A CASE
OF
VERY EXTENSIVE GELATINIFORM
CANCER OF THE PERITONEUM,
INVOLVING THE LYMPHATIC GLANDS OF THE ABDOMEN
AND THE OVARIES, AND SIMULATING ASCITES.

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JANE LAST, aged 55 years, residing in the neighbourhood of Burton Crescent, placed herself under my care at the St. Pancras Dispensary, on January 17th, 1848. The history of her illness taken at that time is as follows:—

She is a native of Boston, but has resided in London during the greater part of her life. She was married at 29 or 30 years of age, and her husband is still living. In two years time she aborted at the third month, and never again became pregnant. The catamenia appeared rather early, namely, between 11 and 12 years of age, and she used frequently to suffer from dysmenorrhœa. She has never undergone any privation, and has always been extremely temperate and regular in her habits. No particular hereditary tendency can be traced.

Previously to her miscarriage she had suffered from no abdominal symptoms, but three or four years before had undergone an attack of typhus. At the time of the miscarriage, however, there was such an amount of pain and tenderness

at the epigastrium as to induce the medical man who attended her to apply leeches and a blister. From that time forward she has been in the habit of suffering from flatulent distention of the abdomen after meals, especially if she partook of any kind of pastry, raw vegetables, or soup.

At 45 years of age, that is to say, ten years ago, the catamenial periods became irregular, the interval varying from two to six weeks, the discharge on each occasion being excessive, and lasting for one or two weeks, accompanied as usual by severe abdominal and lumbar pains. This menorrhagia continued up to the final appearance of the catamenia between the ages of 51 and 52 years. She never suffered in the intervals from any leucorrhœal discharge.

At the time of the menorrhagia (the exact period I have been unable to determine), she consulted a practitioner in her neighbourhood, who cupped her over the sacrum, and applied leeches to the cervix uteri, and informed her that there was a tumour connected with the liver, which could be readily felt beneath the margin of the ribs on the right side. Attention was drawn to this in consequence of the uneasiness and tenderness at the epigastrium having so much increased that she was unable to bear the ordinary pressure of her clothes; and she occasionally experienced the "sensation as of a knot," referable to that region, which was commonly relieved by a dose of aperient medicine, and the evacuation of mucous stools mixed with long membranous shreds.

On the cessation of the catamenia, her health became so much improved that both her friends and herself anticipated in a short time its complete restoration. This improvement was only interrupted, about two years ago, by what she was told was "inflammation of the veins" of both legs: no clear account of this attack could be obtained.

In June 1846, she accidentally slipped from some steps. A few days after she began to complain of a sense of bearing down, and soon discovered a prolapsus of the womb. On account of this a ring pessary was introduced, but as there was much trouble in keeping it in its place, and it gave her

great inconvenience, after a three months' trial its use was finally abandoned, and the uterus has not prolapsed since.

Just at this time she perceived that she was passing a smaller quantity of urine than was natural to her, and that her abdomen was beginning to enlarge. The enlargement was first noticed at the lower part, and was accompanied by such a sense of weight there that she was in the habit of supporting it with her hands while walking. She also noticed a tumour above the pubes, "about the size of a turkey's egg," which, with that beneath the margin of the ribs, subsequently disappeared as the abdominal enlargement increased.

At Michaelmas in the same year, while walking in the city, she inadvertently struck her abdomen against a post with considerable violence, and ever since that time the epigastric uneasiness and sense of a knot there have been much more troublesome; but there has been throughout no lancinating pain.

The abdomen continued to increase in size, and in October last she began to vomit her food. At the beginning of November she entered King's College Hospital. The bowels up to this had been regular, but now became constipated, a change which she ascribed to the administration of opiates for the relief of her pain. Vomiting soon became of nearly daily occurrence, accompanied by violent epigastric pain, the matter thrown up being greenish and sour, but never fæcal. Solid food or broth induced violent cramp-like pain at the epigastrium, and sense of distention, remaining till she was relieved by vomiting after her tea. While in the hospital she began to suffer from œdema of the ankles, which subsequently extended to the thighs and lower part of the abdomen. Three weeks before leaving it she had an attack of diarrhoea.

She left the hospital of her own accord on December 29th. Since then the vomiting has continued, but the bowels have been more regular. She has been complaining very much of chilliness, and is compelled to lie between the blankets for warmth. She has been losing flesh ever since the

prolapsus, and presents a considerable degree of emaciation, where it is not disguised by œdema. The countenance is expressive of great anxiety; the complexion is not more sallow than is natural to her, and the cheeks are marked by fine purple veining.

There has been almost complete orthopnoea for five months past. She states that a sense of dragging and of cramp-like pain at the epigastrium is produced when she lies on the left side, and to a less extent when on the right. The pulse is small and ninety-eight, while the respirations are thirty, in the minute. There is great tenderness at the epigastrium and below the margins of the ribs, especially on the right side, and the tenderness extends as high as the dulness of the liver. There is tenderness also above the pubes, and deep in the left iliac region. There is much thirst, and the tongue is clean and smooth down the centre.

On examining the abdomen, its enlargement was found to be general and rounded, the epigastrium very full, and the umbilicus remarkable as not being prominent but stretched and flattened out. There was no enlargement of the superficial veins, but the cuticle was exfoliating in large pieces. The abdominal wall was tense, except at the epigastrium, where it yielded readily to the hand. By sliding the hand over the surface, there could be felt in the abdominal wall, about its upper part, seven or eight small tumours, about the size of a nut, all unconnected with any solid organ beneath, except one, which was situated near the cartilages of the ribs on the right side of the epigastrium and not far from the ensiform cartilage: this one was felt to be continuous with a solid tumour, about the size of an egg, which passed upwards under the cartilages of the ribs, and apparently belonged to the liver.

On the most careful examination no other tumour could be felt, except one just above the pubes, and this with some difficulty. It rose about three inches above the pubes, extended equally on either side to the total width of about four inches and a half, was immovable, and lobulated.

Pressure over any part of the abdomen produced great increase of the dyspnœa. There was a little resonance on percussion at the epigastrium and along the margin of the ribs on the right side, but in every other situation the dulness was complete, and there was the most perfect fluctuation in every part. The dulness of the liver was perfect as high as the fifth rib. The abdomen measured forty inches and a half in circumference, two inches above the navel.

In front the pulmonary resonance on percussion was good, and the respiratory murmur natural, but accompanied by some sibilant and mucous rhonchi. The heart's dulness was of natural extent, but the apex was beating beneath the third rib. Posteriorly the dulness of the liver rose as high as the lower angle of the scapula, and the resonance on the left side extended only about two fingers' breadth lower. There were no physical signs of pleural or pulmonary disease.

On digital examination the vagina was found to be altered in direction, passing upwards and forwards behind the pubic symphysis, and was broad and capacious. The cervix uteri was not to be detected, but the os uteri terminated the vagina opposite the upper extremity of the pubic symphysis, and was of natural size. By means of Simpson's sound the cavity was noticed to pass forwards in the direction of the tumour, felt in the middle line above the pubes, and the organ was immovable. In addition to this, there could be felt through the posterior wall of the vagina an irregularly nodulated elastic tumour, engaging the upper part of the pelvic cavity; it did not give to the finger any impression which led me to believe that it contained fluid.

It will occupy too much space to enumerate the grounds on which my diagnosis was based, but the conclusions I arrived at were as follows:—1st. That there was ascites. 2ndly. That cancerous disease existed most probably about the inferior part of the liver and transverse fissure, and probably also about the larger divisions of the portal vein. 3rdly. That there were cancerous nodules in the abdominal wall. 4thly. That there was fibrous tumour of the uterus.

5thly. That there probably was encysted ovarian disease. The more important parts of this diagnosis were communicated to my colleagues, Dr. Stewart and Mr. Walton.

I ordered her no medicine, but directed that she should take nothing but a table-spoonful of strong beef-tea every ten minutes, and that an enema of warm water should be used every morning. As I anticipated, this had the effect of removing the vomiting, and very much lessening the pain, while the bowels were acted upon regularly.

As the poor woman expressed a desire to be tapped, and there was a prospect of temporary relief to the dyspnoea being afforded by the operation, I requested Dr. Stewart to visit her with me, and as he saw no reason for deferring it, it was performed on the 24th, by Mr. Walton. Both these gentlemen felt equally convinced with myself, that there was fluid in the peritoneum. The trocar was introduced just below the navel, in order to avoid any tumour which might extend higher from the pelvis than we had physical evidence of. Nothing, however, passed through it, but about a tea-spoonful of clear gelatinous matter, which at the time struck me as so similar to that of gelatiniform cancer, that I remarked it to Mr. Walton. Still the idea that the peritoneal sac could be full of this matter was at once exploded; and under the belief that possibly the trocar might have penetrated a cyst of some kind, we agreed to another puncture being made, a couple of inches higher, in the hope of finding fluid; but here, again, the result was similar. A little opaque white matter accompanied the jelly from the second puncture. The patient was accordingly put to bed, and in the evening, when I visited her, though plainly not fully recovered from the shock of the operation, no unfavourable symptoms had arisen.

On the 25th, I found her complaining more of epigastric pain; there was no tenderness about the punctures, but much thirst; she had not vomited, and the bowels had acted spontaneously; the pulse and respirations were as before the tapping. After passing a very restless night, however, during

which she suffered severely from epigastric pain, she died on the morning of the 26th.

The body was examined twenty-six hours after death.

Head.—The dura mater was universally adherent to the calvarium; the brain, slightly congested.

Chest.—The lungs were small, and did not reach, in front, below the level of the fourth rib. Here and there, near their apices, a little cheesy tubercle and some gritty matter were discovered. The left lung presented a little congestion posteriorly. The heart was healthy, but its apex was situated opposite the third intercostal space. There was more or less atheromatous deposit throughout the whole length of the aorta.

Abdomen.—On opening the abdomen, the peritoneal cavity was discovered filled with gelatinous matter, and in the course of the examination no less than six quarts were, with more or less difficulty, removed: the difficulty arose from its remarkable tenacity, which was greater in the deeper parts than near the surface. It emitted a very disagreeable, faint, sickly odour, resembling that commonly perceived in the contents of the stomach after death. It possessed a ruby tint superficially, but in the deeper portions, and pelvis, it was less clear, and was streaky, some portions being pearly, and others having the colour of crude rock salt. In the epigastric region, there was some reddish-brown opaque liquid, containing some shreds of lymph. On turning aside the abdominal wall, the peritoneal lining was seen to be infiltrated with colloid, in the form of nodules and little masses, intersected with little fibro-cellular bands forming loculi. This gelatinous matter was not separated by any membrane from that in the cavity. There were a few spots of ecchymosis, also, about the lower part of the wall. In its upper part, the nodules felt during life were found to consist of small, hard, flattened tumours, about a quarter of an inch thick, and measuring three-quarters of an inch in diameter, placed beneath the peritoneal lining. There were shreds of lymph attached to the wall and organs in the epigastrium and hypochondria.

When the loose jelly was sufficiently removed, the following appearances were presented :—

1st. The epigastric tumour was found to depend upon a colloid infiltration of the peritoneal investment of the left lobe of the liver. 2nd. The suspensory ligament was infiltrated with it. 3rd. The diaphragm was adherent to the right lobe of the liver, over a great part of its upper surface, and to the spleen; and where unattached, its peritoneal lining was infiltrated in the same manner as the abdominal wall, and contained also small tumours of the same growth. 4th. On the right side of the abdomen lay a large tumour, consisting of colloid, and nodulated on the surface with gelatinous matter. It was broad above, where it was separated by a moderately deep furrow from the liver, but narrow below, where it adhered to a tumour in the hypogastrium. Its entire right border was free, as was also the lower half of the left. From its left side, above, a prolongation extended outwards and backwards, to become continuous with some colloid matter on the surface of the spleen, and was connected by peritoneum with the great curvature of the stomach. The upper part of the tumour presented tuberos elevations on it, and consisted of the mesocolic glands, in a state of colloid degeneration. The remainder, with its prolongation, was formed by the omentum in a similar condition. 5th. In the hypogastric region, a solid tumour was situated, adherent on its anterior surface, and on the right side to the abdominal wall, and there was colloid matter in the adhesions. This tumour was largely lobulated, and was connected to the colloid omentum by means of one of its large globular elevations. Towards its left side and upper part, it was connected with a fibrous sac, presently to be noticed. The dimensions of the tumours were those observed during life. 6th. On the left side of the abdomen, extending upwards nearly to the margin of the ribs, and downwards to the iliac fossa, were situated the remains of a large sac, whose cavity extended, to the right, behind the great lateral tumour of the omentum, and communicated with the general cavity of the peritoneum in the

right flank. This sac, when perfect, could not have contained less than three pints of matter. Its contents were a jelly, less transparent and more opaline than what was lying free in the peritoneum, and very firm. Its colour was like that in the deeper parts of the cavity of the peritoneum. The sac itself, as it appeared anteriorly, consisted of a very dense fibrous tissue, and presented sacculi. It was more or less vascular in all parts, but the part attached to the hypogastric tumour was very much so, the vessels being abundant, running in a vertical direction, and giving a red colour to the surface. There were openings in the sac, by which it communicated with the peritoneal cavity, and the gelatinous contents communicated also with that of the peritoneum, the transition in firmness and colour from one to the other being gradual. One remarkable opening was situated on the anterior part of the sac; it was about three inches in diameter, and rather rounded in form. The sac was also broken down towards the left side, and again at the right side of the colloid omentum. It was connected with the uterine tumour, and with the left edge of the omental mass. 7th. A coil of small intestine was situated in front of that part of the omental mass which proceeded towards the left side, to be connected with the spleen:—the convolutions were adherent by lymph not very recently effused.

The liver was of the ordinary size; its capsule, opaque and thickened; its peritoneal coat, infiltrated with colloid, in most parts of the lower half of the organ. In the lower border of the left lobe, this had occurred to some extent, and constituted the tumour felt during life in the epigastrium. The parenchyma of the organ was healthy. The glands about the transverse fissure were enlarged, and converted into masses of colloid.

The spleen was enveloped in a capsule of colloid, with the exception of the upper and inner portions. The stomach was empty, flattened and contracted, especially towards its pyloric extremity. The mucous membrane was healthy. A small deposit of colloid was situated on the peritoneal surface

posteriorly. There were some portions of colloid connecting the tumour of the mesocolon with that on the surface of the liver, crossing the pyloric extremity of the stomach. The greater part of the small intestines was situated in a small space behind the portion of the tumour which represented the transverse mesocolon, and in front of the right kidney. They were here rather contracted in diameter, but presented no indication of peritoneal inflammation. The mucous membrane was natural. Tubercular elevations of colloid, varying in size from that of a hemp-seed to that of a half-walnut, were scattered over the peritoneal surface. The mesenteric glands were similarly infiltrated with colloid, but were not affected to the same extent as the mesocolic glands. There were nodular deposits of colloid also on the peritoneal surface of the cæcum and colon, and the appendices epiploicæ and the mesocolic glands were deeply implicated; the latter, very much enlarged, and converted entirely into colloid matter. The transverse colon was traced passing in a tortuous manner through the great lateral tumour, marking off the portion above as belonging to the mesocolic glands, and that below as belonging to the omentum. Its diameter was contracted, but the mucous membrane, so far as it could be examined, was healthy. Near the extremity of the cæcum, one colloid mass passed through the muscular coat, and its structure could be seen through the thin layer of mucous membrane which covered it internally. This was the only part of the whole canal where so deep a penetration of the disease had taken place. There were masses of colloid also attached by peritoneum to the sides of the rectum. The pancreas was completely free from disease.

The fundus of the uterus presented some rounded globular elevations before noticed, of the ordinary fibrous character. The ovaries could not be discovered; but in place of them, at the sides of the uterus, and connected by the lateral ligaments to the wall of the pelvis, were fibrous sacs, presenting, externally, a more or less lobulated appearance. This external lobulation corresponded to an internal division into sac-

culi or cells, of rounded form, and each distinct in its cavity from the adjoining. The external ones were large, and embraced several of the smaller. The large sac or cyst, seen on first opening the abdomen, appeared to belong to the ovary of the left side. All these cysts contained a gelatinous, firm matter, which was adherent to their wall. No part of the cysts on either side extended into the pelvis far beyond its brim; but on both sides they pressed upon the iliac vessels and nerves lying on the psoas muscle, especially on the right side. On the right side a small portion of the cyst passed through the upper part of the great sacro-sciatic foramen. The bladder was small and compressed between the uterus and pubic symphysis, but otherwise healthy. The kidneys were healthy, but pale.

A microscopic examination of some of the locular masses, the gelatinous matter of the abdomen and that of the ovarian cysts, was made by Dr. Garrod and myself, and also by Mr. Marshall. The characteristic cells of cancer, simple, compound and caudate, were discovered in all; and, on adding acetic acid, they were found to be held together by a very delicate membrane, which tincture of iodine demonstrated to be very finely granular in its texture.

Remarks.—Although I have searched diligently through the principal periodicals and systematic works, and have moreover looked through several museums, I have failed to meet with a single case presenting the extraordinary characters of that which has just been read. The extent of the disease is one of its most remarkable features, the microscope having proved the cancerous nature of all the gelatinous product found within the abdomen.

It is not unusual for gelatiniform cancer to attack the *omentum*; and sometimes it has, as in this instance, acquired a considerable bulk; but it has mostly occurred

secondarily to cancer of the stomach; while it is remarkable here as lying so completely upon the right side of the abdomen.

The occurrence of colloid of the *liver* is not admitted by Dr. Walshe, Dr. Budd, or M. Cruveilhier, and I only know of a single specimen of it, which was presented by Mr. Kiernan to the Museum of University College. It there forms large masses in the parenchyma of the organ. In the case now before the Society, the peritoneal investment alone is implicated.

I have been able to discover no example of colloid affecting any part of the *spleen*.

The *lymphatic glands* have suffered much more from the disease than those parts of the alimentary canal with which they are connected—throughout which there is no part where the entire wall has been infiltrated; the colloid being thinly scattered over it, and only on the peritoneal surface.

The *peritoneum and its lymphatic glands* constitute the chief seat of the affection. I am unacquainted with any case in which the lining of the *abdominal wall* was so extensively infiltrated as in this. A few years ago, a case of extensive gelatiniform cancer, affecting most of the organs of the body, was, I believe, communicated to the Society by Dr. M. Hall; but I have been unable to discover how far it agreed with mine, inasmuch as only an outline of it is to be met with in the periodicals of that date. I may refer to the *ecchymoses*, in the midst of the colloid infiltrating the lower part of the wall, as something unusual in this variety of cancer. The occupation of almost the entire *peritoneal sac* by colloid matter is, so far as I have been able to discover, without a parallel in the records of medical experience.

Dr. Walshe remarks that he has never himself "observed colloid in the *ovaries*, nor met with any faithful description proving that other observers have been more successful."

Cruveilhier, on the other hand, admits its occurrence; and although, as all must allow, on very insufficient grounds, yet I have reason to believe that his opponents are called

upon to modify, in some degree, their complete condemnation of his views.

Dr. Walshe remarks, that "one of the distinguishing attributes of the colloid species of cancer is its apparent insusceptibility of assuming such variation of internal arrangement as to call, in this point of view, for the establishment of varieties."

In the present instance, however, three forms are clearly discernible:—one, is the ordinary *locular form*; another, is the *encysted form*; and the third, is a *free or unincluded form*. Regarding the first, nothing further is required to be said; but the other two call for a few observations. The term "encysted gelatiniform cancer" originated with M. Cruveilhier; who, taking into consideration the gelatinous appearance of the matter sometimes contained within ovarian cysts, and its enclosure within cavities having fibrous or fibro-cellular walls, instances of which abound in the cases recorded by medical writers, rather hastily sums up his conclusions in these words:—"In short, it is with gelatiniform cancers that we must class the ovarian cyst, which only differs from gelatiniform cancer of the stomach and other tissues by the size of its meshes."

Few pathologists have been found to coincide in this opinion; but, nevertheless, it appears probable that the other extreme, which denies a malignant character to any ovarian cystoid disease, is likely to be no less erroneous. At all events, in the case before us, microscopic examination has demonstrated in the gelatinous matter of the cysts the same minute structure as was found in that from the loculi, so that if we admit the malignancy of the latter, we cannot deny it in the former. But this case does not stand alone, since I would direct attention to one brought before the Medical Society of London, a few years ago, by Dr. Frederick Bird. In that instance an ovary had become converted into a large cyst, containing a firm gelatinous matter, in which Dr. Golding Bird and others, by microscopical examination, discovered cells agreeing in appearance with those found in

other forms of malignant disease. To say the least of it, these two cases deserve to be taken into consideration, in connection with the frequent conjunction of ovarian cystoid affections with cancerous disease of the pelvic or abdominal organs, before we decide finally against the completely malignant character of the former. I am aware that another explanation of the existence of cancer-cells in the gelatinous matter of the cysts in the present case may be afforded, namely, that the contents of the cyst might at first have been non-malignant, and that they might have acquired the cancerous character subsequently to the bursting of the cyst, by contamination from the neighbouring diseased tissues. Nor would the view of its original malignancy be in any way strengthened by the discovery of cancer-cells in the smaller and more recent cysts, although their absence in the latter, had it occurred, would have weighed strongly against it. Still the admission of this explanation does not destroy the fact of malignancy, which is all I argue for; much less does it affect in any way the inference to be drawn from Dr. F. Bird's case.

I have already stated that I have failed in my search after another example of colloid matter lying free within the peritoneal sac. How it got there is a question of interest. Three modes may be imagined—1st. By escape from the ovarian cyst on the occasion of its rupture. 2nd. By growth from the diseased part of the abdominal wall. 3rd. By the occurrence of fibrinous dropsy and its subsequent conversion into colloid matter. An objection fatal to the first of these views is, that at the time the rupture of the cyst is believed to have occurred, the abdomen was but little enlarged; and other evidence is in favour of its accumulation at a subsequent period. Besides, the fibrous cyst was inelastic, and at no time could have contained the vast quantity of matter found in the peritoneal sac. In deciding between the two remaining modes, the question resolves itself into this: viz., whether the plasma from which the cancer arose was effused merely from the diseased surface, or from the entire peritoneal lining,

healthy and diseased. Vogel admits "that the fluid of fibrinous dropsy is capable of organization," and that "it is indifferent whether the fibrin be in a fluid or coagulated state;" that from it "the most different forms of tissue, either normal or pathological, may be evolved;" and he enumerates cancer among the latter. Dr. Walshe, too, says, "that the blastema of cancer, there is every reason to suppose, is, like the ordinary exudation-matter, essentially composed of liquor sanguinis, but of liquor sanguinis modified in its vital properties;" and moreover agrees with Dr. Carswell, that in rare cases the free surface of serous membranes may secrete cancerous matter. It must be borne in mind, moreover, that there was present extensive disease about the large divisions of the portal vein and in the omenta, which would dispose to effusion into the peritoneal cavity.

Still I do not feel inclined to regard this as its origin, for the following reason; namely, that the parts furthest from the diseased portions of the abdominal wall were much firmer in consistence than those near to them, and were deficient in the faint and sickly odour so strongly marked in the latter. The pelvis, too, contained a matter nearly as firm as that in the largest cyst, and the surface of this portion was in no degree softer than the inner part of it.

One word more with respect to two of the signs observed during life. The very perfect character of the fluctuation was such as to lead the minds of those who saw the patient, to the opinion that the matter in the peritoneal sac was sufficiently fluid to pass through an ordinary trocar. I do not know in what way the fluctuation of gelatinous matter can be distinguished from that of ascitic fluid. Cruveilhier relates a case where an ovarian cyst containing gelatinous matter was tapped ineffectually, and acknowledges his inability to avoid a similar accident in future. In Dr. F. Bird's case, fourteen medical men were convinced, from the perfection of the fluctuation, that the cyst was distended with fluid. I was well aware too that even a solid organ will impart sometimes a sense of fluctuation to the hand, recollecting a

case a few years ago under the care of Dr. Williams, in University College Hospital, where it was very evident over a surface corresponding to an exceedingly enlarged spleen. Perhaps in any future case, should a similar one at any time arrive, the diagnosis might be assisted by the condition of the umbilicus;—the opening out, stretching and flattening of its fold, without prominence, being unusual, where ascitic fluid is of the ordinary character, and the abdominal wall free from disease.