CASES AND OBSERVATIONS
ILLUSTRATIVE OF
DIAGNOSIS
WHEN ADHESIONS HAVE TAKEN PLACE IN
THE PERITONEUM,
WITH REMARKS
UPON
SOME OTHER MORBID CHANGES OF THAT MEMBRANE.

By RICHARD BRIGHT, M.D., F.R.S.,

PHYSICIAN TO GUY'S HOSPITAL.

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THE cases which I am about to offer to the Society will be found to vary essentially from each other, and I am induced to throw them together only as they illustrate some points of diagnosis, and one, in particular, which appears to me of considerable importance in the investigation of abdominal disease, and which, as far as I know, has hitherto escaped observation.

When the peritoneum has become the seat of inflammation, whether of the common, the tubercular, or the malignant character, adhesions are occasionally contracted both between the viscera themselves and

between the viscera and the portion of the peritoneum lining the parietes ; and it may be of importance to ascertain the existence of such unnatural adhesions, as guiding and modifying, not only our prognosis, but our practice. At all events, let the actual utility of such information be what it may, according to the present state of our knowledge, whatever symptoms facilitate our obtaining an exact insight into the progress of disease, must be satisfactory to the physician, and may hereafter prove beneficial beyond any thing we can at present foresee.

I shall then content myself with stating, as a sufficient preface to most of the cases contained in the following communication, that I have observed on several occasions, that when the circumstances of the disease had rendered it probable *that adhesions might take place between the viscera and the peritoneum of the abdomen, a very peculiar sensation has been communicated to the touch, varying between the crepitation, produced by emphysema and the sensation derived from bending new leather in the hand.* And in each of the cases which I shall now detail, I have had the opportunity of discovering, by examination after death, that such adhesions had existed in the parts where this sensation was discoverable ; whereas in no case have I observed the phenomenon, and ascertained that the particular morbid condition did not exist ; so that I am led to infer the probability that the same adhesive process had taken

place in those cases where no opportunity of post mortem examination was afforded.

I shall detail the cases nearly (and in the particular parts referring to the subject under consideration, verbally) as they were taken from day to day in my note-book, in order that it may be seen exactly in what terms I described the symptom, which is the immediate subject to which I would direct the attention of the Society.

CASE I.

William Winch, a sea-faring man, aged 42, was admitted under my care into Guy's Hospital, March 25th, 1829, having his abdomen much distended by ascites, and his legs greatly swollen with anasarca. According to his own account, he had been attacked thirteen months before with an inflammation of the liver, followed by effusion into the cavity of the abdomen;—this subsided under medicines, but the abdominal effusion returned about three months ago, and six weeks before his admission he was tapped, when seven quarts of bloody serum were drawn off, which produced but little diminution in his apparent size; the fluid gradually re-accumulated, and fluctuation became most distinct. Tongue clean. Pulse 100.

Purgative and diuretic remedies were prescribed,

but as the abdomen had become exceedingly unwieldy, I ordered the fluid to be removed by tapping, on the 1st of April, and four gallons two quarts of serum, highly tinged with bile, and coloured with blood, were drawn off. The abdomen filled again rapidly, and no unpleasant symptoms followed the operation, but on the night of the 19th, he was attacked with severe pain in the left side, for which he was cupped with relief.

In the beginning of May his bowels became greatly relaxed, accompanied with dysenteric symptoms; this was relieved by castor oil with laudanum, and by small doses of rhubarb and ipecacuanha, with suppositories of opium.

Early in June the urine had become very abundant, by the use of diuretics, but on the 19th of that month he was again attacked with most severe pain towards the right side of the abdomen, for which he was bled, and took three grains of calomel with one of opium every four hours. The inflammatory symptoms were quite relieved in two days, when the calomel and opium were administered at longer intervals.

June 26th. Since he was bled and has taken his present remedies, the quantity of urine has greatly increased, and he has lost at least three inches in the circumference of the abdomen. He generally passes nine pints of pale straw-coloured urine in twenty-

four hours, and he complains much of the weakness which it induces. The swelling, both of the legs and the abdomen, diminished rapidly. The abdomen acquired a singular pendent appearance and a solid feel.

July 8th. The abdomen, though greatly diminished and flaccid, is still projecting, and communicates to the feel the sensation of a semi-solid substance, without fluid, *and gives to the hand an impression as if two surfaces passed over each other, with adhesions between them*; it is a *kind of crepitus*. Though quite free from pain he evidently loses strength, and his face grows thin and sallow.

Diarrhœa and loss of appetite came on shortly after; and in spite of mild nourishment he sunk on the 30th of July.

Sectio Cadaveris. The body was much emaciated, the abdomen large, particularly in the central part, below the umbilicus. On laying open the parietes of the abdomen, not above one or two pints of serous fluid escaped. *On the lower part, and particularly below the umbilicus, and to the right side, strong adhesions had formed between the peritoneum of the parietes and a large tumour*; and on separating the attachments, which could scarcely be effected without laceration, it appeared that the tumour was a mass of fungoid substance, bearing in some parts a lobulated character, but everywhere

soft and spongy to the feel, attached to the stomach, and descending quite to the pelvis. It was slightly glued to the viscera by adhesions which were evidently of late formation, and were easily torn through. When the whole mass was raised, the intestines, both small and large, were found lying behind it, chiefly pressed into the upper part of the lumbar region, and under the margin of the ribs. On examining more carefully its connexions above, it was found firmly united to the right half of the large curvature of the stomach, and to the omentum, which lay as a fatty mass, not very unhealthy in appearance, over the upper part, and besides the tumour, was the only object which came into view when the abdomen was first opened. The stomach felt remarkably hard and solid over the whole of its pyloric half; and on opening it, a mass of lobulated projections was seen rising from the large curvature, filling up one half of its cavity. The mucous membrane covering this was in part healthy; but at the apex of each lobule might be seen a depression, as if ulceration were beginning to take place; and in one part, about the centre of the mass, an oval portion, larger than a shilling, was entirely abraded. The pylorus itself was perfectly free from disease.

The structure of the tumour was very peculiar. It was surrounded by an investing membrane, on which many large vessels were distributed; and in some parts it felt softer and more fluid than in others,

rising in these parts into semi-globular elevations. On cutting into it, the greater part was found to be composed of a fibrinous mass, not unlike the coagulum of blood ; in some parts more red, in others less so, and in a few parts membranous cysts of considerable strength were found containing bloody fluid. The whole tore easily as soon as the external membrane was divided.

The intestines were covered in every part with an adventitious membrane, which had contracted them, and had also drawn together and shortened the mesentery. The same was observable on some portions of the tumour, and the liver was covered with a similar deposit.

The liver was not small and contracted, but rather soft in its texture, with its lower margin rounded ; and its colour was quite unhealthy, pale with red points. The gall-bladder contained a small quantity of unhealthy bile ; the pancreas was healthy ; the spleen covered with a thin, irregular, cartilaginous coating. The kidneys pale and hard.

In this case, then, I first observed the peculiar *crepitating sensation* ; and as on dissection we discovered both cellular adhesion to the parietes, and a spongy tumour of somewhat unusual texture, I could not decide to which of these circumstances the peculiar feeling was to be ascribed.

CASE II.

Sophia Young, aged 30, was admitted under my care into Guy's Hospital, Feb. 24th, 1830, with a large swelling of the abdomen. She had borne five children, and since August the catamenia had not appeared till three weeks ago, when there was a slight appearance, and at the time of her admission she laboured under menorrhagia. The tumour occupied the whole abdomen, and was of a very irregular form. She stated that it had at first shewn itself at the lower part of the abdomen on the left side, but now the most prominent part was on the right side, not far from the head of the colon, where a hard round projection was both seen and felt. Several other round, hard masses might be plainly ascertained by the touch, one nearly in the situation of the liver, and another to the left of the umbilicus, and one below. There was besides, a distinct, general fluctuation, and in several parts, on making the parietes *move gently, a peculiar feel, like a slight crepitus, or like the crackling feel of new leather, was to be distinguished.*

I considered this to be either an ovarian tumour or a collection of hydatids, *and that the peculiar sensation communicated to the hand, arose from adhesions between the tumour and the parietes of the abdomen.* I thought it by far more probable that the tumour was ovarian, from the history, from the fluctuation, and from the hardness of some portions

of the tumour. As the tumour was large, and from its size exceedingly inconvenient, I spoke about tapping in her hearing, but found that she most resolutely refused to consent to an operation. My treatment therefore was confined to the application of leeches to relieve local pain, from which she suffered much, and the regulation of the bowels, together with a few other internal remedies which suggested themselves as likely to retard the increase of the morbid growth and effusion.

On the 7th of July she left the hospital, decidedly increased in size, but still retaining a tolerably healthy appearance in other respects.

When she had returned home, she continued to increase in bulk—her legs swelled, becoming œdematous and then inflamed. She gradually sunk, and died on the 31st of December, 1830.

Sectio Cadaveris. The upper parts of the body greatly emaciated: the legs œdematous, with desquamation of both shins. The abdomen was of the most inordinate size, and very irregular in its form; numerous veins ran over the tumour, and were seen forming large plexuses on the chest.

The parietes of the abdomen were found to adhere very generally, but chiefly about the central part, from side to side, to the tumour within, and there was only about a quart of limpid, straw-coloured

serum in the cavity of the abdomen. When the integuments and the attenuated muscles had been pretty well detached from the contents of the abdomen, a tumour exactly resembling the external form of the abdomen was fully brought to view,—the only difference being that the projections on its surface were rather more marked. It was now, quite obvious to the feel, that the whole was one large cyst with several hard, flattened bodies, almost like the placenta, formed in its parietes. The intestines were forced back out of view to the left side, and the liver was quite pushed under the ribs, so that nothing was to be seen but the large ovarian tumour. An opening being made into the cyst, nearly six gallons of a tenacious, dingy coloured fluid, of the consistence of thick gruel or very thick linseed tea were drawn off, and the cyst being laid open, a tolerably healthy surface was exposed, with a few uneven parts where smaller cysts seemed to be pushing forwards into the cavity. The greater part of the thick, cake-like masses, which occupied at least two-thirds of the whole parietes of the tumour, were developed in the substance of the parietes, and projected outwards rather than inwards. Cutting into these masses, they afforded an appearance of cells filled with thick mucus, not unlike, in some parts, an enormous honeycomb filled with its contents, and in one part near the iliac region, a large rounded mass projected as an external appendage to the great tumour. On examination it appeared that this was a cluster of cysts, more or less

globular, which projected into a kind of chamber connected with the large cyst, the opening being formed by two or three crescentic margins, some parts of which were serrated with very fine spicula of bone. This mass of disease was attached entirely to the left broad ligament of the uterus; the ovary itself, however, could not be traced. The uterus and the right ovary were perfectly healthy, but the uterus was drawn round by the weight of the tumour, which, though it arose in the left side, lay very much to the right of the abdomen.

The viscera of the abdomen were in general healthy, as was the peritoneum of the intestines, which in no part adhered to the tumour, though the parietes adhered so generally. The liver was healthy. The kidneys were flaccid and pale.

The chest was diminished in size by the tumour, which rose almost to the third rib. The lungs were healthy in structure, but gorged with blood.

CASE III.

Mr. A. B., about sixty years of age, who had been much exposed in military service to the vicissitudes of climate, became, in May 1830, the subject of ascites, followed by anasarca of the lower extremities, and I was requested to see him by my friend Mr. Fernandez. The countenance at times a little

sallow, the urine rather high-coloured, and the stools pale. Tongue perfectly clean. Pulse always about 80, his general feelings almost as if free from disease.

On the 19th of June he was tapped by Mr. George Babington, and fifteen quarts of the clearest serum, slightly tinged with yellow, were drawn off. He bore the operation well, no bad consequences followed; the anasarca subsided, and in fourteen days half the quantity of serum was again drawn off by the trochar. In about a week a third, and in another week a fourth operation was performed, and each time from sixteen to twenty pints of serum came away. After the fourth operation we first perceived any unhealthy change to have taken place in the abdomen, for there was a distinct swelling of a soft and rather spongy character to be felt a little above the umbilicus, and after both this and the subsequent operations, he experienced a little more constitutional irritation than on previous occasions—still, however, he rose from his bed, and even went once or twice into the open air in a wheeled chair, and was again tapped on the 25th of July for the fifth time. He bore it well; but now a tumour was most distinctly to be felt, *uneven in its surface, spongy in feel, and giving a kind of crepitus upon pressure*, which led me to consider it in all probability a mass of soft adventitious matter produced from serum and fibrin, the result of adhesive inflammation: and it forcibly brought to my mind the case of Winch, as I stated

in my notes, but not having as yet examined a second case, (for the death of Sophia Young had not then occurred,) I was uncertain whether to ascribe it to adhesion or to the soft, fibrinous deposit. This peculiar sensation continued to be observed for some time, but the fluid again accumulated, though in less quantity, and was removed for the sixth and seventh times, by operation, on the 6th and 23d of August. From that date no fresh accumulation of serum took place, and the hard mass appeared gradually to contract and subside.

Early in October he was able to go daily to the city, where he had business, for several hours. He called on me to shew himself in the beginning of November, at which time his abdomen was rather prominent, giving a sensation to the touch as if a hardened mass occupied a large portion, particularly about the umbilical region.

In the middle of December a fresh accumulation of fluid appeared to be taking place, and the hard mass was less distinctly felt; his body was bent forward as he walked. I recommended some diuretic remedies, and on the 27th of the month I visited him at home, where he was now confined. The abdomen was evidently less than when I last saw him; it felt unevenly hard and soft, and I doubted the existence of any fluid; at the scrobiculus cordis it was hard and rather tender, and he complained of pain passing from that part to the back. He was decidedly

drawn forward both as he sat and as he walked, and he stated that when he laid down, particularly on his back, a cough was apt to be induced, which not unfrequently went on to the production of vomiting, so that for the last month he had generally vomited about four times every week. I now stated to his friends the probability that the omentum had become corrugated, and was gradually contracting and making pressure on the stomach, and that the peritoneum in general was greatly disorganized.

October, 1832. I met him accidentally in the street, and though still bent forward a good deal, he had been enabled to join the military service of Don Pedro at Oporto, whence he had just returned. After this time I frequently saw him in the streets, and observed him obviously losing strength and becoming more and more sallow; and I have since understood from his family that the sickness of his stomach recurred almost daily, and the act of vomiting was attended by most excruciating pain; and about every fortnight or three weeks he brought from his stomach considerable quantities of blood. His bowels almost always relaxed.

On Wednesday, November 19th, 1834, he was apparently in his usual state of health, and supped with his family. On Thursday morning he complained of feeling ill; on Friday morning became almost suddenly comatose; and died on Saturday night, without having at any time completely recovered his sensibility.

Sectio Cadaveris, Nov. 24, 1834. On attempting to raise the *parietes of the abdomen*, they were found completely adherent to the intestines by an organized cellular membrane ; so that in dissecting away the parietes the intestines were more than once perforated, and when the parietes were removed, the small intestines with their convolutions matted together bore some resemblance to a large brain covered with a thickened arachnoid and pia mater. This adhesion might be considered co-extensive with the peritoneum ; but in some parts, particularly between the liver and the right kidney, and between the stomach and pancreas, and about the lesser omentum, were some cavities, of the size of hens' eggs or larger, in which milky or whey-like fluid was pent up. The omentum was drawn up and involved in adhesions of the peritoneum, again adhering, together with the stomach, to the parietes. The liver was held back by adhesions within the cavity of the ribs and diaphragm, and the spleen was glued firmly in the situation it ordinarily occupies.

Almost all the organs and tissues, except the lining membrane of the stomach, were soft and lacerable. The liver was small, and as soft as a soft spleen, yet evidently granulated. The spleen also was soft, and the kidneys, which appeared (as far as could be judged in their present state) granular, were so soft as almost to lose their form by being taken from the body. The lining membrane of the stomach was rather thick and firm. In the small intestines were dark, bilious fæces.

The heart was flaccid, with slight valvular disease, particularly in the mitral valve: this was, however, so slight as probably not to have yielded any marked symptoms during life. Lungs healthy; but the right adherent to the pleura.

The skull remarkably thick and heavy. The dura mater thick, and two or three very large patches of bone in the falciform process. The arachnoid opaque, and spotted with milky patches. An unusual quantity of serum under the arachnoid, some of which had probably been long effused, as it had made deep impressions in the furrows of the convolutions. The arachnoid separated readily from the brain. The ventricles were slightly distended. There was no peculiar vascularity in the brain, and the external layer of the cineritious substance did not separate readily.

In this case then, as in the two preceding, one of the earliest intimations of the formation of adhesions was derived from the peculiar sensation communicated to the hand. I never remember to have seen the cavity of the abdomen so completely obliterated by simple healthy adhesions as in this case, and in all probability the patient owed the prolongation of life in part to this state of the peritoneum; at the same time, there is no doubt that the extensive adhesion was productive of other evils scarcely compatible with the long continuance of life.

CASE IV.

In April, 1832, I was requested to meet Dr. Pidduck and Dr. James Clark, in consultation in the case of a gentleman who after severe illness had become the subject of ascites, which had now existed in a very decided form about two months. I need not at present enter minutely into the circumstances of the case, it is sufficient to say that it was thought right to perform the operation of paracentesis, and above four gallons of clear, pale straw-coloured serum were drawn off by Mr. George Babington. The operation was repeated in a fortnight, when three gallons of a fluid rather more yellow than the last came away. Two days after the second operation, I noted that a *slight sensation of crepitation was distinctly felt over the situation corresponding to the liver and omentum*. This was perceived but for two or three days, and then became indistinct.

Ten days after, seven quarts of clear fluid were drawn off, and the abdomen, though all the fluid seemed to be taken away, was not diminished to its former size, and a distinct hardness was now felt about the situation of the left lobe of the liver, which was attributed to a corrugated state of the omentum. Nearly six weeks now elapsed before the operation was repeated, when one gallon of fluid, of a light colour, was evacuated.

After the fourth operation the accumulation never

returned to any marked extent, and he went into the country.

In June, 1834, I was again requested to see him. He had returned to habits of indulgence, of which we hoped he might have been cured, and was now evidently approaching his dissolution; and after lingering about two days he died.

On examination of the body, the following were the most marked appearances.

The whole abdomen covered with fat, at least two inches in some parts. About two pints of fluid in the cavity. *The colon and omentum were adherent in one mass to the parietes of the abdomen.* The liver was lying under the ribs, concealed at first by the mass of corrugated fat, omentum, and adhesive matter. When the liver was a little drawn down, a hard and almost cartilaginous coating, with which the right lobe was covered, separated from it. The small intestines were quite free from adhesion.

The liver was small, and a well marked specimen of what is called the hobnail liver. Gall bladder contracted, containing only half a drachm of mucus, and two gall-stones, of the size of a small marble, and two smaller, one of which completely blocked up the cystic duct. Kidneys healthy. Lining membrane of stomach and colon rather thickened.

In this case, likewise, the peculiar sensation served as an early indication of the adhesive process going on, and that sensation had been perceived at that part *only* where subsequent examination proved the adhesion to have existed.

The circumstances of this case suggest the idea, not only that the adhesive inflammation is opposed to the throwing out of serum in the part where the adhesion actually takes place, (which indeed is so far almost a self-evident proposition,) but that an approach to that form of inflammation may have the same effect in checking effusion without any actual adhesion forming; for as soon as the adhesive process began to take place but partially in the abdomen, the tendency to effusion very manifestly diminished. If then any mode could be devised of exciting inflammatory action in the peritoneum short of producing adhesion, when the membrane is prone to an inordinate secretion, it is possible we might check this fatal source of exhaustion without incurring the incalculable evils which must arise from gluing the intestines to each other and to the parietes; and should this ever be attempted, every indication which can lead us to estimate the progress of adhesive inflammation will be doubly valuable.

In the case now before us, it is to be observed that the peculiar sensation existed only for three or four days, and I have had reason to believe

in other analogous cases, that the crepitation has chiefly belonged, though by no means exclusively, to some early period of the formation of adhesion, probably before the contraction of the newly formed fibres has taken place. I have at this time under my care a woman, in whom I believe inflammatory effusion to have existed in the peritoneal cavity, followed by adhesion, ascertained by the crepitation over the whole of the right side, from the pelvis to the margin of the ribs; but having observed this in a most decided degree for a period of ten days or a fortnight, it has since ceased to be perceptible.*

In each then of the foregoing cases, the symptom to which I wish to direct particular attention has existed in a degree which, after the first observation, induced me to note the fact and to conjecture the cause on which it depended, and in each the adhesion was discovered after death.

There are, however, besides this, many symptoms, both general and local, which assist in detecting adhesion, but I will proceed to take a review of some

* Since writing the above, I have had an opportunity of pointing out to the pupils at Guy's Hospital this peculiar symptom of abdominal crepitation, and verifying the diagnosis by examination after death, in the case of a man whose peritoneum was covered with miliary tubercles, and in whom recent adhesion had taken place between the intestines and the parietes from the supervention of active peritonitis, which was allowed to run its course unchecked for several days.

August, 1835.

of the most remarkable morbid conditions of the peritoneum, which I have observed more particularly as connected with ascites; and thus take an opportunity of stating some of the marks by which they are occasionally to be inferred.

One of the most frequent morbid changes in the peritoneum is when the whole is covered with an equally distributed false membrane, which renders it, in its general appearance, opaque, and is apt to contract the loose folds of the membrane and those by which the various viscera are suspended or attached, and likewise to form a kind of compressing ligature about all the viscera themselves; the result of which is, that the omentum gradually becomes shortened and corrugated, ultimately forming but a narrow band along the arch of the stomach and the colon,—the mesentery becomes shortened, and the intestines, by this means, drawn towards the spine,—the calibre of the intestines themselves becomes diminished, and they are most obviously shortened in their course,—the liver is drawn close to the diaphragm and the spleen to the stomach,—while the kidneys are fixed more firmly into the cavities formed by the muscles of the loins,—and all these viscera are compressed in a degree which often produces alteration in their shape, and decidedly interferes with the integrity of their respective functions.

This false membrane is polished, like the peritoneum, and at first sight gives the idea of a thickened

ing and opacity of the membrane itself; but upon examination, it is found capable of being removed and stripped off in large flakes, leaving the surface of the peritoneum polished and entire.

This I should consider the product of a very low stage of chronic inflammation, and possibly the result of that constant irritation which is kept up by the presence of an unusual quantity of serum in the cavity. The only signs by which it is to be ascertained are, the general derangement of the various functions, and the circumstance, that on employing percussion while the abdomen is still full of fluid, the superior part, as the patient lies on the back, yields no hollow sound,—which is generally the case when the intestines are free to float upon the surface of the serum, but which, now that they are held back towards the spine, cannot be perceived.

This adventitious covering of the peritoneum has occasionally been found thickened to so great a degree as to obscure the sense of fluctuation, and convey the idea that the fluid was encysted, when in fact it has been in the peritoneum itself. I once had a case under my care, in which a female was tapped fourteen times without suffering any untoward symptoms, the fluid reaccumulating in general very slowly, and on one occasion remaining so long absent as to inspire the hope that a complete stop had been put to the effusion. When the fluid was drawn off, the general impression remained of a large empty cyst, and a hard ovarian tumour was distinctly felt rising from

the left side of the pelvis; but when, after a lapse of nearly three years, she died, the diseased ovary was indeed found, but it was clearly ascertained that the fluid had been drawn from the peritoneal cavity, and so thick was the false membrane deposited on that portion which lined the parietes, that it resembled in some parts a layer of cartilaginous matter.

I will, however, detail more particularly the appearances which presented themselves on dissection.

CASE V.

The abdomen large and flaccid, communicating the sensation of fluctuation in a cyst but partially filled; a large, hard tumour was also to be felt, rising from the pelvis, rather to the left side.

When a longitudinal incision was made into the abdomen, about six or eight pints of reddish fluid escaped from the cavity. The intestines were rather small in diameter, and placed towards the upper part of the abdomen; and looked opake, from a general deposit of adventitious membrane. The stomach was large; and a white rounded mass, about the size of a large fist, occupied the place of the liver. The parietes of the abdomen were lined over the whole anterior part with a firm, cartilaginous substance, somewhat unequal in its thickness, but in some parts not less than the sixth or eighth of an inch. The same cartilaginous substance covered the tumour which came from the pelvis, and formed the external coating of the liver, which lay like a ball under the

margin of the ribs. The spleen was also partially covered with the same substance.

The liver was tolerably healthy in its internal structure. The gall-bladder was confined and contracted by the adventitious coating. The kidneys were healthy.

The pelvic tumour gave a very imperfect sensation of fluctuation; and was attached so firmly to the posterior surface of the uterus, as to be completely inclosed in one membrane with it, as if it were either growing beneath the peritoneum, or as if both were enveloped in the same adventitious layer. The substance of the uterus was not in any way diseased.

When an incision was made into the tumour, it was found to be full of small rounded bodies, of the size of peas, or much smaller, looking like a large cauliflower. These small bodies were attached to the internal parietes of the tumour by vessels, and hung in bunches like grapes, affording an illustration of a morbid growth taking place in the manner described by Dr. Hodgkin in a late volume of our Transactions. The ovaries were not found, and seemed to be enveloped in this morbid growth, which formed altogether a mass of the size of a middle-sized melon. This mass was attached to the sacrum in such a manner that it appeared to make pressure on the nerves, more particularly on the left side. Although this structure of the tumour seemed in some degree to account for the paraplegia which

had long existed in this case, yet the brain and the spinal cord were most carefully examined.

In the brain there were strong marks of congestion. The cineritious substance was decidedly gray, and the medullary portion dusky, with bloody points; but no deviation from natural structure, except that on the upper part of the pineal gland, a small body of gritty matter was observed. The spinal cord was considered small, but was otherwise healthy.

The lungs exhibited a very slight appearance of inflammatory infiltration on the right side. The heart was small, but had upon it some fat, particularly towards its apex.

In this case I always considered it probable that the fluid, which had been drawn off fourteen times, was contained within a cyst. And as a diseased mass, feeling like a hard ovarian tumour, was constantly felt rather to the left side when the fluid was withdrawn, I supposed it most probable that the whole was ovarian. My reasons for thinking it encysted were, the peculiar absence of all constitutional symptoms, the very slight inconvenience which attended and followed the operation of paracentesis; the colour of the fluid, always tinged with blood, and depositing a considerable quantity of red particles, sometimes like vermilion, sometimes of a more dingy colour; and the sensation communicated to the hand when the abdomen was emptied of its fluid, for it did not become wrinkled and corrugated, but

simply flaccid and pendent, apparently not contracting, but the parietes presenting a thick, hard feel on pressure.

On the contrary, there were always many incongruities which led me to expect some great peculiarity in the cyst. The general consistence of the fluid never altered in the least, from the first operation to the last. It was never ropy, and the tinge of blood was only such as I had occasionally seen in ascites. There was never any change in the feel of the supposed external cyst; there was no growth of nodules on its surface or in its parietes, and the internal cyst scarcely increased in size from its first being felt. The long period of apparent quiescence in the accumulation of fluid, was unlike any compound ovarian cyst I had ever seen. The erect or half-sitting posture was always preferred, as if the fluid became more inconvenient when the patient lay down. The fluid occupied an unusual extent in the abdomen, extending in some degree to the hypochondriac and lumbar regions.

From all these circumstances I was led to think that there was one very large cyst of a simple nature, and that perhaps the pelvic tumour might be some independent growth, which I sometimes spoke of to the pupils, as being possibly of the nature of an extra-uterine foetation, or a mass of fat, and hair, and bone.

But to return to the actual state of the peritoneum.

The deposit of adventitious matter, though frequently universally and equally distributed, as in the preceding case, is found in other cases to assume some diversity of appearance, and more particularly on the convex surfaces of the spleen and liver it is remarkable for its honeycombed arrangement; a circumstance not improbably depending upon the interruption which is received during its deposit, by the sliding of their surfaces over the neighbouring surfaces of the diaphragm or ribs, and the interrupted effort at forming adhesions to their adjacent parts.

Many of the appearances which present themselves on the peritoneum seem to depend upon alterations taking place in this adventitious membrane, the feeble organization of which probably renders it liable to morbid changes and the development of morbid growths. Amongst these appearances is that of a carbonaceous deposit, more or less extensive, and varying in the intensity of its colour, and which I conceive to be the result of extravasation of blood into the newly formed tissue, under some peculiar circumstances as yet not sufficiently understood;—I say, under circumstances not sufficiently understood, because we do not know even whether it be the peculiar nature of the blood, or the peculiar structure of the part into which it is effused, which (supposing it to arise from effused blood at all) gives the liability to this black or gray appearance, to which I am perhaps premature even in ascribing a carbonaceous character. This black deposit has in its appearance

a striking resemblance to the black, pulmonary matter formed in the tissue of the lungs; and it seems to be of the same nature as that which forms the minute speckling of gray on the internal surface of the intestines, when they have been subject to continued chronic irritation. I have likewise seen it on the membranes of the brain; in cases where death having occurred from recent effusion of blood, rendered it probable that the black appearance was the result of similar extravasation at a former period.

This gray matter is variously distributed on the peritoneum. I have seen it in patches about the lower part of that which lines the parietes, and in other parts of that portion of the membrane; I have also seen it in the pelvis, and frequently on the surface of the intestines themselves; and I shall now relate a case which has lately occurred to me, which seems to shew its connexion with an hæmorrhagic tendency most probably taking place in the newly formed vessels of the adventitious membrane.

CASE VI.

John Wright was admitted under my care, May 7th, 1834. He was a tall, pallid, bloated man, aged 45, and said to have been very intemperate in his habits. During the last eight weeks his present ailments had attracted attention. He was the subject of anasarca, his legs measuring eighteen inches in circumference below the knee. Urine of a pale, dingy,

brown colour, coagulable, and of the specific gravity of 1007 : his abdomen was somewhat enlarged, with an obscure sense of fluctuation. I considered this a case of renal anasarca, and treated it as such ; his progress was very slow, as is usual in such cases ; and on the 11th of August I reported that the swelling had entirely left the legs, and he was walking about, but his abdomen was tense and round, though not very large. He walked bending a little forward, evidently from uneasiness in the abdomen, which was always tender and sometimes painful ; and his face, which was quite pallid, bespoke the anxiety of visceral disease. He was eager for purgatives, which seemed to give him temporary relief.

Shortly after this he was seized with attacks of an epileptic character ; and in one of them he died on the 9th of November.

Sectio Cadaveris.—On opening the abdomen, the whole was filled with a dark-red serum, evidently tinged with blood : the peritoneum, both of the intestines and the parietes, was covered with a thin adventitious membrane. The small intestines formed a mass, adhering together in the centre of the abdomen. The intestines were of a very dark gray colour, with masses of blood upon them. They were all rather contracted, and in some parts mottled with gray, carbonaceous deposit, like sausages. In the pelvis a good deal of loose coagulum, or collection of red particles, had deposited itself ; but the most curious

appearance was upon the peritoneum lining the parietes, on which clots of blood, bearing a botryoidal form and of a dark colour, were attached, and seemed to be held in this singular situation by the layer and meshes of a false membrane of a gelatinous consistence. The mucous membrane of the intestines throughout was gray, with numerous very fine, dark points. The stomach had an hour-glass contraction, but not permanent: the mucous membrane covered with a very thick tenacious mucus, and in itself rough. The liver covered with that honey-comb or worm-eaten appearance which is produced by an irregular deposit of false membrane. The liver itself by no means unhealthy. Spleen soft. Pancreas healthy. Kidneys small, flattened, of very pale colour, and semi-cartilaginous consistence; the cortical portion contracted; the surface granulated; the internal section shewed one uniform pale appearance. Brain,—some fluid effused under the arachnoid, and also into the ventricles. The superficial stratum of the cineritious substance was readily detached from that below it.

In this case we see very strongly illustrated the tendency to internal hæmorrhage which occasionally exists in cases of ascites, and which, as I have said before, seems in many cases connected with the structure of the new-formed membrane. It often happens that where the fluid drawn in ascites has, during several operations, been quite free from blood, the succeeding operations are attended by the dis-

charge of highly tinged serum, of which I have very lately had a case in a man labouring under ascites with enlarged spleen, in whom the fourth or fifth operation yielded a fluid, which deposited a large coagulum of perfect blood. In the case of Chant, (Case V.,) the red particles were deposited like powdered vermilion. In the case of Winch, (Case I.,) much blood was mingled with the fluid ; and in that of Wright, (Case VI.,) now more particularly the subject of observation, blood had been effused into the false membrane, without any operation having been performed.

The state of serum produced by the admixture of blood, and likewise the occasional deep tinge of bile, are by far the most frequent, if not the only peculiarities of appearance, which the serum of the peritoneum acquires in genuine ascites, even where it is connected with much disease of a malignant character ; so that, when in doubtful cases of ovarian dropsy, (cases rendered doubtful by the extent of the cyst, by the general fluctuation, and by the absence, at least during the distended state, of any perceptible secondary tumours,) we find the fluid assuming either the opake appearance of puriform matter, or a ropy consistence, or the grumous appearance of long deposited and altered blood, we may, I think, generally conclude, in the absence of other proofs, that the fluid is not secreted by the peritoneum. There is likewise another state of the effused fluid, where it contains fine crystals of cholesterine, such as is de-

scribed by Dr. Bostock in some of the early volumes of the Transactions of this Society, which I have never observed in genuine ascites. It appears to take place generally when the fluid has been long collected in cavities, under different circumstances of disease, and amongst these the ovarian cyst may not unfrequently be ranked. Within the last week, Mr. Bransby Cooper drew off the fluid for me in a case where the fluctuation, extending even to the lumbar spaces, and the perfectly even shape and feel of the tumour, might easily have led to doubt, if not mistake, but the fluid was most remarkably loaded with the cholesterine, and I have no doubt of its encysted origin.

When the inflammatory action has gone to an extent to which it has apparently never reached when the adventitious covering only of the peritoneum has been formed, we find adhesions of greater or less extent taking place between the different organs, and between them and the parietes of the abdomen: and it is to this subject that I have so particularly referred in many of the foregoing observations.

When adhesions of this kind take place only to a small extent, they are not to be discovered, unless they happen to interfere with some function, and then only become the subjects of conjecture. I have seen habitual constipation apparently depend upon a firm old adhesion of small extent between the ileum and the peritoneum, at the brim of the pelvis. The

same effect has been produced by bands of adhesion stretching from the omentum ; and such bands have been the cause of fatal constipation and strangulation of the intestines. When the adhesion has taken place about the stomach, that organ has been much affected, and frequent vomiting has been the result. But when the adhesion has been more general between the viscera, or the convolutions of the intestines, a peculiar feeling of hardness is communicated to the touch, over a greater or less extent, which awakens in the experienced physician strong suspicion of the fact ; and when this has become universal, matting the intestines into one mass, the hard, unyielding feel which is discovered, or the dough-like sensation which is felt, or the unnatural, rounded mass which fills the place of the small intestines, present almost convincing proof of the condition of the peritoneum. Should there be, in addition to this, a want of that sensation of the viscera slipping from beneath the touch which is recognized in the healthy state of these parts, the probability is, that whether the viscera adhere amongst themselves or not, they are likewise glued to the parietes ; and if still further, or if without the other symptoms, that peculiar *crepitus* of which I have spoken should exist, scarcely a doubt would be left in my mind that adhesions had formed.

The mode in which adhesion takes place varies very greatly with the severity of the inflammation, and with the constitutional peculiarity of the patient. In some of the cases which I have recited above, the

adhesion was of the more simple healthy character, formed by fine bands and meshes resembling cellular membrane, and this is probably the only form of adhesion which yields the sensation of crepitus ; but it often happens that previously to the deposit of less healthy structures, this cellular union takes place, and becomes the nidus of morbid growth. For nothing is more common than to see an extensive sprinkling of miliary tubercles developed in these new structures, or massive deposits of scrofulous matter collecting between the convolutions of the matted intestines ; or in cases where malignant disease exists, we find the true scirrhus, fungoid, or malignant tubercle occupying the adventitious structures : and often, when the intestines appear covered with these morbid bodies, we may strip from the peritoneum large flakes of false membrane, bringing with it the tubercles, and leaving the peritoneum perfect.

When these changes take place in the texture of the false membrane, they are apt to induce a still greater degree of hardness and of solidity in the diseased portions of the abdomen, and when they go to a great extent, present a board-like resistance to the hand, which no relaxation of the abdominal muscles can remove ; and which becomes still more remarkable if the viscera are glued to the parietes, in which case we may often, as the patient becomes emaciated, discover by the feel something of the nature of the cementing deposit.

It is indeed often totally impossible to determine, from local symptoms, whether this deposit be scrofulous and tubercular or malignant in character. Yet it sometimes happens, more particularly when, by tapping, any inflammatory action has been induced in the cellular membrane of the integuments, that they assume a character at the part where the adhesion takes place, which is by no means equivocal; and in illustration of this point, I may hereafter offer some cases, shewing that occasionally, where the internal disease has been of a malignant character, the neighbouring parietes have indicated the fact by pretty speedily becoming the seat of true scirrhus tubercles, felt like small beans or peas under the hand, and quite superficially, as I have likewise more than once had occasion to observe, on the parietes of the thorax, where malignant adhesion has taken place between the lung and the pleura costalis. When the deposit is of a tubercular character, we frequently have a granulated feel communicated to the spread hand applied over the abdomen, and we generally discover other symptoms of the tubercular diathesis by which our suspicions are awakened.

Since the foregoing remarks were submitted to the Society, I have had under my observation, with Dr. Farre and Mr. Edenborough, a very interesting case, which, though it was impossible to overcome the feelings of the relatives so as to obtain a post mortem examination, was accompanied with such decided symptoms

that I have little hesitation in declaring very extensive peritoneal adhesions to have taken place.

CASE VII.

A gentleman, past the meridian of life, who had suffered several attacks of abdominal derangement, and in all probability chronic inflammation of the liver, became, in the month of February, 1835, much more seriously indisposed, his countenance sallow, and his abdomen distended with fluid.

When I first saw him, April 17th, the propriety of paracentesis was very naturally one subject of discussion, but we all felt convinced that such an operation would but hasten the almost necessarily and apparently fast approaching fatal result, and we contented ourselves with continuing such remedies as were calculated to act on the kidneys and support his declining powers. Under this treatment the abdomen began obviously to diminish, and the fluctuation to become less and less distinct. A solid substance projected a little at the umbilicus, and we could pretty plainly trace the thickened omentum, forming a resisting mass above.

On the 4th of May, the size of the abdomen having gradually diminished, I first distinctly felt a peculiar sensation, which I could compare to nothing so well as to that which is experienced *when the finger or*

hand is rubbed over a damp pane of glass, or other damp polished surface; it was obtained by placing the hand firmly on one side of the abdomen, while the mass of intestines was made to move by gently pressing the other hand on the opposite side. This sensation appeared to me to be derived from the passing of the two peritoneal surfaces over each other, and I stated that I thought it probable the process of adhesion was taking place.

May 7th. The abdomen is less, and the whole surface, under gentle pressure with the hand, now shews small corrugations. On deeper pressure a crepitus is plainly felt in various parts, which, together with the resistance and doughy feel communicated to the touch, convinces me that adhesions are taking place pretty generally between the omentum and other viscera and the parietes.

18th. The abdomen diminishes, and the crepitus, which, probably owing to the softness of the recent adhesion, resembles deep seated emphysema rather than the crackling of leather, is very general, but most remarkable at the right side of the abdomen. I pointed it out to Mr. Edenborough, who then and at other times distinctly recognized the peculiarity of the sensation.

21st. The diminution of the abdomen still goes on. The omentum is plainly felt attached to the um-

bilicus, while a hard mass below the scrobiculus cordis corresponds with the left lobe of the liver. The soft crepitus is very perceptible over the lateral portion of the abdomen on both sides, but not below the umbilicus, where there is still a little fluctuation. In addition to his other distressing symptoms, he has now for the first time experienced occasional sickness.

28th. The sickness has been more frequent after taking food, and is almost always brought on by rising in bed after eating. The abdomen continues to diminish, the countenance is improved, and the dejections are natural. Urine pretty copious. Tongue red, but moist : it is with great difficulty we can induce him to take any nourishment. As far as I can discover the state of the abdomen, it is probable that the omentum is adhering over the whole upper part, and the stomach, colon, and neighbouring viscera are matted together, but the lower part of the abdomen is as yet free from adhesions.

June 1st. He is now sick as soon as he rises to take any food, so that while the nutriment he gets down is exceedingly little, that which he retains is still less. He has been observed to wander a good deal in his mind. Urine pretty abundant. The state of the bowels has varied ; for twelve hours he has had a sharp diarrhoea, but that has subsided. I now distinctly feel the soft crepitus below the umbilicus : I likewise feel a portion of the right lobe of the liver

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hard, and not adherent to the parietes below the false ribs in the right lumbar space.

June 4th. The yellowness of the skin amounts to slight jaundice. Urine very high coloured. Stools tinged with bile.

He became gradually weaker, and died on the 12th of June.

It is greatly to be regretted that in this important case a post mortem examination could by no means be obtained ; but I have scarcely any hesitation in pronouncing what was the condition of the peritoneum. The particular symptom on which so much stress is laid in the foregoing observations, may at least be received in confirmation of the conclusion to which the general increasing hardness of the abdomen, the disordered condition of the bowels, and the gradually generated tendency to sickness on assuming an erect position, particularly when food had been introduced into the stomach, seemed to point ; nor does the fact of paracentesis not having been performed, as it had been previously to the adhesion of the peritoneum in three of the preceding cases of ascites, in any way militate against the probability that adhesions had taken place, for every one conversant with such subjects must have seen this condition of the peritoneum in cases where the fluid had never been drawn off ; and indeed it was so in two

of the instances already related ; but if a fact of this kind were wanting, it would be found in the following note which was very kindly written to me by Mr. Copland Hutchison, and affords an interesting corroboration of the accuracy of the diagnostic symptom which I have endeavoured to establish, while it presents a case in very many respects strictly analogous to that which I have just introduced ; and Mr. Hutchison has since told me, that the patient had never been tapped ; and the sensation communicated to his touch was so completely that of deep-seated emphysema, that he concluded at the time that some process of disorganization was going on in the viscera, by which gas had been evolved.

Duchess Street, Portland Place,
Tuesday, 16th Feb., 1835.

DEAR SIR,

I HAVE this day seen in last Saturday's Medical Gazette, a short notice of a paper of yours read at one of the recent meetings of the Royal Medical and Chirurgical Society, on the subject of a new diagnosis in adhesions between the peritoneum lining the abdominal parietes, and the peritoneal covering of the liver,—the result of inflammatory action.

It is singular that, only yesterday, I examined the body of one of Mr. Weiss's shopmen, in Long Acre, who had laboured under ascites for many months, with great visceral disease. About six weeks ago,

when I first saw him, I distinctly felt the crepitus you speak of, and remarked it to Mr. Wade, Jun., of the Westminster General Dispensary, and others, immediately under the natural situation of the margin of the right lobe of the liver, and occupying a space of the size of my extended hand, towards the right side.

The post mortem examination not only exhibited adhesions of the peritoneal lining of the parietes of the abdomen and diaphragm to the liver and omentum, which latter was, in one part, of a scirrhus hardness, but also to the arch of the colon and small intestines, which were likewise adherent to each other. The spleen, mesenteric glands, and pancreas, were very much enlarged,—the glands being of a scirrhus texture; there were, besides, a considerable stricture and scirrhus thickening of the left descending colon, immediately above the sigmoid flexure. The head and thorax were not examined.

Whilst fresh in my mind, I have thought it but friendly to furnish you with this additional fact to those you have had read at the Society, and

I am, dear Sir,

Yours, very faithfully,

A. COPLAND HUTCHISON.