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OF

OVARIAN DROPSY,

IN WHICH BOTH OVARIES WERE EXCISED, TERMINATING FATALLY ON THE SEVENTIETH DAY, FROM STRANGULATION OF THE INTESTINE.

RECORDED BY

DRS BENNETT AND HANDYSIDE.

WITH

PATHOLOGICAL AND CLINICAL OBSERVATIONS

ON

ENCYSTED TUMOURS OF THE OVARY.

BY

JOHN HUGHES BENNETT, M. D., F. R. S. E.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, LECTURER ON THE PRACTICE OF PHYSIC AND ON CLINICAL MEDICINE, PATHOLOGIST TO THE ROYAL INFIRMARY, EDINBURGH, &c.

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CASE OF OVARIAN DROPSY.

History of the Case previous to the operation. By Dr Bennett.

Jessie Fleming, unmarried, aged 20, residing in Crail, was admitted into the Royal Infirmary under Dr Bennett, July 5, 1845, recommended by Mr Crabbe, Surgeon.

She states, that eighteen months ago she first perceived a tumour in the lower part of the abdomen, deep seated in the middle of the hypogastrium. She remembers that she could push it aside in various directions without pain, and that at this time it was about the size of an orange. She can assign no cause for its appearance. The tumour rapidly increased in bulk, until at the end of ten months the abdomen was greatly distended, so much so, that respiration and progression were rendered difficult. Paracentesis was now performed, and forty imperial pints of a viscid yellowish-coloured fluid were removed. The abdomen, however, again rapidly increased in size, and paracentesis was again had recourse to. The operation has now been performed six times, the intervals between each becoming less and less lengthened, and the amount of fluid, though always considerable, varying in amount. She says that immediately after every tapping a tumour can be felt about the size of a child's head on each side of the abdomen; that these tumours (she thinks there are two,) are moveable laterally, but seem to grow from below. She thinks the one on the left side is larger and higher up than that on the right. Her general health has been little affected by the disease.

At present, July 6th, she complains of pain in the head, which is stated to be dull and heavy, and seated principally over the forehead. It comes on occasionally, and lasts for three or four days at a time. She has pain in the loins very frequently, especially when the dropsy is large. Special senses and common sensibility normal. Her sleep is much disturbed by breathlessness, and by the semi-erect posture the dropsy requires. Motion is impeded by the size of the abdomen, and from its great weight. There is much muscular weakness.

The abdomen measures 48½ inches at its largest girth, which is just above the navel. It fluctuates distinctly. Dulness of the liver cannot be defined by percussion. The skin of the abdomen is marked by transverse fissures or marks of a purplish colour; it often feels very hot and as if it were bursting; tongue clean; appetite a little impaired; no thirst or sickness; bowels regular; stools somewhat fluid, but of healthy aspect; urine scanty, thick, high coloured, of acid reaction, containing a yellowish brown sediment, but unaffected by heat; skin dry, not warmer than usual. She states that she never perspires. Has no cough or pectoral complaints except dyspnœa, which is very severe at night. On auscultation the chest appears to be healthy. Pulse 88, sharp and small; heart's sounds apparently abrupt, but natural. The catamenia have appeared at irregular intervals, sometimes of three weeks, at others five weeks, and when present are profuse.

From this time she remained generally in about the same condition. The urine passed in the twenty-four hours never exceeded twelve ounces, and on one occasion was as low as six ounces. The abdomen gradually became more tense and the dyspnœa more urgent.

12th. Mr Syme performed the operation of paracentesis of the abdomen. The trocar was introduced to the left of the *linea alba*, about two inches above the pubic bone. Five imperial gallons of a yellow-coloured transparent fluid were removed. The last four ounces which came off were viscid like white of egg, and contained a few yellowish opaque flocculi. The fluid was densely coagulable on adding heat or nitric acid.

The flocculi when examined with the microscope were found to be composed not of lymph, as was at first supposed, but of numerous cells, varying in size from the $\frac{1}{100}$th to $\frac{1}{40}$th of a millimetre in diameter. The great majority were about $\frac{1}{50}$th of a millimetre. They were slightly granular, of round and oval shape, unaffected by water, but becoming more transparent on the addition of acetic acid, and exhibiting a distinct nucleus about $\frac{1}{140}$th of a millimeter in diameter. The nucleated cells were imbedded in a granular matter which could easily be broken down.

Shortly after the operation, she complained of considerable pain n the abdomen towards the left side, which was not increased on ressure. Fifty minims of tincture of opium to be taken imme- iately.

7 P. M. Experiences pain over the abdomen analogous to ramps, not increased on pressure. Pulse between 70 and 0.

℞ *Opii* gr. i.; *Pulv. Antim.* gr. ij.; *Con. Aromat. q. s. Ft. pil. 4ta hora sumend. Mittantur* vi.

13th. To-day has felt considerable trembling and faintishness, hich were relieved by tightening the roller. Bowels not reliev- d since yesterday morning; pulse 100; pain in abdomen very ight, not affected by pressure; has passed forty-eight ounces of rine since yesterday; vomited her breakfast; tongue much furred. The pills were stopped; and one drachm of the compound jalap owder was directed to be taken immediately.

14th. Passed a good night, and has now no pain in the abdo- en; but there is considerable tenderness on pressure towards ight side, where the swelling appears to be greatest. Passed fifty unces of urine. No powders have been taken since the morning f the 12th. Bowels freely opened by jalap powder. Breath- essness.

15th. Passed a restless night, having experienced much nausea nd vomiting. She also felt considerable pain in the right iliac nd hypochondriac regions. The pain still exists, and she says is uch increased on pressure. The source of pain is very deep- ated; is certainly not in the peritoneum. The puncture is now ealed; the abdomen is still voluminous, but soft. On palpation, tumour with distinct margins, about the size of the adult human ead, may be distinctly felt, firmly attached inferiorly within the elvis, but its upper portion moveable to a considerable extent om side to side. She describes the pain as being of a dull, nawing, and continued character; not lancinating nor increased n movement. Pulse 98, of natural strength; tongue slightly urred; has tolerable appetite; no thirst, but says she vomits verything she takes. The matters vomited are thrown up about n minutes after each meal, in successive mouthfuls, accompanied y gnawing pains at the stomach. These latter pains are felt under he false ribs on the right side. The stomach is often felt to be istended, followed by considerable eructations of gas; bowels ave been open four or five times; urine much increased in amount nce the operation; to-day she passed thirty-eight ounces. On the 0th passed ten ounces of urine, on the 17th sixteen ounces. The ompound jalap powder was directed to be given again.

July 18th. To-day she was carefully examined by Professor impson, who employed his uterine bougie. By this means the

fundus of the uterus was raised above the brim of the pelvis, where it was distinctly felt presenting its obtuse, rounded, natural form. The Professor stated his opinion that the tumour was connected to the left ovary by a narrow pedicle. Urine ten ounces.

19th. The examination of yesterday was followed by great pain. She described this as being "tremendous," and seated in the back. The nurse says she cried out as a woman in labour. About two and a half hours afterwards a draught containing one drachm of solution of morphia was given. It relieved the pain, but it continued until 11 P. M. An anodyne and ether draught was then given, which was immediately rejected by vomiting. Since the examination the vomiting has been more urgent; everything taken has been brought up *en masse*, and there is still dull pain on pressing deeply into the right hypochondriac and iliac regions. Urine sixteen ounces.

The powders were stopped. She was directed to take three times daily one ounce of a mixture consisting of one drachm of medicinal naphtha, three drachms of tincture of foxglove, three of spirit of nitrous ether, and five ounces of water.

20th. Urine twelve ounces. 21st. Urine ten ounces; still complains of vomiting.

Seven leeches were applied to the epigastric region.

22d. Leeches bled well; vomiting continues; it comes on now ten minutes after taking meals, but sometimes sooner; it is more quickly excited when fluid is taken than when solid food only is swallowed; for the last eight months has had occasional vomiting, and since entering the house it has become more frequent and continued; no pain on pressure of the epigastrium; the stomach is much distended with air; there is frequent eructation of gas in considerable quantity; twenty ounces of urine passed since yesterday's visit; the fluid in the abdomen is again increasing; the tumour can be felt very moveable; it can be pushed freely from one side of the abdomen to the other, and seems only attached by a long pedicle; considerable pain in back. Continue powder.

℞ *Pulv. Opii* gr. ij.; *Creosoti.* gtt. ij. *Ext. Taraxaci q. s.*
Ft. pil. ii. 1. *h. s et post hor.* vj. *si opus sit.*

23d. No vomiting yesterday after the visit. Complains of pain in the back and some cephalalgia. Passed thirty-six ounces of urine.

A plaster of extract of belladonna was applied.

24th. Urine eighteen ounces; presents a more copious sediment of urate of ammonia; it is high coloured. Acid reaction on litmus; copious orange-coloured sediment, which is dissolved on addition of heat or nitric acid; no vomiting.

25th. Urine twelve ounces. 26th. Urine eighteen ounces. 27th. Urine twenty-four ounces. 28th. Urine sixteen ounces.

29th. Twenty-two ounces. 30th. Twenty-six ounces. 31st. Ten ounces. August 1. Urine sixteen ounces.

August 7th. Since last report the amount of urine passed daily has diminished to from ten to twelve ounces, whilst the increase of fluid in the abdomen has gradually rendered respiration difficult. To-day this fluid was removed by Dr Duncan. A trocar was introduced in the mesian line, above the pubes low down. Five and a half gallons of yellow slightly viscid fluid were removed. Towards the end the viscidity of the fluid was increased, and flocculi, as on the last occasion of tapping, were observed. Examination of the flocculi microscopically presented the same appearances as on the last occasion. Fluid the same chemically.

Soon after the operation she experienced considerable pain in the back and over superior portion of abdomen, which was not increased by pressure. Pulse became quick and full. At 8 P. M. she had experienced no relief, and was ordered half a drachm of the solution of muriate of morphia in the form of draught immediately, and repeated at midnight if necessary.

August 8th. The pain ceased at midnight. Had little sleep. To-day slight pain under false ribs of left side; otherwise easy. Pulse natural. She has passed more than fifty ounces of urine.

August 9th. Passed a good night; slight pain in abdomen on pressure. Amount of urine less than yesterday, but not measured.

August 16th. Since last report has been in the Surgical Hospital. Dr Bennett proposed to the acting-surgeons severally the operation of ovariotomy, which they declined to perform. To-day, accordingly, she returned to the medical ward. During the interval her general health has been good. The fluid in the abdomen, however, is again accumulating. By a careful examination the tumour can be ascertained to be quite free from adhesions to the anterior walls of the abdomen. These latter can be pulled forwards and held steady, while the tumour is made to roll free beneath. Passed during the last 24 hours eighteen ounces of urine. The liver was carefully percussed. Its extreme dulness in the right hypochondrium is three inches; it is pushed considerably upwards, the upper line of dulness being on a level with the nipple. She denies ever having suffered from dyspeptic symptoms, or so-called attacks of bile; and her general health is in every respect good, and the amount of urine discharged diminishing. Her general health is not so robust as when she first entered the house.

Dismissed from the infirmary August 24th. The fluid of abdomen somewhat increased in amount.

September 2d. After leaving the house she went into lodgings, having been placed by Dr Bennett under Dr Handyside's care. The fluid gradually accumulated again, and for the last three days has rendered respiration difficult. Yesterday, paracentesis was

performed by Dr Handyside, and about four gallons of fluid were removed. The character of the fluid was exactly the same as on former occasions, except that the flocculi were not so large and numerous. About an hour after the operation considerable pain in the abdomen came on, which continued until 2 A. M. this morning, notwithstanding two anodyne draughts. To-day is free from pain. Slight cephalalgia. Bowels not open since yesterday morning.

September 3d. This evening a consultation was held; present Dr Handyside, Dr Simpson, Dr Spittal, Mr Crabbe, and Dr Bennett. Patient is doing well; no pain; tumour very moveable, and distinctly felt, as after previous tappings. The propriety of ovariotomy was agreed on, Dr Handyside having now satisfied himself that this was a case urgently calling for the performance of that operation, and feeling that he could no longer conscientiously decline the proposal to this effect, previously made to him by Dr Bennett. To have half an ounce of castor oil.

September 4th. Partly vomited castor oil. Bowels open only slightly; is in good spirits; face pale and a little anxious.

℞. *Ext. Colocynth. c.* gr. x.; *Ext. Hyoscyam.* gr. v. *Ft. pil.* iii. s.s. A domestic enema in the morning.

September 5th. Bowels opened four times during the night, the last time at 8 this morning. In good health and spirits. Tongue clean. To-day the operation was performed by Dr Handyside, in the presence of Dr Beilby, Dr J. Y. Simpson, Dr W. Campbell, Dr A. D. Campbell, Dr Baillie, Dr Bennett, Mr Goodsir, and Dr Struthers.

Description of the operation and subsequent treatment up to October 3d. By Dr Handyside.

The operation was performed at half-past 12. The temperature of the room was raised to 72°. The patient was placed on a table before a good light, her feet resting on a stool, and her shoulders raised and supported by pillows. The other necessary arrangements for the operation having been made, Dr Handyside, now, standing to the right side of the patient, made, with a strong scalpel, an incision of about three inches in length through the skin and subcutaneous cellular tissue, midway between the umbilicus and pubis, and over the *linea alba*. This incision was deepened carefully, the *linea alba* divided, and the peritoneum reached. A fold of this membrane was pinched up with the forceps, and a small opening made into it. Through this opening some glairy fluid escaped, indicating that the cavity of the abdomen had been opened. With a probe-pointed bistoury the peritoneum was now slit open to the extent of an inch less than the

external wound. A large quantity of the glairy fluid then escaped, which occasioned some delay. Through this opening Dr Handyside now introduced two of his fingers, in order to ascertain that no adhesions existed on the anterior surface of the tumour. None being felt, the wound was now dilated upwards for other three inches. This was done with a probe-pointed bistoury, which was guided by two fingers introduced into the abdomen. Through this opening Dr Handyside now introduced his whole hand, in order to ascertain whether the tumour was adherent at any part of its surface. The hand was passed over, around, and down to the pedicle of the tumour, and the latter was found to be attached only by its pedicle, which was felt to be small. The operation was therefore proceeded with. From the size of the tumour it was evident that a large opening was required for its removal. Accordingly, the wound was extended upwards to rather more than midway between the umbilicus and the ensiform cartilage, and downwards to within two inches of the symphysis pubis,—the probe-pointed bistoury being employed as before. In dilating upwards, the umbilicus was avoided, the incision passing to the left side of it. Through the large opening the fundus of the tumour now presented, and the charge of it was committed to Professor Simpson, who drew it gently outwards. At this time, as well as before and after, care was taken to prevent protrusion of the intestines. This was done by Mr Goodsir, who, with both hands, pressed the edges of the wound downwards and backwards against the intestines and from the tumour. On the anterior aspect and fundus of the tumour were now observed several round smooth-edged apertures, through which some of the glairy fluid was seen to escape, being of the same character as that which had flowed from the peritoneal cavity, but rather more viscid in consistence. One of these openings was dilated with a bistoury, which allowed of the escape of a large quantity of the glairy fluid. This had the desired effect of diminishing considerably the size of the tumour. The pedicle of the tumour was next examined, and it was found to consist of the left broad ligament of the uterus, somewhat elongated and enlarged, but not altered in texture. The uterus was seen to be of normal size, though of a rose-red colour, and to be unconnected with the tumour, except through the medium of the ligament. The pedicle of the tumour being now put on the stretch by exerting slight traction on the latter, a strong curved needle, in a fixed handle, and carrying a strong double ligature, was passed through its middle. The double end of the ligature being divided, each half was tied separately, so that each included one-half of the pedicle. Some delay was occasioned by the difficulty experienced in tying the ligatures, as the elasticity of the part included caused the first

half of the knot to slacken before the other half could be thrown. The tumour now required to be removed. This was done by cutting carefully with a scalpel at about an inch beyond the part surrounded by the ligatures. In doing so a cyst, which had extended down to the pedicle, was necessarily opened, and some more of the glairy fluid escaped. During the division of the pedicle venous blood escaped freely from the tumour, but, after the removal of that latter, no bleeding occurred from the divided surface of the pedicle, although the mouth of at least one large artery was visible. The right ovary was now examined, and it was found to be enlarged to the size of a walnut, and to contain several small cysts. Accordingly Dr Handyside proceeded to remove it also. A needle carrying a double ligature was passed through the middle of the ligament of the ovary, and the ends tied separately in the same manner as on the other side. No bleeding followed the division of the ligament beyond the ligatures. The portions of the broad ligaments which were left were unaltered in structure. The four ends of ligature attached to each broad ligament were now tied together around the latter, and then three of the ends cut off so as to leave one only from each side hanging at the lower angle of the wound. The blood mixed with the remainder of the glairy fluid was now sponged carefully out of the lower part of the abdomen and the pelvis, which were exposed. The peritoneum lining the abdominal wall, as well as that covering part of the intestines, was now examined, and seen to be of a red colour, as from congestion or chronic inflammation ; but on no part was there any mark of the effusion of lymph. Beneath the part of it which lined the abdominal wall, the appearance as of numerous ecchymotic spots was visible.

Part of the intestines which were seen towards the termination of the operation, though they did not protrude, were quite natural in their appearance. All oozing of blood from the incisions in the abdominal wall having ceased, no vessel having required ligature, the edges of the wound, with the careful exclusion of the peritoneum only, were approximated and retained in accurate apposition by means of twisted sutures, ten of which were employed. Corresponding parts of the edges of the incision were indicated by the dark points and cross lines which were previously marked with the nitrate of silver, and which, on the now flaccid skin, were found to be of great use. A long pad of tint was now laid, as a compress, along each side of the wound, and a lighter one over it, and these were retained by broad strips of adhesive plaster. Lastly, over these pressure was made, and support given, by the ends of a double many-tailed bandage, which had been placed under the patient before the operation began, and which were crossed and pinned alternately at opposite sides of the abdomen. The patient

was then placed in bed, a dry blanket having been previously wrapped round the thighs and pelvis. The patient bore the operation well. At one time she felt faint, but syncope never occurred, so that no stimuli were given. The pulse never sunk below 80, but remained most of the time between 90 and 100. The operation occupied in all about forty minutes. Fifteen of these were occupied in the preliminary incision, examination and removal of the large tumour,—five in the removal of the small one, and twenty in sponging out the pelvis, introducing the sutures, and applying the compresses, straps, and the many-tailed roller.

September 5th,* 1½ P. M. Pulse 60.

To have one drachm of the solution of muriate of morphia.

3 P. M. Pulse 90, and of good strength.

4 P. M. Pulse 90, and full. She complains of acute pain of abdomen. To have two grains of solid opium in pill.

8 P. M. Pulse 100, and full. To have another grain of opium.

9 P. M. Pulse 100, and soft. The pain of abdomen now ceased on her being turned in bed. Eight ounces of urine withdrawn by the catheter, several ounces having been passed at 5 P. M.

12 P. M. Pulse 100. She complains of thirst. She has had no sleep as yet.

To have one drachm of the solution of muriate of morphia.

6th, 1 A. M. She complains of sickness, and has made some efforts to vomit. For this a drop of hydrocyanic acid was given.

3 A. M. She has had some more vomiting. The fluid vomited is thin, and of a green colour. No sleep as yet.

To have half a drachm of the solution of muriate of morphia.

10 A. M. She has lain in a drowsy condition during the night, but has had no sleep. Pulse 122, of moderate size, and soft; tongue rather dry; less pain of abdomen. Four ounces of urine withdrawn, some having been passed during the night.

2 P. M. Pulse 134, full, but soft. Complains of difficulty of breathing, from a feeling of constriction of the chest.

9 P. M. Pulse 148, full, and rather strong. Difficulty of breathing increased. Pain of abdomen less. She was now bled from the arm until the pulse became soft and compressible. She was bled in the recumbent posture, and twenty ounces were taken. After the bleeding the breathing became easy. Was ordered twenty drops of black drop.

11 P. M. Pulse 160, small and vibrating. She has passed urine twice during the day.

7th, 9 A. M. She has had some hours sleep towards morning. Passed urine freely during the night. Pulse 130.

2 P. M. Pulse 140. She has as yet taken no nourishment since the operation, except a little warm coffee. To have some warm

* From this time up to the 15th the case was treated in consultation by Drs Handyside, Bennett, J. Y. Simpson, W. Campbell, and Messrs Crabbe and Goodsir.

gruel. Fifteen drops of the "black drop" were now given, as she was restless and irritable.

9 P. M. Pulse 130. Has passed urine three times during the day,—the quantity each time being about four ounces. The bandage was now loosened for the first time. Some sero-purulent fluid oozed from around the ligatures. Except where the latter intervene the wound seems to be united throughout. The bandage was replaced, as she complained of a feeling of tightness of the abdomen. To have some beaf-tea and toast.

8th, 9 A. M. She has slept several hours during the night, and passed urine twice; pulse 120, and not so soft as before; skin hot and dry; complains of griping pain in abdomen; no motion of the bowels as yet. An enema of warm water to be administered.

2 P. M. Pulse 120. The enema has acted twice, but no intestinal matter has come with it. Griping still continues. The compresses were removed, and the wound dressed for the first time. Union by the first intention has taken place throughout, except where the ligatures interpose. Some sero-purulent fluid oozed from around the latter. Light compresses were applied along the side of the wound, and retained by a few straps, and the bandage was again replaced.

9 P. M. She has slept some time since last report. Passed urine twice during the day; bowels again moved in the afternoon, but no fæces in the stool; pulse 120.

It may be here stated, to save repetition, that she continued to pass urine regularly and freely, the quantity gradually increasing.

9th, 9 A. M. She has passed a good night, but her sleep has been occasionally interrupted by tormina, which caused several watery stools, with the passage of flatus. Pulse 120; skin cool. Has had some arrow root with new milk. She has also been troubled with flatulence and eructation, for which she was ordered half a wine glassful of a mixture of equal parts of milk and lime water occasionally, and she is to have "Dalby's carminative," one drachm for a dose, if the flatulence continues.

2 P. M. After a dose of each of the above the tormina and flatulence diminished. The wound was again dressed. The tepid water dressing was applied to the lower part of the wound. No tenderness of abdomen.

9 P. M. Had bread with milk to dinner. Bowels moved, and feculent matter in the stool.

10th, 9 A. M. She has slept a good deal during the night. Pulse 130, and soft; respirations 35; tongue white and furred; complains of tormina; wound discharging freely around ligatures. The three lower alternate needles were removed, and their places supplied by straps of adhesive plaster. To have chicken broth for dinner.

1 P. M. Complains of great tormina and restlessness.

℞ *Bismuthi Albi* ʒss.; *Olei Anisi* m. iij.; *M. et divide in pil.* vi. One of which she is to have every three hours.

6 P. M. She has had since last report two copious feculent stools. She is now irritable and restless; skin dry; tongue furred; expression anxious.

Let her have three grains of genuine James' powder with two grains of calomel.

9. P. M. Pulse and general condition as before. There is now tenderness of the abdomen, which is elicited by pressure over the iliac regions. This was the first symptom of local inflammatory action.

Twenty-four leeches were ordered to be applied,—and after the bleeding let her have gr. iij. of the *Pulv. Jacobi Ver.* and gr. i. of opium in pill, which is to be continued till the pain is abated and the frequency of the pulse diminished.

11th, 9 A. M. The leeches bled well last night. One of the pills was given, and in addition, two grains of solid opium during the night. After the bleeding she felt relieved, and she has passed a tolerable night; pulse 130, but softer; respirations 35, easy and full; skin moist; iliac region still the seat of pain though less than before.

Twenty leeches to be applied, after which let her have three grains of genuine James's powder, with half a grain of opium, which is to be repeated at noon. To allay thirst let her have some soda water with raspberry vinegar for drink.

2 P. M. Leeches bled freely, and she feels again relieved. The remaining sutures were removed, and union by the first intention is found to have taken place throughout. Discharge from around the ligatures free. Had milk and tea with rusk to breakfast, and to have broth for dinner.

9 P. M. Pulse 128; respirations 22.

12th, 9 A. M. Has had three of the opiate pills. Slept several hours towards morning; starts during her sleep, and awakes unrefreshed; pulse 120; tongue covered with whitish fur; skin warm and moist; wound discharges small sloughs of a blackish colour amongst the pus.

9. P. M. Pulse 120. Has had two opium pills during the day. She has slept occasionally. Bowels not open. To have half an ounce of the electuary of senna, and afterwards the yolk of a soft boiled egg.

13th, 9 A. M. Has passed a pretty good night. Bowels not yet moved, but she had an enema of warm water, which has just come away, but without bringing any fæces with it. Pulse 116; tongue cleaner. To have half an ounce of castor oil.

9 P. M. Has had five bilious stools since the castor oil was given. Feels much relieved. Has had beef-tea for dinner.

Pulse 108 ; tongue cleaner ; has occasional hiccough ; flatulent distension of the abdomen, which appeared yesterday, has subsided. To have sixty drops of the *Sol. Mur. Morph.*

14th, 8 A. M. Has slept several hours during the night ; pulse 108.

10 A. M. Pulse 120. Has taken an egg with rusk and coffee to breakfast. Wound discharging freely.

9 P. M. Pulse 102. Has had four scanty bilious stools since morning ; complains of tormina and eructation.

15th, 9 A. M. Has had no sleep during the night ; pulse 100 ; skin natural. To have two of the bismuth pills ordered on the 10th instant, and some beef-tea.

9 P. M. Has had two scanty motions of the bowels ; no eructations since the bismuth was taken ; pulse 118. To have twenty drops of the Lancaster black drop. To have farinaceous food only for the present.

16th, 9 A. M. Has had several hours' sleep. Has had other two bismuth pills, as the eructation returned during the night. Wound discharges freely sero-purulent matter, mixed with dark flocculi ; pulse 108.

9 P. M. Has had one free motion of bowels. Has had other two of the bismuth pills. To have one drachm of the *Sol. Mur. Morph.*

17th, 9 A. M. Has slept well during the night ; pulse 118.

9 P. M. Pulse 120 ; tongue natural ; she feels comfortable.

18th, 9 A. M. Has passed a restless night ; but has no particular complaint except a little cough. Bowels once opened during the night ; pulse 120. On auscultation no abnormal sounds could be detected. A sinapism to be applied to the sternal region.

9 P. M. Cough still present ; pulse 120, full and soft. To have one grain of opium with three grains of James's powder instead of morphia ; and to have a bottle of hot water to the feet. Bowels twice opened during the day.

19th, 2 P. M. Passed a good night. Had beef-tea and calf's-foot jelly for dinner. Pulse 120 ; has still a little cough ; discharge from wound very free, amounting to about three ounces at each dressing.

20th, 2 P.M. Had 80 drops of the *Sol. Mur. Morph.* last night. Slept well ; pulse 112 ; tongue covered with whitish fur, but moist skin, rather hot and dry ; bowels open.

21st, 9 P. M. Was restless last night. She is annoyed by irregular cough ; had three motions of bowels during the day. Has had 20 drops of the black drop, with the yolk of an egg. Sinuses discharging freely.

22d, 9 P. M. Feels better ; pulse 120 ; skin cool ; tongue

clean. Had two ounces of steak allowed for dinner to-day, with beef-tea and toast.

23d, 9 P. M. Had an opiate last night, after which she slept well. Has been restless during the day, with want of appetite ; pulse 120 ; discharge free. About three and a-half ounces of pus escaped at the dressing. The pus escapes more freely when she is raised in bed, and when slight traction is made on the ligatures. Cough continues ; no expectoration ; no râles audible in chest.

24th, 9 P. M. Slept well last night after the usual opiate. Had two ounces of minced collops for dinner. Appetite rather improved ; bowels open ; pulse 120, and sharp. To have 15 drops of the black drop, with one drachm of the *Aq. Acet. Ammon.*

25th, 9 P. M. Slept well last night. Had dinner to-day as yesterday. To have a little porter. Draught to be repeated to-night.

26th, 9 P. M. Feels better to-day ; pulse 116 ; tongue clean ; respirations 32, and thoracic ; appetite improved ; bowels open thrice during the day.

27th, 9 P. M. Had her opiate last night, and slept well. Has been troubled a good deal with eructation. She is now able to sit up in bed during her meals, and to read in bed.

28th, 9 P. M. Slept well after the draught last night. Eructations removed by a dose of the hydrocyanic acid. Bowels open twice during the day, and with tormina. For this she had 20 drops of the *Sol. Mur. Morph.* in half a glass of wine, made into negus. She sat up in a chair to-day and read for some time. The cough is now attended with slight mucous expectoration, but there is no pain of chest. Discharge less to-day. To have a grain of opium with three grains of James' powder, and to have no more malt liquor at present.

29th, 9 P. M. Slept well last night, but has been troubled a good deal with cough during the day. There is a scanty expectoration of clear, and sometimes of tough greyish-yellow tenacious mucus. She complains of soreness of the throat, extending down the larynx and trachea, but the fauces seem natural. On examination of the chest, the respiratory sound is normal, but loud anteriorly, and especially in the upper parts of the chest. In the lateral regions it is less distinct ; and posteriorly, especially in the lower parts, very feebly heard, and it is there almost inaudible during expiration. There are a few sonorous râles in the anterior part of the right axilla, on a line with the nipple, during inspiration. Pulse 112. To have a grain of opium.

30th, 9 P. M. Feels easy ; appetite improved ; still some cough ; pulse 120. To have 20 drops of the black drop, with a drachm of the *Aq. Acet. Ammon.*

October 1st, 9 P. M. Slept well last night ; bowels open ; pulse 130. To have an opiate.

2d, 9 P. M. She feels weaker, and has less appetite to-day ; but

still took two ounces of roast mutton with bread for dinner. Bowels thrice opened during the day; pulse 120. To have a grain of opium.

THE REMAINDER OF THE CASE IS REPORTED BY DR BENNETT.

October 3d,* 2 P. M. Dr Bennett on again taking charge of the patient found her pulse 120, weak; the discharge from the wound copious and fœtid; considerable diaphoresis and diarrhœa, the bowels having been open four times since last night's visit; and with loss of appetite. To have half an ounce of wine every two hours until the evening.

9 P. M. Has taken the wine regularly. Face somewhat flushed; pulse 112, of greater force; appetite improved; bowels open twice since morning visit. When she coughs air is sucked in, and forced out of the wound during expiration and inspiration. She feels the ligatures gnawing. On pulling the right ligature gently it came away together with a slough about three inches long, and the diameter of a crow quill. A quantity of pus followed, but no blood. The end of the ligature embraced the two loops which enclosed the halves of the pedicle. Immediately after the dressing the pulse was counted to be 132; ten minutes after it sunk to 114. This is the twenty-ninth day after the operation. To have a grain of opium. Omit wine.

4th, Notwithstanding the pill had a restless night. Discharge from wound abundant; pulse 132, weak; no appetite; bowels open four times during the morning; cough less troublesome. Considerable morning perspirations. Percussion of the chest every where good. No râles could be detected any where. Respirations short; chest not fully expanded. Inferiorly and posteriorly the inspiratory murmur is harsh, and the expiratory murmur is prolonged over the whole chest. Vocal resonance clearer than usual on the right side. Heart's action fluttering. To have a dessert spoonful of wine every two hours. Rice pudding with one egg. At night a dessert spoonful of castor oil.

5th, 2 P. M. Passed a tolerable night. Has taken wine regularly. Vomited the castor oil last night. Bowels have been open twice this morning. At present she complains of the cough, which causes her much pain in the seat of the ligature. The discharge from wound is abundant; pulse 140, soft; tongue clean; respirations hurried. Continue wine.

9 P. M. Dr Alison was invited to meet Dr Bennett and Dr Spittal in consultation, and he saw the patient at this visit. Bowels open five times since the morning; stools loose and feculent, with streaks of mucus floating in them; pulse 130,

* Dr Handyside at this period went into the country, leaving the farther surgical treatment of the case to Dr Struthers.

fuller. A thin purulent discharge squeezed from the wound. No tenderness of abdomen. To have one of the following pills every eight hours :—

℞. *Pulv. Opii* gr. i.; *Pulv. Plumb. Acet.* gr. ij.; *Pulv. Ipecac.* gr. ss. *Ft. pil.* Continue wine.

6th, 2 P. M. Has taken three lead and opium pills, which have checked the diarrhœa. Tongue clean; pulse 140, weak; morning perspirations. Omit pills.

9 P. M. Bowels have not been opened since taking the pills. Pain in the seat of ligature always induced on coughing. Pressure in the left iliac region causes pus to exude plentifully. Edge of the opening is somewhat wider, and the skin surrounding it is the seat of an erythematous blush, over a space the size of half a crown. Poultice to the wound. Continue wine. Meat soups, and nutritious diet.

7th, 2 P. M. Discharge from the wound this morning amounted to about two ounces. Pulse 140, soft; appetite improved; respiration hurried and thoracic.

9 P. M. On placing the trunk in a semi-erect posture pus flows freely from the wound without pressure. Pulse 130, very soft; feels weaker; bowels have been open three times during the day; stools natural, but soft. Skin covered with a damp sweat. Increase the wine to a tablespoonful every two hours. Repeat the *Pil. Opii c. Plumb.*

8th, 12 A. M. Bowels open once last night, and twice this morning. There is still cough, which is now followed by a tough expectoration. Occasional mucous râles are heard on inspiration over the posterior surface of chest. The inspiratory murmur, however, is generally harsh and dry; the expiration prolonged. Pulse 128, of greater strength. Discharge from wound less copious.

9th, 9 P. M. Since last report has been much the same. Discharge from wound this evening copious and thicker, mixed with small portions of slough.

10th, 2 P. M. On tightening the ligature, which is still firmly attached, about three ounces of thick greenish offensive pus flowed from the opening. On examining chest, a crepitating râle is heard for the first time about the middle third of left back, and inferiorly, sonorous râle, both with inspiration and expiration. Over the right back the respiratory murmurs are generally harsh, with increased vocal resonance, but no râle. Sputa are tenacious and slightly tinged of a rusty colour. To lie on the face as much as possible. To take a tablespoonful every four or five hours of the following mixture :—

℞. *Mucilag.* ℥i.; *Syr. Simp. Vin. Ipecac., aa.* ℥ss.; *Sol. Mur. Morph.* ℥ij.; *Aq. font.* ℥. *M.*

9 P. M. The report of this evening visit is in the words of Dr Struthers. Dr Bennett was not present. "For the last three

days the ligature has been pulled regularly at each dressing, with the view of at least accelerating its separation, but it has always firmly resisted the attempts at extraction. To-night, however, it suddenly yielded, when it was being firmly and steadily pulled at. The patient cried out that some one had struck her a severe blow on the belly, and she experienced considerable pain for a short time afterwards. The ligature was then entirely removed, having the same appearance as to loops and ends as the last one. No slough came with or after the ligature, but in the pus which preceded it were seen numerous flakes of dead tissue. Not a drop of blood followed the extraction of the ligature, neither was the latter itself tinged with it. Considerable pressure was made by pads over the iliac fossa and the umbilical region, so as to direct the pus towards the external opening. A little more force was used to bring away the ligature than is usually had recourse to in surgical practice; but it was thought to be very desirable that the ligature should come away, as the great discharge and irritation to which its presence apparently gave rise were evidently reducing the strength of the patient." This is the thirty-sixth day from the operation.

11th. 2 P. M. Amount of discharge from wound increased, amounting this morning to four ounces, of fœtid odour, mixed with shreds. Pulse 130, fuller; tongue clean; appetite improved; thirst less; bowels open once. Wine to be diminished to two drachms every two hours; omit lead and opium pills.

℞ *Opii* gr. i.; *Acid. Gallici* gr. ij. *Ft. pil.* One to be taken every eight hours.

℞ *Acid. Sulph. Dil.* ℥ij.; *Tr. Digit.* ℥iij.; *Sol. Mur. Morph.* ℥ij.; *Aq. font.* ℥xvj. A tablespoonful every three hours.

12th. 2 P. M. No material change. Bowels open once.

13th. 2 P. M. Cough has been very troublesome this morning; respirations still rapid and thoracic; expectoration tenacious, and slightly tinged with blood of a rusty colour. In right side of chest posteriorly, a distinct crepitating râle may be heard with the inspiration, and short sonorous rales with the expiration. Skin hot; pulse 140; tongue clean; bowels open once. Says that she is constantly hungry.

14th. 2 P. M. Much the same. No blood in sputa.

15th. 9 P. M. Less cough; pulse 120; bowels open twice; respiration still frequent and catching; no dulness on percussion could be determined. On left back, near spinal column in the middle third of chest, there is a space about the size of the hand, where both respiratory murmurs are harsh and exaggerated, with the vocal resonance of a shrill character. Crepitating rale has disappeared.

A blister to be applied to the left side early in the morning.

Oct. 20th. 2 P. M. Since last report there has been a marked improvement in all the symptoms. The blister rose well, and the cough and respiration have been easier. Mixture was not given. About one ounce of pus is discharged at each dressing. She has been eating animal food with appetite, and sitting up for an hour and a half daily. Last night she complained of severe tormina, increased on going to stool, and took one of the gallic acid and hyoscyamus pills. To-day the pain is still present occasionally. No tenderness on pressing abdomen. Bowels open three times last night and this morning. Blister nearly well.

To have a gallic acid and opium pill.

21st. 2 P. M. Has been taking vinegar and water three times a day for a few days.* With the exception of occasional tormina, doing well. Omit vinegar and water.

27th. Has had no tormina, and has been doing well since last report. To-day she was removed to another lodging in a carriage, under the care of Mr Crabbe, and bore the journey remarkably well.

28th,† 9 A.M. Expression of countenance much improved. Passed a tolerable night; had slight cough during the night, with no expectoration; chest examined with great care; respiration audible over the whole of the back, but more obscure on the right side inferiorly than on the left. Under the inferior angle of left scapula, over a space about the size of the palm of the hand, there was a distinct crepitating râle, loudest with inspiration. The vocal resonance here is also increased in intensity, but less so than formerly; and there is marked dulness on percussion. Anteriorly, bronchial respiration diminished. The inspiratory murmur is unusually harsh, but there are no anormal râles. Pulse 114; in other respects well. The wound discharges freely.

29th, 11 A. M. Passed a good night; discharge from wound slight; pulse 108; bowels open twice since yesterday. Absence of respiration over right back inferiorly, as high as lower angle of scapula; vocal resonance not increased; crepitating râle in left back diminished; little cough, very scanty expectoration.

℞ *Pulv. Digit.* gr. i.; *Sulph Quininæ*, gr. iss. *M. Ft. pil. Sumat* ii. *in die. Applicet. Emp. Lyttæ lateri sinistro* 2½ P. M.

30th, 11 A. M. Night somewhat restless, having experienced griping pains in the abdomen; bowels open at 9 this morning, since which the pains have diminished; tongue clean; blister was applied yesterday, but did not rise well; has no cough or expectoration; takes a breath without difficulty; respirations 36 in the minute. On sitting up, matter flows freely from wound.

* This had been given probably with the best intentions, but without the knowledge of the medical attendants, by a pupil who was assisting at the dressings.

† From this period the case was treated in consultation by Drs Alison, Spittal, Bennett, and by Mr Crabbe, whose attention throughout the case was most assiduous.

On pressing abdomen, an indurated, undefined swelling is felt beneath integuments immediately to the left and below the umbilicus. On pressure over the induration, the flow of matter is accelerated. About half an ounce of thick good matter discharged this morning. No tenderness; but feels slight pain on pressing deep.

November 1, 11 A. M. Has been doing well. At present feels easy; pulse 106, soft; tongue clean; respirations 26; on cough or expectoration. About two teaspoonfuls of good pus sponged from wound.

4½ P. M. About 1 o'clock, feeling excessively hungry, she took half a teacupful of arrow root, a small piece of roast beef, half a pint of strong soup, and a small piece of bread, without the nurse being aware of it. Immediately afterwards she experienced severe griping pains over the whole abdomen, followed by vomiting of the matters taken. She was seen by Mr Crabbe, who administered a few drops of the *Ol. menth. pip.*, which produced some relief, and ordered warm fomentations to the abdomen. After vomiting the pulse sunk to 80. At present the griping pains occur frequently with loud borborygmi. Abdomen somewhat distended, and generally tympanitic above the umbilicus. A curve of intestine is very prominent, and clear on percussion. Continued firm pressure on abdomen gives relief. Frequent vomiting of a greenish fluid. Pulse 100, soft. Cries for relief.

Dr Spittal, who was sent for at this time, administered five grains of opium, in the form of suppository.

2d, 12 M. Pain in abdomen only occasional. Had a good night. Still occasional sickness, bringing up a few mouthfuls of mucus. Tongue clean. An injection was given at 10 A. M., which has not yet come away. Pulse 98, soft. Injection to be repeated, with a little salt in it.

To have beef-tea and toast for dinner.

8 P. M. There has been no stool since 6 P. M. on the 31st. During the day there has been frequent retching, with discharge of mouthfuls of mucus. The coil of intestine noticed in the report of yesterday still prominent in abdomen, and tympanitic. Marked difference between fulness and distension above umbilicus, and flatness and collapse of abdomen below it. Pressure with points of fingers causes pain; but she is very irritable. Has had two injections, which have been for the most part retained, but no evacuation has been produced. Had nothing to eat; drank only a little coffee. Pulse 108; no shivering. Fomentations to abdomen.

℞. *Calomel.* gr. viij.; *Gum. Opii* gr. ij.; *Con.* q. s. *Ft. pil.* ij. *Sumat una stat. sumend.*

Four pounds of warm water to be injected slowly. If no motion by 12 o'clock to have a tobacco enema; six ounces of boiling water to fifteen grains of tobacco.

11 P. M. Injection of water was given about a-quarter of an hou

ago, and returned immediately, with much flatus and some small pieces of feculent matter. Uneasiness in abdomen has been relieved since. Had one of the calomel pills at 9 P. M. Pulse 100, of pretty good strength. Tobacco enema not given. Repeat the injection at 1 A. M., and again at 3 A. M., if bowels are not moved. Repeat calomel pills at 2 A. M. if requisite.

3d, 8 A. M. Slept occasionally during the night, and vomited twice. About 3 A. M. was very restless, threatening to get out of bed. Two injections have been given, also another pill, but no fæces have passed. At present countenance anxious; and pulse 120, smaller; tongue furred; great thirst; no appetite; still distension of upper part of abdomen, especially the knuckle of intestine formerly mentioned. There is slight tenderness on pressure.

Twelve leeches to be applied to the abdomen. Tobacco injection.

11 A. M.* The whole of tobacco injection, as formerly ordered, was not given. It was kept in ten minutes; produced considerable collapse, with tremors and vomiting. Pulse now 120, small; great thirst; swelling of abdomen somewhat diminished, and knuckle of intestine shifted higher up; no tenderness. Turpentine embrocation to abdomen. Large warm water injection.

℞. *Acid. Hydrocyan.* gtt. xii.; *Aquæ* ℥iv.; *M.* ℥ss. every two hours.

8 P. M. Mixture has been given regularly, but always vomited shortly after. Some matters vomited immediately before this visit have a distinctly feculent odour. Two large injections have been given, which have been returned without fæces. Expression of countenance flushed and febrile. Thirst continues; pulse 140, of good strength. Still tympanitic swelling of upper part of abdomen, but more diffused; the knuckles of intestine prominent. She is occasionally seized with spasmodic pains of abdomen, and then the knuckles of intestine become very prominent and tense. Slight discharge from wound. Dr Handyside passed a probe a short distance into the sinus, which brought away a little blood. Apply eight leeches to the abdomen, to be followed by warm fomentations.

℞. *Gum. Opii* gr. iss.; *Calomel.* gr. iij. *Ft. pil.* Injection with ℥j. of tincture of assafœtida.

4th, 8 A. M. Passed a restless night; rather quiet about 5 A. M. Vomited frequently till about 4 A. M. Leeches bled well. Complained last night for the first time of throbbing pain in the calf of left leg, and swelling of foot and ankle. To-day the whole limb is swollen as high as the groin, and a slight degree of indu-

* Dr Handyside was now again invited to meet the other practitioners in attendance, as it appeared to them doubtful whether any part of these abdominal symptoms depended on the state of the wounds.

ration is felt in the course of the femoral vein. Pulse 120, soft, and rather smaller; vomited little since 5 A. M; matter ejected during the night more feculent; bowels not opened; tongue furred; thirst great. It was agreed to apply the electro-magnetic aura to the abdomen, which was done by Dr Handyside. Immediately after, she vomited about a pint of thickish brown-yellow matter of feculent odour. Pills and injections have been given as directed; fomentations continued.

To continue the pills every four hours. Flannel roller to be applied to abdomen. Sugar of lead solution, with opium, to left lower extremity to be applied hot.

5 P. M. Has taken two pills since last report. Vomited occasionally, the matter being stercoraceous; leg less painful and less tense; no pain in abdomen, except on sudden and deep pressure; pulse 140; tongue slightly furred; thirst diminished. Has taken at various times a little coffee, milk, and biscuit, which, however, for the most part were vomited.

To continue pills. An injection at 9.

10½ P. M. Pulse 140, small, and soft. Has vomited three times since last report; matter vomited small; less feculent; abdomen softer and less swollen; no pain except on considerable pressure; no stool; flannel roller has been applied since 5 P. M.; countenance anxious; cheeks somewhat flushed. An injection immediately, to be repeated at 4 A. M.

One pill now, and another at 5 A. M.

5th, 8 A. M. Has passed a quiet night, having slept a good deal. Has taken two pills and two injections, the latter having been returned without feculent matter. At 12 M. had a little wine, as she felt faint. At 3 A. M. took a small cup of coffee and a portion of rice biscuit, which were retained; no vomiting since 10 last night; pulse varies from 126 to 135, easily excitable, small, and soft; tongue furred; still thirsty, but less so since 3 A. M.; pain of limb less; abdomen less distended and bears pressure better.

℞ *Calomel.* gr. iij.; *Opii* gr. ss. *Ft. pil.* 1 *quartis horis.*

An injection some time during the day. A desert spoonful of wine every four hours. Fomentations to limb to be continued.

10 P. M. Vomited a little about 10 A. M.; again at 4 P. M. Matter not feculent. Has taken from time to time a little coffee, with bread. Wine taken returns, and apparently produces "heartburn." Has had two pills since morning. No complaint of pain. Is generally in a drowsy state, but easily roused. Upper, anterior, and lateral part of thigh more swollen. There is also a deep redness over a portion of the skin. Discharge from wound rather increased. She is thinner, and when she lies on the left side, matter from the wound flows over the left groin, occasioning erythematous redness. Had an injection of warm water at 3 P. M.

returned without fæces; pulse 130, as before; abdomen tense and not so much swollen; loud borborygmi, heard at some distance from the bed. The stethoscope enabled amphoric resonance to be detected occasionally with these. To lie if possible on right side.

6th, 8 A. M. Between 10 and 11 last night had a warm water injection, which was returned in a few minutes without feculent matter. About 11 had a small beef-tea injection with forty drops of laudanum, which was retained. Had a pill at 11 P. M., and again at 4 A.M. Vomited at 2 and 7½ A. M.; matters ejected not feculent, but containing bile; abdomen less distended since last night, soft, and little or no pain on pressure; respirations decidedly show descent of diaphragm. There is still general enlargement of the limb, with an erythematic blush, extending from orifice of wound round to left hip, showing the surface over which the matter flows. She still lies constantly on the left side. Discharge scanty. Pulse 130, small. Thirst increased.

℞ *Ext. Colocynth.* gr. iv.; *Pulv. Scammon.* gr. iv.; *Ext. Hyoscyam.* gr. ij. *Ft. pil.* ij. s. s.

12¼ P. M. Lies a little on right side. Has slept at intervals during the morning, and taken a little coffee and bread, which has remained on the stomach. Complains of griping pains through the bowels. The aperient pills were retained.

8 P. M. About 2 P. M. had desire to go to stool. Nothing was passed, however, but felt sick and vomited a mouthful of matter, not stercoraceous. About 7. P. M. vomited half a basonful of dark-brown matter, decidedly feculent. At present pulse 140, of good strength. Tympanitic distension of abdomen disappeared; still loud on percussion, however, which is well contrasted with the perfect dulness below umbilicus; otherwise the same; no tenderness on pressure; swelling of leg and erythematous blush very much diminished.

Continue calomel and opium pills. To have beef-tea injection early to-morrow. One drachm of mercurial ointment to be rubbed into the axilla on both sides.

7th, 8 A. M. Vomited only once last night; matter bilious, not feculent; slept well; swelling of leg diminished; pulse 138, soft; otherwise the same.

Pills to be continued.

8 P. M. Had a beef-tea injection at about 10 o'clock, which was retained. Half an hour afterwards felt a desire to go to stool, but was unable to pass anything; then took the opium and calomel pill. About 11 had a teaspoonful of Dalby's carminative, which immediately induced vomiting. After this she felt very faint and exhausted. Three teaspoonfuls of sherry wine were then given in water. At mid-day a tablespoonful of yellowish fluid of feculent odour passed *per anum*. From this time till 5 P. M. small quantities of similar fluid, sometimes thick as cream, passed from the bowels, accompanied by considerable griping

pains in the abdomen. At 5 an injection of warm water was given, which was immediately returned with small lumps of feculent matter. She has since had two fluid feculent stools. Pulse 130, full; tongue clean, but dry; general appearance much improved; hungry.

℞ *Ext. Hyoscyam.* gr. x. s. s.; *Pil. Opii, si opus sit.*

To have coffee and bread, and in the night, arrow root.

8th, 11 A. M. Had short snatches of sleep during the night. There were, however, considerable griping pains in the abdomen. Since last report the bowels have been open twice, and loose feculent matter passed on both occasions, with small hardened portions of fæces. At present is suffering much from colic pains. The coils of intestine distended with gas, produce visible prominences on the surface of the abdomen. There are none of these, however, below the umbilicus. A small indurated mass may be felt, on the left of, and somewhat below umbilicus; matter discharged from opening more copious and of offensive odour; distension of leg gone, slight swelling of foot only remains; erythematous redness of left groin nearly disappeared; tongue slightly furred, rather dry; thirst; pulse 140, firm; appearance of exhaustion much less. Had a little coffee, bread, and a tablespoonful of wine during the night. An injection immediately.

℞ *Pulv. Opii*, gr. iss.; *T. Rhei*, gr. x.; *Syr. q. s. Ft. pil.* iv. Two for a dose. Hot fomentations to abdomen.

8 P. M. During the day had two stools, with small lumps of fæces. There have been tormina throughout the day, but less than formerly. To-night the upper part of abdomen is found still to be distended with air; pulse 144, firm; tongue furred and dry; thirst. Has had no nourishment, with the exception of a little coffee, which was again vomited. Skin hot, feverish.

To have draughts with ʒj. *Kali. Citratis et Vin. Antim.* gut. x. Draught at night, with *Sol. Morph. m.* xxv. Milk and water for drink.

Nov. 9th. 11 A. M. Passed a tolerable night; likes the effervescent draughts; vomited twice a slight quantity; is greatly exhausted and emaciated; tongue moist; less thirst; pulse 140, smaller. About two tablespoonfuls of soft feculent matter passed *per anum;* fever less.

Pil. Opii et Calomel. i. Milk and water for drink. Two teaspoonfuls of wine occasionally.

8 P. M. Has taken beef-tea and milk and water several times, but they have either been immediately vomited or retained a very short time. Between 1 and 4 P. M. had two stools, soft, but containing lumps of purulent matter and a little mucus. To-night pulse 140, thready; countenance anxious; eyeballs staring; ema-

ciation extreme. Has a sore on the left hip, the surface broken over the space of a five-shilling piece. Had one opium and calomel pill. Gums and mouth sore; spirits depressed, and expresses a fear of approaching death.

Beef-tea injection, with *Sol. Morph.* ʒj.; *Haust. c. Sol. Mur. Morph. M.* xxv. White-wine whey.

Nov. 10th, 8 A. M. Vomited much last night until 11 P. M. after which passed rather a restless night, with occasional sound sleep for short periods; pulse 150, small and more feeble. Had two drachms of wine six times during the night, and several times a little beef-tea. This morning had a wine-glassful of milk. Complains of mouth being hot and sore; countenance less anxious. Beef-tea injection was retained some time, and when passed was accompanied with much flatus. Sinapism was applied to epigastrium last night, but produced no relief. The upper part of the abdomen still distended. There are occasional tormina, preceded by loud borborygmi. Discharge from opening thin, fœtid, and tinging the bed-clothes blackish.

Repeat beef-tea injection with forty minims of solution of muriate of morphia; wine as before; beef-tea or milk for drink.

8 P. M. Passed the day tranquilly, with only occasional pain in abdomen. Appetite improved, asks for food; has taken four ounces of milk twice, and sometimes a few tablespoonfuls of beef-tea with a little bread. Two teaspoonfuls of wine have been given every hour; no vomiting. At present is tolerably easy; anxiety of countenance disappeared; voice more firm; pulse 130, firm; no motion; somewhat stronger. A beef-tea injection with forty minims of tincture of opium has been given and retained.

Lin. Sapon. c. Opio, to be rubbed on abdomen. *Haust. Anody.*

11th, 8 A. M. Passed a restless night from griping pains in abdomen and flatulency; vomited twice during the night; pulse 136; thirst; no stool; frictions on abdomen have produced no relief. Warm water injection.

8 P. M. During the day has vomited every thing taken; matters ejected are of a greenish hue, with flakes of mucus; bowels open slightly once, when about two ounces of feculent matter were discharged with several lumps in it; frequent desire at stool and tenesmus. At present pulse 140, of good strength; upper part of abdomen still distended and tympanitic.

℞ *Bismuth. Oxyd.* gr. x.; *Pulv. Opii* gr. ii. *M. Ft. pil.* iv. One every hour.

12th, 8 A. M. About one o'clock this morning the tenesmus and pain in abdomen have ceased; she had then taken two pills; has since been restless and vomited every thing taken; thirst; mouth very sore, with discharge of saliva; bowels not opened since last report; pulse 130, firm.

℞ *Ext. Colocynth.* i.; *Scammon.* gr. ij.; *Ex. Hyoscyam.* gr. i.; *Pil. Opii* gr. ss.; *Bismuth.* gr. iij. *Ft. pil.* ij. To be taken in four hours if the bowels are not opened. Fomentations and warm water injection.

7 P. M. Has slept occasionally during the day. Still continual vomiting of ingesta; has taken pills; no motion; abdominal pain and griping less severe; injection would not pass; pulse 126, weak; is very restless; hands and feet cold; countenance sunk; dark areola round the eyes. To have large warm water injection.

℞ *Pulv. Opii* gr. i.; *Bismuth.* gr. vj.; *in pil.* ij.

The warm water injection was given easily about 9, and was retained several minutes. When returned it brought away only one piece of feculent matter the size of a bean. Vomiting commenced shortly after. The coldness of extremities now increased. She complained of want of breath, *tinnitus aurium*, and frequently turned from side to side. Hot bottles were applied to the hands and feet, and they were also rubbed assiduously with warm flannels. Wine given freely, but was always vomited. Pulse small, weak, and thready. The pills were vomited. About 11 P. M. the restlessness was somewhat abated, and she expressed a desire to go to sleep. After lying some time, she requested the nurse to raise her up. This was done, when she fell back and expired, without a groan or struggle, at ten minutes after 12 o'clock, —the 70th day after the operation.

Examination of the body, November 14*th*, 4 P. M. Present, Drs Alison, Simpson, Spittal, Cowan, A. D. Campbell, Handyside, Bennett, and Mr Crabbe.

The body was greatly emaciated.

The *head* was not opened.

Chest.—The cavity of the pleura on the left side contained about one ounce and on the right about two ounces of serum. On the left side the pleuræ were adherent so strongly, that the lung was lacerated in removing it: this more especially between the inferior surface of the lung and upper surface of the diaphragm. On the right side the pleuræ were adherent at the apex, and over inferior lobe, but the adhesions were easily torn through.

The anterior margin of the upper lobe of the *left lung* was emphysematous; its posterior portion slightly engorged. On section it crepitated readily, and was healthy in structure. The inferior lobe felt dense externally, and on section the parenchyma was of a brownish red colour; splenified; easily breaking down under the finger, and portions of it placed in water sunk nearly to the bottom of the vessel. The two upper lobes of the *right lung* very emphysematous anteriorly, engorged posteriorly and inferiorly, but

otherwise healthy. The anterior half of the inferior lobe also emphysematous, with here and there indurated patches of chronic lobular pneumonia. The posterior half of this lobe was splenified throughout, as in the opposite lung. The lining membrane of the bronchi was healthy, here and there covered with mucus. Both lungs were small in volume.

The *heart* was small and pale. Its right cavities contained a firm dark coagulum. The valves and structure of the organ healthy. In the aorta there was a small but firm coagulum, partly decolorized.

Abdomen.—On reflecting the walls of the abdomen, a few chronic bands of lymph were torn through, uniting the opposite portions of peritoneum. The line of incision was firmly united except at its lower end, where a round opening existed about the size of a pea. On the peritoneal surface the union was marked by a dark blackish line, which was perfectly smooth and free from lymph. The omentum was thin and transparent, destitute of fat, and stretched tightly over the intestines. Its inferior margin adhered strongly to the visceral and parietal peritoneum, about an inch above the pubic bones. The omentum was cut through transversely about its middle, and the intestines below exposed, which were greatly distended with gas. These were found to be portions of the ileum, the coils of which were more or less adherent to each other, to the mesentery, omentum, and to the neighbouring organs by bands of chronic lymph. The adhesions were now carefully torn through, the gut liberated and traced downwards. Exactly five feet and a half from the cæcum, above and to the left of the umbilicus, the intestine was constricted by a band of lymph, as if a ligature had been tied round it. Above the constriction the gut was distended to about the size of the wrist; below, it was collapsed to the size of the little finger. Air could be pressed from the superior portion into the inferior, but the passage of water poured from above was completely checked at the seat of stricture. All the intestines above the stricture were greatly distended with gas; those below it, including the cæcum, colon, and rectum, were small and collapsed.

The cavity of the pelvis was blocked up, and separated from the general cavity of the abdomen by firm adhesions between the surfaces of the abdominal walls, the omentum, and knuckles of intestine. The peritoneum in this place, and especially in the left iliac hollow, was covered with a dense layer of chronic lymph. This lymph was about one-eighth of an inch in thickness, of a dirty greenish colour, mixed with black pigmentary matter, of great hardness to the feel, and cut under the knife like cartilage. With some trouble the united knuckles of intestine, and portions

of omentum involved were separated and drawn out. A cavity was thus exposed, about the size of an orange, situated between the uterus and rectum, lined throughout by the same dense, chronic lymph spoken of above. The anterior surface of the uterus was firmly united to the bladder by chronic adhesions. On the right side about one inch of the Fallopian tube and broad ligament remained, the extremities of which were closely united to the anterior wall of the cavity. On the left side the margins of the uterus and short pedicle of the broad ligament were so united to the walls of the cavity that they could not be separated. This cavity or pouch between the uterus and rectum communicated with the external opening, and was evidently the place where the pus during life had accumulated. A sinus opened into it superiorly, which on being traced upwards was seen to extend, above the descending colon, between the peritoneum and intestines as high as the diaphragm on the left side, where it terminated in a cul de sac, the size of a hen's egg. The sinus was about the size of the little finger, and lined throughout by the same dense, greenish lymph formerly noticed. The cul de sac was full of dirty-yellow offensive pus, and bounded by a portion of the stomach and left lobe of the liver internally; the diaphragm above and posteriorly; and the colon and spleen externally and inferiorly. It also was lined with dense chronic lymph.

The mucous membrane of the stomach and small intestines were healthy. The latter contained a clayey coloured soft feculent matter. The large intestines were empty. No appearance of inflammation existed at the constricted part. The internal surface of the rectum, extending seven inches from the anus, was intensely vascular, thickened, and inflamed. Six ulcers, varying in size from a sixpence to that of a shilling, were scattered over the diseased part of the gut, one of the largest being only an inch from its extremity. They were round in shape, and covered with a raised dirty greenish slough.

The *liver*, *kidneys*, and *spleen* were anemic, but healthy in structure.

The *femoral* and *saphena veins* could be felt hard and distended below the integuments. On dissection, these, as well as the external *iliac vein*, up to the point where it passed under the layer of lymph, in the left iliac hollow formerly described, were found to be obstructed by a coagulum of blood. This coagulum was adherent to the internal wall of the vessel, was partially decolorized, and of the consistence of soft cheese. This obstruction of the vessels ceased about three inches below Poupart's ligament.

Description of the tumours removed.

The tumour which involved the left ovary on being removed weighed nine pounds and a half. It was of an oval form, and measured thirteen inches in its longest, and nine inches and a half in its shortest diameter. Its envelope was composed of white, dense, and glistening fibrous tissue, having upon its external surface patches of various sizes, resembling chronic lymph. On its anterior surface might be seen openings, or ulcerations, varying in size.

The edges of these ulcerations were smooth and rounded, and of the same thickness as the fibrous envelope. The cut surface, which had been near the ligature, now presented a large opening into the tumour, through which numerous cysts, varying in size from a pea to that of a billiard ball, protruded. The incision into it, made during the operation, had opened up one of these cysts about the size of a cocoa nut.

Dr Bennett and Dr Handyside sent the tumour to the University Museum, where Mr Goodsir was forming a collection of these growths. By him it was minutely injected, and afterwards cut up, in order to show its internal structure. In dividing it, some of the internal cysts were found to be full of pus, whilst others contained the usual glairy fluid, common to these tumours.

Three preparations were made from this tumour, which may be seen in the museum, and which demonstrate the following facts.

1*st.* A portion of the fibrous sac, showing the attachment of numerous cysts varying in size and shape. A minute injection has been thrown into the arteries? and exhibits how richly the walls of the internal cysts are supplied with blood-vessels. One of these cysts, about the size of a small hen's egg, has its upper half fully injected, whilst the lower half is pale. The margin between the two is uneven but abrupt, and from the creamy and distended appearance of the cyst, there can be no doubt that it is full of pus.

2*d.* A portion of the fibrous sac, showing the incision which separated the tumour from its attachments. The opening is of an irregular form, about three inches in its longest diameter.

3*d.* A portion of the fibrous sac, showing the ulcerated openings formerly described.

The left ovary was about the size of a walnut. It was formed externally of a dense fibrous capsule, and internally of several small cysts. The natural stroma of the organ had entirely disappeared.

Remarks by Dr Bennett.

The question I have frequently asked myself is, was I warrant-

ed in proposing and urging others to perform the operation? The reasons that induced me to do so were the following,

1*st*, The youth and good constitution of the patient.

2*dly*, The disease was rendering her life miserable, and she earnestly wished the operation to be performed.

3*dly*, Death seemed unavoidable at no distant period. At least, it could not be anticipated that five gallons of fluid could be removed from the abdomen every three weeks, for any length of time, without injury to the vital powers.

4*thly*, Extirpation of the tumour appeared to be the only rational means of cure.

Again, on looking at the most recent statistics of the operation, published by Dr Atlee,* I found that abdominal section has been performed for ovarian tumours, real or supposed, 101 times. If we extract from this list cases where the operation was not completed, and those on the point of death before the operation was begun, we shall have ninety remaining, in all of which the tumour was excised. Of these sixty-two recovered and twenty-eight died. Thus, whatever may be thought of the correctness of the statistics, the broad fact still remains, that an ovarian tumour has been extracted from living women in sixty-two cases with perfect success. An acquaintance with the structure and mode of development of these growths must convince us that the only other possible mode of cure is by rupture of the cyst, and then only under particular circumstances. This I shall endeavour to show in a separate paper. At present it need only be said that this is an occurrence of extreme rarity, and yet, were we to be guided by the opinions of those surgeons who refuse to perform ovariotomy in any case, no other termination is to be expected, and the disease, notwithstanding the facts previously stated, is to be considered as irremediable by art. But every case must stand upon its own merits, and when all the circumstances of the one detailed are taken into consideration, the perfect diagnosis that was established, and the probability of a speedy fatal termination, (a probability afterwards rendered certain by the suppuration discovered to exist within the cysts), it must be granted that the operation, if admissible at all, was so in this instance.

An important practical question presents itself in regard to the treatment after the operation, on which there is a difference of opinion among the practitioners who witnessed the case and dissection, viz. how the cavity or pouch containing pus, between the uterus and rectum, and the sinus leading from it up to the diaphragm, were connected with the pressure made on the abdomen by the many-tailed bandages and compresses, in order to direct the

* American Journ. of the Med. Sciences, April 1845.

matter towards the external opening. Some have thought, that the pressure employed, instead of directing the matter downwards, may have forced a portion of it upwards; while others are inclined to believe, that if the pressure, which latterly was much relaxed, had been more steadily continued, the formation of that cavity and sinus might have been prevented. The question is important, however, rather in reference to the proper treatment of future cases, than to the fatal event of this case; for the symptoms of ileus and the death of the patient were obviously dependent on the constriction of the portion of ileum above noticed by a band of lymph which was at the distance of some inches from any part of the wound, and had no connection either with the cavity or the sinus.

Although various lesions were found after death, their origin and connection with each other will easily be understood from a perusal of the case, and of the *post mortem* examination.

Notwithstanding the unsuccessful termination of this case, I am still of opinion that ovariotomy is warrantable *when the diagnosis of the tumour is certain, and the other circumstances favourable.* The more frequently it is performed the more readily will experience dictate the avoidance of many errors that even now encumber the practice of it. When once recognised as a legitimate mode of treatment, and only performed in appropriate cases, there is every reason to hope, from the experience of the past, that the degree of mortality which has hitherto accompanied it will gradually diminish. Before such a result can be hoped for, however, it is necessary that our notions of the pathology and diagnosis of the disease should be improved. To these subjects I shall advert in a separate communication.

Remarks by Dr Handyside relative to the operation of Ovariotomy in general.

In the divided state of opinion existing among surgeons, relative to the propriety of undertaking the operation of ovariotomy, the profession may naturally look to me as responsible for the step taken in the case now narrated; and expect a full statement of the reasons that led to the performance of that operation.

It is acknowledged, that the only justification and full warrant for such surgical operations as involve imminent peril and hazard, —(such as lithotomy, the ligature of a large artery, the operation for hernia, amputation through the thigh, ovariotomy, &c.,)—rest on this ground, that *their performance is essential to the preservation of the patient's life.* Thus, the patient in the present case had been much reduced by repeated tappings, the last three of which were found to be necessary during the very limited space of

about three weeks; and this was not a case similar to those described by Martineau, Portal, and others, which "amply attest the protracted duration of life in association even with this stage of the affection." But there are other important conditions which must coexist with the above requirement in order to warrant the step of a capital operation, such as that of ovariotomy. These are, *secondly,—the establishing a clear diagnosis* in a proposed case of ovariotomy, so as to determine accurately that the tumour is not malignant or of solid consistence, that it presents no serious adhesions, and that the uterus is not involved. *Thirdly,—that there is no hope of a palliative cure, or of a spontaneous declension in the severity of the urgent symptoms. Fourthly,*—that *there is no co-existent disease* or condition of the system such as contra-indicates capital operations in general. *Fifthly,*—that the patient and her relatives, on being made acquainted with the danger attending the operation, express their urgent request for its performance. *Sixthly,*—as to the *statistics* of the operation, I refer to the *Edin. Med. and Surg. Journ.* for April 1844, and to the *Monthly Journal of Medical Science* for February and May 1845, and January 1846; although these are *by no means unfavourable* as argument for its performance, still I would not make use of them as such, for these reasons: First,—that many cases in which the operation had been most recklessly and unjustifiably performed are included in these tables, which have thus perverted the statistical results, and made the operation appear in a less favourable light; and, Secondly,—because surgical statistics in general stand broadly forth against the performance of many universally recognised capital operations, for instance, some of the larger amputations, &c.

I am no advocate for the operation in cases such as those in which it has been generally had recourse to. Like many other surgeons, I had been previously prejudiced against and averse from the operation, (which aversion was in no degree lessened by the circumstance, that some Edinburgh surgeons had previously refrained from undertaking the operation in the present case); but, after a careful examination of the subject, I was forced to the conclusion, that it is the duty of the surgeon, *in certain rare cases*, to recommend and to practise the operation, and the case submitted to my care appeared to be one of those. This view I adopted only after having been informed of the opinion of those of my professional brethren versant in obstetric diagnosis, who concluded along with myself, that the tumour was non-adherent throughout; —that it was attached only by an elongated pedicle, the broad ligament;—that the uterus and peritoneum generally were healthy; —and that the fluid in the abdomen was either the result of the

ritation of the peritoneum from the presence of the tumour, or e produce of the tumour itself.

Such cases differ from those which generally come within the ovince of the surgeon, as, in arriving at a decision as to the pro- iety of the operation, he thus manifestly requires the co-opera- on of a skilful obstetrician, and hence a probable reason for the nfavourable reception that the operation had met with from the ajority of operating surgeons—the tendency to which has been no way lessened by the undeniable circumstance, that really lit- e or no surgical skill is required for its accomplishment, and, nsequently, that no credit for anatomical knowledge, or surgi- l dexterity, can accrue to the operator,—for in my opinion, the eration requires less of these qualifications than even the com- on operation of amputation through the leg.

I add that, while a diagnosis in most other cases requiring sur- cal operation can generally be at once and easily made by the rgeon himself,—much care, and repeated examination of the pa- ent, are required in cases submitted to him for ovariotomy, as in e present case, in which he had not decided on the operation ntil he had made repeated examinations of the patient, both be- re and after, as well as during the last tapping. In this way a agnosis was formed which has been amply verified, and which nfirmed the original view taken by Dr Bennett.

Lastly, I must protest against the indiscriminate performance the operation, and in such rare cases as the present, *but in such ly*, I am quite ready to repeat it.

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PATHOLOGICAL AND CLINICAL OBSERVATIONS

ON

ENCYSTED TUMOURS OF THE OVARY.

Cases of ovarian dropsy are by no means unfrequent, and their diagnosis and treatment are so confessedly imperfect, that the following observations may not be destitute of practical utility, at a time when the disease, and its cure by extirpation, are strongly engaging the attention of the profession.

The subject of encysted tumours of the ovary has been considerably elucidated by numerous writers, but more especially by Hodgkin, Seymour, Bright, Cruveilhier, and Müller. From these it would appear that the ovary may be the seat, 1*st*, of a simple cyst; 2*d*, of a compound cyst, formed of a capsule containing a number of secondary cysts; and 3*d*, of similar cysts more or less combined with a sarcomatous structure, generally considered of a malignant nature. The first of these seldom becomes larger than an orange, and is for the most part only detected after death. The two latter frequently reach a large size, and contain several gallons of fluid, constituting what has been called ovarian dropsy. In these cases the accumulation of fluid sooner or later interferes with the process of respiration, so as to render paracentesis necessary. This operation is repeated again and again at shorter intervals, until the patient sinks. On dissection death is found to have been occasioned by peritonitis, by suppurative inflammation within the sac, or by exhaustion.

The source of the fluid, removed by tapping in ovarian dropsy, has not hitherto been determined. On some occasions it exists within the cavity of the abdomen, and the tumour can be felt to move or float in it, at others it is confined within the cyst. Thus some have conceived the fluid to be ascitic, that is, independent of the ovarian disease. In the case of Fleming,* it was argued that the removal of the tumour could not for this reason cure the dropsy; and yet in most of the successful cases of ovariotomy more or less fluid has been found to exist in the peritoneal cavity.

The first case that pointed out to me the true origin of the fluid was the following:—

Case 2. *Ovarian dropsy—23 Imperial pints removed by paracentesis—Death by peritonitis—Compound encysted tumour of the right ovary size of a cocoa nut—Round ulceration on its anterior surface—Simple encysted tumour of the left ovary size of an orange.*

Jane Westwater, aged 49, unmarried, was admitted into the clinical wards of the Royal Infirmary, March 12, 1845, labouring under great swelling and tension of the abdominal walls, apparently from ascites. On the 27th the surgical clerk performed paracentesis, by means of an incision, an inch and a-half long, made through the abdominal walls. Twenty-three imperial pints of a clear brownish fluid were removed. A hard oblong tumour could now be felt in the lower part of the abdomen on the right side. On the 29th she complained of pain and tenderness in the lower part of the abdomen; pulse was 90, small and soft; no vomiting. In the evening the pulse became scarcely perceptible, the countenance anxious and haggard. Delirium supervened, and she died at five A. M. on the following morning.

Sectio cadaveris.—April 1, one P. M.

Head not opened.

Chest.—Pectoral organs, with the exception of firm adhesions between the pleuræ of right side, healthy.

Abdomen.—The peritoneal cavity contained about a gallon of turbid sanguinolent fluid, in which floated numerous flocculi of recent lymph. Nearly the whole of the serous surface was covered with recently exuded lymph, which feebly united the intestines to each other. The cavity of the pelvis was occupied by a tumour, the contents of which, as determined by the feel, were evidently partly fluid. It was about the size of a fœtal head, or cocoa nut, of an oblong form, and of a dark-red colour externally, from the numerously distended veins which ramified on its surface. About the centre of the tumour anteriorly was a round perforation, with thickened edges the size of a four-penny piece, through which, on pressing the tumour, a gelatinous milky fluid could be made to flow. This perforation was at least six inches below the incision

* Case 1. That of Jessie Fleming, reported in the same number of the Journal

made into the abdomen to evacuate the fluid. On removing the uterus and its appendages the tumour was found to be a development of the ovary, the broad ligament being considerably elongated. The left ovary was expanded into a smaller tumour, about the size of an orange.

On bisecting the larger tumour it was seen to be composed of various cysts, varying in size, the largest being about as large as an orange. They were for the most part filled with a gelatinous milky fluid, but a few contained recently extravasated blood. Between the cysts was a purplish jelly-like substance, which, on pressure, exuded blood, and a milky fluid. The smaller tumour, on being cut into, was found to be composed of a single cyst. It may be seen injected in the University Museum.

Microscopic examination. — The gelatinous milky fluid within the cells of the larger tumour contained numerous corpuscles, varying in character and size. Some were one-fiftieth of a millimetre in diameter, containing a nucleus and several minute granules. Others were one-one-hundredth of a millimetre in diameter, more transparent, containing a few granules, and resembling plastic corpuscles. (Fig. 1, *a* and *b*.) These isolated cells were mingled with numerous granules and a few drops of oil. There were also groups of nucleated cells of two kinds, the one flat, hexagonal, or oval in shape, resembling pavement; the other caudate, resembling ciliated epithelium cells. (See Fig. 1, *c* and *d*.) The purplish jelly-like substance surrounding the cysts was composed of a net-work of fine filaments, interspersed with numerous granules, and the isolated corpuscles above described.

Remarks.—It must be evident that the amount of fluid removed by tapping, namely 23 imperial pints, could not be contained within a tumour the size of a fœtal head Neither could this fluid have been the result of peritonitis, as although brownish, it was clear, and the lymph found exuded after death was evidently recent. Again, as the liver and other abdominal viscera were healthy, there was no reason to suppose that the dropsy was owing to venous congestion. It must be concluded, therefore, that the fluid was secreted within the tumour, and passed into the general cavity of the abdomen through the opening in its walls formerly described.

It was at first considered that the perforation discovered in the tumour was caused by a puncture, but its round and thickened margin, its distance from the external wound, and the mode in which that wound happened to be made, viz. by incision instead of with a trochar, forbade such an opinion. We must then consider the opening described as an ulceration, occurring in the walls of the sac. Such ulcerations are very common in the external envelope of ovarian tumours;* and when they occur the pe-

* See case of Jessie Fleming.

culiar viscous fluid secreted within the cysts of the tumour flows through them, and accumulates between the tumour and the abdominal walls.

This explanation of the source of the fluid, and its situation in the peritoneal cavity applies to the majority of ovarian dropsies. In a few instances, however, adhesions occur between the tumour and peritoneum, preventing this kind of accumulation, as in the following case.

Case 3.—*Ovarian dropsy—Frequent tappings—Death from exhaustion—Large encysted tumour of left ovary, consisting of one multilocular sac, adherent to the whole anterior parietes of abdomen—Complete suppuration within the sac.*

On the 5th of September 1845 I was requested by Professor Simpson to open the body of a lady, who had long suffered from ovarian dropsy, and been tapped several times. She died much emaciated, with symptoms of hectic fever and exhaustion, but without any signs of peritonitis.

Sectio cadaveris.—The abdomen was much distended with fluid, forming a round globular swelling, very different from the undefined and uniform enlargement occurring in ascites. A puncture was made into the right and depending portion of the tumour, when its fluid contents gushed out in a continuous stream. About three gallons were taken away altogether, the first portion coming off resembling clear coffee, and the latter dirty yellow pus. On opening the abdomen it presented one large cavity, lined throughout with a layer of flocculent purulent lymph, of the same dirty yellow colour as the fluid removed. None of the viscera could be seen. It was soon evident that I had opened a large sac connected with a jelly-like substance of a cauliflower form, about the size of the fœtal head, situated immediately under the false ribs on the left side. The sac was closely adherent to the anterior wall of the abdomen throughout, by somewhat tenacious adhesions, which, however, could easily be torn through. I carefully separated these adhesions, and, with the exception of the first incision, removed the sac entire. It was not adherent posteriorly. The jelly-like tumour was developed in the left ovary, and by the expansion of the sac, and elongation of the broad ligament had been drawn into the situation described. The uterus and right ovary were healthy. On removing the morbid structures the intestines and abdominal viscera were brought into view, which, although displaced from their natural position by the tumour, were in structure healthy.

I had no time to make a very minute microscopic examination of the morbid structures, as they were sent to the college museum, and immediately injected by Mr Goodsir. I satisfied myself, however, that the jelly-like mass was wholly composed of primitive filaments, mixed with granular exudation corpuscles, and patches of pigmentary deposit, (Fig. 2.)

Seven preparations were made from the diseased structures in

this case, which may be seen in the university museum, and exhibit the following facts :—

1. A portion of the sac, almost healthy in structure, showing the bands and imperfect septa which give these tumours internally a multilocular appearance.

2—5. Four portions of the sac injected, showing the different degrees of suppurative inflammation, and of vascularity, in various parts of the sac internally.

6. Shows the expansion of the broad ligament over the external wall of the tumour, its elongation, and the fimbriated extremity of the Fallopian tube enlarged and standing out from the morbid growth. The uterus and opposite ovary are seen to be healthy.

7. A portion of the jelly like tumour attatched to the internal and thickened membrane of the sac, partially separated from the fibrous envelope. It now resembles a mass of flakes and membranes, into which the injection has scarcely penetrated. A cyst, the size of a walnut, may be seen cut through and attached to the sac, at the lower part of the preparation.

Remarks.—In this case the adhesions anteriorly and laterally, and the support given to the tumour posteriorly, had prevented pressure from within being so directed as to cause ulceration in the external sac. Internally, however, nearly all the cysts had burst into each other, and the tumour presented the last stage of development of these growths, viz. one enormous cavity with the traces on its internal surface of previous cysts. Under these circumstances, inflammation followed by suppuration took place ; no peritonitis occurred, and she died exhausted.

The following is another instance of the disease, which went through all its stages.

Case 4.—*Ovarian Dropsy—Several tappings—Death by peritonitis—Tumour of left ovary consisting of one multilocular sac—Various adhesions—Partial suppuration within the sac.*

Elizabeth Hayden, aged 23, unmarried, entered the Royal Infirmary March 17, 1845, and was treated successively by Dr Alison and Dr Christison.

The abdomen was first perceived to enlarge two years ago. She entered the Carlisle Infirmary, where, six months after the commencement of the swelling, paracentesis was performed. Since then she has been tapped twice.

On admission, her general appearance is that of perfect health. She complains, however, of occasional lancinating pains in the right iliac region. The abdomen is much enlarged, with distinct fluctuation ; urine scanty. On the 28th paracentesis of the abdomen was performed, and nine imperial pints of very tenacious, transparent, colourless fluid were withdrawn. It closely resembled white of egg. On the 31st of May she complained of severe pain in the abdomen and back, and some vomiting of bilious matter. There was tender-

ness of the right hypogastrium, and the descent of the diaphragm was impeded. She was relieved by bleeding and antiphlogistics, but the pain returned on the 2d of June, accompanied by bilious vomiting. These attacks of pain, tenderness of abdomen, and vomiting, continued with more or less intermission, until July 1st, when she was again tapped, and thirty-five lbs. of glutinous fluid of specific gravity 1010 drawn off. July 7th, a firm tumour could be felt, most distinct immediately above the umbilicus. The pain and tenderness now increased, but were occasionally relieved by leeches. The vomiting, which was very distressing, ceased on taking a naphtha mixture. A marked change has occurred in her general aspect since the last tapping. On the 22d she had become much debilitated ; her healthy condition has disappeared. The countenance is now pale, anxious, and haggard. There is great general emaciation. The pulse is frequent and feeble. On the 24th her sister conveyed her to Carlisle in a very exhausted state, where she died August 18th. Dr Thomas Elliot of that city has kindly informed me that the symptoms which preceded death were most excruciating suffering, a feeling as if something had given way or " burst" in her bowels ; and a diminution of size and softening of the abdomen. Shortly after the occurrence of these sufferings, she fell into a state of collapse, the pulse could not be felt, and she sunk rapidly.

Sectio cadaveris.—The incision into the abdomen opened a large cyst developed in the left ovary. It contained about two gallons of greenish pus, mixed here and there with a transparent glairy fluid. On attempting to remove the whole morbid structure, it was found to be adherent to the transverse arch of the colon and great omentum posteriorly ; and to the peritoneum lining the anterior wall of the abdomen anteriorly. The peritoneum generally was much inflamed and thickened, and its cavity contained a quantity of the same fluid as was found within the cyst. The bowels, uterus and opposite ovary were healthy. The tumour was sent by Dr Elliot to Professor Simpson. It was injected by Mr Goodsir, and the preparation may now be seen in the University museum.

This preparation exhibits one-half of an encysted tumour of the left ovary, with its relation to the healthy uterus. It is of an ovoid form, about fourteen inches long and ten broad. Internally three large sacs formed by imperfect septa may be seen, with several smaller cysts, size of walnuts, attached to the sac. The lining membrane resembles a mucous surface, and has evidently in some places been the seat of suppurative inflammation. In these portions the injection may be seen to have penetrated much more freely than in other parts of the sac. Externally the fibrous structure of the external envelope may be seen injected. The Fallopian tube and broad ligament much elongated, the latter apparently expanded over the tumour.

Remarks.—In this case we have an excellent opportunity of studying the symptoms in connection with encysted disease of the

ovary. It is particularly worthy of remark, that the general health and constitution continued good up to the period when inflammation of the cyst occurred. The girl, when I first saw her in the clinical ward of the infirmary, presented all the appearances of perfect health. The same was observed in the case of Fleming (Case 1), and this notwithstanding the tumour, in both instances, had become greatly developed, and rendered tapping necessary several times. When this case in conjunction with others is considered, it is very probable that the deterioration of the general health commences with the inflammation and suppuration set up within the sac. Large quantities of blood plasma must necessarily be poured into the cyst, which is converted into pus. The mass of the circulation thus drained of its nutritive matter, is not so well able to supply the other wants of the system, and hence the cachectic appearance, emaciation, and exhaustion which generally precede death. The tumour furnished a valuable specimen of the disease in its latter stage, when nearly all the secondary cysts had opened into one large cavity.

The mode of growth and structure of encysted tumours of the ovary may, I think, be inferred from the cases now narrated, together with the facts previously ascertained by others.

In all the specimens of the disease I have examined, whether only the size of a walnut, or so large that it has entirely filled the abdomen, the original form and structure of the ovary has disappeared. Whether a new growth is produced, or, as has been supposed by some, the Graafian vesicles are enlarged, and thus originate the tumour, is not yet determined. I am inclined to adopt the latter opinion, and to think also that the external capsule is formed by the thickening and extension of the serous membrane which covers the organ. Sooner or later the enlarged ovary is found to consist of a dense fibrous envelope or sac, containing internally numerous secondary cysts attached to its walls. As the tumour developes itself these cysts become larger, more numerous, and crowded together. Each individual secondary cyst contains a clear glairy or gelatinous fluid, and is composed of a firm fibrous capsule, lined by a smooth membrane. On making a thin section completely through one of these cysts, its greatest thickness will be found, on a microscopic examination, to be composed of fibrous tissue, lined internally by a delicate membrane covered with epithelial cells. The whole are richly supplied with blood-vessels.

As the tumour enlarges it ascends from the pelvis where it was originally confined, and occupies more and more of the abdominal cavity. The Fallopian tube and broad ligament become elon-

gated. The fimbriated extremity of the former is sometimes obliterated, at others stands out from the morbid mass. Sometimes the tumour forms adhesions externally, more or less extensive to the peritoneum, omentum, colon, or neighbouring viscera. At others it floats loose in a fluid within the abdominal cavity.

Meanwhile the internal cysts press upon each other, they become distended with fluid, the blood-vessels are compressed, and in such places further growth is checked. In consequence of this absorption of their structure occurs, and one or more open into each other, as was pointed out by Hodgkin, constituting a multilocular cyst. Occasionally the pressure acting upon the external sac causes it to become thinner and thinner, until at length perforations are produced through which the fluid contents of the cyst escape into the abdominal cavity. Thus relieved from pressure the margins of these perforations become once more vascular, and of considerable thickness, often resembling the round perforating ulcer of the stomach so well described by Cruveilhier. Under such circumstances the internal membrane of the cyst continues to secrete, and pour its fluid into the peritoneum, rendering paracentesis necessary. At other times no opening in the sac takes place, the secondary cysts burst or open into each other, so that after a certain period three, two, or only one cavity may remain, with bands stretching across, forming imperfect septa in, or a few small cysts attached to the internal wall, clearly indicating its original structure. In either case, sooner or later, suppuration is in most instances established within one or more cysts, or within the external sac itself. This suppuration seems to occur in some cases by the formation of pus corpuscles in the gelatinous matter; in others, by inflammatory action attacking the walls of the cyst or sac, leading to fresh exudation, which is afterwards converted into pus. The patient does not long survive this occurrence. If ulceration have taken place in the external wall of the tumour, peritonitis is generally induced, if not the patient sinks exhausted, whether the pus be evacuated or no. Occasionally more or less blood is extravasated into the inflamed cysts, which, with the various stages of suppuration, cause the sanguinolent, coffee-like, or purulent fluid so often observed.

The gelatinous contents of the cysts vary greatly in different cases, in some being diffluent, in others glairy like white of egg, whilst in many it is semi-solid, resembling coagulated calve's-foot jelly, or strong size. When fluid it frequently contains flocculi, which are patches of epithelial membrane, more or less united together by granular matter. When gelatiniform it often contains faint oval corpuscles, or a few primitive corpuscles. Occasionally an opalescent or opaque creamy appearance is communicated to the jelly by the formation of pus corpuscles or minute granules,

and sometimes it is wholly filamentous mixed with granular cells and other products of inflammation.

This jelly-like matter when consistent presents all the characters of coagulated *liquor sanguinis*, which has not yet passed into organization. Acetic acid developes in it, or causes to be precipitated a white membrane having all the characters of fibrous tissue. Frequently granules, cells, and filaments may be observed in it in various stages, as is the case with recent exudation from the serous membranes, or in other simple forms of hyaline blastema.

I must remark before leaving this part of the subject, that the above description only refers to encysted tumours of the ovary, uncomplicated with hairy or other growths, osseous deposits, or cancer, a form of disease much less common in this situation than is generally supposed. In the great majority of cases an encysted tumour of the ovary must be considered as an alteration of structure purely local in its nature.

The *diagnosis* of ovarian and abdominal tumours generally is very defective, so much so indeed as in one case to have led to the opening of the abdomen, when no tumour existed, and in many others to the performance of an operation when, from adhesions or other causes, the tumour could not be removed. In all diseases of this kind there are two questions which every practitioner desires to answer with certainty, namely 1st, what is the *seat*, and 2d, what is the *nature* of the tumour? Now, in addition to what is already known on this subject, and the means generally recommended for forming a diagnosis, there are two other methods of investigation which seem to me capable of greatly assisting the practitioner in his efforts to form a correct opinion of the case. These are, 1st, an employment of the uterine sound, recommended by Professor Simpson, and 2d, a microscopic examination of the fluid removed by paracentesis.

1. With respect to the uterine sound I need only refer the reader to the excellent paper in which Dr Simpson described it.* Therein is detailed how, by fixing the body of the uterus, and by elevating, depressing, or bringing forward the handle of the instrument, both the anterior and posterior portions of the fundus may be felt with the left hand above the pubis, through the integuments. In cases of ovarian dropsy the information thus arrived at is negative, but this becomes of immense importance when the question arises, (as it always does,) is the tumour uterine or ovarian? In the case of Fleming this point was anxiously debated, but when on the introduction of the sound the fundus of the

* London and Edinburgh Monthly Journal, 1843, p. 701.

uterus could be distinctly felt above the pubis presenting its usual rounded character, there could no longer be any suspicion that the tumour originated in that organ. Again by pushing the uterus from side to side, we are enabled to act upon the ovaries, and to determine by the impulses communicated to the hand, whether the tumour be on the right or left side, and to form a tolerable idea, in certain cases, whether it be free or attached. By means of this instrument then we are materially assisted in resolving the first important question regarding the *seat* of the tumour.

2. The microscopic examination of the fluid removed by paracentesis has only so far as I am aware been made by myself, and the results are of a nature which it appears to me are capable of being made highly serviceable in diagnosing the *nature* of the tumour. The observations I have now to describe must only be considered as a contribution, intended to direct the attention of practitioners to this subject, and not as a complete investigation from which positive results should be drawn. These cases, though far from uncommon, are brought too seldom under the notice of one individual, to enable him without assistance to complete the inquiry.

In the fluid removed by paracentesis from Jessie Fleming, it has been previously described (see page 2) that several flocculi existed. These when examined with the microscope were found to be composed not of lymph, as was at first supposed, but of numerous cells, varying in size from the one one-hundredth to one-fortieth of a millimetre in diameter. The great majority were about one-fiftieth of a millimetre. They were slightly granular, of round and oval shape, unaffected by water, but becoming more transparent on the addition of acetic acid, and exhibiting a distinct nucleus about one-one-hundred and fortieth of a millimetre in diameter. The nucleated cells were imbedded in a granular matter, which could easily be broken down. (See Fig 3.) From this description it will be at once perceived that these corpuscles resembled those which constitute the epithelial surface of certain membranes.

After the operation on Fleming, I examined the cysts found in the ovary with great care. They were each lined by a delicate membrane, covered with nucleated epithelial cells, some round or oval, and others many-sided from contiguous pressure. (See Fig. 4.) I could find little difficulty, therefore, in identifying the corpuscles seen in the fluid removed by paracentesis, with those observed lining the cysts, and it became evident that masses of these had separated, and floated into the abdominal cavity, through the perforations in the external sac as previously described.

In a second case (Case 4) I found similar cells thinly scattered, which was probably owing to my having examined a portion of

the fluid first drawn off, instead of the last portion removed, which usually contains more of the flocculi.

In a third case, in which paracentesis was performed, and where the fluid removed was sent to me by Dr Simpson, I could discover none of the corpuscles just alluded to, but only shapeless flakes, mixed with numerous granules. After death the ovarian tumour was found to be fibrous throughout.

In a fourth case the fluid removed was sent to me by Dr Handyside. It was slightly turbid and viscid, and contained numerous yellow flocculi which sank to the bottom of the vessel. In these I observed the following appearances, 1*st*, Numerous transparent cells, containing several granules, and in some of which there was a distinct nucleus. They varied greatly in size, some being so small as the $\frac{1}{1000}$th, and others so large as the $\frac{1}{200}$th of a millimetre in diameter. They were intermixed with numerous granular exudation cells, such as are observed in inflammatory softenings. (Fig. 5.) Some of these (*a*) were partly dissolved on the addition of acetic acid, the others were not affected. 2*d*, Numerous oblong cells grouped together, and imbedded in a finely granular matter. They varied from the $\frac{1}{133}$th to $\frac{1}{250}$th of a millimetre in their longest diameter, and were granular throughout. (Fig. 6.) 3*d*, Granular masses varying in size and shape, yet bounded by distinct lines. (Fig. 7.) 4*th*, Numerous transparent cells resembling young fat vesicles. (Fig. 8.)

The woman from whom this fluid was taken is still living, yet I had no hesitation in pronouncing from the above examination that she laboured under an encysted tumour of the ovary, an opinion which on examination of the case with Drs Simpson, Handyside, and Burn, and the employment of the uterine sound fully confirmed.

In another and fifth case, where I examined the fluid removed by Dr Simpson, the most positive evidence was afforded me of testing the accuracy of this means of diagnosis. The cells were similar in character to those formerly mentioned, combined with the debris of a fibrous structure, which induced me to suppose that the external envelope of the tumour was in a state of decomposition. In this case Dr Simpson was not permitted to use the uterine sound, but from an external examination of the tumour, diagnosed a fibrous growth from the uterus. I myself examined the woman, and found a firm, resistant and immovable tumour, occupying the centre of the abdomen, and producing a to-and-fro friction murmur with the respiratory movements. The difficulty of forming the diagnosis in this instance, however, as well as the extreme value of the case itself in other respects, demands that it should be placed on record. This I am enabled to do through the kindness of Dr Woodhead, whose case it was. I myself per-

formed the examination after death, and examined the morbid structures removed with extreme care.

Case 5.—*Firm and attached tumour of the abdomen—Paracentesis performed once—Death by exhaustion—Compound encysted tumour of both ovaries—Sloughing of the fibrous sac of the left ovarian tumour—Colloid cancer of omentum and peritoneum.*

Mrs K. aged 28, had no children, consulted Dr Woodhead in October 1845, considering herself to be in a pregnant state. She thought that she had been in the family way about seven months; during which time, however, the catamenia had appeared regularly, but were scanty. There was a visible enlargement of the abdomen, but no particular examination was made. In November she complained of pains in her back and abdomen, and passed very restless nights. These symptoms were treated by palliatives, and attributed to the spurious pains so common in advanced pregnancy. In the beginning of December an examination of the abdomen was made, which was considerably enlarged, so much so as to resemble a woman about the 8th or 9th month of utero-gestation. A distinct fluctuation was perceived, and an indurated tumour which remarkably resembled a fœtal head. About the commencement of January 1846 she was examined *per vaginam*, when the *os uteri* was felt unusually high, which led to the suspicion that she was not pregnant. At this time the peritoneal fluid was much increased in amount, and the abdomen was very tense. The respiration was considerably embarrassed, and the nights rendered restless from dyspnœa. About the middle of January Dr Simpson was consulted, who diagnosed a fibrous tumour of the uterus. The following day paracentesis was performed at the umbilicus, which was unusually prominent, and a wash-hand basin full and a half of fluid was drawn off. This fluid was of a reddish colour, and contained numerous flocculi and white nodules. The former were seen on a microscopic examination to be composed of numerous corpuscles, both nucleated and granular similar to those formerly described, entangled together in groups by numerous filaments. There were also numerous blood globules. (Fig. 9.) The white nodules were entirely composed of filamentous tissue, containing several fusiform corpuscles.

The breathing was much relieved by the tapping, but from this time she could not carry on her usual occupation, which she had hitherto done. The pains in the back and abdomen continued: a febrile action was excited; the pulse rose to above 100; the nights continued restless; no vomiting; and a cachectic state made its appearance. The wound did not close, but continued to discharge a reddish fluid, which afterwards became dark, often mixed with flocculi, and latterly with a quantity of jelly-like substance. About the second week in February the tumour was felt hard, unequal on the surface, and apparently attached to the parietal walls of the abdomen anteriorly. On placing the ear over the abdomen a distinct to and fro friction murmur could be heard. Fluctuation could also

be felt at the lower part of the abdomen. Two other openings now took place in the umbilicus, from which a continual discharge escaped. The other symptoms continued; the pains could only be relieved by morphia, and she sunk exhausted on the morning of March 8.

Sectio cadaveris, March 9, 8 P. M.

The body was much emaciated.

The thoracic organs were healthy.

Abdomen.—On cutting through the peritoneum, about a pint of dirty yellow purulent fluid escaped. The pelvis and abdomen inferiorly were occupied by an encysted tumour, which had burst anteriorly, exposing several cysts containing an amber-coloured jelly-like matter. The peritoneum superiorly and interiorly was united to a firm tumour underneath, by gelatinous adhesions, which were easily broken through. This tumour occupied the whole breadth of the abdomen, and extended from the ensiform cartilage to midway between the umbilicus and pubes. It varied in thickness from one to two inches, and was evidently a degeneration of the omentum, being attached superiorly to the stomach and transverse colon, lying over the intestines, and terminating inferiorly in a rounded edge. When removed from its attachments the tumour weighed 3 pounds 13 ounces. To its anterior and posterior surface were attached numerous shreds and patches of chronic lymph. On cutting into it in various directions, it presented numerous cells, varying in size from a pin's head to that of a large pea, filled with a clear, glistening, gelatinous matter, surrounded by a firm fibrous substance or mesh-work. In some places it was of a greenish hue, in others of an ochrey or orange yellow. Here and there the meshes of the tissue were tinged of a grayish hue by black pigmentary deposits.

The peritoneal membrane lining the abdominal parietes was coated with a layer of the same colloid cancer about two lines in thickness, covered with patches and flocculi of lymph. This layer could in many places be stripped from the serous membrane below, which appeared to be healthy. Between the liver and diaphragm a mass existed half an inch thick. The spleen was surrounded by a similar layer. The lymphatic glands in the neighbourhood of the pancreas and stomach were much enlarged, and apparently quite converted into the colloid cancer. A mass surrounded the uterus more than an inch thick, circumscribing the cavity of the pelvis. The lumbar glands and *appendicæ epiploicæ* of the large intestines were greatly enlarged and similarly affected. On cutting into the liver, spleen, and kidneys, they were found healthy; the peritoneal membrane covering them being alone affected. The peritoneum surrounding the pyloric extremity of the stomach, and extending a third over the surface of that viscus, was upwards of an inch thick from deposit of colloid cancer. Its muscular and mucous coats were healthy. The small intestines were united together by bands of chronic lymph, of a bluish-black colour from pigmentary deposit.

Anteriorly they were covered *en masse* by a layer of lymph, of greenish colour, about a line in thickness.

Both ovaries were the seat of a compound cystic tumour, that on the left side was in circumference about the size of the crown of a hat. When viewed anteriorly, it presented the appearance of a mass of trembling calve's-foot jelly, with numerous blood vessels ramifying upon it. Shreds of the external sac were seen attached to it here and there, which had evidently sloughed, and in some places been adherent to the abdominal parietes. Posteriorly the fibrous sac was still entire, and presented numerous rounded elevations, marking out the forms of distinct cysts. On incising this mass, it was found to consist of numerous cysts, the walls of which were very thin, but richly supplied with blood-vessels. They for the most part contained a trembling, transparent, gelatinous substance, generally of an amber colour, but here and there of a brownish-red. Imbedded in some of this jelly, there existed opaque white masses, resembling blanc-mange, or thick cream. In other places the gelatinous matter might be observed semitransparent and of a light yellow colour.

The tumour of the right ovary was about the size of a small orange. In the fibrous capsule anteriorly was a round perforation the size of a four-penny piece, from which a similar amber-coloured jelly could be squeezed as existed on the opposite side. On section it was found entirely full of cysts, all filled with the same gelatinous matter.

Microscopic examination.—The colloid cancer was composed of the usual structure of such growths, which need not be described here.

The amber-coloured transparent jelly within the cysts at first appeared to be structureless. On careful examination, however, with the rays of light directed obliquely, very faint cells could be distinguished of an oval form, varying in their longest diameter from the $\frac{1}{800}$th to the $\frac{1}{250}$th of a millimeter in diameter. Some of these were distinctly nucleated. A few oily granules could also be seen isolated and in groups. (Fig. 11.)

The white opaque creamy matter in the cysts was entirely composed of minute granules and molecules, united together by delicate filaments. These granules were of two distinct sizes. Those in one group being generally about the $\frac{1}{3000}$th, those in the other being about the $\frac{1}{6000}$th or $\frac{1}{7000}$th of a millimeter in diameter. These granules were densely grouped together, and in some places constituted granular masses, similar to those seen in inflammatory exudation. (Fig. 13.)

In the light yellow semitransparent gelatinous matter delicate filaments could be seen crossing each other, together with numerous faint cells, round in shape, about the size of pus corpuscles, containing from one to six granules. (Fig. 12.)

The walls of the cysts themselves were composed of fibrous tissue more or less covered with numerous granules. In a few places only could granular cells be seen. (Fig. 14.)

The dirty yellow purulent matter was composed of broken down pus corpuscles, mixed with innumerable granules and molecules.

The lymph attached to the omental tumour and parietal walls was composed of filamentous tissue, interspersed with the same broken down corpuscles and granules just alluded to. It was also studded over with a large number of crystals of the triple phosphate. (Fig. 15.)

Remarks.—A perusal of this case must convince every practitioner of the extreme diagnostic difficulties it presented. At first the enlargement of the abdomen was supposed to depend on pregnancy both by the patient and her medical attendant. When a suspicion of disease was excited, the attention was naturally fixed on the indurated tumour, that dissection afterwards discovered to be colloid cancer of the omentum. It was supposed to be a fibrous tumour of the uterus. Had the sound been used I feel satisfied that this error would have been avoided. The patient, however, would not allow Dr Simpson to make an examination. Under these embarrassing circumstances, a microscopic observation of the fluid removed by paracentesis exhibited the same structures seen in cases of undoubted ovarian dropsy, and it appears to me a strong proof of the utility of such observation, that an encysted tumour in each ovary was afterwards found to co-exist with the cancerous disease.

The case is further interesting as presenting perhaps the most extensive deposit of colloid cancer on record. Small fragments of it came away with the fluid, which presented the fibrous tissue of the areolar structure which enters into its composition. But as any observations on the cancer itself would be foreign from the subject under consideration, I forbear to enter upon them at present.

There can be little danger of our confounding the fluid accompanying encysted ovarian disease from that found in inflammatory or passive dropsies. In peritonitis we find primitive filaments mixed with plastic or pus corpuscles,* which can never be mistaken for the large epithelial cells observed in the fluid of ovarian dropsy. In accumulations of fluid caused by diseased liver, I have not detected, when uncombined with inflammation, any structures whatever. A comparative diagnosis, however, from an examination of the effused fluid, requires farther researches, which I shall soon have ample opportunities of entering into.

As regards *treatment*, the anatomical examination of encysted tumours of the ovary must convince any one, that they are not curable by internal medicines. The idea that a dense fibrous envelope, containing numerous secondary cysts, all richly furnished

* See plate in the writer's Treatise on Inflammation.

with blood-vessels, can be absorbed through the agency of mercury, iodine, or any other drug, must be purely imaginary. There is not one positive fact to support such an opinion. Neither can it be supposed from what has been described of the mode in which these tumours are developed, that so long as any of the cysts remain intact, a cure can be hoped for. But we have seen that the natural course of these secondary cysts is to open into each other, until at length only one large cyst remains. Under such circumstances it may be conceived that a rupture might, by exciting inflammation, and thus destroying the secreting surfaces, or inducing adhesions between them, cause a radical cure of the disease. Such is probably the explanation of those rare cases, well established in science, which have apparently burst, and rapidly disappeared. A recent case of this kind has lately been recorded by Lebert,* of which the following is a condensation :—

CASE 6. *Ovarian dropsy—Rupture of the cyst by a fall—Peritonitis —Permanent cure.*

Madame S——, aged 46, of good constitution, first perceived a tumour on the left side of the abdomen in 1836. In the summer of 1837 it had acquired the diameter of a "decimetre," and felt elastic. The volume of the abdomen gradually increased The hardness became general. The urine contained a deposit which she likened to white of egg. At length the abdomen became so large that she resembled a pregnant woman. The catamenia had ceased for several years.

At the commencement of last April, (the year is not stated,) the patient, when sitting on a grassy bank, voluntarily rolled down the declivity. At the moment she arrived at the bottom, although the descent was neither rapid or steep, she experienced a very violent pain, a desire to vomit, impeded respiration, and could not move. The pains in the abdomen were continued, and violent for two days. The volume of the abdomen increased rapidly, and it became tympanitic. She had frequent vomiting, shrunken features, and for twenty-four hours the pulse could scarcely be felt or counted. On the third day, after the active use of antiphlogistics, the pulse became less frequent, the abdomen diminished in volume, and a fluctuation could be distinctly felt in it below the umbilicus. By degrees the fluctuation diminished, and at the end of some weeks, during which the convalescence went forward without accident, all signs of the effusion had entirely disappeared. It was now ascertained that no tumour existed, and she has since enjoyed good health.

The records of medicine will be found to furnish many cases like the above. As I am not aware that any subsequent *post mortem* examination of individuals thus recovering from ovarian disease has ever been made, the exact mode of cure is not ascertained. In the majority of such cases, however, it will

* Physiologie Pathologique, Tome ii. p. 71.

be observed that the progress of the morbid growth has been chronic, that consequently time has been allowed for all the secondary cysts to open into each other, and that the inflammation which follows the rupture may then be supposed to act by obliterating or causing adhesions between the walls of the cyst, as in the case of hydrocele. When, on the other hand, rupture of the external sac takes place, whilst some of the cysts remain entire, the termination in cure is impossible, and the peritonitis occasioned more frequently causes death.

It is astonishing how some individuals accommodate themselves to very large abdominal swellings. I have known more than one case where the patient has laboured under an enormous encysted tumour of the ovary for ten and even fifteen years. On the other hand, the cases detailed in this paper are sufficient to show that when once paracentesis is had recourse to as a palliative measure, suppuration within the cysts, and a cachectic state of the constitution more rapidly supervene. One important practical rule, therefore, to be followed in the treatment of these cases is, not hastily to have recourse to tapping, but by all possible means of delay, to further the natural disposition which the internal cysts exhibit, under pressure, of forming one large sac. This once accomplished, there is nothing inconsistent in supposing that inflammation produced artificially is capable of producing a permanent cure as well as a spontaneous rupture. There is every reason to ~~suppose~~ that artificial pressure is capable of facilitating the absorption of the walls of the secondary cysts, and their opening into each other; but we possess no means of ascertaining when only one sac is produced. That it has succeeded in obliterating and ultimately curing the disease, however, has been proved by Mr Isaac Brown,* whatever other opinions may be held respecting the propriety of his treatment.

Whether treatment by pressure should be tried, or whether ovariotomy should be had recourse to, will depend on the nature of the case. If the tumour have contracted extensive adhesions, the first plan is indicated. If it be free, the patient young, and of good strength, excision is more likely to be attended with success. Further experience can alone decide on the propriety of either proceeding. At present, it may be said, from the degree of success which has attended both methods, that it is not likely cases of ovarian dropsy will in future be considered as beyond the reach of art, and that before long we shall be furnished with sufficient data to render our practice less empirical and more rational than heretofore.

* See cases recorded in the Lancet.

Description of the Plate.

All the figures are drawn as seen under a magnifying power of 230 diameters linear.

Fig 1. Structures found in the fluid squeezed from the right ovarian tumour, Case 2. *a* large nucleated cells, *b* small nucleated cells, *c* pavement epithelium, *d* caudate cells, *e* drops of oil.

Fig. 2. Structure of jelly-like substance in the ovarian tumour, Case 3. *a* finely filamentous substance, in which several granules and plastic corpuscles are visible, *b* exudation granular mass, *c* exudation granular corpuscles, *d* pigmentary deposit.

Fig. 3. Structure of the flocculi which floated in the fluid removed by paracentesis, in the case of Jessie Fleming, Case 1. *a* as seen without reagents, *b* after the addition of acetic acid.

Fig. 4. Structures taken from a cyst the size of a marble, in the left ovarian tumour of Jessie Fleming, Case 1. *a* pavement epithelium, *b* nucleated corpuscles in the fluid of the cyst.

Fig. 5. Structures seen in the fluid removed by paracentesis of a woman now labouring under ovarian dropsy. *a* cells containing granules, *b* younger similar cells, *d* cells which from endosmosis have become unusually large and transparent, *e* exudation granular cells.

Fig. 6. Large granular cells seen in the same fluid, imbedded in, *a*, amorphous granular matter.

Fig. 7. Granular matter enclosed within distinct lines, more probably of filamentous than of cellular origin, in the same fluid.

Fig. 8. Group of simple transparent cells from the same fluid.

Fig. 9. Structures seen in the fluid removed by paracentesis, Case 5. *a* nucleated corpuscles, united in groups by *b* primitive filaments, *c* nucleated cells rendered large and transparent by endosmosis, *d* simple transparent cells, *e* blood globules, isolated, in rolls and masses.

Fig. 10. The nucleated cells of the last figure, seen after the addition of acetic acid.

Fig. 11. Delicate oval corpuscles seen in the clear amber jelly-like matter found within the cysts of the left ovarian tumour, Case 5. They were only made visible when the light was directed obliquely.

Fig. 12. Delicate primitive filaments, and corpuscles seen in the semi-opaque yellow jelly-like matter of the same tumour.

Fig. 13. The granules of two medium sizes, seen in the white creamy opaque matter within the cysts of the same tumour; at *a* they were gathered together so as to resemble exudation granular masses.

Fig. 14. Fibrous structure, covered and interspersed with granules forming the walls of the cysts, in the same tumour; a few nucleated cells were also visible.

Fig. 15. The structure of shreds of lymph, hanging to the external sac of the same tumour, and to the surface of the colloid cancer in Case 5. *a* broken down pus or plastic corpuscles, *b* crystals of the triple phosphate.

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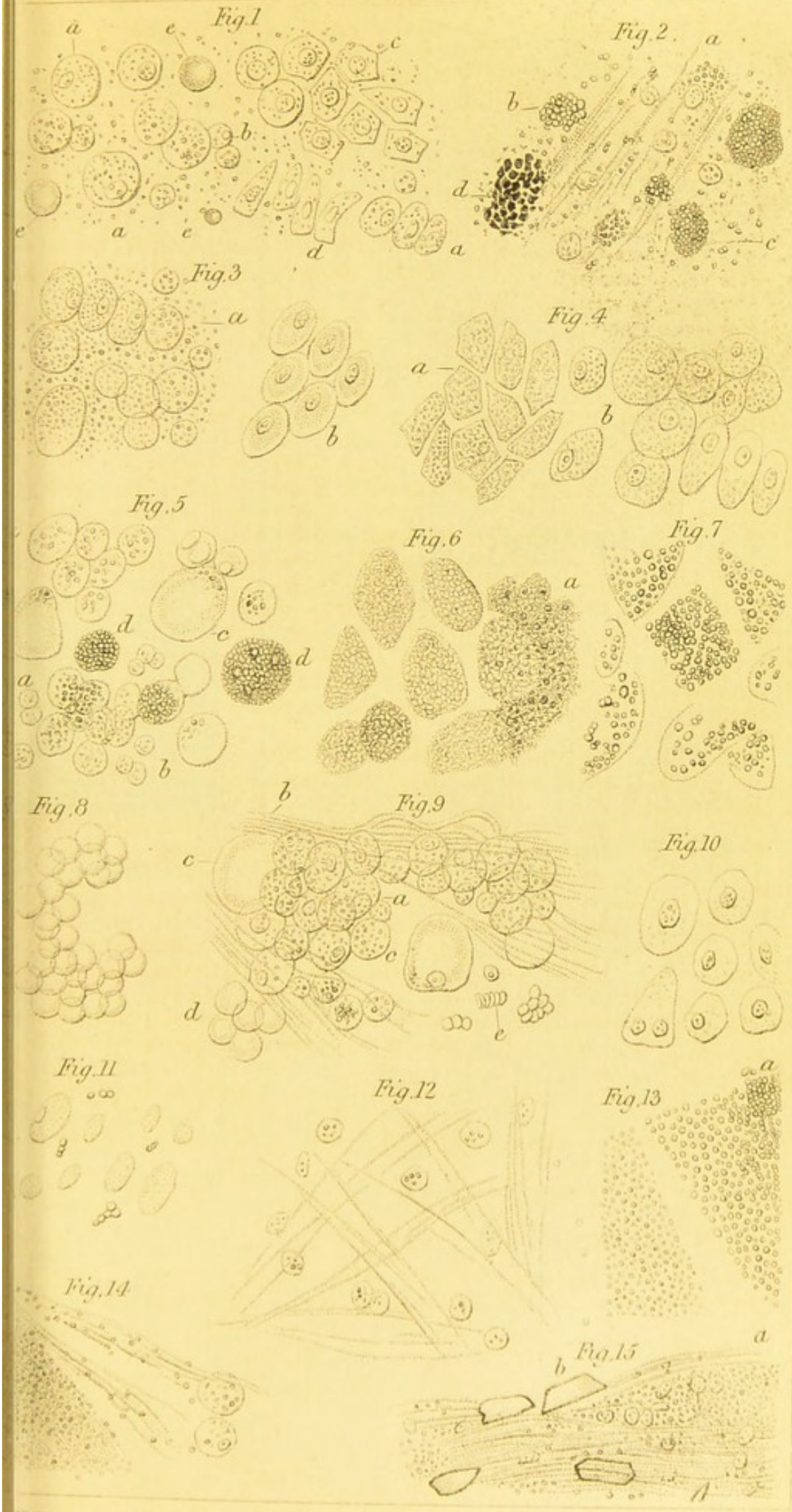

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