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ON A CASE OF SPONTANEOUS THROMBOSIS IN THE LEFT FEMORAL AND SAPHENA VEIN.

BY H. M. TUCKWELL, M.D.

A. B., aged 33, has previously enjoyed good health; during the past year has allowed himself but little rest in his profession, and has become thoroughly overworked. His present illness commenced about a month ago with severe pain in the head, which lasted five or six days without intermission, and left him much weakened. The pain then shifted to the loins, and continued there for two weeks, during which time he was extremely depressed and unable to get about. At the end of this time, rather more than a week ago, he was attacked suddenly in the night by a violent pain in the right side, which seems to have been purely neuralgic, for no signs of pleurisy could be detected at the time; this pain continued for three days and nights, during which time *he lay continually on the left side*, without sleep, and taking no food, till, on the fourth day, it left him almost as suddenly as it had come on. On attempting now to change his posture he found that the left leg was quite numb, that sensation began to return after rubbing the leg for a time, but that, with returning sensation, there came on an intense pain in the lower part of the leg, more especially in the calf; that he soon observed the leg and foot beginning to swell; that the swelling gradually involved the whole leg, and extended up the thigh to the groin, the pain becoming generally diffused and intensified as the swelling extended and increased. I saw him on the fourth day after the swelling had commenced, when the following appearance presented itself:—

He is extremely prostrate, unable to raise himself in bed; the eyes hollow; the voice low and changed: skin generally cool, except that of the left leg, which is abnormally hot; pulse 60, very small, thready and irregular, intermitting at every third beat; thorax generally resonant on percussion; respiration feeble, but free from any morbid sound; urine natural. The left leg, from the groin to the toes, is enormously swollen, pitting everywhere deeply on pressure, its surface is hot and very sensitive; an indistinct hardness can be felt through the œdema along the course of the femoral and saphena vein as far as Poupart's ligament, above which point it cannot be traced; beneath the œdematous integuments large superficial veins are seen ramifying along the anterior and outer aspect of the thigh.

Diagnosis.—Thrombosis of saphena and femoral, perhaps of external iliac vein.

Treatment.—To relieve the pain, cold was applied to the whole limb in the form of evaporating lotions, and the limb was supported on pillows. Small quantities of brandy and wine were administered, with milk and beef-tea.

On the day following, Mr. Savory saw the case with me, and gave me the benefit of his valuable opinion. He fully concurred in the

diagnosis, but advised that the leg should be wrapped in cotton-wool, and pressed upon me most forcibly the necessity of increasing the quantity of stimulants, bidding me, to use his own words, "measure the quantity not by the glass or bottle, but by the effect produced." From this time, brandy, rum, port, sherry and champagne were given every two or three hours day and night, till, on the sixth day from the time that I first saw him, he was taking, in the twenty-four hours, brandy, ℥ zij.; rum, ℥ xij.; wine, ℥ xx. The effect of this on the pulse was as follows:—It rose from 60 to 94, the intermissions at the same time becoming less frequent, and the volume better and better, till, on the tenth day from the time that the stimulants were first given, and while he was still taking the above quantity, it fell to 84, and ceased to intermit. His general condition improved, *pari passu*, with the pulse. At the request of the patient, I returned to the cold applications, after having made fair trial of the cotton-wool, and found that it made the leg uncomfortable, while the cold relieved the pain in a marked degree. On the twelfth day, the pain having quite subsided, while the swelling remained unchanged, the leg was carefully rolled in flannel bandages, moderate pressure being at first employed and gradually increased, and it was swung from a fracture cradle, with the foot slightly raised. This was continued during a period of seven weeks, at the end of which time the swelling had entirely disappeared. It may be remarked, that the œdema subsided rapidly for the first week after the application of the bandage, but then seemed, for a time, to remain stationary, and was at last slowly removed. The quantity of stimulants was gradually reduced after the fourth week.

He has now recovered his health, can walk two or three miles in the day, but still finds, after a walk, that the leg and foot feel heavy, and that the veins in the foot become, in spite of a lace-socking, considerably distended. There is now nothing abnormal to be felt or seen in the thigh in the region of the large veins, nor is there any visible enlargement of the superficial veins there.

Remarks.—The occurrence of spontaneous coagulation in the living veins, simply as a result of nervous debility, independently of the puerperal state, of fever, or of any wasting organic disease, as phthisis, cancer, etc., is, seemingly, a rare phenomenon. On reading through Virchow's masterly paper on the subject, I cannot find, among the many cases of thrombosis there enumerated, one exactly similar; nor is there in Cohn's monograph one case in which there was not either some organic disease or fever to account for the coagulation. Not that I wish to instance this case as one whose pathology is distinct or special, for the so-called "Marantischer Thrombus" of the Germans, or clot that forms in wasting diseases, is, as Virchow has shown, dependent primarily on the same cause,—an enfeebled state of the heart's action; but the disease here presents peculiar in-

terest, in that there was an absence of any dyscrasia or fever which might be supposed to give rise to the formation of a thrombus by altering the composition of the blood; it shows that to a feeble heart alone may be attributed all the symptoms and signs of the worst form of "phlegmasia dolens." It may be urged by some, in contradiction of this assertion, that phlebitis was here the real cause of the coagulation; but a careful observation of the way in which the disease showed itself seems to me to afford convincing evidence that no phlebitis whatever was present, and thus to confirm still further the doctrines of Virchow. The rapid development and extent of the swelling certainly point to a primary obstruction of the main venous trunk in the thigh. Now, if this obstruction had been due to phlebitis, surely the first symptoms of pain and swelling would have been noticed in the immediate neighborhood of that venous trunk, whereas nothing of the kind was observed. The swelling and pain commenced in the leg and foot, and extended, last of all, to the thigh; nor was there at any time marked pain, along the course of the obstructed vein, distinct from that felt all over the leg. Besides, the general symptoms were not those of an acute inflammatory process; the skin of the body, generally, was cold, and the pulse quite unlike that of inflammation. The conversion of the saphena and femoral vein into a solid tube by coagulation of their contents, is quite sufficient to account for the hardness felt along their course.

John Davy and Gulliver were the first to notice the frequent occurrence of clots of this kind in the veins of those who had suffered from chronic diseases, with failing circulation and great prostration of the vital powers. After them, Hasse and Bouchut turned the attention of pathologists still further in this direction. But to Virchow must be awarded the largest share of praise, for he it was who first cleared away the mists which enveloped the whole subject; he showed, by repeated experiments and post-mortem examinations, that the doctrine of phlebitis, first promulgated by John Hunter, is erroneous; that the coagulation is not preceded by inflammation of the vein, and that there is no exudation on the free surface of its inner coat which determines coagulation; but that, through failure of the heart's power, the blood current is retarded and finally stagnates, and that the starting-point for coagulation is at the point of junction of the valve with the wall of the vein, the valve here (like the chordæ tendinæ in the heart) acting as a foreign body, and furnishing a centre round which the stagnant blood coagulates.

It is worthy of notice that, in circumstances predisposing to thrombus formation, a long continuance in one posture seems to favor the occurrence of the phenomenon, and that the side to which the patient inclines is often the side on which the clot forms. Virchow dwells upon this, and relates cases which corroborate the statement. Cohn has observed the same; he mentions one case in particular—a case

of Bright's disease with effusion into the right pleura—where the patient lay continually on the right side and right arm, and where the whole right arm became œdematous from the formation of a thrombus found after death in the subclavian vein.

The contingencies to be feared in these cases are, first, that the heart may not be able to recover itself, and that death by asthenia may follow rapidly; secondly, that erysipelas may set in, followed by diffuse abscess, or even gangrene; thirdly, that a portion of the clot may be detached and washed into the pulmonary artery, causing sudden death; fourthly, that the clot may undergo the so-called retrograde metamorphosis, may soften and break down in its interior, and that this softened, ill-conditioned fibrine may be carried into the general circulation, and cause death from pyæmia. The heart must regain its lost power, and the clot must undergo a healthy process of organization, before anything like a favorable prognosis can be given.

The question then arises as to how the circulation is re-established; the answer to which is, by the formation of collateral channels, if the vein be completely obliterated by the organized clot. But it may also happen that the canal of the obstructed vein may in part reopen; that the clot, during the process of organization, may shrink away from one wall of the vein as it becomes adherent to the other; and that the blood may flow on again in its original channel, now of necessity much narrowed by the changes that have taken place. It is probable that the latter has occurred in the case related, from the fact that there are no large superficial veins visible.

The circumstances of principal interest in the treatment employed are, the beneficial effect of cold, the value of pressure, and the necessity of stimulants.

The application of cold—a remedial agent so largely employed in Germany—is strongly recommended by Virchow as the best and often the only means of alleviating the terrible pain that follows the sudden obstruction by an embolus of one of the large arteries of the extremities. The relief it afforded in this case was most marked. Pressure carefully applied and gradually increased by means of a flannel bandage—a plan of treatment employed by many obstetric physicians in the later stages of the puerperal phlegmasia dolens—was here, too, attended with good results. The rapid and manifest improvement in the general condition of the patient, and the restoration of the heart's power in proportion as the quantity of stimulants was increased, sufficiently indicate their importance in the treatment of such cases. And, surely, if alcohol acts thus beneficially after the mischief has been done, we cannot avoid the reflection, that the free use of alcohol in wasting diseases may often avert the mischief altogether, and that the stimulant plan of treatment has, at any rate, this much to be said in its favor, that it tends to prevent the formation of thrombi. In the history of this disease we have, certainly, one

satisfactory example of the way in which a real advance in pathology leads to a corresponding advance in therapeutics.—*Medical Times and Gazette.*

[The preceding article has been transferred to our pages of selected papers on account of its practical interest, and that we might call anew the attention of readers to a class of important cases, to which that above recorded belongs, and instances of which now and then occur with disastrous results in the practice of every physician.

Sudden death from fatty degeneration of the heart is but a single consequence of the influences which, operating in a less degree, produce results similar to those recorded by Mr. Tuckwell. A number of striking instances have been related in this JOURNAL, on various occasions, where patients died suddenly, or came near it, solely from the inefficiency of the muscular power of the heart to propel the blood to the brain, the syncope consequent thereon terminating fatally or nearly so. Other cases illustrating this mode of death have from time to time been reported as following the sudden rising from the recumbent to a sitting posture of females recently confined; the muscular force of the heart, weakened by the exhaustion incident to pregnancy and its attendant loss of blood, proving unequal to the task of the circulation; or, what practically amounts to the same thing, the volume of circulating fluid being greatly diminished and altered, becomes an inadequate stimulus to the heart, which thus fails to drive the blood to the brain, against gravity, in sufficient quantities for the sustenance of the nervous influence upon which its contractile power depends; syncope, therefore, takes place and not unfrequently proves fatal. Mr. Tuckwell points out in his paper other accidents consequent upon this condition of the heart. In the case narrated, an arrest of a portion of the circulation was produced by the influences we have described. The bearing of these upon the production of phlegmasia dolens is also distinctly alluded to. As interesting in this aspect of the subject, we desire to mention the following case.

A patient, recently under our charge, was confined in November last. Naturally healthy and robust, the care of children and household responsibilities, none of which her energetic disposition would allow her to delegate to others, had enfeebled her health and reduced her strength to a state ill qualified to bear the further exactions of an increasing family, or to resume at so early a period as inclination prompted her domestic duties. After a slow convalescence, and contrary to advice, she again, however, returned to her active habits, long before her anæmic and exhausted condition warranted. Early in February a small felon formed on one of her fingers; a fortnight later, a little, indolent abscess gathered in one of her breasts, and a week afterwards she complained of pain and swelling about her ankles. On examination, several tender and indurated nodosities were

detected in the course of the superficial veins of both legs, below the knee, chiefly in the vicinity of the ankle. These were sufficiently raised above the surface to be visible in profile, surrounded by a circumscribed deposit of lymph, pitting upon pressure and marked by a trifling redness, which subsequently became slightly ecchymosed. This condition was unaccompanied by any febrile or constitutional disturbance; the nodules persisted and multiplied for some time, being aggravated by the least attempt at walking or even by allowing the feet to hang down. Rest and tonic treatment, with the application of tincture of iodine externally to the knots, at the end of six weeks, arrested the further development of these swellings, none of which threatened suppuration or indeed manifested any signs of active inflammation. An indolent tumefaction continued to mark the seat of each tumor which appeared. These phenomena, constituting what is described by Cruveilhier as "adhesive phlebitis," are not of common occurrence, and, we are led to think, not really of the nature of phlebitis at all, but due rather to a stagnation of the blood, or, in other words, that they are "spontaneous thrombosis," in a remote part of the circulation, from sheer inability on the part of the heart to propel the blood through its entire circuit. The condition of our patient's pulse, which was very weak and small, the feebleness of her heart's action, her anæmic condition and generally impaired health, as shown by the felon and abscess, together with the extent to which she was upon her feet, justify this theory of the symptoms, especially in presence of a case like that which has served us as a text, and in the light of the discussion which is there elaborately entered into. It is not difficult to imagine, in a subject like ours, that, had the symptoms been carried one degree further, much graver consequences would have been the result.

Occurring insidiously, in convalescents, or in delicate persons enjoying their usual degree of health, characterized by grave and sudden manifestations, the events liable to attend enfeebled action of the heart, whether from fatty or other degeneration, cannot be too frequently present in the mind of the physician or too earnestly brought to his notice.]

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY FRANCIS MINOT, M.D., SECRETARY.

APRIL 11th.—*Cerebro-spinal Meningitis*.—Dr. ELLIS reported the following case.

On April 4th, a young man, 17 years of age, came home from a store in which he was employed, with a slight headache, but as he had been subject to this for several years it attracted no particular attention. In the evening, however, it increased, and was followed

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