A CONTRIBUTION

TO

THE PATHOLOGY

OF

PHLEGMASIA DOLENS.

BY ROBERT LEE, M.D.

PHYSICIAN-ACCOUCHEUR TO THE BRITISH LYING-IN HOSPITAL.

FROM THE FIFTEENTH VOLUME OF THE MEDICO-CHIRURGICAL TRANSACTIONS, PUBLISHED BY THE MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

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Read Dec. 23, 1828.

THERE is, perhaps, no subject on which a greater difference of opinion now prevails, than on the Pathology of Phlegmasia Dolens. Previous to the publication of the Memoirs of Mons. Bouillaud * Drs. Davis† and Velpeau ‡, various hypotheses had been advanced, respecting the proximate cause of this disease, but they were mere speculations unsupported by facts, and inadequate to account for the phenomena. The cases and dissections related by these authors first threw light on the real nature of the complaint, and shewed that it consisted in an inflammation of the trunks, and principal branches of the veins of the lower extremities; but the histories of most of these cases were so brief, and in many respects

* Archives de Médecine, Tome II, p. 192, Jan. 1823.

† Medico-Chirurgical Transactions, Vol. XII, May 1823.

‡ Archives de Médecine, Tome VI, p. 221.

so imperfect, that pathologists remained in doubt whether they should be considered as examples of genuine Phlegmasia Dolens, or viewed as analogous to those formidable attacks of Phlebitis which sometimes succeed to venesection and wounds.

In the XIIth Volume of the Transactions of this Society, published in 1823, the valuable Essay of Dr. Davis appeared, and since that period there has not been recorded in the medical literature of this country any unequivocal example of Phlegmasia Dolens, where the actual condition of the affected parts has been ascertained by dissection. I hope, therefore, that the case which I am about to relate will not be uninteresting to the Society, as it affords me an opportunity of giving an account of the morbid appearances which I observed in the iliac and femoral veins of a patient, who died twenty-one months subsequent to an attack of Phlegmasia Dolens.

Case I.—Mrs. J——, æt. 31, was delivered of her fifth child on the 10th of March, 1827, after a labour of twenty hours' duration, during which she frequently complained of severe pain shooting into her left thigh and leg. This pain entirely subsided subsequently to the labour, and she appeared to recover in the most favourable manner until the 14th of March, the fourth day after her confinement. She then began to experience a sense of pain in the left groin and calf of the leg,

with numbness in the whole left inferior extremity; but nothing unusual could be perceived in the appearance of the limb, except a slight tumefaction in the situation of the inguinal glands, where pressure occasioned great uneasiness. She had occasional rigors. The tongue was furred, and there was much thirst. Bowels open. Pulse only eighty. The flow of milk and lochia natural.

March 16th, (the sixth day after parturition,) the pain of the left thigh and leg continued with increased severity, particularly from the groin to the knee, along the inner surface of the limb where a swelling of a glistening white appearance was observed. The pulse was still eighty, and the general functions were but little deranged.

19th. The pain had diminished, but the swelling had greatly increased, and extended to the leg and foot, which were both very tense, and did not pit on pressure. There was no discoloration of the skin. The pain of the limb was relieved by placing it in a state of moderate flexion.

21st. The pain in the groin had abated, and the swelling appeared to decrease.

24th. The pain of the limb was aggravated, particularly on moving it. The pulse more accelerated.—Skin hot and moist—she was extremely irritable and desponding.

25th, (the fifteenth day after delivery.) When I first saw her, the whole extremity was much swollen, the intumescence being greatest in the ham and calf of the leg. The integuments wore a uniform smooth shining appearance, having a cream-like colour, and everywhere pitting on pressure, but more readily in some situations than in others. The temperature to the touch did not differ from that of the other limb, though she complained of a disagreeable sensation of heat throughout its whole extent, and much pain was experienced in the upper and inner part of the thigh on moving it. Immediately below Poupart's ligament, in the situation of the femoral vein, a thick, hard cord, about the size of the little finger was distinctly felt. This cord, which rolled under the fingers, and was exquisitely sensible, could be distinctly traced three or four inches down the thigh in the course of the femoral vessels, and great pain was experienced on pressure, as low down as the middle of the thigh in the same direction. The pulsations of the femoral artery were felt in the usual situation below Poupart's ligament; pressure over this vessel excited little or no uneasiness. Pulse ninety and sharp. Tongue much furred.—Thirst urgent. Bowels confined.—The lochial discharge had nearly disappeared.

Leeches were applied to the left groin and upper and inner part of the thigh; these were

followed by cold lotions to the affected parts, and mild cathartics and anodynes were administered internally.

30th. The acute pain on pressure, and motion of the limb had subsided, and the extremity was universally œdematous. For two months after this period the limb remained so feeble, as to disable her from walking, and continued larger than the other.

Eleven months after the attack the general health of the patient was restored, and she again became pregnant. On the 5th of November, 1828, she was delivered of a still-born child, and died soon after from uterine hemorrhagy. Permission to examine the body was most reluctantly granted three days after death, and the dissection was necessarily conducted with the greatest possible dispatch, from the danger of interruption on the part of the relatives.

Appearances on Dissection.—The whole of the left inferior extremity was considerably larger than the right, but no serous fluid escaped from the incisions made through the integuments, beneath which a thick layer of peculiarly dense, granular, adipose matter was observed. The common external iliac and femoral veins and arteries, enclosed in their sheath, were removed from the body for examination. The common iliac with

its subdivisions, and the upper part of the femoral veins so resembled a ligamentous cord, that, on opening the sheath, the vessel was not, until dissected out, distinguishable from the cellular substance surrounding it. On laying open the middle portion of the vein, a firm thin layer of ash-coloured lymph was found in some places adhering close to and uniting its sides, and in others clogging it up, but not distending it. On tracing upwards the obliterated vein, that portion which lies above Poupart's ligament was observed to become gradually smaller, so that, in the situation of the common iliac, it was lost in the surrounding cellular membrane, and no traces of its entrance into the vena cava were discernible. The vena cava itself was in its natural state. The entrance of the internal iliac was completely closed, and in the small portion of it which I had an opportunity of examining, the inner surface was coated by an adventitious membrane. The lower end of the removed vein was permeable, but its coats were much more dense than natural, and the inner coat was lined with a strong membrane, which diminished considerably its calibre, and here and there fine bands of the same substance ran from one side of the vessel to the other. The outer coat had formed strong adhesions with the artery and the common sheath. The inguinal glands adhered firmly to the veins, but were otherwise in a healthy condition.

No appearance of recent disease existed, and the density and firmness of the morbid textures evidently shewed that the whole was the result of inflammation which had occurred at a remote period.

The Sketch * copied from a very accurate drawing, taken immediately after the removal of the vessels from the body, will convey a clearer idea of their morbid state than any verbal description. The vein is laid open on the back part, and bristles are passed under the adventitious membrane lining its interior and closing up the mouths of all the anastomosing branches.

The patient whose case I have now related was under the immediate care of my friend Mr. Grant, of Thayer-street, Manchester-square, and to him I am indebted for the history of the disease during its early stages.

Case II.—Mrs. P——, æt. 27, of a delicate constitution, had been affected, during the last two months of pregnancy, with œdema of the right inferior extremity, a varicose state of the veins, and pain in the inside of the thigh and groin. In the latter situation it had been at times so severe as to prevent her retaining the limb long either in the bent or straight position.

* See Plate II.

On the 8th of December, 1827, she was delivered, after a tedious labour, of a healthy child, and during the succeeding week felt unusual pain in the hypogastrium and in the right iliac and inguinal regions. On the 20th, the pain which had remitted returned with increased violence, and on the 21st rigors and other symptoms of pyrexia supervened, and the whole right inferior extremity became stiff and swollen.

On the 22d (the fourteenth day from her confinement) I first saw her. A considerable degree of tumefaction then occupied the extremity, it was, however, much greater in the leg than in the thigh; and in the former the integuments were tense and elastic, but pitted slightly on firm pressure along the front of the tibia. In the thigh no effect was produced by pressure. The temperature to the touch was higher than natural. There was exquisite pain aggravated by pressure in the course of the femoral vein, and in the groin this vessel felt as if enlarged, rolling, hard and incompressible under the finger. The pain extended upwards through the iliac region, along the course of the great vessels, and through the thigh, ham, and back of the leg towards the foot. The pulse was 112.—The skin hot.—The tongue white, with much thirst, and nausea.

December 25th, (seventeenth day after delivery, and fifth from the invasion of the disease,) all the

symptoms are augmented in severity, and violent pains are experienced in the hypogastrium and iliac regions. The tumefaction in the thigh has increased, and at the upper and inner part is so great as to prevent the distended vein from being felt. The right labium pudendi is much swollen. The integuments of the limb are pale and shining, and everywhere pit on strong pressure.

26th. A similar affection observed to be commencing in the left extremity. There is pain and sense of numbness in the whole pelvic region. The calf of the leg is slightly tumid and painful.

27th. Fullness and severe pain in the left iliac region.—Swelling of the leg and temperature increased. No enlargement of the femoral vein can be felt, yet there is exquisite pain in its course through the groin and upper part of the thigh.

28th. From the diminution of the swelling of the right extremity, the indurated vein can again be felt in the groin, the pain however in this situation is much abated. The left extremity is swollen, stiff, hot, and painful, and cannot be moved, its integuments are white and pallid, and pit on strong pressure. The left labium pudendi is similarly affected. The femoral vein is felt enlarged and indurated in its passage through the groin;—intense pain marks its course down the thigh to the point where it

leaves the ham; in this latter situation pressure produces much suffering, as it does down the whole posterior part of the leg. The parts of the limb out of the course of this vessel and of the great superficial veins are comparatively much less painful than on the lower and anterior part of the thigh; for several inches above the knee firm and continued pressure is borne without complaint. The countenance is pale and sunk. The pulse rapid. There is great irritability and prostration of strength.

29th. The swelling is so much augmented in the last affected limb, that the femoral vein can no longer be distinguished.

8th January. Tumefaction and pain gradually declining in both extremities, which now admit of being moved, but cannot be extended. The feet are more swollen and tender than any other part of the limbs.

17th. General health improved. No pain experienced in the course of the great vessels. Left leg and both feet slightly œdematous.

12th Feb. Has been gradually improving since the last report. There is great weakness in both extremities, but pain is nowhere felt, and the slight degree of swelling remaining is confined to the left ankle and leg. No induration nor en-

largement is perceptible in the course of the femoral vessels.

The remedial means employed were local abstractions of blood by leeches, anodyne fomentations, and cold lotions. Purgatives and opiates were given according to circumstances; and low diet enjoined during the acute stage of the dissease.

Dr. Sims, Mr. Arnott, and Mr. Prout, saw this patient at different periods during the progress of the complaint *.

The symptoms observed in the foregoing cases were precisely those which have been described by continental authors, as Puzos, Levret, Callisen, and Gardien, and by the best writers on Phlegmasia Dolens in this country, as pathognomonic of

* Feb. 3, 1829. Mrs. P. is now under my care; and from the condition of the inferior extremities, and symptoms under which she labours, it appears highly probable that the iliac and femoral veins on both sides are partially, if not entirely, obstructed. During the last year both limbs have been extremely feeble, and the feet and ankles have been so tumid and painful as often to prevent her from walking. She has also suffered from constant dull pain and sense of stiffness in the groins and upper and inner part of the thighs, where the enlarged femoral veins were formerly perceived, but which cannot now be felt on the most careful examination. Numerous large tortuous veins under the skin of both ankles and legs are, however, apparent.

that disease; and by a short reference to a few passages contained in the works of Puzos and Levret, the accuracy of whose descriptions has never been questioned, it will be seen, that from them alone, independent of the facts ascertained by recent pathological enquiries, the inference might be fairly drawn, that the primary seat of the disease is most frequently in the great veins or arteries of the pelvis and thigh of the affected extremity, and that the infiltration of the cellular membrane, and other diseased appearances, are merely the consequence of the inflammation and obstruction of the blood vessels.

Puzos observes, "La douleur et l'enflure commencent toujours dans l'aine, et par le haut de la cuisse le mal descend, ensuite tout le long du cordon des vaisseaux." *

And at p. 350, "C'est dans l'aine et dans la partie superieure de la cuisse, que le depot commence a donner des signes de sa presence, par la douleur que l'accouchée y ressent, et la douleur suit ordinairement le trajet des gros vaisseaux qui descend le long de la cuisse, elle est même plus vive dans tout ce trajet. On reconnoit l'etendue du mal par une espèce de corde douloureux que forme l'infiltration du tissu cellulaire qui accompagne ces vaisseaux."

* Puzos, Mémoire sur les Depots Laiteux, p. 346.

Levret's description strikingly coincides with that of Puzos, "Le cordon des vaisseaux cruraux, est aussi douloureux pour lors dans une grande partie de son trajet." *

Callisen and Gardien have described the disease in similar terms, and Mr. Whyte, Mr. Trye, and Dr. Hull, have all stated that the pain is most frequently first experienced in the situation of the great blood-vessels at the brim of the pelvis, and extends from thence along the course of the femoral vessels.

From the preceding facts, as well as from the cases to which I have already alluded, we may, I think, safely conclude, that inflammation of the coats of the iliac and femoral veins in puerperal women does unquestionably give rise to all the phenomena of genuine Phlegmasia Dolens. It remains, however, for future observers to determine, if this venous inflammation be the only cause of the disease, or if cases do not occur wherein the other textures are primarily affected. I may observe, that hitherto no instance of Phlegmasia Dolens has been met with where the glandular, lymphatic, or cellular tissues of the limb have been found diseased, without the veins being also in a morbid condition.

Whether the inflammation of the coats of the

* Levret, L'Art des Accouchements, p. 932.

veins in this disease be simple adhesive inflammation, or inflammation of a specific kind connected with the puerperal state, and differing not only in degree of intensity, but in its essential nature from phlebitis after venesection, it is difficult to determine. The peculiar character of the symptoms seems strongly to favour the latter opinion, though it cannot be denied that the disease occasionally assumes the form of common phlebitis, fatal cases having occurred, where pus has been found secreted by the internal coats of the iliac veins, and death caused by inflammation and apostematous deposits of matter in the lungs and other remote organs of the body.

APPENDIX,

Containing Cases and Observations further illustrative of the Pathology of Phlegmasia Dolens.

Since the preceding paper was communicated to the Society, the three following cases have come under my observation, in which though an inflammatory affection of the veins undoubtedly existed, yet that degree and kind of swelling of the inferior extremity did not take place, which is considered to be characteristic of Phlegmasia

Dolens. In all these cases the phlebitis commenced with pain in the situation of the iliac and femoral veins; but in the second, the inflammation, instead of pursuing the course of the femoral vein down the thigh, appeared to have been arrested at the junction of the saphena interna with this vein, and to have proceeded along the trunk and branches of the superficial vessel to the foot. All these affections of the lower extremities which I have witnessed, I am disposed to regard as varieties of the same disease, and to attribute the absence of general swelling of the limbs to the slight degree of inflammation and obstruction which existed in the iliac and femoral veins.

Case III.—Mrs. Smith, 36, Brownlow Street, was delivered of her third child on the 17th Nov. 1828, after a natural labour. She had enjoyed a good state of health during her pregnancy, and every thing proceeded favourably till the eighth day after her confinement, when she was attacked with pain in the left inguinal region, which increased in violence for three or four days, and was accompanied with slight symptoms of fever.

Nov. 28th. Hypogastrium and left iliac region painful on pressure; pain in the direction of the great vessels from the groin downwards, terminating at the point where they pierce the triceps muscle; no perceptible swelling. Pulse eighty-two and full; tongue white; thirst.

29th. Calf of the leg tumid and painful; great weakness of the whole extremity; the course of the femoral vein distinctly traced by the pain caused on examination; pulse 86; lochial discharge subsiding; milk abundant.

December 4th. The pain in the groin and leg, which for a day or two appeared to decline, has again become more severe; there is stiffness, with a sense of numbness in the limb, which she is unable to move, and a considerable degree of swelling from the knee to the ankle, as well as along the inside of the thigh. The integuments retain their natural colour, but their temperature is increased; no pitting from pressure, except on the tibia. A hard and painful cord distinguishable in the course of the great vein in the groin and upper part of the thigh. In the ham and lower half of the extremity pressure borne without complaint; little or no disturbance of the general functions.

9th. The pain has abated in the upper part of the thigh, and is now felt in the ham and calf of the leg, which is more swollen; skin colourless.

12th. The integuments of the leg and foot tender to the touch, and everywhere pit on pressure; temperature natural.

14th. Both pain and tumefaction gradually sub-

siding. A month after the last report, all traces of the complaint had disappeared, except a sense of stiffness, in the upper and inner part of the thigh, a slight degree of œdema about the ankle, and general debility of the extremity.

Several professional friends witnessed the progress of this case, and had no doubt as to the nature of the disease.

March 11th, 1829. The extremity formerly affected has in all respects the same appearance as the other, but it is still so feeble, as to prevent her walking any considerable distance.

Case IV.—Mrs. Coghlin, æt. 37, No. 1, Abbey Place, Little Coram Street, was delivered on the 14th February, 1829, and on the 21st, was attacked with pain in the left inguinal region, which extended during the two following days along the inner surface of the thigh and leg to the ankle. Mid-way between the knee and ankle, and about an inch from the inner edge of the tibia, the pain was so acute on the 23d, that she applied several leeches over the part. In this situation a diffuse swelling took place, soon after the aggravation of the pain.

Feb. 25th. She complains of great weakness in the whole left inferior extremity, and pain along the inner surface of the thigh and leg, the trunk

and principal branches of the internal saphena vein, to the ankle are enlarged, indurated, and very painful on pressure; a considerable degree of swelling exists in their whole course, but the integuments though hotter than on the outer surface of the limb, retain their natural colour and do not pit. Pressure over the situation of the femoral vein excites no pain, and the vein itself cannot be felt. Along the outer surface of the limb there is neither swelling, nor increased heat, nor sensibility.

The pulse is slightly accelerated, tongue clean, bowels open. When the pain is severe, she states that she has feverish attacks, which are however of short duration.

During gestation she enjoyed good health, but observed the veins of the left lower extremity to swell much more than those of the right.

27th. The internal saphena vein continues in the same state, and the swelling is not increased along its course. Considerable tenderness is now experienced in the situation of the femoral vein, though it is not distinctly perceptible to the touch.

March 1st. The swelling along the course of the saphena vein particularly in the leg is increased. Its branches both in the thigh and leg, are hard, knotted, and very painful. The integu-

ments along the inner surface of the thigh and leg, are hot, but retain the natural colour and do not pit, except along the front of the tibia.

7th. Swelling diminished, and the branches of the saphena vein in the leg less hard and painful.

10th. She suffers much more from pain in the leg, particularly along the exterior surface from the ankle to the knee joint, where several indurated branches of veins can be felt. The whole leg is now affected with a considerable degree of swelling, without increased heat or tension of the integuments. The branches of the internal saphena vein in the thigh are still hard and painful, and the femoral vein is now perceived to be enlarged and indurated, under Poupart's ligament, though but little sensible when pressed. The limb is extremely feeble, and great pain is produced by attempting to extend it.

18th. The leg and ankle are œdematous, and the extremity is left in a state of great debility. The femoral vein cannot now be distinctly perceived, but the coats of the saphena are still thickened and indurated, though perfectly free from pain. General health good.

The foregoing example of inflammation of the internal saphena vein, occurred in a patient of the Middlesex Hospital, and I was indebted to the

kindness of my friend, Dr. Ley, for an opportunity of observing the progress of the symptoms.

In 1827, a similar affection of the saphena vein occurred in two patients of the Westminster General Dispensary, who were under my care, and in both of whom the inflammation commenced with pain in the iliac and femoral veins. The swelling in these instances was also limited to the inner surface of the thigh and leg.

Case V.—Mrs. Hopkins, æt. 39, No. 6, Little Earl Street, was delivered on the 11th of February 1829, and ten days after experienced a sense of weakness in the left lower extremity, with pain in the region of the uterus, and febrile symptoms. The pain continued in the hypogastrium for three or four days, and then became fixed in the left iliac region and groin.

February 26th. She now complains of pain in the left iliac region, and of general increased sensibility in the whole extremity, amounting to pain on pressure along the direction of the femoral vessels, where, however, there is no fullness or hardness to be perceived. There is a slight diffuse swelling in the calf of the leg, without increased heat or discolouration of the integuments. Considerable pyrexia.

March 6th. The pain is now chiefly confined

to the course of the great vessels of the limb. There is some swelling of the leg and thigh, but the integuments are not tense, and they retain their natural colour and temperature. Pulse quick; tongue white, with thirst. Much general debility.

10th. The whole extremity is now swollen, but not tense. There is great sensibility and increased temperature along the track of the great vessels; the femoral vein can be distinctly felt indurated and enlarged for a space of three inches below Poupart's ligament, and when pressed, acute pain is experienced in its whole course to the ham. Pulse 100; tongue white. Prostration of strength continues.

15th. The pain and swelling of the extremity have been aggravated during the last two days, but they are again diminishing. Induration of the femoral vein with tenderness continues.

23d. The extremity is so completely deprived of all power that it is incapable of supporting the weight of the body. Sense of soreness in the course of the deep seated and superficial veins. In the ham one of these vessels seems to be indurated. There is a cluster of enlarged glands seated over the great vessels in the groin, the whole limb is larger than the other; no unnatural turgescence of the cutaneous veins is perceived.

The preceding case occurred in the practice of the Westminster General Dispensary, and Dr. Granville who saw the patient with me, soon after the commencement of the complaint, also considered it an example of Phlegmasia Dolens in its milder form.

26, Argyll-street,
24th March 1829.

G. Woodfall, Printer, Angel Court, Skinner Street, London.