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ON

ABSCESSES

IN THE

LOWER ABDOMINAL CAVITY

AND

ITS PARIETES.

BY

GURDON BUCK, M.D.,

NEW YORK.



NEW YORK:

JOHN F. TROW & SON, PRINTERS.

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THIS pamphlet contains three separate articles, all of which have been published before in different medical journals : that on "Perityphlitic Abscess in the Ilio-Cæcal Region," in the Transactions of the New York Academy of Medicine for September, 1874, and in the New York Medical Record of January 15, 1876 ; that on "Migration of Purulent Matter," in the Richmond and Louisville Medical Journal for March, 1876 ; and, finally, that on "Post-Fascial Abscesses originating in the Iliac Fossa," in the New York Journal of Medicine for March, 1857. These different subjects are so intimately related to each other, and have such important bearings on surgical therapeutics, that the author has thought it advisable to republish them under the title of "Abscesses in the Lower Abdominal Cavity and its Parietes."

THE MIGRATION  
OF  
PURULENT MATTER

AND THE  
ANATOMICAL AND OTHER CONDITIONS

UPON WHICH IT DEPENDS:

ILLUSTRATED BY CASES.

BY  
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[Read at a Stated Meeting of New York Academy of Medicine, July 1875.]

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FROM MARCH NO. RICHMOND AND LOUISVILLE MEDICAL JOURNAL, 1876.

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LOUISVILLE, KY.:

RICHMOND AND LOUISVILLE MEDICAL JOURNAL BOOK AND JOB STEAM PRINT,

104 Green Street, 2d door west of Post-office.

1876.



## MIGRATION OF PURULENT MATTER.

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By migration of pus is understood its accumulation in a locality more or less remote from the seat of suppuration. It may take place in certain regions of the body, and is favored by the anatomical relations of the parts involved, especially the aponeuroses and membranous structures, and also by gravitation. The following cases are examples in which the parietes of the lower abdominal and pelvic cavities were concerned :

CASE I.—On Sunday afternoon, July 29, 1868, a poor woman from Hudson City, New Jersey, brought her infant, a robust and full-sized boy, eleven months old, to the office for advice, accompanied by her physician. The child was exceedingly restless, crying out in interrupted, short exclamations, and seizing, incessantly, the mother's breast for comfort. His countenance was expressive of severe suffering. The left buttock and thigh were very much swollen and tense, especially along the crest of the ilium ; the left inguinal region was also swollen. The temperature of the surface was elevated, and the subcutaneous tissue œdematous. The thigh was semi-flexed, somewhat everted, and motionless ; when cautiously handled, however, it was found free at the hip-joint. Attention was arrested by a tumor in the left groin of the size of the last phalanx of the little finger, occupying the site of the internal abdominal ring, with its longest diameter parallel to Poupart's ligament. It was found to emerge from the abdominal parietes, but without adhering to the superjacent skin, it had the feeling of an enlarged lymphatic gland. The superficial veins upon the lower half of the left side of the abdomen and the upper part of the left thigh were remarkably enlarged and conspicuous. The swelling and tension existing along the crest of the left ilium entirely prevented the anterior superior spinous pro-

cess of the ilium from being grasped between the thumb and fingers; while, on the right side, it could be done with great facility.

The mother gave the following account of the antecedents of this condition: On the 4th of July (this being the 29th), the child fell from her arms upon the pavement, but upon what part of the body he struck, she was unable to say. The hurt was evidently severe, judging from its immediate effects. About one week after the fall, she first noticed a swelling on the left nates, and since then the child had made no attempt to stand upon the limb as he had been accustomed to do previously. The swelling in the left groin first attracted her attention on the 25th of July. He had had a passage from the bowels regularly, and they had also been acted on by medicine prescribed by a physician. There had been no vomiting at any time. The tumor in the left groin suggested the suspicion of an inguinal hernia, but the absence of all symptoms of intestinal obstruction, and the recent appearance of the tumor, taken in connection with other considerations, put at rest the question of hernia. The swelling involving the left buttock was most prominent behind the trochanter, where an obscure, doubtful feeling of fluctuation was recognized. For several days past, the child's sufferings had been very severe. The mother was advised to take her child the next day to St. Luke's Hospital, and in the meantime to poultice the hip, to employ a Sitz bath with hot bran water, and give small doses of Dover's powder every three hours.

On Monday, the 30th, the child was seen at the hospital. The swelling in the left groin appeared to have increased, and fluctuation behind the trochanter to have become more distinct. The same treatment was directed to be continued another twenty-four hours.

31st.—Drs. Geo. A. Peters, W. H. Draper, F. J. Bumstead, and T. B. Reynolds, were present at the hospital and examined the patient. The child's restless and suffering condition continued unabated. The swelling in the left groin had still further increased, and the fluctuation behind the trochanter was no longer doubtful. In view of all the facts of the case, the

following explanation of the patient's condition appeared to me to be the most reasonable: The markedly acute phlegmonous character of the swelling, supervening, as it did, upon a severe injury, clearly pointed to the existence of a deep-seated abscess, following inflammation, as the most probable cause of the obstruction of the superficial venous circulation, which was so conspicuous. The distended condition of the superficial veins upon the lower part of the left side of the abdomen and upper part of the thigh, all of which convey their blood to the common iliac trunk, appeared to indicate that the seat of obstruction existed at that point in the course of the iliac vein where it skirts the upper margin of the pelvic cavity and rests upon the iliac fascia, with the peritoneum covering it. The absence of any symptoms of peritonitis precluded the supposition that the abscess had formed in the cavity of the peritoneum itself. If, on the other hand, the abscess had formed in the iliac fossa underneath the iliac fascia, an accumulation of matter in that locality, shut in as it would be by the resisting fascia, could only have the effect of elevating the fascia, and with it the vein, but not to such a degree as to obstruct the flow of blood through it. If, however, suppuration had taken place in the connective tissue outside of the peritoneum and between it and the iliac fascia, where the abscess would be in immediate contact with the vein itself, it might readily encroach upon it and diminish its calibre to such a degree as to obstruct the flow of blood through it. Such a conclusion in regard to the precise seat of the abscess in the pelvic cavity would also explain, on anatomical grounds, how the collection of matter, which was approaching the surface upon the buttock behind the trochanter, might communicate through the ischiatic notch with the abscess in the pelvis. Guided by these considerations, I proceeded to make an opening in the abscess at a point behind the trochanter, where the matter appeared to have approached nearest to the surface. A sharp-pointed, narrow bistoury, after penetrating three-fourths of an inch, arrived in the cavity of the abscess. The opening being enlarged, five or six ounces of thick, healthy pus escaped, and was followed by the immediate subsidence of the swelling in the left groin, and the disappearance of the distended super-

ficial veins. The tension and fullness over the crest of the left ilium also became relaxed, so that the anterior superior spinous process could now be readily grasped between the thumb and fingers. From the immediate subsidence of the tumor in the left groin, there appeared good reason to infer that the suppuration had also approached the surface and was seeking an outlet in that direction. A greased tent was inserted in the opening, and the poultices were resumed. A copious discharge continued for a few days, and gradually subsided. A female catheter was, on one occasion, inserted through the opening and passed nearly its whole length in the direction of the ischiatic notch. The patient steadily improved thereafter, and in a few days was removed from the hospital to his home.

In the month of October following, the mother brought him to my office to show that the opening had been closed for some time, and all traces of swelling had disappeared. The hip had regained its natural contour, and the use of the limb was being steadily recovered.

CASE II.—J. Dreenan, aged twenty-four; Ireland; a foundry workman; admitted into New York Hospital September 15, 1866, with a prominent tumor in the hypogastric region, occupying the entire space in the median line between the umbilicus and the symphysis pubis. It was of a symmetrical, ovoid form, elastic, fluctuating, and painless. The skin covering it was supple, unchanged in color, and unadherent to the underlying parts. It presented the aspect of an overdistended bladder, but no encroachment upon the rectum could be felt by the finger inserted per anum, and no difficulty was experienced in urinating. A catheter entered the bladder without encountering obstruction, and gave exit to only a few ounces of healthy urine, but without any effect upon the size of the tumor.

The patient gave the following account of his antecedent condition: About six or seven weeks previously, he experienced, while handling a heavy piece of iron-casting, a sudden sensation of something giving way in the left flank that caused severe pain, obliged him to give up work, and keep in the house. Subsequently, he had chills, followed by fever, and at a later period the tumor was gradually developed in its present local-

ity, accompanied by pain in the left hip, and lameness when he attempted to walk. His general condition when I first saw him was as follows: He was emaciated and weak; his pulse was accelerated, and his countenance expressive of suffering. An incision had been made over the tumor by the House Surgeon after his admission, but matter not having been reached, the wound was closed by sutures.

*Diagnosis.*—The presence of a collection of fluid within the tumor was evident from the elasticity and fluctuation that were perceptible; the nature of the fluid, however, seemed to be indicated by the following considerations. No direct violence having been inflicted upon the part itself occupied by the tumor, and its development having taken place tardily, at a point distant from the site of original injury, precluded the inference that the contents of the tumor consisted of extravasated blood. That suppuration had taken place might however reasonably be inferred from the fact, that an injury had been sustained in the first instance, and that, subsequently, chills, followed by fever, had occurred, and were accompanied by wasting and other symptoms of constitutional disturbance. But, admitting the existence of suppuration, the question still remained, where could the collection of matter constituting the tumor be located anatomically, so as to explain its presence at a point so remote from the seat of the original injury which the patient, from his sensations, experienced at the time, referred to the left ilio-lumbar region?

To answer this, we should inquire, 1st. Was it situated in the subcutaneous connective tissue? The suppleness of the skin covering the tumor, the absence of adhesions between the skin and underlying surface, as well as the absence of inflammatory, cedematous infiltration, were conditions quite incompatible with such a conclusion. 2d. Was the collection of matter confined within the sheath of the recti abdominis muscles which occupy this region? The extent of surface covered by the tumor, its oval and salient form, exceeding the narrow and sharply defined limits within which the matter would have necessarily been confined had it occupied the cavity of the sheath, were considerations unfavorable to such a view. 3d.

Could the abscess be located in the peritoneal cavity itself, and there, be circumscribed by adhesions of the intestines to each other, and to the parietes? Such a condition could only be the result of peritoneal inflammation, of which there had been in this case no antecedent symptoms. 4th. And finally, did the collection of matter occupy the loose, connective tissue outside of the peritoneum and between it and the abdominal parietes? This was the only remaining locality it could occupy, and here, it was concluded that it was actually lodged, having migrated to this point from the left ilio-lumbar region, where, at the site of the original injury, suppuration must have commenced. It was on this anatomical plane alone that migration of pus could take place between these two points. It was decided accordingly to establish an outlet for the matter at the most depending point, by making an opening in the linea alba between the pyramidal muscles, immediately above the symphysis pubis. As the medical students attending the hospital were to make their visit on the following Monday (it being Saturday) the operation was postponed, and the patient directed to keep in bed in the meantime.

17th.—During the previous night, patient had had several thin, faecal evacuations, in quick succession, the last of which, on being inspected by the nurse, was found to consist chiefly of pus. The abscess had evidently opened into the descending colon, and the pus had thus found an exit per anum. The hypogastric tumor, though relaxed, was still quite prominent. Notwithstanding what had happened, it was thought best to establish, as was originally intended, a direct outlet at the most depending point. By this means, it was believed that the matter would be diverted from passing into the bowel, and the final closure of the communication between the abscess and intestine, be more surely brought about. An incision, two inches long, was accordingly made in the linea alba immediately above the symphysis pubis and continued into the cavity of the abscess. An abundant discharge of pus followed, and was succeeded by the subsidence of the tumor. A greased tent was inserted to maintain the opening free. 22d. Some pus continued to be discharged with the faecal evacuations. Pressure

over the left ilio-lumbar region increased the discharge of matter from the abdominal opening, showing conclusively the source from which the suppuration proceeded. September 28th, discharge less copious; pulse 120. October 27th, the discharge much abated; patient's general health much improved. November 16th, the discharge had nearly ceased from the abdominal opening, and pus had disappeared from the fæcal evacuations. 28th, the left hip-joint was becoming limber. December 21st, the sore, having nearly closed, patient was discharged cured.

*Remarks.*—If we carefully consider the distribution of the peritoneum where it lines the parietes of the lower abdominal and pelvic cavities, we find it in the lumbar region covering the anterior surface of the psoas magnus muscle, and thence spreading out inferiorly and laterally over the iliac fossa, and further down over the walls of the pelvic cavity. In all these regions, as well as in the contiguous hypogastric and inguinal regions, this membrane adheres loosely to the surfaces which it covers, by means of a delicate connective tissue interspersed scantily with a fine adipose tissue, and can readily be detached by pressure with the ends of the fingers alone without the aid of a scalpel. The slight resistance to its spreading which suppuration would encounter on this anatomical plane favors the migration of pus to a distant point, especially if aided by gravitation. This anatomical peculiarity also serves as a protection to the peritoneal cavity itself against ulcerative perforation of the membrane, the consequences of which would be so disastrous. On this same plane, migrating pus would gain access to the track by which the great sciatic nerve and vessels pass out through the ischiatic notch into the gluteal region, as happened in Case No. I. of the infant before narrated. A further illustration of this subject is furnished in the case of what is known as psoas abscess, where suppuration takes place in the lumbar or dorsal region of the spine, and depends on caries of the vertebræ. Aided by gravitation the pus follows the psoas muscle, and in its descent may take either one of two directions. 1st. By passing behind the iliac fascia it may accumulate in the iliac fossa and make its way behind the outer half of Poupart's ligament, distending and elevating it in some degree, and then may

arrive upon the upper part of the thigh, below the outer half of Poupart's ligament, where it presents a more or less extensive, elastic and fluctuating swelling. Continuing along the course of the iliacus and psoas muscles, the matter may burrow its way on even to the region of the hip-joint.

2d. Purulent matter in its descent from the lumbar region, instead of passing behind the iliac fascia, may keep in front of and between it and the peritoneum, and accompany the femoral vessels in their passage from the pelvis, behind the inner half of Poupart's ligament. In this case a superficial subfascial swelling may form on the anterior aspect of the thigh, below the inner half of Poupart's ligament. Another point at which matter may make its escape from the pelvic cavity, is in company with the obturator vessels as they traverse the obturator foramen at its upper margin, where the obturator membrane is wanting. In this case the accumulated matter makes room for itself among the abductor muscles and forms a bulging elastic tumor on the inner aspect of the thigh close to the perineum. An example of this last mode of migration is afforded by the following case:

CASE III.—John Rahelly; thirty-two years; Ireland; laborer; admitted into New York Hospital August 7, 1838, under the care of Dr. J. C. Cheesman. Patient had suffered from chills and fever the two preceding summers, but had previously enjoyed robust health. In the month of December preceding, he first noticed a swelling that appeared without local injury on the anterior aspect of the left thigh high up. It increased rapidly at first, but more gradually afterward, and was unaccompanied by pain. He had continued at hard work without interruption. His condition when admitted to the hospital was as follows: The swelling of a bulging form extended from the perineum to a point below the middle of the thigh, and occupied its inner and anterior surface. The skin covering it was supple and unchanged in color. The tumor itself was elastic, distinctly fluctuating, painless, without pulsation, and conveyed no impulse to the hand during the act of coughing. The passage of the gracilis muscle over it in a vertical direction, was marked by a shallow sulcus on the surface. The extension of the tumor beneath the adductor muscles became obvious when the thigh was flexed on

the trunk and adducted. A puncture was made in the tumor on its inner aspect about one hand's breadth below the perineum, and more than one quart of pus evacuated. Constitutional reaction supervened in a few days and was developed into hectic, accompanied by profuse suppuration, under which patient succumbed on the 14th of September, about five weeks after entering the hospital. From his fellow workman who visited him, it was ascertained that for some time past, patient avoided stooping to lift anything from the ground, and accomplished it by assuming a squatting position. His laborious occupation often obliged him to lift heavy weights. Although no post-mortem examination was obtained to establish the diagnosis, the history of the case clearly pointed to the lumbar vertebræ as the seat of disease and source of suppuration. The location of the accumulated pus among the adductor muscles at the highest point of the thigh, and on its inner aspect also pointed to the obturator foramen as the passage by which it might emerge from the pelvic cavity and reach its destination rather than by either of the other points indicated above.





## PERI-TYPHLITIC ABSCESS IN THE ILIO-CÆCAL REGION.

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THE form of abscess here under consideration occurs exclusively on the right side, and is produced by peri-typhlitis, or, as the term implies, inflammation around the cœcum. It is due most frequently to perforation of the appendix vermiformis; and the collection of matter resulting therefrom occupies the peritoneal cavity itself, and is walled in by adhesions.

The present communication is offered especially with the view of illustrating the successful treatment of this abscess by the early establishment of an external opening in the abdominal walls for the discharge of the pus.

The following cases that occurred in the Author's own practice are offered in illustration.

CASE I.—G. N., a lad, aet. 12, residing in the city, while in the enjoyment of ordinary good health, and after a day of accustomed activity, was, on Thursday, June 11, 1874, attacked, on going to bed, with violent colic-pains and vomiting. Hot poultices and anodynes were resorted to, and on the following day free evacuations from the bowels were obtained by a dose of five grains each of calomel and Dover's powder. On Saturday evening, June 13th, forty-eight hours after the attack, I saw him, in consultation with Dr. J. Linsly, the attending physician, and found his condition as follows: Vomiting had almost ceased, his pulse was moderately accelerated, and the temperature of the surface was normal. The abdomen was tumid, but not tense; and tenderness on pressure, which at first had been diffused over the abdomen, was now confined to the right iliac region, where a deep-seated tumor could be defined, though rather indistinctly. It occupied a space above the outer half of Poupart's ligament, and close to it. There was no elevation of the surface over the tumor, and the pain

produced by the most cautious attempts at deep pressure deterred us from making as thorough an exploration as seemed desirable. No dulness on percussion was appreciable, and flexion and extension of the thigh caused no pain. The tongue was clean, and there was no aversion to taking nourishment. Dr. Linsly had already prescribed pills of morph. sulph. gr.  $\frac{1}{4}$ , of which one was to be taken every two hours. The conclusion we arrived at respecting our patient was, that an abscess was forming in connection with perforation of the vermiform appendix. Six leeches were applied over the tumor the same evening, and followed by poultices. Under the influence of the morphia pills a quiet condition was maintained; the pulse ranged from 80 to 100; the temperature of the surface was uniformly natural. On Wednesday (seventh day) the morphia was suspended, and a movement of the bowels obtained by means of ol. ricin.  $\zeta$  ss., and an enema of catnip-tea, but with only partial effect, owing to his instinctively avoiding any straining effort. After the suspension of the morphia he became nervous, and complained more of pain in the tumor, especially after an examination of it, however carefully made. No chill or feverishness was at any time observable, nor any extension of abdominal tenderness beyond the limits of the tumor itself. Nothing abnormal could be felt by digital exploration *per rectum*. On Thursday, June 18th (eighth day), Prof. W. Parker joined our consultation, and arrived unhesitatingly at the conclusion that an abscess had formed, and required to be opened from the surface. The absence of dulness on percussion over the tumor was the only condition that seemed to militate against the diagnosis arrived at. All the other conditions and antecedents corroborated it; and the existence of resonance was afterward explained by the presence, within the cavity of the abscess, of an abundant collection of gas. The morphia and poultices were resumed, preparatory to an operation on the following day. On Friday (ninth day), at twelve o'clock, the operation was performed, after the inhalation of ether. Some elevation of the surface over the tumor was now manifest, but no redness, or oedematous infiltration, or adhesion of the skin to the underlying parts, existed; nor was any fluctuation perceptible. By a bolder palpation, now admissible

under anæsthesia, the deeper outlines of the tumor could be better defined, and its longest diameter was ascertained to be parallel with Poupart's ligament. The operation was performed as follows: A point two fingers' breadth distant from and to the inside of the anterior superior spinous process of the ilium, and a little below its level, where the tumor approached nearest to the surface, was chosen for an opening, which was made with a small canulated trocar (equivalent in size to No. 1 of the bougie scale.) A puncture was first made, at the point chosen, with a tenotomy-knife, through the skin, to facilitate the onward passage of the trocar. This was then inserted, and advanced till it encountered the tendon of the obliquus externus muscle, which presented great resistance to its further passage. To overcome the resistance safely, the trocar was withdrawn within its sheath, and the canula held in firm contact with the surface of the tendon, while the point of the trocar was pushed on. By successive repetitions of this manœuvre, the trocar at length encountered no further resistance; and, on withdrawing it entirely while the canula was advanced, matter escaped from the outer orifice of the tube, and the success of the procedure was demonstrated. The canula, being still held *in situ*, served as a guide, along the outer surface of which a sharp-pointed knife was conducted into the cavity of the abscess, and used to enlarge the track of the canula. On withdrawing the knife, the wound was further enlarged to the extent of more than an inch at the surface of the skin. The little-finger was then thrust into the cavity of the abscess, and the opening dilated sufficiently to allow a free escape of the matter, which was fetid and of a dirty-grayish aspect, but without any biliary discoloration. With the matter there was also an abundant escape of fetid gas, to the presence of which was attributed the resonance on percussion over the tumor observed previous to the operation. A plug of cotton-wick well greased was inserted in the opening, and the poultices were resumed. For the first three or four days a solution of salt and water (3j to ℥. viij) was injected into the abscess at the daily dressing. The patient's subsequent progress was favorable. On the fifth day after the operation, when the discharge was no longer fetid,

and had regained a healthy character, two tufts of sloughy connective tissue came away, followed by a more copious discharge of pus, which had accumulated in the cavity of the abscess from obstruction of the outlet. On June 25th, the sixth day after the operation, a dark-colored, gritty substance, of the size of a small pea, was discharged. A chemical analysis ascertained it to be a phosphatic concretion. On the day following another substance, of the shape and size of half an inch of small clay pipe-stem, was found on the dressing; it had all the characters of compact fecal matter. After this the suppuration progressively diminished. On June 29th a third smaller tuft of sloughy tissue was discharged. The subsequent progress of the case requires no special notice. Under excellent care at home, with generous diet and a moderate allowance of stimulants and tonics, he steadily improved both locally and generally. On July 18th he accompanied his family to their summer residence in the country, where he continued to gain rapidly. On August 14th his father reported that the wound had healed, and that the boy was quite himself again.

CASE II.—Mr. J. M., *æt.* 26, of Liverpool, of good constitution and regular habits, being in good health and free from any premonitions of the attack that was impending, returned on Monday, Nov. 8, 1875, to the city, from Philadelphia, by an early morning train, took his ordinary dinner at half-past six in the evening, and retired to rest at about eleven o'clock. After a good night's sleep he was awakened in the morning of Tuesday, 9th, by pains in the right iliac region, which he described as a peculiar sensation rather than pain, and which he feared might be the precursor of an attack of colic such as he had experienced on two previous occasions, but at remote periods. He had two small loose evacuations, following each other after a short interval. Hoping to obtain relief by provoking vomiting, he drank freely of hot water, which he rejected, unmixed with other substances. The pain increasing in severity, he resorted to hot fomentations. At 9 o'clock he was visited by Dr. G. H. Wynkoop, who prescribed six grains of calomel and administered a hypodermic injection of Magendie's solution of morphia, and repeated it a second time later

in the day. The same evening, about twelve hours after the attack, I made my first visit, and found him suffering from very severe pain in the right iliac region, which had persisted all day. He had vomited two or three times some bilious matter subsequent to the vomiting produced by taking hot water in the morning. There was no febrile heat nor acceleration of the pulse, nor had there been any rigor. The abdomen was supple, but extreme tenderness on the slightest pressure existed over a spot that could be covered with the thumb at a point three fingers'-breadths distant from and to the inside of the anterior superior spinous process of the right ilium, and on the same level with it. The tenderness diminished in a marked degree as the pressure receded from this circumscribed spot. Suspicion of the existence of a lesion of the vermiform appendix was excited. Without delay one dozen leeches were applied, and followed by hot fomentations.

*Second day*, at 9.30 A.M.—Visited Mr. M. with Dr. Wynkoop, and found him still suffering severe pain by paroxysms, and with the same extreme tenderness on pressure over the spot already indicated in the right iliac region. He had had a shiver, lasting ten minutes, since daylight. Pulse had risen to 106 and temperature to  $101^{\circ}$ . A second application of six leeches was made and poultices were continued. A narcotic treatment was now instituted. Magendie's solution of morphia was directed to be taken, 15 minims every hour, till narcotism should be produced, and thereafter to be continued every two hours. At 7.30 P.M. patient was more comfortable and suffering less pain; there was less tenderness on pressure; he had not vomited for 24 hours. Pulse was reduced to 86. Temp.  $100.6^{\circ}$ . A moderate degree of narcotism has been maintained by 75 minims of Magendie taken since morning.

*Third day*, at 9.30 A.M.—Has passed a comfortable night without severe pain; tenderness on pressure is less marked; its locality, however, is unchanged; has vomited bile. During our visit he had an attack of severe colic pain, diffused over the abdomen. The abdominal muscles were tense and retracted; pulse 98. Temp. between  $99^{\circ}$  and  $100^{\circ}$ . Has taken 60 minims of Magendie through the night, up to eight o'clock this morning. Ordered enema of infusion of catnip, and the use of the catheter

to relieve fruitless efforts at urination. Ordered to take calomel, gr. x.

At 7.30 P.M., patient somewhat relieved after the operation of the enema; has succeeded in urinating. The abdomen has now become tumid. Local tenderness not increased; the surface of the body is moist. Dysuria persistent. Pulse 98. Temp. 99°. Morphia has been taken in increased quantity through the day; but the original dose of 15 minims is to be resumed again.

*Fourth day*, at 9.30 A.M.—Has passed the night without severe pain. Pulse 94. Temp 99°. Abdomen still tumid. Is much disturbed by nausea, evidently aggravated by the morphia. It was therefore stopped. Ordered calomel gr. ij., sub-nitrate of bismuth gr. v., to be repeated three times at intervals of three hours. At 7.30 P.M., has taken no morphia since 6 A.M., without increase of pain. Nausea persists. Pulse 84. Temp. 98°. Ordered sinapism to epigastrium, ol. ricini  $\frac{3}{4}$  ss., and enema of infusion of catnip.

*Fifth day*.—Pulse 84. Temp. 98° morning and evening. Flatulence and nausea persist. Abdomen tumid. Cap. calomel gr. ij., sodæ bicarb. gr. v., every four hours.

*Sixth day*, at 9.30 A.M.—Continued flatulence and nausea, with eructations accompanied by severe colic pains. Pulse 102. Temp. 101°. Stopped calomel powders, of which he had taken six. At 7.30 P.M., no decided relief. Ordered ol. ricini  $\frac{3}{4}$  ss., and an enema of catnip, to be administered through an O'Birne rectum tube, inserted high up.

*Seventh day*, at 9.30 A.M.—The severe colic pains continue. Pulse and temperature abated. At 8.30 P.M., Prof. Alonzo Clark joined us in consultation, and after a careful examination of the patient, confirmed the diagnosis already arrived at. By careful percussion he outlined a dull space upon the surface identical with the seat of local tenderness, but unaccompanied by any elevation of the surface corresponding to it. He also defined by palpation the outlines of a deep-seated tumor of somewhat firm consistence, the centre of which also corresponded to the tender spot on the surface. Patient's sufferings were further aggravated by the development of an inflamed swollen hemorrhoid, occupying the right half of the

verge of the anus. It was split into two halves by transfixing it lengthwise at its base with a sharp-pointed bistoury, and cutting outward through the surface. An enema of 20 drops of Magendie's solution was then administered.

*Eighth day*, at 9.30 A.M.—Patient has passed a distressing night, chiefly caused by the hemorrhoid, but obtained some sleep toward morning after a hypodermic injection of morphia. Has had several free liquid evacuations, and has vomited two or three times; the abdomen has now become more supple. Pulse 98. Temp. 99° to 100°. At 7.30 P.M., Prof. T. M. Markoe joined our consultation, and also confirmed the diagnosis.

*Ninth day*, at 9.30 A.M.—Patient passed a better night, more free from pain. No vomiting, no eructations. Takes more liquid nourishment. Pulse 72. Temp. 98.2°. At 7.30 P.M., pulse 68. Temp. 98.°

*Tenth day*.—A good night. Pulse, morning and evening, 64. Abdomen less tumid and more supple. Local tenderness on pressure is again becoming more marked; its centre of greatest intensity remains at the same point.

*November 19th, eleventh day*.—At 1.30 P.M., Prof. Clark met us again in consultation, with special reference to an operation. Patient's condition was as follows: The tumidity of the abdomen had subsided to such a degree, that the surface between the umbilicus and crest of the right ilium, from being elevated, had become sunken. The deep outlines of the tumor could be more easily distinguished by palpation, though there was still no circumscribed elevation upon the surface at the point where the greatest sensibility to pressure existed. No fluctuation was perceptible, nor was there any redness of the surface nor adhesion of the skin to the underlying parts. Instead of dulness, there was now resonance on percussion over the seat of greatest sensibility. This condition of resonance, conflicting as it did apparently with the supposed presence of purulent matter, was believed to depend, as afterward proved to be the case, on the co-existence of gas with pus in the cavity of the abscess. This apparently conflicting condition did not, however, deter from the proposed explorative operation, which was performed as follows:

*Operation*.—Before the inhalation of ether was commenced,

the precise seat of greatest sensitiveness under digital pressure was once more determined and located, as it had uniformly been by daily repeated previous examinations, midway on a line between the umbilicus and the anterior superior spinous process of the right ilium. After complete anæsthesia and relaxation were produced, the deep-seated outlines of the tumor were again confirmed by a more thorough palpation than had been admissible at previous examinations. At the point chosen upon the surface a puncture was made through the skin with a tenotomy knife, to facilitate the onward progress of a sharp-pointed canula (of the size of No. 1 of the bougie scale), which was advanced cautiously through the aponeurotic and muscular parietes of the abdomen to a depth of more than one inch, when pus escaped by the side of the canula, and immediately after through the canula itself. The canula, which was held *in situ*, served as a guide, upon the outer surface of which a sharp-pointed bistoury was conducted into the cavity of the abscess, and the opening enlarged. At the same time the external wound was also enlarged by dividing the skin and underlying parts to the extent of nearly two inches. A dressing forceps was then introduced with closed blades, and withdrawn with the blades opened, so as to enlarge the entrance of the abscess. A free discharge of grayish fetid pus, without stain of bile, to the amount of more than an ounce, followed, together with an abundant escape of gas. A finger was next inserted into the wound, to enlarge still further the opening and explore the cavity of the abscess, which was found to extend in every direction laterally beyond the reach of the finger; its opposite wall, however, was reached by the end of the finger, but nothing definite was ascertained by it. A plug of cotton wick well greased was inserted, and left in the opening to maintain it free, and poultices were directed to be continued. In the evening patient was found comfortable, and his pulse at 84.

*Second day* after operation.—Has passed a good night, and taken food with some appetite. Removed the plug, and gave exit to a copious discharge of brownish matter, followed by thick laudable pus. Pulse, 82; temperature,  $99\frac{1}{3}^{\circ}$ . Replaced the plug, which was thereafter to be kept in only during the day. On the third day poultices were discontinued, and a

dressing of simple cerate substituted. The abscess was injected with salt and water, and the injection was to be repeated on the two following days. On the fourth day a particle of greenish fecal matter of the size of a split pea was expelled with the injection. On the fifth, sixth, seventh, and eighth days small tufts of sloughy tissue, ascertained to be connective tissue by microscopic examination, were discharged, the suppuration continuing healthy and abundant. On the twelfth day suppuration no longer proceeded from the cavity of the abscess, but from the external wound alone, which was steadily filling up and contracting. Patient's general condition has steadily improved, since the abscess was opened, under the use of generous diet and the citrate of iron and quinine, gr. v., ter in die. On December 4th, the fifteenth day, he was able to be removed to the house of a friend in the vicinity of the Central Park.

*December 17th.*—The wound has healed, and patient has resumed his out-of-door life. General health excellent.

The conditions upon which a diagnosis was based in this case were the following: 1st. The abrupt onset of the attack, with out any premonition of its approach. 2d. The early development of acute local sensibility referred to the ilio-cæcal region, and restricted within a small circumscribed space, where the slightest degree of digital pressure could not be tolerated. 3d. The uninterrupted persistence of the acute local sensitiveness within the same restricted limits, as was verified on each succeeding day, by carefully repeated exploration, up to the day of the operation. 4th. The recognition of a deep-seated circumscribed tumor of rather firm consistence, indistinctly definable in the earlier stages of the disease, owing to the general tumidity of the abdomen, but becoming more clearly outlined as the tumidity subsided and the abdominal parietes became more supple. The centre of the deep-seated tumor also corresponded to the focus of greatest sensibility on the surface. It was not, however, until the eleventh day after the attack that the deep outlines of the tumor could be defined with such a degree of distinctness as to render it clearly advisable to resort to an operation for establishing an external opening in the abdominal walls, and the operation was then undertaken, notwithstanding the absence both of fluctuation and elevation of the surface

over the tumor, and also notwithstanding the presence of resonance on percussion over the tumor, where previously there had been dulness (the resonance being attributable, as has already been stated, to the co-existence of gas with pus in the cavity of the abscess). It was a matter of regret in this case that a digital exploration per anum was rendered inadmissible by the presence of an inflamed and very sensitive hemorrhoid.

*Symptoms.*—In a retrospect of the progress of the symptoms in this case, it is interesting to observe that constitutional reaction was first noticed twenty-four hours after the attack, when the pulse had risen to 106 and the temperature to 101°. Twelve hours later, and after a second application of leeches had been made, and the narcotic treatment put in operation, the pulse had fallen to 86, and the temperature to 100 $\frac{5}{8}$ °. On the third day the pulse was 98, temp. 99°. On the 4th and 5th days the pulse was 84, temp. 98°. On the 6th day the pulse rose to 102, and the temperature to 101°. On this day the distressing colic pains, with eructations and nausea, reached their maximum of intensity, and the tumidity of the abdomen its greatest degree of development. On the 8th, 9th, and 10th days the pulse subsided to 78, 72, and 64, and the temperature to 99°, 98.4-5°. On the day of the operation (the 11th of the disease), the pulse was 82, and the temperature 99.1-5°.

The uniformly moderate rate of the pulse and temperature, notwithstanding the severity of the abdominal pains, indicating as it did the absence of inflammatory action affecting the peritoneum, afforded a sure ground for hope of a favorable termination.

REMARKS.—In the *New York Medical Record* of March 15, 1867, Prof. Willard Parker reported a case in which he first employed successfully a method of treatment which may be said to have disarmed this disease of its terrors, and changed its issue from one almost invariably fatal to the reverse. This method consists in making an early incision into the abscess, without waiting for fluctuation to demonstrate the presence of pus. In the same journal of the 15th of June following, Dr. J. H. Hobart Burge, of Brooklyn, reported a second successful operation performed by Dr. Parker on a patient of Dr. Burge's. Since the publication of these two cases, two others

equally successful have been reported in the *New York Medical Journal*, one by Dr. Leonard Weber, in the August number of 1871, the other by Prof. H. B. Sands, in the August number of 1874. Other cases, not yet made public, have been ascertained to have occurred in the practice of other surgeons, to whose courtesy the author is indebted for such particulars as will enable him to develop more fully this interesting subject. These cases, together with one reported by Mr. Henry Hancock of London, in 1848, which will be more particularly noticed hereafter, and the two in my own practice above narrated, form an aggregate of thirteen cases, which make up the following table and from which some instructive deductions may be drawn.

Ten of the cases were males, three females. The ages of the females were 15, 16, and about 35 years; of the males, 2, 12, 17, 22, 25, 30, 32, 40, 41. In every case the invasion of the disease was abrupt, and attended with symptoms of acute peritonitis, which early became localized in the ilio-cæcal region; and in all a deep-seated tumor was more or less distinctly felt at an early period in the same locality.

The times at which the operation was performed are as follows: In one case, early, as stated; on the seventh day in two cases; on the eighth day in one; on the tenth in five; on the eleventh in two; on the thirteenth in one, and on the fourteenth in one. In only two of the thirteen cases could fluctuation be detected at the time of the operation. A discharge of fetid matter took place after the opening of the abscess in all the cases, and in some it was accompanied with gas-bubbles. In five cases it was stated that the matter was not stained with bile, from which it might be inferred that there existed no open communication between the intestine and the cavity of the abscess; the same was probably true of the other eight cases in which the fact of biliary discoloration was not stated. In seven of the cases one or more foreign substances were discharged at varying intervals of from four to sixteen days after the operation, and in the other six cases none were found. Where none were found it may be presumed that they might either have been overlooked, or, if retained in the cavity of the abscess, they became imbedded in exudation material, and thus were rendered innocuous. These substances were concretions, and fecal masses incrustated

with chalky material. In four cases tufts of sloughy connective tissue were discharged besides the foreign substances. In one case (No. 9), communicated by Dr. White, the collection of pus being excessive in quantity, its presence was readily detected by fluctuation. The patient became collapsed on the ninth day, and was in imminent danger of his life. Instead of a free opening being made for the exit of matter, the aspirator was judiciously used, and twenty-six ounces of pus were drawn off; two days after sixteen ounces more were drawn off by a second aspiration, and four days after the second aspiration a free opening was established.

The method of operating inaugurated by Dr. Parker, and adopted by his imitators, was the following: An incision from three to six inches in length was carried across the tumor a little above and nearly parallel with Poupart's ligament, and divided the skin and subjacent tendinous and muscular layers till the fascia transversalis was exposed. An exploring-needle, or fine trocar, was then inserted in search of matter, and the puncture afterward enlarged to a free opening with a knife. In one case (No. 8), after the exposure of the fascia, the aspirator was first used, and then a free opening made. In two other cases (Nos. 4 and 6), after the exposure of the fascia transversalis, fluctuation not being perceptible, the wound was dressed open, and a spontaneous opening formed on the second and third days after the operation.

This cautious procedure was adopted, no doubt, as a surer means of avoiding a wound of the intestines. In my own cases, however, I deviated from this plan by first penetrating the abscess, without any preliminary incision of the abdominal parietes, and then enlarging the track of the puncture sufficiently to afford a free outlet for the contents of the abscess. The reasons for this modification of the operation were these: Regarding as I did the most prominent point of the tumor as indicating the approach to the surface of pus, and not of intestine, this point was chosen for the insertion of a fine canulated trocar, or, what is preferable, a sharp-pointed canula, such as is used in the operation of aspiration. The insertion of such a small-sized canula into the intestine itself would be harmless, inasmuch as on its withdrawal there would be no escape of

fecal fluid, and consequently no danger of the formation of a fistula. Matter having been reached by this first step of the procedure, the canula is held *in situ*, and used as a guide, along the outer surface of which a sharp-pointed knife is conducted into the cavity of the abscess, and the track of the canula enlarged to the requisite dimensions. In case of a failure to reach the collection of pus by a first attempt, a second introduction of the canula may be safely tried at another selected point. By this method, also, an extensive incision of the abdominal parietes is avoided, and the subsequent liability to a hernial protrusion prevented. In cases 11 and 12 of the table, the patients were obliged, on their recovery, to wear a truss, in consequence of the thinning of the cicatrix at its centre and the tendency to protrusion. After completing the opening with the knife, a finger should be introduced to stretch it, and a full-sized plug of cotton wick, well greased, should be kept in for the first three or four days after the operation.

*Diagnosis.*—The abruptness of the invasion of the disease, with symptoms of acute peritonitis, and the fact that the pain early becomes localized in the ilio-cæcal region, or restricted mostly to this region from the first of the attack, will distinguish it from the other forms of abscess that originate in this region, and from fecal accumulations in the cæcum, which are gradual in their development. Its precise locality in the hollow of the iliac fossa should also distinguish it from concealed strangulated hernia, the attendant symptoms of which are not unlike those of peri-typhlitis. A close observation of the daily progress of the disease will also very much aid our judgment in arriving at a correct conclusion in regard to its nature, especially if we are able to recognize the existence of a circumscribed spot of tenderness on pressure occupying uniformly the same locality on the surface in the ilio-cæcal region, and surmounting a deep-seated induration. By percussion the deep-seated induration may also be outlined. It should be borne in mind, however, that the central point of the induration, from being dull may in the process of the disease become resonant on percussion, as occurred in the author's two cases above narrated; the explanation of which is the co-existence of gas with pus in the cavity of the abscess.

*Prognosis.*—Authors who have treated of this disease have regarded it as having almost invariably a fatal termination. It is true, however, that sometimes recovery has taken place after the spontaneous formation of an opening into the intestine, probably the cœcum, and the discharge of the contents of the abscess *per anum*. A like favorable result has followed after an opening into the bladder, and the expulsion of pus *per urethram*. In much rarer instances the abscess has emptied itself by a spontaneous opening through the abdominal parietes. A favorable termination by resolution is perhaps of the rarest occurrence, and yet it has taken place. The disastrous tendency of this disease may now happily be averted by a reasonable operation.

*Treatment.*—In the onset and early progress of the disease, Mr. John Burne (in vol. xx. of *Medico-Chirurgical Transactions*) very judiciously cautions against the energetic depleting treatment that might be applicable to acute idiopathic peritonitis. It is well to apply leeches early over the tumor to the extent of from six to twelve in number, and to repeat them if necessary. Poultices are also indicated, but they must be adjusted so as not to be burdensome by their weight. From five to ten grains of calomel, followed by ol. ricini, with the addition of tinct. opii, or sol. s. morph., should be given. After this, a state of moderate narcotism should be maintained by the administration of pil. opii gr. j or sulph. morphiæ, from  $\frac{1}{2}$  to  $\frac{1}{4}$  gr., repeated at first every hour till the desired effect is produced, and afterward at intervals of from two to four hours. The object of our treatment should be to moderate the production of pus, and thereby diminish the strain upon the adhesions which wall in the abscess, and so shut it off from the general peritoneal cavity, till the favorable moment arrives for giving exit to the matter through an external opening upon the surface of the abdomen. To determine the time for operating is a point of chief importance. It should be borne in mind that we are not to wait to detect fluctuation, which is regarded as the unequivocal sign of the existence of matter. Before that stage is reached, the patient is exposed to a disastrous issue from different sources, such as the giving way of the adhesions that wall in the abscess, and

the supervention of fatal general peritonitis, gangrene, and exhaustion from the hectic of purulent cachexia. If we interrogate experience on this point, we find that, in the thirteen cases cited in this paper, the operation was performed at the earliest moment on the seventh day after the onset of the disease, and at the latest on the fourteenth day. We may therefore, perhaps, safely lay it down as a rule that after the lapse of one week from the onset of the disease there should be no delay in resorting to the operation, unless there should be clear indications of resolution going on, which is an extremely rare issue of this disease. This treatment, so remarkably successful in the cases above reported, is quite inapplicable to those other cases in which adhesions fail to wall in the supuration, and general peritonitis hastens on a fatal termination.

It is due to Mr. Henry Hancock, of London, to state that he performed this same operation with success in 1848, but, for some reason or other, his report of the case failed to receive the attention it deserved. In his report (*see London Medical Gazette*, New Series, vol. vii., p. 547) before the London Medical Society, of which he was then the president, Mr. Hancock remarked as follows: "Abscesses of the abdomen connected with the cœcum or large intestines, and attended with fluctuation, had from time to time been opened, but he was not acquainted with any instance in which any operation had been attempted under the circumstances about to be detailed in his own case, and where the result had been so entirely satisfactory. In the cases recorded, the presence of fluctuation has proved the existence of matter, but the details of his case would show that we should not always wait for this unequivocal sign." His case was that of an adult female, in whom the attack began on the day following her giving birth to her fifth child, six or seven weeks before the full time, with a severe pain in the right groin and a sensation of something having snapped asunder as she turned herself over in bed. After nine days of appropriate treatment, Mr. Hancock operated by an incision four inches long carried across the tumor from the spine of the ilium inward, above and close to Poupart's ligament. A quantity of fetid matter with gas-bubbles was discharged. On the fifteenth day after the operation, two masses of fœces, incrustated with cal-

careous deposit, and moulded upon each other, were discharged. From their size, Mr. Hancock judged that they had been impacted in, and had escaped by ulceration from, the vermiform appendix. At a meeting of the same Society, held March 27, 1871 (*British Medical Journal*, 1871, vol. i., p. 450), the subject of peri-typhlitis was brought forward, and, in the discussion that followed, no allusion was made to Mr. Hancock's case, or to his method of treatment. Although Mr. Hancock's report was also republished in full in the *American Journal of Medical Sciences* of 1849, the only notice of it in this country was by Dr. George Lewis, then Physician to the Eastern Dispensary, in an article on "Abscesses in the Appendix Vermiformis," that appeared in the *New York Journal of Medicine*, 1856, Third Series, vol. 1. Under the head of "Treatment" he remarks upon the question of the propriety of making a free incision downward upon the tumor, and states that he is inclined to favor the operation. "The favorable issue of a single case, and this, so far as our information extends, the only one on record in which this practice was adopted, taken in conjunction with other considerations," (already stated by the writer), "if they do not conclusively settle the utility of this mode of procedure, at least justify a more extended trial of it." He then reproduces the report of Mr. Hancock's case in full. This important subject attracted no further notice, nor is any allusion to the operation to be found in the most recent text-books on medicine and surgery, such as those of Aitken, Reynolds, and Flint, or those of Holmes, Gross, or Hamilton. Happily for suffering humanity, this same method of treatment was reproduced by one of our own number, in 1867, as before stated, and has already had so many successful imitators that its vitality may now be considered as assured.

*Note.*—Since the completion of the foregoing article, the author has received a communication from Prof. Jas. R. Wood, M.D., of which the following extract relates to this subject: "I have operated on three cases by Dr. Parker's method; the patients were all males and adults. In all of them the onset of the disease was abrupt, with acute symptoms of peritonitis that became localized in the right iliac region. In two of the cases the offending substance was discharged; in the third case none was seen. Two cases recovered rapidly; one died on the second day after the operation. Although I saw these cases early after the attack, I did not operate earlier than the seventh day. I think it is as important not to operate too soon, as it is to defer the operation too long."

TABLE OF THIRTEEN CASES OF ABSCESS IN THE ILIO-CÆCAL REGION, FOLLOWING PERFORATION OF THE VERMIFORM APPENDIX.

Name of Operator, Where Recorded.	No.	Sex.	Age.	Invasion and Locali- zation of Disease.	Day of Operation after Invasion.	Mode of Operation.	Contents of Abscess.	Foreign Substances Discharged; on what Day after Operation.	Result.	Year of Operation.	Remarks.
Henry Hancock London Medical Gazette, New Series, Vol. VIII., p. 547.	I.	F.	Adult.	Abrupt invasion, with symptoms of acute perito- nitis, early lo- calized in ilio- cæcal region.	9th.	Incision over tu- mor 4 inches long.	Fœtid pus and gas.	Two lumps of feces incrust- ed with calca- reous matter, 15th day.	Recovery.	1848.	Attacked day after con- finement with fifth child. No fluctuation felt.
Prof. W. Park- er, M.D. N. Y. Medical Record, 15th March, 1867.	II.	M.	40	do. do. do.	9th.	Incision 6 inches down to fascia transv.; then exploring nee- dle inserted.	Fœtid pus.	None seen.	do.	1867.	No fluctuation.
Prof. W. Park- er, M.D. Reported by Dr. J. H. H. Burge, N. Y. Medical Record, 15th June, 1867.	III.	F.	15	do. do. do.	14th.	Incision 5 inches.	Fœtid pus.	None.	do.	1867.	No fluctuation.
L. Weber, M.D. N. Y. Medical Journal, Aug., 1871.	IV.	M.	22	do. do. do.	7th.	Incision 6 inches down to fascia transv., and left to open sponta- neously 2½ days later.	Fœtid pus.	Concretion 16th day.	on do.	1871.	No fluctuation.

TABLE CONTINUED.

Name of Operator, Where Recorded.	No.	Sex.	Age	Invasion and Locali- zation of Disease.	Day of Operation after Invasion.	Mode of Operation.	Contents of Abscess.	Foreign Substances Discharged; on what Day after Operation.	Result.	Year of Operation.	Remarks.
E. Krackowizer, M.D. Communicated.	V.	M.	2	Abrupt invasion, with symptoms of acute perito- nitis, early lo- calized in ilio- cecal region.	11th.	Incision down to fascia, then di- vided on direc- tor.	Fœtid pus; no stain of bile.	None.	Recovery.	1872.	No fluctuation.
Sam'l B. Ward, M.D. Communicated.	VI.	M.	17	do. do. do.	Early.	Incision down to fascia transv., and left to open spontaneously 2 days after.	Fœtid pus; no stain of bile.	None.	do.	1872.	No fluctuation.
Prof. H. B. Sands, M.D. N. Y. Medical Journal, Aug., 1874.	VII.	M.	41	do. do. do.	13th.	Incision down to fascia.	Fœtid pus.	Eight or nine do. concretions.	do.	1874.	No fluctuation.
C. Kelsey, M.D. Communicated.	VIII.	F.	16	do. do. do.	8th.	Incision down to fascia; aspirator used; opening then enlarged.	Fœtid pus.	None seen.	do.	1874.	No fluctuation.
J. P. P. White, M.D. Communicated.	IX.	M.	32	do. do. do.	9th.	Aspirated on 9th and 11th days; incision on 15th day 5 in. long.	Fœtid pus; no stain of bile.	Concretion like do. date pit.	do.	1874.	Fluctuation very dis- tinct. Within two years preceding the present at- tack, patient had two acute ones; recovered

Gurdon Buck, M.D. Reported above	X	M.	12	do.	do.	9th.	First punctured with fine trocar, then enlarged by incision.	Fœtid pus and gas; no stain of bile.	One concretion, do. 1874. one lump of faeces, three tufts of slough	No fluctuation. Sound cicatrix 18 months after operation.	from without discharge, but a deep-seated tumor remained in ilio-cæcal re- gion. 20 oz. pus evacuated by first aspiration, on 9th day; 16 oz. by second aspi- ration, on 11th day; a free opening made on 15th day.
L. Weber, M.D. Communicated.	XI.	M.	30	do.	do.	9th.	Free incision.	On 5th, 6th and 10th days fœtid pus & gas.	Sloughy con- do. 1875. nective tissue & fœcal lump, 12th day.	No fluctuation. On 14th day after operation, ery- sipelas attacked wound, and lasted five days. A tendency to hernia in cen- tre of cicatrix, for which a truss was worn.	
L. Weber, M.D. Communicated.	XII.	M.	32	do.	do.	7th.	Free incision.	Fœtid pus and gas.	Dead tissue; no do. foreign body.	Fluctuation felt. In 3d week after operation, an attack of peritonitis, with discharge of pus per rec- tum. In 6th week another attack, and discharge of pus per urethram. Con- tinued free suppuration from abdominal opening. Centre of cicatrix thinned; required support of a truss	
Gurdon Buck, M.D. Reported above	XIII.	M.	26	do.	do.	11th.	First punctured with sharp-p't'd canula, then en- larged by incis- ion.	Fœtid pus and gas; no stain of bile.	Fœcal mass of do. Nov. size of split pea on 4th day; on 5th, 6th, 7th & 8th days tufts of sloughy connective tissue	No fluctuation. Sound cicatrix.	



## POST-FASCIAL ABSCESS

### ORIGINATING IN THE ILIAC FOSSA.

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THE aim of the author in the following article is to establish the diagnosis of a class of abscesses originating in the parietes of the abdominal and pelvic cavities, and invite attention to a method of treatment by which they may be conducted to a successful issue. A correct diagnosis of the class in question is the more important, inasmuch as another class of abscesses involving the same parts, and known as psoas abscesses, tending as they do to a disastrous termination, might be accelerated in their progress by the employment of the same treatment. By a careful study of the anatomy of the parts, especially of the relations of the aponeurotic structures involved, the conditions have been ascertained by which the suppuration is confined within the same uniform anatomical limits, and the most favorable point has been determined at which an outlet can be early and safely established for the discharge of the deeply seated pus, even without waiting for its presence to be ascertained by the existence of fluctuation. This abscess may occur in the iliac fossa of either side. The following cases, derived from the author's own practice, will be first communicated, and from these will be drawn such deductions as will serve more fully to elucidate the subject.

CASE I.—John Roach, a seaman, native of Pennsylvania, æt. 32, was admitted into ward No. 12, Marine Department of the New York Hospital, on the 3rd of July, 1843, with a deep-seated phlegmonous swelling in the left iliac and inguinal regions, of four weeks' standing. At the time of its appearance he had been already suffering for a fortnight from inflammation of the lymphatic vessels of the lower limb of the same side, that had been followed by several small subcutaneous abscesses, the remains of which were still to be seen: five or six between the groin and knee, and three between the inner condyle and malleolus.

The swelling in the groin has, from its commencement, been attended with pain on moving the limb, and has gradually increased in size. It fills up the iliac fossa, so that the fingers cannot be buried in it along the inner margin of the crest of the ilium, as on the sound side. It also involves the outer half of Poupart's ligament, and extends to a distance of four fingers'-breadths below it, a superficial furrow crosses the swelling on a line with this ligament. Its inner limits can be traced from the middle of Poupart's ligament, where the femoral artery bounds it, upwards and outwards in a curved line, approaching within three fingers'-breadths of the umbilicus. A general fulness of the parts on the surface, rather than a well-defined tumor, indicates its existence. The skin covering the swelling continues movable, supple, and unchanged in color. No increased heat is perceptible to the touch, though the patient himself is, at times, sensible of an increase in the temperature. An obscure, deep-seated fluctuation can be felt. There is constant pain extending to the hip, and down the thigh nearly to the knee. The thigh is kept semi-flexed on the trunk, and cannot be straightened out. Patient feels very weak, and has been deprived of sleep for a fortnight by nocturnal exacerbations of pain. His countenance is haggard and anxious; pulse 100, and weak; respiration somewhat laborious. Any movement of the limb or coughing aggravates the pain in the groin; his easiest position is on his left side. His belly is somewhat tympanitic, but supple. He has never had pain in the lumbar region, nor is there any tenderness on pressure there. His tongue is furred, dry in the middle, moist at the

edges, and pale ; appetite tolerable ; bowels move spontaneously every second day. Ordered—poultices to abdomen, Magendie's sol. sulph. morph., gutt. xx., at bedtime.

July 5.—Opened the abscess in the following manner :—An incision, one inch in length, was made at a finger's breadth below the middle of the outer half of Poupart's ligament, through the skin, sub-cutaneous tissue, and fascia lata ; a probe was then passed deeply upwards and backwards behind Poupart's ligament and in front of the psoas and iliacus muscles ; and, on being withdrawn, was followed by an escape of pus ; whereupon the track of the probe was enlarged, and a free outlet afforded for the contents of the abscess, with evident relief to the patient.

July 6.—Still more decided relief has been afforded by the continued free discharge of matter, and the limb can be moved with greater ease.

For about five weeks the suppuration from the abscess continued very abundant, with considerable febrile action, and, at times, free perspiration ; his pulse averaged 120 per minute, and his strength became much reduced. Two or three attacks of cholera morbus, within the same period, contributed very much to aggravate his other symptoms. After this the suppuration gradually diminished, and his general condition steadily improved. Early in September the discharge had entirely ceased, and the opening had closed.

On the 18th of September the patient was able to walk about. Some degree of fulness still remained in the left groin ; the deep swelling in the iliac fossa, and behind and below Poupart's ligament, had very much diminished ; and the suppleness of the superjacent tissues was, in a great measure, restored. The thigh, which had very much emaciated, was regaining its plumpness, and motion at the hip joint was every day increasing. A steady, progressive improvement was also taking place in his general health. On the 27th of September he was discharged from the hospital, cured.

CASE II.—William Davis, æt. 37 years, a seaman, native of the Sandwich Islands, of robust appearance, was admitted into

the New York Hospital, November 27, 1845, with a prominent tumor occupying the left iliac and inguinal regions, and extending laterally from the anterior superior spinous process to within four fingers'-breadths of the root of the penis. In this direction it presented its longest diameter; its upper and inner margin approaches within four fingers'-breadths of the umbilicus. Inferiorly, it somewhat overhangs Poupart's ligament, and is limited at its outer circumference by the crest of the ilium. The circumference of the tumor, towards the median line, is gradually lost in the surrounding surface, while its summit stands out in relief about two inches. The integument covering it is supple, without adhesions, without increased heat or discoloration.

The tumor itself is elastic, fluctuating, closely bound down at its circumference, and not admitting the fingers to be insinuated under its base at any point. By grasping the tumor and crowding it backwards and downwards, its contents are made to transmit an impulse behind and below the outer half of Poupart's ligament. This impulse is felt at a distance of nearly two inches below the ligament; on the surface, however, no external swelling is perceptible in this situation. A slight impulse is communicated to the swelling by coughing. In the erect position, it becomes somewhat more tense than in the recumbent; no translucency exists; no gurgling; no functional disturbance of the bowels; no pain is occasioned by handling it nor by the motions of the thigh upon the trunk. The neighboring lymphatic glands are slightly enlarged, but not tender. The patient is under no restraint in moving his body in any direction, and feels able to perform any sort of work. There is no tenderness on pressure over the lumbar region or along the spine. The spermatic cord is felt at the inner margin of the tumor, supple, and in a normal condition.

The previous history of this case, so far as the patient's imperfect knowledge of the language permitted it to be ascertained, was as follows: The tumor first appeared about four months ago, while he was at hard work on board a vessel. A feeling of soreness drew his attention to the part, when the swelling was discovered, of the size of a hen's egg. For one week he gave up work and kept below, and then, of his own

accord, resumed his duties. The swelling attained its present size in about a month, since which time it has remained stationary. His general health is apparently good, and his strength unimpaired. Pulse somewhat accelerated, and tongue coated with a yellowish fur.

The extension of the tumor downwards behind and below the outer half of Poupart's ligament, as evinced by the transmission of fluctuation to the superior and outer part of the thigh when pressure was made above, warranted the conclusion that the collection of fluid was situated behind the iliac fascia.

From the anatomical conformation of this region, it was impossible for any collection of matter developed more superficially to make its way behind the outer half of Poupart's ligament. Though the great prominence of the tumor, and the entire absence of all signs of inflammatory action, together with the freedom of motion of the thigh, were features which cast doubt on its nature, still the fluidity of its contents was apparent, and the necessity of their evacuation clearly indicated. At a consultation of the visiting surgeons held upon the case, one opinion was expressed that it might be a tumor of a consistence that might afford a sensation of pseudo-fluctuation. The surgeon in charge proceeded with reference to this possible condition, and made an incision five or six inches in length across the surface of the tumor and parallel with Poupart's ligament; after carefully dividing the skin and sub-cutaneous tissues, layer by layer, the knife suddenly penetrated the cavity of the tumor and gave exit to about a pint of thin, ill-conditioned, serofulous matter of a brownish color, with particles of a curdy substance floating in it. After enlarging the opening, two fingers introduced into the cavity of the cold abscess passed downward behind the outer half of Poupart's ligament, and below it to the extent to which the sensation of fluctuation had been felt before the operation. The conclusion previously formed respecting the anatomical location of the confined matter was thus demonstrated. No denuded bone was detected in the iliac fossa.

December 27.—Up to this date the patient's general health continued good; the discharge was small in quantity, and of good appearance. A small abscess pointed below Poupart's

ligament and opened. In the further progress of the case, however, symptoms of phthisis supervened, with cough, hectic and gradual emaciation. The abscess continued open.

April 3, 1846, he was discharged at his own request.

CASE III.—Benjamin C. Smith, æt. 54 years, a native of the State of New York, seaman, with fair complexion and sandy hair, entered the hospital on January 13, 1847, with unhealthy sloughy ulcers on the nape of the neck, that had been preceded by undermining abscesses. Soon after admission, erysipelas supervened, involving the face and scalp, and followed by abscesses in the eyelids, and extensive undermining suppuration of the scalp. While gradually convalescing from the low cachectic condition thus induced, he began, early in the month of March, to complain of pain in his left groin, and inability to straighten out the thigh. At the same time his appetite fell off; he became feverish, and his general condition deteriorated.

March 15.—On careful examination of his groin, a deep swelling, tender, and painful on pressure, was felt behind the outer half of Poupart's ligament, and extending upwards and occupying the iliac fossa. Its surface could be traced along the inner margin of the crest of the ilium, and in such close contact with it as not to allow the fingers to be buried at all in the fossa. The swelling also extended below Poupart's ligament a distance of two or three fingers'-breadths; along the inner margin of the swelling, the course of the femoral artery was traced. Fluctuation was perceptible below the outer half of Poupart's ligament, when deep pressure was made over the iliac fossa above. The skin and subjacent tissues covering the swelling were still supple and unadherent, and the surface free from heat or redness. On comparison with the sound side, an increased degree of fulness was observable. The thigh was kept flexed at an angle of about  $145^{\circ}$  with the trunk, and could not be extended to the straight position without causing pain. Stinging pains occasionally extended down the thigh, more particularly when the swelling was handled.

An incision was made, as in Case No. 1, down through the fascia lata, and a grooved exploring needle passed upward and backward to the depth of about two inches, when a few

drops of pus escaped along the groove. The opening was then enlarged, and a quantity of matter evacuated. Two ligatures were applied to a small artery that was divided by the incision.

March 17.—Great relief has followed the opening of the abscess. The outlet having become blocked up, a female catheter was introduced, and a large discharge followed. The catheter could be passed in nearly its whole length, and came in contact with denuded bone. The thigh can be extended almost to its full degree. General condition favorable—no fever.

March 25.—The discharge of pus continues, but has diminished in quantity. Generous diet and tonics are allowed.

April 5.—The abscess has ceased to discharge, and the patient is rapidly gaining in health and strength.

April 26.—He was discharged cured, with the abscess closed.

CASE IV.—Robert Brown, æt. 40 years, native of Ireland, shoemaker, was admitted into the New York Hospital, January 11, 1851, with compound comminuted fracture of the right leg, involving the ankle joint, that had happened just before admission, while in a state of intoxication. On the 29th of the same month amputation below the knee was performed. On the 9th of April, when the stump had nearly healed, and patient's general condition had become tolerably good, my attention was first called to a soreness in the right groin and iliac region. He had previously complained of this part; and from superficial examination it was supposed to depend upon inflamed lymphatic glands, caused by the sore of the stump, and for which blisters had been applied. A careful examination being now instituted, it was ascertained that the iliac fossa was filled up by a deep-seated hard swelling, extending down behind Poupart's ligament, and confined to its outer half. The femoral artery could be distinctly felt skirting the inner margin of the swelling. The fingers could not be buried in the fossa, nor could they embrace the crest of the ilium, or the anterior superior spinous process, as could readily be done on the opposite side. No fluctuation could be distinguished, nor was there any redness of the surface, nor œdema of the subcutaneous tissue, nor increased heat. Pressure gave pain at every point where the swelling could be reached. The outer half of Poupart's liga-

ment was tense and unyielding, while the inner half retained its natural suppleness. The swelling could not be distinguished much below the ligament. Flexion of the thigh caused no pain, but extension did when carried to an extreme degree. There was no pain in the lumbar region, nor had there been at any time. The patient, who was of a weak constitution, and had had symptoms of phthisis, dated back the origin of this ailment three months prior to the accident to his leg. He could assign no other cause for it than that he had strained the part while engaged in piling wood, being obliged at the time to stand on tiptoe and place the wood as high as he could possibly reach.

*Operation.*—An incision being made as already described, the fascia lata was found tense and unyielding. A trochar exploring needle in a canula was passed upwards and backwards, and soon arrived in a free cavity, from which pus escaped through the canula. After enlarging the track, a tent was introduced and a poultice applied. Generous diet, cod-liver oil and quinine were given.

May 4.—The discharge from the abscess is decreasing. Strength is good, and patient is able to sit up.

May 28.—The discharge, having become thin and scanty, ceased three days ago. A firm, circumscribed tumor, about the size of a hen's egg, is still felt in the iliac fossa.

May 29.—The patient was discharged cured.

Several months subsequent to leaving the hospital, he reported himself in good condition.

CASE V.—Mrs. B., æt. 25 years, a lady of delicate constitution, residing at No.— Pike street, a patient of Dr. I. W., has a deep swelling in the left groin, filling up the iliac fossa and extending down behind Poupart's ligament, but confined to its outer half. A fulness, rather than a defined swelling, is all that is observable on the surface. The femoral artery skirts its inner margin. The presence of the swelling prevents the ends of the fingers from being buried in the fossa, along the crest of the ilium, or at the anterior superior spinous process, though this can readily be done on the opposite side. The in-

tegument covering the swelling is free from redness or heat, and retains its natural suppleness. The subcutaneous cellular tissue is also free from œdema and induration. No fluctuation can be perceived. Deep pressure causes pain wherever the swelling is within reach; the outer half of Poupart's ligament is tense and unyielding. About a hand's breadth lower down on the thigh and toward its inner margin, the skin is œdematous, indurated, and somewhat swollen over a space of about five inches in circumference; this has appeared within a few days, and is disconnected from the swelling above. The thigh is kept flexed at an angle of about  $135^{\circ}$  with the body, and attempts to extend it cause pain in the swelling. Two months prior to my first visit (on March 30, 1852) Mrs. B. had been confined with her second child, after an ordinary labor. On the second day following her confinement she was seized with a severe rigor and pains in the lower part of the abdomen, accompanied with tympanites and a rapid pulse, which led Dr. W. to apprehend an attack of puerperal fever. Purgings, etc., without the aid of blood-letting, subdued these symptoms. In a short time, however, she began to be seized with chills, which recurred at irregular periods, sometimes twice within twenty-four hours, and were followed by fever of short duration and profuse perspiration. At the expiration of between three and four weeks after confinement, her left thigh began to be drawn up, so that, in attempting to walk across the room, she was obliged to lean her body forward, and was unable to stand erect with her foot flat on the floor. She experienced, however, no pain in the groin, nor has she, to the present time. Her countenance is pale and languid, and her pulse feeble. She has at no time had pain in the lumbar region, nor is there any tenderness on pressure over this part. The absence of fluctuation was the only feature which made me hesitate in regard to the existence of matter behind the iliac fascia; all the other symptoms, general as well as local, were unequivocal. On careful inquiry, no connection could be established with the lumbar region or colon, as the point of departure of this phlegmonous swelling. Flax-seed poultices were advised, and kept constantly applied until

April 3, when it was decided to make an explorative punc-

ture. An incision was made, as in the preceding cases, below the outer half of Poupart's ligament, through the integument and subjacent tissues, down to the fascia, which was found tense and unyielding. A small-sized trochar exploring needle, sheathed in a canula, was passed upwards and backwards behind Poupart's ligament, and soon arrived in a free cavity. The needle being withdrawn, matter escaped through the canula. Before withdrawing the canula, a narrow-bladed knife was passed up by the side of it, and the track enlarged to afford a free outlet. A tent was then inserted, and poultices directed to be continued. The tonic and supporting treatment, already in use, was also continued.

April 7.—The use of the tent, which had been changed daily, was laid aside. The discharge was moderate in quantity, and the patient's condition was gradually improving. The subsequent progress was favorable. At the expiration of about six weeks the opening had closed, and the patient was able to ride and walk out.

CASE VI.—Mary Ann T., æt. 12 years, a girl of pale complexion and very delicate appearance, whose father had been of a very scrofulous constitution, suffered in the month of May, 1853, from a large abscess that formed spontaneously in the axilla, and which, having been opened, discharged very copiously for some time. After a gradual recovery, she enjoyed a comfortable state of health until the month of August following, when she began to complain of pain in the right hip and groin. Two or three weeks after this she was observed to walk lame, with the thigh retracted, and to have hectic fever at irregular periods. On the 22nd of November following, she was first examined at her residence, No. 193 West 25th street, and the following particulars ascertained: The right thigh was kept flexed upon the trunk, and adducted towards its fellow. The body was inclined to the opposite side, and caused a notable projection of the lame hip, suggesting at once the suspicion of hip disease; the motion of the joint, however, was found free, and unattended with pain or swelling about the trochanter; attempts to extend and bring down the thigh, however, caused pain in

the region of the psoas and iliacus muscles. There had been at no time pain in the lumbar region, nor was there any tenderness on pressure in this part. She was still able to walk, by stepping on her toes, and inclining her body forward, taking care to maintain it always at the same angle with the thigh. In the recumbent position, a swelling was recognized in the right iliac fossa, closely hugging the crest of the ilium and the outer half of Poupart's ligament, so that it was impossible to bury the ends of the fingers in the fossa, or to grasp the anterior superior spinous process between the thumb and fingers, or to depress the outer half of Poupart's ligament. The inner margin of the tumor could be traced from the middle of Poupart's ligament upwards and backwards in a line corresponding to the superior strait of the pelvic cavity. There was no redness of the surface, nor adhesion of the skin to the subjacent tissues, nor œdema, nor elevation of temperature. A moderate degree of fulness was observable at and above Poupart's ligament. Deep pressure caused pain. The perception of fluctuation was obscure and doubtful. Her pulse was habitually frequent, and her countenance wore an anxious expression. She still retained a good degree of strength. Directed poultices to the swelling. Repeated examinations having corroborated the condition above described, and confirmed my opinion of the existence of a collection of matter behind the iliac fascia, an opening was made on the 28th of November, in the presence of Drs. Van Buren and Halsted, and my pupil Mr. H. D. Noyes. This was performed, as in the preceding cases, and a grooved exploring needle passed upwards and backwards nearly two inches, when matter escaped. After incising the opening, and giving vent to a large quantity of thick pus, a tent was introduced; a copious suppuration followed. Poultices were kept applied and cod-liver oil and syr iodide of iron were administered for several weeks; also super-sulphate of quinine, with generous diet and malt liquors.

On the 4th of March, 1854, I found my patient had already been walking about several weeks; the discharge had become reduced to a small quantity of thin matter. She had almost regained the power of holding the body erect, with the foot applied flat upon the floor; hardness continues in the seat of the

tumor. She survived till the 23rd of November following. The discharge continued from the groin, sometimes abundant and at other times scanty and thin. An attempt was made to use injections of a weak solution of the bichloride of mercury, by means of a gum elastic catheter introduced into the remotest part of the abscess; but this was rendered impossible by her extreme timidity and uncontrollable intractability. Gradual emaciation took place, and progressed to an extreme degree. She kept up till within a few days of her death, and was at last exhausted by a profuse diarrhœa. No examination of the body could be obtained.

CASE VII.—John Burr, æt. 27 years, a native of New York, boatman, entered the New York Hospital on the 15th of March, 1855, with an inflammatory swelling in the right iliac region, of which he gave the following history: About six months ago, without injury or other obvious cause, he began to notice a swelling on the inner side of the middle of the crest of the ilium, accompanied with pain and inability to straighten the thigh to its full extent on the trunk. These symptoms passed off and again recurred, according to the patient's recollection, once in about two or three weeks. He was not obliged, however, to give up his occupation, or to keep in the house until within eight or ten days of his admission. At this time the following condition was observed: The lower and right portion of the abdomen was swollen and prominent; the swelling was limited below and to the outside by the crest of the ilium and the outer two-thirds of Poupart's ligament, with which parts it was so closely connected that it was impossible to insinuate the ends of the fingers between them and the swelling, although this could easily be done on the opposite side. Toward the umbilicus, the swelling was gradually lost, and its limits could only be defined by percussion, which was dull for about two-thirds of the distance from the ilium to the umbilicus. The line of dulness receded farther from the umbilicus as it was traced upwards and outwards. The abdominal muscles on the right side were kept in such a state of tension as to prevent the limits of the swelling from being felt by deep pressure. The integument covering the swelling had undergone no change in color,

but had lost suppleness, and was movable only to a limited extent on the subjacent tissues. Deep pressure with the ends of the fingers disclosed the existence of œdema and tenderness over every part of the swelling, especially in the neighborhood of the anterior superior spinous process. Poupart's ligament was evidently pushed downwards, as well as forwards; its inner half retained its natural suppleness, while its outer half was tense and unyielding. No fluctuation was perceptible. The thigh was kept flexed upon the trunk and somewhat abducted, and could not be extended without causing pain in the swelling. When the patient stood up, he inclined his body forward, so as to keep his groin relaxed. On careful inquiry, it was ascertained that there had not been any pain or lameness in the lumbar region. The patient had generally enjoyed good health, was free from fever, though his pulse was somewhat accelerated. Six leeches were directed to the swelling, to be followed by poultices.

March 19.—Patient had a smart rigor, followed by a fever. The swelling appears to have somewhat increased, and become much more painful; the pain spreading upwards, towards the false ribs, and around the body. Made an explorative puncture below the outer half of Poupart's ligament, in the same manner as already described, and reached a cavity in the iliac fossa, containing pus. Five or six ounces were evacuated, of a grayish color and fetid odor. Poultices directed to be continued.

March 21.—Patient has experienced great relief since the evacuation of the matter. The swelling has somewhat subsided so as to render the prominences of the crest and the spinous process of the ilium more visible. The dulness has disappeared to within a finger's breadth of the crest of the ilium and Poupart's ligament. The discharge continues free, and the thigh is still flexed.

March 27.—A large slough came away from the abscess, and a slight blush of redness extends about a hand's breadth around the opening; the discharge is free; he has had no chill; is allowed tonics and good diet.

This patient remained in the hospital under treatment for several months. The abscess continued to discharge more or less without interruption. About the middle of April he had an

attack of acute pneumonia of the right lung, from which he gradually recovered.

May 26.—Began injecting the abscess with Lugol's solution of iodine, and repeated it every third day until the 27th of June without benefit.

July 7.—A small slough appeared at the orifice of the abscess; and, after its removal, a hard substance was encountered, about one inch deep, which, on being withdrawn, proved to be a pin of ordinary size, encrusted with biliary concretions, except at its head and point. The body was of the size and form of a small olive, with a rough, uneven surface. He had no recollection of ever having swallowed a pin.

July 14.—Air escaped from the abscess. The discharge fluctuates in quantity, and sometimes has a faecal odor. The thigh is still retracted.

August 9.—He was discharged from the hospital, and went into the country. In October, after his return from the country, the abscess still continued to discharge. Several months afterward the author encountered the patient in the street; he represented himself as quite restored to health, and again engaged in his former laborious occupation of coal-heaver. The abscess had ceased to discharge and the opening had healed.

*Remarks.*—Of the seven cases reported above, five were males and two females. Their ages ranged from twelve to fifty-four years. In four of their number the disease occupied the left side; and in three, the right. In one of the two female patients the disease occurred during the puerperal state, and might be regarded as a case of pelvic cellulitis.

*Anatomy.*—The importance of an accurate knowledge of the relative anatomy of the parts involved in this form of abscess will be admitted, if it is remembered that both the diagnosis and treatment are based upon it.

The crural arch, which is spanned by Poupart's ligament, is divided into two halves by a strong process of aponeurosis, sent off posteriorly from the middle of this ligament, and inserted into the ileo-pectineal eminence. The inner half serves for the passage of the great blood-vessels, lymphatics, etc.; the outer

for the psoas magnus, and iliacus internus muscles, and crural nerves. The fascia iliaca, of which the above process is also a continuation, is a strong aponeurosis, which is continuous upward with the outer half of Poupart's ligament, and, spreading out over the anterior face of the iliacus and psoas magnus muscles, is inserted outwardly into the inner margin of the crest of the ilium, and inwardly into the linea ileo-pectinea. It is also prolonged upwards upon the psoas, as high as its origin from the lumbar vertebræ. Below Poupart's ligament, and continuous with it, the fascia lata covers the psoas and iliacus, in common with the other muscles of the thigh, and, at the inner margin of these two, gives off posteriorly a septum, which is continuous above with the process of aponeurosis, already described as inserted into the ileo-pectineal eminence. Now, if an incision be made parallel with Poupart's ligament, and below its outer half, down through the fascia lata, the psoas and iliacus muscles will be exposed, and the fingers can be passed upwards behind Poupart's ligament so as to arrive in the fossa, behind the iliac fascia. The same track can be followed from above downwards, by incising the iliac fascia transversely, and passing the fingers downwards behind it and the outer half of Poupart's ligament, till they arrive on the anterior face of the thigh. Here, then, we have a well-defined track, bounded posteriorly by a bony surface, anteriorly by a strong fascia, and shut in on either side by the insertions of the fascia into the bone. Suppuration taking place in this track could only reach the surface through the fascia, by the slow and gradual process of ulceration and absorption.

*Pathology.*—The able author of an article in the *British and Foreign Medical Review* (page 456, April No. for 1840) remarks: "An abscess in the cellular tissue of the right iliac fossa, when it does not result from a blow or external wound, from perforation of the appendix or cæcum, or from child-birth is, we believe, in almost every instance, the consequence of disease of the bones, either of the back or pelvis. There may be cases in which an abscess forms in the iliac fossa from idiopathic inflammation of the cellular tissue, but we have never seen one." Several of the cases narrated above prove, as we believe

beyond a doubt, that suppuration may take place in the iliac-fossa behind its fascia, unconnected with caries of the lumbar vertebræ or pelvis, or morbid lesions of the cœcum or colon. There is no reason why the cachectic condition, upon which the formation of abscesses depends, may not manifest itself in this particular region as well as in any other of the body. The functions of the psoas and iliacus muscles render them liable to the injurious effects of over-straining efforts, and such efforts may be the exciting cause of suppurative inflammation in the cellular tissue surrounding these muscles, especially where a general cachectic condition co-exists to favor it. Such seems to have been the fact in Case No. IV.

*Causes.*—In Case No. 1, the irritation was propagated in the course of the absorbent vessels, which had recently been the seat of inflammation, resulting in numerous small subcutaneous abscesses along their track from the inner ankle to the groin.

In No. II., which was a remarkable example of cold abscess, the patient, though apparently in good health when the abscess was *opened*, exhibited subsequently all the signs of tubercular cachexia.

In No. III. a low cachectic condition, induced by copious suppuration following erysipelas of the face and scalp, coincided with the development of suppurative inflammation in the iliac fossa, without any obvious exciting cause.

In No. IV., after violent efforts, by which the psoas and iliacus muscles were overstrained, pain and lameness first seated themselves in the iliac region; and at length, while the system was suffering under depressing influences, suppuration developed itself.

In No. V., the only case of an adult female, the disease originated in the puerperal state.

In No. VI. the patient's whole aspect was expressive of a hereditary scrofulous diathesis, which had manifested itself, previous to the suppuration in the iliac region, by the development of a large abscess in the axilla.

In No. VII. the escape of a foreign body from the intestine (probably the cœcum) first excited suppurative inflammation, and

its protracted sojourn in the abscess perpetuated its continuance for a long period.

*Diagnosis.*—Other forms of abscess, besides the one in question, are found located in the iliac region, forms which it is important to distinguish.

1. In this, as in other regions of the abdomen, suppuration may take place in the muscular parietes, or in the cellular tissue between the muscles and peritoneum. Such an abscess would not, however, be confined within the same defined limits; nor in case it was seated in the cellular tissue of the fossa anterior to its fascia could it extend behind or below Poupart's ligament. Retraction of the thigh would not be produced by it, and adhesion of the skin and subjacent tissues, as well as redness and inflammatory œdema, would take place early in its progress.

2. Abscesses form in consequence of perforation of the vermiform process and cœcum. The suppuration in this case is commonly confined by adhesions between the peritoneal surfaces of the intestines and parietes, and the tumor produced is not confined within the same anatomical limits as the abscess in question. The same deviation from the anatomical characters already so often insisted on is observable in abscesses produced by fœcal obstruction, as well as in those that are developed in the appendages of the uterus during the puerperal state.

3. Ordinary psoas abscess, which is understood to depend on disease of vertebræ, may and does, in its descent along the psoas muscle, sometimes keep behind the iliac fascia, and occupy the same track as the idiopathic abscess; but its connection with the vertebræ can be readily ascertained by careful inquiry.

4. The question may arise, whether caries of the os ilii itself may not cause suppuration in the fossa, and present a swelling confined within the same anatomical limits. Doubtless it may, and so also may a fracture of the ilium. The author believes he has seen such an example after fracture, where, besides other abscesses around the pelvis, one formed and occupied exactly the limits of the fossa, and was evacuated by an opening made below the outer half of Poupart's ligament.

The true post-fascial abscess originating in the iliac fossa

from idiopathic inflammation of the cellular tissue, may be described as follows: It presents itself in a chronic (though much more rarely) as well as in an acute form, and locates itself in either the right or the left iliac region. Though it may occur in early youth, it is most frequently met with in adult age, and affects alike both sexes. The tumor which it forms rises up from the hollow of the ilium, pushing before it the fascia and outer half of Poupart's ligament, so that the crest of the ilium and the anterior superior spinous process can no longer be grasped between the thumb and fingers. The outer half of Poupart's ligament is rendered tense and unyielding, and a deep-seated induration may extend two or three fingers'-breadths below it. The precise limits of the swelling can only be appreciated by the touch and by percussion over its abdominal portion; upon the surface the eye only perceives a fulness or a diffuse swelling of these parts. No increased heat or redness of the skin existed in either of the cases above narrated. In four of them (Nos. I., IV., V., and VII.) no fluctuation could be detected; in two (Nos. III. and VI.) it was obscure and doubtful; while in one only (No. II., the cold abscess), it was unequivocal. In all (except No. II.) the thigh was retracted, and attempts to straighten it caused pain. In all the cases (except No. II.) constitutional disturbance and fever accompanied the local disease. In all the acute cases, the absence of heat, redness, adhesions, œdema, and also of fluctuation in three of them, is to be attributed to the remoteness of the abscess from the surface, and its confinement beneath the fascia.

*Treatment.*—The treatment of abscesses in the iliac region, laid down by surgical authorities, does not differ materially from that of abscesses situated elsewhere. Means suited to produce resolution of the inflammation and prevent suppuration are advised in the early stage. When these have failed, such means as will hasten the approach of matter to the surface, and thus afford an opportunity to evacuate it by an opening, are then to be resorted to. In this form of abscess, the first object would be very rarely attained, owing to the remoteness of the seat of inflammation from the surface and its confinement beneath a strong and tense fascia. For the same reason, the approach of suppuration to the surface

would be very tardy, and hence great danger might be apprehended from the injurious effects of long pent-up matter, such as caries of the os ilii, as was threatened in Case No. III., where denuded bone was encountered at the bottom of the abscess; also, deep burrowing along the walls of the pelvic cavity and openings into the peritoneum, intestines, vagina, and bladder. With the view of averting these disastrous consequences, a point was sought where an opening might be early established for the escape of the pus. The point selected possesses the advantage of safety in respect to its anatomical relations, it being remote from the peritoneum and important blood vessels; it affords, also, the most dependent outlet. The mode of performing the operation has been sufficiently described in the preceding narrative. No time should be lost in resorting to it; the absence of fluctuation need not deter from it. The phlegmonous character of the swelling; its anatomical relations to the iliac fossa and Poupart's ligament; the absence of disease of the lumbar vertebræ, and the co-existing retraction of the thigh; these points being clearly made out, are sufficient to warrant the conclusion that suppuration has taken place in the fossa behind the fascia.

It is hardly necessary to add that the approved auxiliary means of abating inflammation, such as leeches, poultices, etc., together with appropriate constitutional remedies, are not to be omitted.





