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ON

ABSCESSES

OF THE

ANTERIOR ABDOMINAL WALL.

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Of abscesses of the abdominal parietes Prof. Velpeau* remarks that they present so many varied points for consideration, (tant de nuances à étudier), that a special treatise would be required to elucidate all their peculiarities. A no less eminent authority, in this country—Mr. S. Cooper†—says "that abscesses between the peritoneum and abdominal muscles, or between the layers of these muscles and under the integument, are attended with considerable variety, according as they happen to be acute or chronic, circumscribed or diffused, small or extensive."

The object of the present communication is to call attention to those abscesses only of the anterior abdominal walls which are situated in or near the umbilical region. The following history of a case which last year fell under my observation may serve as introduction:—

Sarah Collins, ætat. 3½, a child of dark complexion, well developed, with a fair proportion of adipose tissue, but of a somewhat lymphatic appearance, and with a naturally tumid belly, came under my care, at the City Dispensary, in the beginning of January 1850. She had been an out-patient since June 6th, 1849, presenting, as far as could be ascertained from the mother's imperfect report, symptoms of hectic fever,—viz., gradual loss of flesh and strength, with thirst and hot skin, but from what cause did not appear: during this state the bowels were reported to have been regular. Towards the middle of December, 1849, and when her recovery was considered nigh complete, her health again began to decline, and she frequently complained of pain in the abdomen, which became tense and swollen; the pain increased in severity, and, about a fortnight after the tumefaction of the abdomen had first attracted notice, a copious discharge of purulent fluid took place spontaneously through the umbilicus: this has continued up to the present time (Jan. 14th). On examination, the umbilical region is found to be full and prominent; the integument has a dusky brown colour, as commonly observed in the vicinity of an abscess of some duration; a discharge of purulent fluid, not exactly homogeneous, and of a yellowish colour, arises from the centre of the umbilicus, which no longer presents the usual depression, but is pouting, and has the same dusky brown red colour as the surrounding integument. The quantity of discharge is now moderate. On pressing the swelling close to the umbilicus, pus is poured out in a thick stream through the fistulous opening, accompanied by small bubbles of a gaseous fluid. This circumstance presented itself twice during the examination: it had never been observed by the mother, probably from her never having attempted to make any pressure on the tumour. Pressure not only increased the discharge, but showed, also, that the pus did not come from the immediate vicinity of the umbilicus, but at some distance to the right of

* Leçons de Clin. Chir., tom. iii. p. 377, Paris, 1841.

† Dict. of Pract. Surg., p. 3, 7th edit., London, 1838.

it, where, about midway between the navel and the anterior and superior spine of the ileum, an indurated spot could be distinctly felt through the abdominal walls. Upon continuing the pressure from this spot towards the fistulous opening, pus and gas-bubbles escaped in greater quantity: the pus had no fetid odour. The fistulous opening was small, and was situated on the summit of a papilla-like process occupying the centre of the navel: into it a probe could be introduced; but at no time did I attempt to ascertain to what depth or in what direction the instrument could be passed, from a fear of doing mischief, and from the conviction that no useful information could be obtained by the experiment; not following in this respect the precept laid down by Celsus, who, speaking of fistulæ in general, says*—"ante omnia demitti specillum in fistulam convenit, ut quò tendat et quam altè perveniat, scire possimus." On endeavouring to determine the seat of the induration, I remarked that it was evidently not situated in the subcutaneous cellular tissue, as this, which was of some thickness, could be grasped and raised over the swelling.

Feb. 11th.—The induration can still be felt in the right lateral region of the abdomen, all the other parts of which are in a natural state. The discharge persists, increased by pressure, is somewhat thinner: no escape of gaseous fluid at this examination.

April 8th. — The child was again brought to the Dispensary, the mother having perceived, a day or two back, that the navel pouted again considerably, was red and tense, and the child suffering a fresh accession of pain. She was on the point of applying a poultice, when a large quantity of pus escaped.

Since the last report the fistula had for some time ceased to discharge, although the appearance of it seemed to indicate that it was not permanently closed. The discharge is at present as abundant as at the commencement; the fluid yellowish, but thin. There is still considerable induration to the right of the umbilicus below the right hypochondrium. Pressure from this point towards the umbilicus determines an increased flow of pus, as in former examinations: no escape of bubbles.

30th.—The discharge persists, although again less abundant. The induration can be still distinctly felt.

May 16th.—Still some discharge; is, however, much thinner.

June 10th.—Slight suppuration from the fistula.

July 1st.—No trace whatever of discharge; the umbilicus is perfectly dry, and somewhat puckered, and has no appearance of the persistence of the fistulous opening. No distinct and circumscribed induration can now be felt where it formerly existed, although, upon deep depression of the abdominal wall, something of a cord like substance is found.

15th.—The closure of the fistula appears now to be permanent, and the umbilicus has resumed its natural appearance: as at last examination, something like the vestige of an inflammatory induration can be felt by forcible depression of the abdominal wall: this pressure causes no pain. The child was discharged.

When the child first came under my care in January, I found that she had been taking the Ol. Jec. Aselli since the occurrence of the suppuration (one month). Under the influence of this remedy the mother stated that she had gained flesh; it was therefore continued up to May 16th, when it was thought proper to leave off all treatment. The child continued to enjoy good health during the whole period she was under my care, eating with appetite, and taking exercise, and, with the exception of the recrudescence already alluded to, suffered no pain. The local treatment consisted in poultices and simple dressing.

I may here mention that at no time did I detect any peculiar or fetid odour in the purulent fluid or in the gas; never, while the child was under my care, did the discharge contain fæcal matter or intestinal fluid, nor did it appear to have presented any trace of them before the patient was seen by me. There likewise never appears to have been any pus in the stools, nor other circumstance to induce the belief of a communication of the abscess with any portion of the intestinal canal.

Examined upon two other occasions under the microscope, the purulent fluid presented pus-globules of a somewhat irregular form, and portions of it, thicker than the rest, and of a darker yellow colour, consisted of fat and oil-globules.

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* Corn. Cels. de re med., lib. v. cap. ii. Sect. xiv.

The preceding history presents many of the features of deep-seated phlegmon of the anterior abdominal wall; but, like all individual cases, it does not permit of drawing from it a general description: this can only be done by the collation of facts of the same order.

As superficial or subcutaneous abscesses of the anterior abdominal wall resemble similar collections in other parts of the body, they will require no especial notice. I may only mention that it was held by Delamotte, and after him by Boyer, that the inflammation of which they are the sequel is generally attended with more pain than in other regions, on account of the abundant supply of nerves to the abdominal parietes, and also on account of the repeated action of the abdominal muscles.

Of deep-seated abscesses of the anterior abdominal wall I may immediately remark that they may be situated either in the areolar tissue connecting the muscles and fasciæ, or in that external to the peritoneum or fascia propria; but in most cases, if not in all, it is extremely difficult, not to say altogether impossible, to determine precisely the situation of the pus, whether immediately external to the peritoneum, or between the muscles and fasciæ. This circumstance, however, is fortunately of little practical importance, as the therapeutical indications are the same in either case.

In its incipient stage, deep-seated inflammation of the anterior abdominal wall not unfrequently presents, as might be expected, symptoms chiefly resembling those of acute peritonitis. It almost invariably terminates in suppuration, and the purulent fluid is frequently in so great quantity as to lead to the suspicion of ascites. The pus frequently makes its way to the exterior through the umbilical ring, rarely, but occasionally, into the peritoneal cavity, sometimes into the intestine.

It presents also, in some instances, a peculiarly fetid odour; a circumstance eminently conducive of error, if not understood. This character of the pus is, however, not peculiar to abscesses of the abdominal parietes, but is now well known to obtain in purulent collections situated in the immediate proximity of cavities containing atmospheric air or other gases.

As the pus collects, the unyielding nature of the tissues which form the abdominal wall prevents the abscess pointing readily; the tumour is more or less flattened, very tender on pressure, and the pain is increased still more in these cases than in superficial inflammation, by every act which calls the abdominal muscles into play.* After the evacuation of the pus, the effusion into the surrounding cellular tissue, which is generally very extensive, is tardy in disappearing, and indurated masses are felt through the abdominal wall.

Such are some of the more prominent features of abscesses of the anterior abdominal wall, which the following abstracts of cases will serve to illustrate.

In the Archives Gén. de Médecine, Ser. iii., p. 435, 1839, M. Bricheteau has published the following very interesting case, in which, it will be seen, the symptoms strongly resembled those of acute peritonitis:—

The patient was a young lady, æt. 17, of lymphatic habit, and who in her infancy had presented decided symptoms of struma. On the 17th of May, 1839, she was seized with violent pain in the abdomen, which lasted throughout the night, and entirely prevented sleep. The following night was equally bad. The author was called in on the second day, when, on examination, he found the abdomen generally painful, and intolerant of the slightest pressure. The skin, however, was scarcely hot, but the pulse somewhat accelerated. There was much restlessness; but the countenance was not altered. The patient was troubled with repeated bilious vomiting. Leeches, baths, fomentations, &c., were employed, and a mixture containing Tinct. Opii, to restrain the vomiting, and to appease the extraordinary restlessness, which was most distressing. These means continued during some days, with the exception of the leeches, were attended with apparent success. The abdominal pain yielded; the vomiting ceased; and pressure no longer caused pain: nevertheless the pulse remained frequent—at 120; the respiration accelerated, 44 inspirations per minute. But at the expiration of a week things looked favourably, and some broth, for which the patient expressed a strong desire, was allowed: this was followed by a return of the pain, with tension and tympany of the abdomen, vomiting, frequent

* Dance, in Dict. de Méd.: art. Abdomen.

pulse, and other febrile symptoms. The leeches and other antiphlogistic means were again resorted to, and soon this second attack in great measure abated; but the vomiting did not cease altogether, and the pulse varied from 120 to 140. On the 1st of June the patient was seen conjointly by Bricheteau and Marjolin, when they both thought they detected fluctuation; and the case was considered to be effusion consequent on peritonitis. Marjolin moreover suspected the presence of tubercle in the peritoneum.

About the 12th it was observed that the integuments at the umbilicus were thinner than usual, and pouted somewhat; the abdomen was resonant on the left, and dull on the right side.

On the 14th, the patient complaining of feeling wet, the poultice was removed, when a jet of pus escaped through the umbilicus, which had given way: the quantity collected was estimated at several basinsfull. This discharge was, as after tapping for dropsy, followed by syncope, which was, however, of short duration: after it, the patient fell into a quiet sleep. The pus was thick, creamy, without odour,—similar in all respects to that of an ordinary phlegmonous abscess. The following day the patient was easy, and had passed a good night. The abdomen was considerably dimi nished in size, and tolerant of pressure; pulse down to 98. The suppuration was extremely copious; the bed-linen was saturated with pus. There was still some nausea and occasional vomiting, with partial cold sweats. Strengthening diet was ordered.

On 20th the abscess ceased to discharge during thirty-six hours, when the pus again escaped after some violent abdominal pain: the pulse again rose to 120.

26th.—There was great restlessness; delirium, with some vomiting; the pus had again ceased to flow.

29th.—The patient was once more restored to quietude; the abscess no longer discharged, but the urine, for the first time, presented a copious mucous sediment; the pulse was still at 120. She continued in this state, with some variations and occasional vomiting, until July 8th, nearly two months from the commencement of her illness. Her convalescence appeared now to be certain; the pulse was down to 98. No accident occurred after this date; and in October, on her return from the country, she was enjoying perfect health.

This case, the author remarks, was well calculated to lead into error, from the close resemblance of many of its leading features to those of acute peritonitis—viz., the severe abdominal pain, increasing on the slightest pressure; the tympany and tension of the abdomen; the acceleration of the circulation and respiration; the repeated vomiting; and, in addition to these, and as a sequel to them, the sensation of fluctuation obtained on the 17th day from the commencement of the attack, which might very naturally be considered to be dependent on effusion into the cavity of the peritoneum. So strongly, indeed, did the case resemble an attack of acute peritonitis, as to lead into error so sagacious and experienced a practitioner as the late Professor Marjolin. In this instance, notwithstanding the discharge was most profuse, the abscess was doubtless circumscribed by the salutary adhesive inflammation, and the disease by this means limited to a portion only of the cellular tissue external to the peritoneum. In less fortunate cases the inflammation involves the entire layer of the fascia propria, which is found separated from the posterior aspect of the abdominal muscles by a layer of pus. An example of this severe form of phlegmonous inflammation of the abdominal parietes has been published in the same periodical—Les Arch. de Méd. for 1841, by Dr. Néret, physician to the hospital at Nancy.

The patient was a girl, æt. 15. When first admitted, she was suffering from leucorrhœa, great tenderness of the lower part of the abdomen, and rather profuse diarrhœa: these symptoms were relieved by quietude and mild antiphlogistic remedies. On leaving the hospital the abdomen was soft and retracted, scarcely painful on pressure, and her general health much improved. But shortly after her return home, she relapsed; the abdomen again became extremely painful, and increased considerably in size. She was readmitted two months after her first discharge; the abdomen was then found to be much swollen and painful; percussion gave the sensation of a fluid, which there was every reason to suppose was situated in the cavity of the peritoneum: close to the umbilicus there was an opening resulting from an incision which had been made two

days previously into a fluctuating tumour, out of which a serous fluid had escaped. After admission, this opening continued to discharge for some days; first a large quantity of serum, and afterwards a still larger quantity of a whitish purulent fluid of tolerable consistence. The situation of this collection appeared to be the umbilical region, as the flow of pus was increased by pressure in the two hypochondria. This discharge, however, ceased, and the abdomen diminished in size; but a few days after, a round tumour, similar to the bladder distended by urine, was perceived in the hypogastric region: catheterism had no effect in reducing its size, and only a small quantity of water was drawn off; but it subsided considerably on the reappearance of the discharge at the umbilicus, and which evidently had its source in the hypogastric tumour, as was proved by pressure on this part. Hectic symptoms set in, and death took place at the expiration of six-and-twenty days.

At the post-mortem examination the whole extent of the parietal layer of the peritoneum was found separated from the posterior aspect of the abdominal muscles and fascia by a layer of pus; the external surface of the serous membrane was of a greyish colour, thickened and granular. At the lower part of the abdomen, and in the pelvis, this same external surface had contracted adhesions with the neighbouring parts, and in this manner formed pouches or cysts, some of which contained serum, and the others purulent fluid.

One of these cysts, of large dimension, was situated in the region of the bladder; but this organ was healthy.

In the cavity of the peritoneum there was found neither serum nor pus, but the intestines, especially in the lower part, were adherent one to another, and to the omentum. No communication whatever was found to exist between the cavity of the peritoneum and the parts external to it.

In this case the inflammation in all probability originated in the cellular tissue of the fascia propria, where it soon arrived at the period of suppuration, and was ultimately propagated to the inner surface of the peritoneum, where it did not go beyond the adhesive stage.

In the following history of abdominal inflammation abridged from Hunter, and which is related by him as an instance of what he has termed the relaxing process, the succession of morbid phenomena appears to have been the same, although the effects produced were not quite similar, and still more destructive.

A boy about thirteen years old was attacked with a violent inflammation in his belly, without any apparent cause. The usual means were used without effect. His belly began to swell in a few days after the attack. In several places there appeared a pointing as if from matter; one of those which was just below the sternum became pretty large, and discoloured with a red tint. Although there was no perfect fluctuation, yet it was plain there was a fluid, and most probably from the pointings it was matter in consequence of inflammation, and was producing ulceration on the inside of the abdomen for its exit.

Hunter therefore made a small opening into the pointing part just below the sternum, hardly an inch long. There was immmediately discharged by this wound about two or three quarts of a thin bloody matter: the swelling of the abdomen subsided, but the patient lived only about sixty hours after the operation.

On opening his abdomen, little or no matter was found lying loose; all had made its escape through the wound. The whole intestines, stomach, and liver, were united by a very thick covering of the coagulating lymph, which also passed into all the interstices between them, by which means they were all united into one mass. The liver adhered also to the diaphragm; but none of the viscera adhered to the inside of the belly on its fore part, for there the matter had given the stimulus for ulceration, which prevents all adhesions. The process of ulceration had gone on so far as to have destroyed the whole of the peritoneum on the fore part of the abdomen, and the transversalis and recti musles were cleanly dissected on their inside. The tendons of the lateral muscles that pass behind the heads of the recti were in rags, partly gone, and partly in the form of a slough.

In the works of some of the older surgical writers, histories are recorded of large collections of pus formed in the abdominal parietes, and accompa-

nied with symptoms similar to those of acute peritonitis. Delamotte relates the case of a soldier who was seized with a pain that extended over the whole surface of the abdomen, so intense that he could scarce bear the pressure of his linen. He was bled, fomented, &c. At the expiration of ten days the pain was still very severe, and a small tumour appeared in the upper and right lateral portion of the hypogastric region, with redness of the integument and fluctuation. It was opened with the knife, and a surprising quantity of pus escaped, and continued to do so for some time; but the patient recovered.

Case LII., from the same author, is an instance of suppuration of the abdominal wall occurring after parturition. Five days after the birth of twins, and the operation of turning to deliver the second child, the patient experienced a sudden and great fright, and exposed herself to cold. Soon after she was seized with rigors, followed by intense febrile action. The lochial discharge was completely arrested, and the whole surface of the abdomen became tense and excessively painful. Bloodletting, fomentations, emollient enemata, were used to moderate the fever and pain, which lasted during forty days with considerable intensity. At the expiration of this time, Delamotte, who, on account of the distance, could not visit his patient daily, found that the integuments had given way about four fingers' breadths above and to the side of the umbilicus; and through the opening an immense quantity of pus escaped (*un seau de pus*, a bucket-full of pus: such are the author's words). After this the patient was much relieved, and speedily recovered.

From the remarks appended to several of his cases, Delamotte was evidently of opinion that the purulent collections were located within the peritoneal cavity, and he supposed that he had frequently opened the abdomen with impunity. But Sabatier, who gave a corrected edition of his Treatise on Surgery, observes that in none is there any proof that this was the case; and he considers that these were simply instances of abscesses in the areolar tissue external to the peritoneum, or perhaps only in that which exists between the layers of the abdominal muscles. Sabatier grounds his opinion principally on the rapidity with which the patients recovered after the evacuation of the pus.

The umbilicus is not unfrequently the seat of fistula. Pus from abscesses of the liver, hydatids from cysts of the same organ, and gall-stones, are occasionally discharged at this point of the abdominal wall; also, although much more rarely, the urine and calculi from the bladder. Again, fæcal matter, from a communication with the diverticulum ilei, as in the cases related in Guy's Hospital Reports, 1843, by Mr. T. W. King. Lastly, the fluid of ascites, whether general or encysted, and the pus of encysted abscesses of the peritoneum, and of abscesses of the abdominal parietes, &c.

Some of these varieties of fistula, especially those first mentioned, may perhaps be explained by the presence of the suspensory ligament, which, as remarked by Professor Bérard,* guides towards the umbilical ring the contents of hepatic tumours. The non-obliteration of the urachus, or its reopening from retention of urine, explains the passage of this fluid and of vesical calculi; but I can find no satisfactory explanation for the discharge at this spot of the pus of simple abscesses of the abdominal wall situated outside the peritoneum, especially when the seat of the suppuration, as in the case I have related, is at some distance from the umbilicus.

That abscesses of the abdominal wall do fortunately seldom discharge their contents into the peritoneal cavity, is probably due both to the protective inflammatory thickening of the external surface of the peritoneum, and to the continual and equable pressure of the viscera. Of course, when effusion does take place, death from peritonitis is the ordinary conseqaence of it. I have, however, met with the record of a case in the June number of the Arch. de Méd. 1850, which is given as an instance of absorption of the pus after its discharge into the peritoneum, where it gave rise to all the symptoms of acute peritonitis, from which the patient happily recovered. It is one of several cases given in an elaborate paper on the subject of post-peritoneal abscess, by Dr. Bernutz. It is headed

* Dict. de Méd. tom. xxii.: art. Ombilic.

"Acute Inflammation of the Fascia Propria of the Umbilical Region, with Purulent Collection, and Migration of the Pus into the cavity of the Peritoneum—Peritonitis—Recovery." A lad of 17, of poor constitution, and who suffered frequently from colic and diarrhœa, after a debauch, especially of wine, was seized with rigors, vomiting, and abdominal pains, so severe that he shrieked under them. On admission into the hospital, the features were shrunken, the countenance bad, no appetite, much thirst, continual nausea, and frequent vomiting of green bile. The abdomen was *retracted*, hard, and extremely painful on the slightest pressure. Bowels not opened for four days; respiration hurried, arrested by the pain; micturition easy and frequent; skin dry; pulse small, 80—90. On the fifth day the patient experienced a violent pain situated about an inch to the right of the umbilicus: this spot was very tender on pressure, and presented a slight tumefaction and doughy sensation, deep-seated, ill-defined, elastic, with an obscure and doubtful fluctuation. The integument over the tumour had its natural appearance, and could be made to glide over it. Fluctuation soon became distinct in the centre of the swelling. The patient was then seized with extreme pain, spreading from the umbilicus over the whole of the abdomen. The countenance was pinched *(grippée)*; continual agitation; intense thirst; nausea, and almost continued vomiting of a very bitter bluish-green fluid. The abdomen became tense, tympanitic, and hard, and everywhere intolerant of pressure. The circumscribed swelling near the umbilicus was no longer distinct. By the aid of large applications of leeches, and an opium pill every hour, these symptoms were mitigated; and, the abdomen being less painful, a more perfect examination of the umbilical tumour could be made, when it was found that all sensation of fluctuation had entirely disappeared in it, and it was considerably flattened. As the pain decreased, and finally ceased, an empty circumscribed cavity could be felt, which had taken the place of the umbilical tumour, and its walls could be made to glide one upon the other.

About a fortnight after, the patient left the hospital, and was no more heard of.

The author from whom I have taken the case illustrative of the absorption of the pus after its effusion into the peritoneal cavity, gives also an instance in which the tumour did not progress beyond the stage of induration: it extended longitudinally from the umbilicus to within a finger's breadth of Poupart's ligament, and transversely from the linea alba to within an inch of the crista of the ileum. The absorption of this induration was slow, and was not completed when the patient expressed the wish to leave the hospital.

When the pus is discharged into the intestinal canal, the apertures of both abscess and bowel are necessarily encircled and secured by salutary adhesions. The perforation of the bowel, however, is here of much more rare occurrence than in the case of abscesses of the iliac and pelvic regions: still there are some examples extant in which the pus was voided in large quantities per anum. Sometimes, indeed, the abscess, whilst it opens through the abdominal parietes, communicates at the same time with the bowel; producing, in this manner, a stercoraceous fistula. Dr. Bernutz, in his very instructive paper, alludes to an instance of this kind, recorded in the Mémoires de Chirurgie of Trécourt —a work I have not been able to obtain.

A case I had occasion to observe during the course of the past summer presented somewhat similar symptoms; but there was, upon the whole, too much obscurity attached to it to allow of forming any definite opinion as to its precise nature. I will, however, beg leave to introduce it here, as being in some measure connected with the subject of the paper. For the first part of its history I am indebted to my friend, Mr. A. Kingdon, through whose kindness I was also enabled to complete it.

James Lester, æt. 14, a healthy looking lad, a farm-servant, was admitted into Henry's ward, June 22nd, 1850, with copious suppuration from the umbilicus.

He attributes his present malady to a blow he received on the back (lower dorsal region) from a rolling pin, three years ago; it was severe, and gave him pain for a day or two, but then subsided. During last winter he says

that he suffered pain in the back, an aching pain, increased by labour. Ten weeks ago he perceived a slight fulness above the umbilicus, accompanied with redness, but without pain; at this period also the pain left the back, and he has been free from it ever since.

Soon after the appearance of the swelling, matter was discharged through the navel, at first in small quantity, and of rather offensive odour; the quantity of the discharge has been increasing steadily up to the present time. A probe was introduced by a medical man at the expiration of a fortnight, and, by the boy's account, penetrated no further than an inch. On admission, however, a probe would pass almost by its own weight fully 3 inches along the fistulous opening, shewing the track of the canal to be exactly on the mesial line, extending upwards and inwards, and apparently entering the abdominal cavity, for the probe stood at an angle of 45° with the long axis of the body when in the horizontal position.

The discharge is now (on admission) abundant, and has a strong odour, such as is given off from dirty bandages. The flow of pus is favoured by the vertical position, and is increased also by a deep inspiration. The abdomen is generally hard from muscular development, but it is in no part tender. There is no unusual condition of the parietes around the navel, save a crop of pustules from poulticing. The spines of the vertebræ are all regular, and no pain is experienced on percussion. The appetite has been good throughout, and the patient's health and strength had never failed. He sought admission solely on account of the inconvenience of the discharge.

Cotton-wool was ordered to be applied to the abdomen. He had meat diet.

July 11th.—I saw the patient with Mr. Kingdon. The suppuration is still abundant; the pus is thick, homogeneous, of a healthy laudable character: when the patient rises up in the sitting posture, it flows out in a stream over the parietes of the abdomen. On removal of the cotton dressing the odour emitted is that of a large suppurating surface, such as a stump, but by holding some of the pus close under the nose, it was found to have a very fœtid odour, of an intestinal character, and similar to that given off when the abdomen is opened at a post-mortem. This circumstance, which had not hitherto been noticed, became evident upon removing the stopper of a small glass tube into which some of the pus had been received for the purpose of microscopical examination. Another important fact observed for the first time by us was the escape of bubbles of a gaseous fluid, with a gurgling sound accompanying the flow of pus. The boy, however, stated that he had yesterday remarked this for the first time. Under the microscope, the purulent fluid, examined a short time after its removal, presented the ordinary pus-globules and extremely fine molecules.

The patient has had no medicine since his admission: he was ordered half a pint of porter daily. There is a certain degree of emaciation, and the countenance is not expressive of the same robust health as was the case when he entered the hospital.

26th.—Since last report the patient has spent the greater part of the day out of bed, so that the pus has escaped more freely; it has now no peculiarly fœtid smell, and is not accompanied with the escape of a gaseous fluid; the patient says that it is decreasing in quantity. The general appearance is improving, although the pulse is weak. He is on generous diet, with meat and porter; takes also ℥xx. of the liq. cinchonæ ter die.

27th.—This morning he complains of much pain in the abdomen: he was seized in the night, without any assignable cause, with nausea and vomiting, followed by several diarrhœic stools, which have continued this morning. The belly is tense and painful, especially on pressure, or when the patient moves. The countenance is strongly expressive of abdominal pain, with a flush on the cheeks. Tongue slightly furred, red at tip; thirst; the vomiting has ceased; pulse 145—50, small; respiration almost entirely costal; urine free; motions were not seen, not having been kept. The discharge from the umbilicus is still copious, and escapes with a slight gurgling sound on the patient raising himself. Was ordered—Hirudin. viij. umbilico, cat. aut fotus postea; Pil. Hyd. c. Cret. co. j. sext. hor. Haust. Arom. si opus sit.

In the evening, the countenance although pale and blanched, was more tranquil, and less expressive of pain; he said that he had been relieved by

the leeches; they had bled freely. The abdomen was evidently less tense; the bowels had acted twice only; the pulse was still small and frequent, it was with difficulty it could be counted.

28th.—No sleep; but no pain in abdomen; skin hot and dry; pulse 145 to 50; tongue irregularly patched with a white fur; bowels open twice; stools liquid.—To continue Fotus et Pil.

29th, 3 P.M.—The face is flushed; the skin hot but moist; pulse with more power; has had some beef-tea about one P.M.; he experiences no pain in the abdomen, neither on moving nor on taking a deep breath; no sickness, but slight nausea after the beef-tea. The abdomen is generally less tense, but the left hypochondrium appears fuller than the right; pressure upon the left side also produces a more copious flow of pus through the fistulous opening.

The discharge is extremely copious, with escape of large and numerous bubbles of gas; moreover it presented this morning for the first time an entirely new feature, in that it evidently from its appearance and smell contained intestinal and fæcal fluids. The nurse on removing the dressing for the first time this morning, found it impregnated with matter that communicated to it a stain similar to that which would be produced by fæces; the smell was also characteristic. This we were also able to verify at our visit: no motion per anum since yesterday. The tongue presents irregular patches of a white fur, with some tendency to dry; he complains of thirst, and expresses a desire for beer, which is not allowed; had some refreshing sleep in the night. —The pill was discontinued.

31st.—There has been no passage of fæces per anum since 28th. The evacuation through the umbilicus is so abundant that it is with difficulty the patient can be kept clean; it stains the linen a yellowish brown colour, and is evidently and almost entirely fæcal. Upon removing the cotton-wool, it bubbles forth, streaming down the surface of the abdomen. No abdominal pain on moving, on taking a deep inspira tion, or when pressure is made. The abdomen is still somewhat rigid and tense, but mostly from muscular contraction. No sickness, but thirst; tongue clean, rather red at tip; pulse still weak and small, but much less rapid; urine reported high coloured; good sleep at night; countenance flushed, but probably from his having just taken some beef-tea; otherwise natural.

August 2nd.—The bowels not having acted in the natural way, was ordered a gruel injection, which was followed by two loose but otherwise natural stools, as reported by the nurse. The discharge through the umbilical fistula is again becoming simply purulent. Pulse 108; no pain; tongue clean.—Ordered an egg and beef-tea.

3rd, 12 P.M.—This morning the discharge has no longer the character it has presented the last four days, but it is again distinctly purulent, being a thick, cream-like, yellowish homogeneous pus, escaping abundantly on pressure above and a little to the left of the umbilicus; abdomen quite tolerant; the bowels have not acted since the injection.

5th.—Bowels open twice since last report without assistance. The umbilical discharge is solely purulent, with no escape of gas-bubbles; no abdominal pain; sleeps well; appetite good.—Ordered mutton-chop.

8th.—The escape of gaseous fluids was again observed to day. Discharge thinner, and reported less abundant; the flow is still increased by pressure in the left hypochondrium, which is certainly more full and tense than the right. Bowels open; stools rather loose; pulse still frequent, above 100, compressible; a slight hectic flush; eats his chop, and takes his porter; but the tongue is still furred at root, and red on dorsum and at tip.

12th.—The discharge is considerably diminished in quantity, the dressing being removed only twice a day. The general state is improving; bowels act regularly; takes all his food with pleasure.

19th.—Continues to improve; still some discharge, simply purulent, but considerably diminished; bowels acting naturally, and the stools are reported to contain no pus.

The patient was removed from the hospital by his father on September 17th, 1850. He was then weak and sallow-looking; the pulse remained small and rapid (being rarely below 100 pulsations per minute). The appetite was fair, and the tongue clean.

The discharge through the umbilicus was at that time sero-purulent, not offensive in odour, nor discoloured; the

quantity was comparatively small, and he could move about without inconvenience, the cotton-wool dressing being sufficient to keep his clothes dry. The quantity had not, however, at all diminished during the last fortnight of his residence in the hospital.

On the 18th February, 1851, Mr. Kingdon was informed that the patient remained much in the same condition, the discharge continuing, but that he had gained sufficient strength to enable him to assist his father in some of the lighter duties of the farm.

I am by no means prepared to give any definite opinion as to the situation of the abscess in the case I have just related, although the depth to which the probe penetrated, and the direction it took, together with the persistence of the fistula, might lead to the supposition that it was located within the cavity of the abdomen. These are circumstances, however, which are known to occur in simple abscesses of the abdominal parietes.

Nevertheless, I am inclined to think that the pus was situated within the peritoneal cavity, and probably in some of its folds, as in the liver, or great omentum, or circumscribed by adhesions. I have not been able to meet with an instance of abdominal suppuration precisely similar to it, but in the Mém. de l'Acad. de Chirurgie, in a paper by Petit *(le fils)* on abscesses of the liver, cases are related of collections of pus situated and confined by adhesions between the concave surface of the liver, arch of the colon, and neighbouring parts, and in which the pus was voided into the bowel: in one instance, in which the malady was of short duration, and death took place on the 15th day, pus was voided per anum two days previous to the fatal termination, and upon inspection the abscess was found situated between the concave surface of the liver and the arch of the colon, which was perforated at one point. In another, the patient lived five years after the first evacuation of pus per anum, which continued up to the time of his death. At the post-mortem examination, a round opening, large enough to admit the finger, was found in the right portion of the arch of the colon: the margin of this opening, and the cavity of the abscess, were extremely hard; the peritoneum, the external surface of the gall-bladder, a portion of the omentum, and the margin of the concave surface of the liver, all adherent and confounded together, formed the walls of the cavity.

Is it not probable, or rather possible, that in the case before us the seat of the abscess was somewhat similar, and that the only difference consisted in the abscess opening both into the bowel and externally?

The peculiarly fetid odour of the pus of abscesses developed in the substance of the abdominal parietes externally to the peritoneum, and having no communication with the bowel, had already been remarked by Ledran and Delamotte; and, in our own time, a paper containing the relation of four cases in which it was present was published by Dance, in the Arch. Gén. de Méd., for October, 1832. The pus in these cases had either the odour of assafœtida, of sulphurretted hydrogen, or of fæcal matter. In three of them the rapid cicatrization of the fistulous openings, none of which at any time discharged true fæcal matter, was a sufficient proof that there existed no communication with the cavity of the bowel. In the fourth case, in which the discharge presented in the highest degree the fæcal odour, direct proof of the non-existence of all lesion of the gut was obtained by a post-mortem examination, at which the most minute search could discover no perforation. A similar case is recorded in the third vol. of Prof. Velpeau's Clinical Lectures (p. 376): the pus from the tumour, which burst spontaneously, and was situated on the right side of the abdomen, had an exceedingly strong smell, quite similar to that of intestinal fluid. The result of this case proved that there had existed no internal lesion, and that the pus had collected in the substance of the abdominal parietes, for after some symptoms which led to fear purulent absorption, the patient recovered completely, and left the hospital quite cured.

As an explanation of the fact, Dance considers that it must be admitted that the fæcal odour is transmitted by imbibition through the parietes of the intestine. Prof. Velpeau expresses a similar opinion. He has, moreover, remarked that the smell is not the same over every region of the abdomen in which these abscesses occur. Thus, for example, an abscess situated in the right iliac region presented a decidedly

stercoraceous odour; while in another instance in which the collection was seated in the epigastric region, the pus had rather a sourish smell, similar to that of ill-digested food.

The causes which operate in the production of phlegmonous inflammation of the abdominal walls are numerous.

On the more apparent, including all kinds of external injuries, such as wounds, contusions, the presence of foreign bodies, &c., it is unnecessary to dwell.

The puerperal state is occasionally attended with the formation of purulent collections in the anterior wall of the abdomen, where, after bursting spontaneously, or being opened with the knife, they frequently remain fistulous during a longer or shorter period, and sometimes permanently.

A case of the kind was pointed out to me last autumn, by my friend Mr. Worship, of Riverhead. The patient, a young primiparous female, was seized after labour with symptoms of abdominal inflammation, which were followed by the formation of an abscess in the hypogastric region: it burst a little below the umbilicus; and at the time when I saw the patient, several months after her confinement, the fistulous opening was still discharging freely.

In September last, whilst accidentally going through Queen's Ward, I took the following brief note of a case, which may perhaps be considered as an example of chronic abscess consequent on parturition:—

Jackson, æt. 22: admitted August 7th, 1850. Her first and only confinement occurred two years ago. She states that her labour was long, but natural and unaided: after it she had pain and swelling in the right groin, but these symptoms disappeared some time back: she has never been well since her confinement. About a week before admission a copious discharge of a thin whitish fluid took place through the umbilicus; this is now (Sept. 21st) thick and distinctly purulent, not extremely abundant, the poultices being changed twice a day. The patient says she suffered no acute pain a short time previous to the bursting of the abscess, nor was there any redness nor swelling around the umbilicus, but she was much relieved after the discharge. It was more than once ascertained that a probe passed its whole length down the fistulous track, in the direction of the uterus. I had no opportunity of further watching this case.

Affections of the intestinal canal are considered by Dr. Bernutz, and apparently with good reason, to be a not unfrequent cause of phlegmonous inflammation of the fascia propria of the anterior wall of the abdomen; four cases given in this author's paper tend to illustrate this proposition. In one there was cancerous disease of the omentum and bowel; in three others protracted dyspepsia, and intestinal disturbance in the form of habitual colic and diarrhœa. In one of these the exciting cause appeared to be an overdose of a drastic purgative, and in another the ingestion of an excessive quantity of wine.

Tubercular deposit in the post-peritoneal areolar tissue, does, doubtless, also give rise to deep-seated suppuration of the anterior abdominal wall.

Such was probably the origin of the disease in the case related by M. Bricheteau, in which, it will not be forgotten, the patient was of a strumous habit.*

On the diagnosis of deep-seated abscesses of the abdomen I have nothing to offer as the result of personal observation, and the works of both surgical and medical writers afford but little assistance on the subject

It is stated by Dance (Dict. de Méd.) that, notwithstanding the close resemblance of their symptoms in the incipient stage to those of inflammation of the subjacent organs, and more particularly of the peritoneum, nevertheless the pain, even at the onset, has something of a fixed and superficial character (*quelque chose de fixe et de superficiel*), that it is, as well as the tumour succeeding it, circumscribed and limited to one point, and that the tumour may be ascertained to be imbedded in the substance of the abdominal wall.

But the particulars of the individual cases I have met with do not bear out the statement of Dance, as regards the character of the pain in the earliest stage of the complaint, which appears

* I have now (June 28th, 1851) grounds for believing that the formation of the abscess in the case of the child Collins was due to a similar cause, as, since the communication was made to the Abernethian Society, the patient has again come under my observation, and this time, in addition to loss of flesh and strength, with local symptoms of pulmonary phthisis. On examining the abdomen, now nearly a year since the ultimate closure of the fistula, no trace of disease is discovered.

to differ in nothing from that of acute peritonitis.

Dr. Bernutz has remarked, that at this period, the abdomen, far from being distended, is hard and retracted; a circumstance which might assist in distinguishing the case from one of peritonitis or enteritis.

Afterwards, when the tumour becomes more or less apparent, the difficulty attendant upon the diagnosis is considerably diminished; and at a still more advanced period, when a spontaneous or artificial opening has shown that the tumour was formed by a collection of pus, it is no longer a matter of practical interest to determine the precise nature of the case, as all we can do for its cure is to abandon it to nature, abstaining altogether from useless and unnecessary probing.

The therapeutical indications in these cases are few. In the incipient stage, and when the symptoms are similar to those of acute inflammation of the abdomen, we should all instinctively, and without hesitation, resort to the usual antiphlogistic remedies.

Upon detection of pus forming a collection, the early but cautious cutting down upon the tumour with a view to its evacuation would be advisable. In the case of the opening, produced either by nature or by art, remaining fistulous, I do not know that it would be prudent to apply any but the mildest means to attempt the closure of it. As an instance of an ingenious and innocent mode of applying compression for the obliteration of the fistulous track, although available only in the fair sex, the following from Boyer stands probably unique:—

A female, aged 22, was affected after her first confinement, which was long and laborious, with inflammatory symptoms in the hypogastric region, followed by the formation of an enormous abscess, which burst just below the umbilicus: the opening remained fistulous, and Boyer made a counter opening just above the symphysis pubis, after ascertaining that a probe passed from the upper opening down to this spot. The upper opening soon healed, but the lower one in its turn remained fistulous. Now Boyer, seeing that to obtain the adhesion of the walls of the fistula it would be necessary to keep them in contact by a permanent compression, was struck with the idea that this might be accomplished by the pressure of the gravid uterus upon the walls of the abdomen at the period of gestation, when it rises above the brim of the pelvis; and agreeably to this view he recommended a second pregnancy. The patient had some difficulty in understanding that a second pregnancy was to be the means of curing a complaint which had been brought about by a first one; but wisely yielding to the advice of her surgeon, again became *enceinte*: before the expiration of the sixth month of her pregnancy the fistula was completely and solidly cicatrized.