the leg were gangrenous, and I amputated the limb above the knee. On dissecting the amputated part, the principal veins of the leg, as high as the tumour, were all filled with coagulum; above the tumour the femoral vein was pervious and healthy. A section of the tumour showed it to be perfectly consolidated by the deposition of concentric layers of fibrine.

In this case it was evident that the sudden conversion of this large, soft, yielding tumour, into a firm unyielding mass, had caused such a degree of compression of the popliteal vein as to arrest the flow of blood through it, and venous obstruction in addition to the arterial being produced, gangrene resulted.

You have here, gentlemen, the opportunity of examining the preparation; you see the veins below the tumour filled with coagulum, the femoral vein pervious above, and the aneurism itself of a very large size, perfectly consolidated.

NOTES AND ILLUSTRATIONS OF THE DISQUISITION ON PUERPERAL FEVER.

By EDWARD BLACKMORE, M.D.

(Concluded from page 390.)

THE TREATMENT.

Dr. G. Fordyce says, "In robust women in the country, at the beginning of the disease, which is attended with hardness of the pulse and general inflammation, bleeding from the system is advantageous, but if there is no general inflammation we must not bleed, neither can we employ purgatives with advantage; perhaps the evacuation itself increases the irritability, or the peristaltic motion of the guts affects the patients injuriously. Relaxants frequently purge or produce profuse sweating without relief; however, we must employ them, and if they excite a gentle sweat, they are of use. Bleeding from the skin of the abdomen is the most powerful remedy; eight or ten leeches, and sedative, and anti-spasmodic fomentations, the flannel being wrung out as dry as possible; the fomentation of briony, rue, matricaria, and other anti-spasmodic herbs, to be repeated in two or three hours.

The food should be farinaceous, and sometimes animal broths." MS. Lectures.

Dr. Osborne says, "The treatment is bleeding; an ingenious man has recommended bleeding, even in putrid fevers; a small quantity of blood drawn can never do harm; it is only the excess that does harm; and we always recommend taking away a small quantity in this disease. You are to consider the prevailing epidemic, in directing the quantity; and remember that women, after labour, can bear very little evacuation; and that in the beginning of this disease the symptoms are the same, whether it is to become a violent (*i. e.* typhoid) fever, or an inflammatory fever; therefore bleed with caution. Dr. Leake has recommended free, quick, and plentiful bleeding; and he has given a very fair account of his success. He lost thirteen patients out of nineteen, which is a great proportion; and I dare believe that half of them would have recovered if left to nature! At the time this disease prevailed, and was so fatal in the Store Street Lying-in Hospital, I determined to try the effect of bleeding, and I bled a strong plethoric young woman four times. On three bleedings she seemed better; but on the fourth she sank immediately! We may always bleed once to eight ounces, which can't do any harm; and as there is vomiting of porraceous bile, and more of it in the stomach, we give a vomit of ipecacuanha. Emetics are useful once or twice, but not except at the beginning. As the diarrhoea appears salutary, we give a clyster, and a purgative solution of Epsom salt in mint water, so as to procure three or four stools; we invariably purge to this extent. We then attempt to relieve the excessive pain, by applying a fomentation of hot chamomile flowers in a bag; after this we give an opiate; but I think nothing relieves so much as a chamomile fomentation. Anodyne embrocations have also been recommended. I then prescribe saline mixtures with spirit of mindererus, and pulverized antimony, with pulverized contrayerva, every six hours, as a relaxant. When you give antimony, tincture of thebaica may be added; these assist each other, and form an admirable medicine. You now leave your patient; and next day 'tis rare that bleeding can be repeated, except the woman be very plethoric, or an inflammatory epidemic prevails, which may require it. However, you can't expect the fever to be gone in twenty-four hours; in general it is either gone off, or fatal in from four to six days, and sometimes it has been fatal on the tenth day. We go on with the same means. Blisters, leeches, opium externally, have been recommended, but I never saw them useful. If the antimony does not act, it must be increased.

"However the fever begins, in a short time it puts on the low nervous or putrid type; and here you must use cordials. Camphor is the best cordial; it never heats. I prescribe camphor julep, six drachms; Hoffman's anodyne, two drachms; giving the patient as much as she will take. If she wants more cordials, I give wine-whey, made thus,—a cup of milk, a cup of wine, and a pint of water. There are two or three cases in which the patients were much relieved by purging with calomel, given to the quantity of ten grains; if a case occurs to me I will use it. After all, I cannot say I have known many cases in which medicine has been of use; though I have seen great practice, I am yet to learn what is most useful in this disease! At the