On examination (June 16th, 1928) he was found to be thin, and to have clubbing of the fingers; the spine showed marked kyphosis and lordosis, but there was no tenderness on pressure on any part. The nervous system showed the following changes. The legs were flaccidly paralysed, with loss of power and tone; the knee and tendo Achillis jerks were just present; the plantar response was extensor on both sides; there was no ankle clonus, and the superficial abdominal reflexes were absent. There was loss of sensation to pin and brush to eight inches above the umbilicus, with a tendency to harlequin distribution. No gross changes were noticed in any other system, apart from the deformity of the chest due to the spinal changes.

An x-ray examination of the spine showed old Pott's disease, with angular curvature in the mid-dorsal region, as a result of which the thoracic cavity was shortened and distorted. The Wassermann reactions of the blood and cerebro-spinal fluid were negative. The cerebro-spinal fluid taken from the lumbar region showed xanthochromia; the cells numbered 2.3 per c.mm., all being lymphocytes. Protein was present to the amount of 880 mg. per 100 c.cm.; the chloride figure was 720 mg. per 100 c.cm., and the sugar 0.05 per cent. No tubercle bacilli or other organisms were seen.

A laminectomy was performed. This revealed at the level of the fourth to the seventh dorsal vertebrae a reddish-blue, thickened, nodular dura, which enclosed the cord in a collar. The cord was non-pulsatile, and could not be isolated. Some thick, greyish pus exuded from this tissue, and a section of it showed tuberculous granulation tissue. Tubercle bacilli could not be demonstrated in the pus or in the tissue. The patient was discharged unrelieved.

CASE IV.

A man, aged 64, first noticed about eighteen months ago that his right leg was becoming weak. This change slowly developed in the left leg, and four months afterwards stiffness slowly came on; the patient states that his legs tended to jerk up. He added that six months previously he had a girdle pain at the level of the umbilicus, and that he was unable to appreciate heat and cold in the legs.

On examination, on April 30th, 1928, the nervous system showed the following changes. The cranial nerves were unaffected, but there was marked wasting of the arms and weakness of the small muscles of the hands, with some slight inco-ordination in the finger-nose tests; the reflexes were sluggish. The trapezius muscles and the sterno-mastoids were very wasted. The legs showed a tendency to a "mass reflex"; the feet exhibited pes cavus, and there was loss of power, marked wasting, and increase of tone. The knee and tendo Achillis jerks were sluggish; there was no ankle clonus; the plantar response was extensor; and Oppenheim's reflex was present. The superficial abdominal reflexes were absent. Sensation to pin and brush was impaired over an area extending from six inches above the nipple and down the inner side of both arms, involving all the fingers, but sparing the thumbs. The Wassermann reaction of the blood was positive in a 1 in 45 dilution, and weakly positive in the case of the cerebro-spinal fluid; this fluid contained 6.6 cells per c.mm.—all lymphocytes; chemical examination of the fluid obtained from the cisterna magna and lumbar regions gave evidence of stasis.

Lipiodol injected at the cisterna magna lodged chiefly in the cervical region. The patient was treated with antisyphilitic measures, but died in about three weeks.

A necropsy revealed the presence of syphilitic aortitis and an extradural cyst at the level of the third to the fifth cervical vertebrae. The cyst was about three-quarters of an inch in diameter, and contained brownish material; the corresponding area of the cord was softened. A section of the cyst showed that it was a gumma undergoing degeneration. The spinal cord below this level showed degeneration due to compression by the cyst.

The points of interest in these cases are the following:

1. In three of the cases (Nos. I, III, and IV) the first abnormality noticed was impairment of the motor system occurring much earlier than sensory involvement.

2. In cases Nos. I and III pain was never reported, while in Case II the pain complained of for six years was probably due to the osteo-arthritis, and only latterly was attributable to the tumour.

3. It is also of interest to note that when pain was complained of it was not felt at the level of the tumour, and was probably due to stretching of the sensory tracts in the cord.

4. Another point of interest was the occurrence of pain in Case II, which was an intramedullary tumour.

I am indebted to Dr. D. E. Core for permission to publish these cases, and to Mr. G. Jefferson for operative details.

CONGENITAL RETROPERITONEAL HERNIA.

BY

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RETROPERITONEAL hernia is an uncommon condition. Moynihan and Dobson have dealt with the various forms and their method of origin in their valuable and exhaustive work *Retroperitoneal Hernia*. The case here described does not conform to any of the types noted therein. It was obviously a congenital hernia, comparable in many ways to a left duodenal hernia as described by them.

A farm labourer, aged 66, had suffered for years from occasional attacks of abdominal discomfort, which he described as "indigestion," and could usually attribute it to certain foods, especially pastry, after the ingestion of which he would get epigastric discomfort, lasting from a few hours to one or two days.

In January, 1921, he was admitted into the Dorset County Hospital with, apparently, symptoms pointing to acute appendicitis; the surgeon's notes state that the appendix was inflamed, and was removed; there is no mention of any other abnormal condition in the abdominal cavity having been noticed.

On January 29th, 1926, at 10 p.m., he was admitted into the same hospital under my care, suffering from intestinal obstruction; he gave the following history. On January 27th he awoke quite fit, had his usual breakfast, enjoyed the usual action of his bowels, went as usual to his work in the fields, returned home for his midday meal, at which he ate peas, returned to his work, got "indigestion," which he attributed to the peas, and was so uncomfortable that he returned home and went to bed. On January 28th, at 2 a.m., he vomited; this relieved him somewhat. His medical attendant saw him and treated him. The discomfort continued; notwithstanding the use of aperients, his bowels did not act. The condition remained the same on the 29th; at 7.30 p.m. he vomited some "brown, nasty-smelling stuff"; he was sent into hospital.

On admission his temperature was 97.5° F., pulse 104, respirations 24; he had little abdominal pain, but was uncomfortable. His face was quite placid, and even cheerful during conversation; his heart and lungs were normal; his abdomen was a little "en garde"; although slight, it was quite definitely so; the abdomen was a little prominent, chiefly in the umbilical and hypogastric region; it did not move with respiration; there was no peristaltic movement to be seen or felt, nor was anything to be seen or felt at any of the hernial orifices; the rectum was, on examination, found to be empty, and the prostate was enlarged. An enema was given, and was returned clear.

In spite of his slight symptoms an immediate laparotomy was performed at 11 p.m. He was given ether by the open method. A catheter drew off 20 oz. of normal urine. The abdominal cavity was opened by a left paramedian incision; the edges of the incision were well retracted; no bowel came into view, but a large, flat, tense, elastic swelling, with the great omentum spread over it, was in contact with the anterior abdominal wall. On pushing upwards the great omentum there was exposed to view a large, smooth, shiny sac wall, in which distended coils of intestine could be seen tightly packed. On exploring the lower portion of this it was found to extend into the pelvis, reaching to the level of the promontory of the sacrum. The fingers could be passed behind the sac round its lower convex surface; following the sac upwards anteriorly it was found that the transverse mesocolon was arching over it and deeply indenting it. There was only a small portion of the terminal ileum free in the general peritoneal cavity, and this, together with the caecum and the ascending and descending colons, was collapsed; along the large bowel were small scybala at intervals. Coursing in the front wall of the sac from below upwards, and slightly to the right, were three small long blood vessels. Evidently the whole, or practically the whole, of the small intestines and the mesentery were packed away in the sac.

A hole was made in the front wall of the sac, in a bloodless area, and the intestines popped out; these were not greatly distended, and were only slightly congested. Five different portions of gut, which had evidently been nipped by the transverse mesocolon, acting as a constricting band, showed marks of this pressure in linear chocolate-coloured discolorations; each mark was about an eighth to a quarter of an inch wide, and varied from one to three inches in length; in no case was the viability of the bowel impaired. The constricting mesocolon could now be felt to be quite free from the sac wall, it being possible to sweep the finger under it from one side to the other of the three-inch arch. The constricting band having been loosened and the bowel released, the toilet of the wound was completed, and the patient returned to his bed.

On recovering from the anaesthetic he began to complain of increasing pain in his right chest. Notwithstanding appropriate treatment, his breathing became more and more laboured and

quicken; he had crepitations at his right base, and he died in twenty-four hours. A limited *post-mortem* examination only was allowed.

Post-mortem Findings.

The lower lobe of his right lung was found to be in a state of acute congestive engorgement.

Commencing at the ileo-caecal junction the collapsed ileum was traced proximally. A length of $\frac{1}{2}$ feet of collapsed ileum lay free in the peritoneal cavity between the lower right side of the sac and the collapsed caecum, and then passed through an aperture into the hernial sac; this aperture admitted two fingers, was situated on the right side of the sac, and faced to the right; it was at the level of the third lumbar vertebra; through it passed only this one piece of bowel. The rest of the small intestine and the mesentery had been all contained in the sac. The entering piece of bowel into the sac was found to consist of the uppermost part of the jejunum; the duodeno-jejunal flexure had not emerged into the general peritoneal cavity as usual, but had been, or rather its peritoneal covering had been, involved in the upper anterior sac wall; for a distance of two inches it was part of the wall, and then gradually became freer and freer, until it finally emerged free into the interior of the sac. About this level the transverse mesocolon arched horizontally over the sac; a finger could be easily passed under this, between it and the sac wall, and swept from side to side, a distance of three inches; it had a free, rounded, thickish edge; it looked like, and had acted as, a band constricting the sac—the more distended the sac, the greater the constriction. The fingers in the sac, passed upwards beyond the level of the duodeno-jejunal flexure (in the wall of the sac), showed that the sac cavity extended upwards behind the pancreas, which, like the duodeno-jejunal flexure, was an integral portion of the anterior sac wall in this region; at the upper margin of the pancreas the sac cavity ended, the peritoneal covering of the posterior surface of the pancreas fusing with that of the posterior abdominal wall. When the hernial sac was removed for preservation as a specimen, the duodenal flexure and a portion of the pancreas had to be removed also. In the developing pancreas, when it is completely covered with peritoneum, and after it has completed its rotation to its final position, the posterior surface of the pancreas, with its peritoneal covering, lies against the posterior abdominal wall covered by its peritoneum; normally these two layers fuse together, and the intervening space is obliterated; in this case, for a distance of three inches across its middle, fusion had only taken place at the upper border, the remaining unobliterated space going to make part of the hernial sac.

Tracing the anterior wall of the sac downwards it extended as low as the promontory of the sacrum, where, after curving round its contents, it passed upwards, lying on the posterior abdominal wall and its covering peritoneum, until it reached the mesentery, to which, half an inch from its base of attachment, it was fused in a very definite thickened white line of fusion. The mesentery had a smaller line of attachment than usual; the margins of the sac were spread out on each side to the sides of the spinal column; the inner surface of the sac was smooth and shiny; the posterior abdominal wall, covered by its peritoneum, was the posterior wall of the hernia.

Remarks.

Thus the small intestine with its mesentery was not, as is normally the case, free in the general peritoneal cavity, but was confined in a space at the back of the abdomen. It would appear that through an error in development an adventitious fold of peritoneum extended down from the duodeno-jejunal flexure and became fused below to the peritoneum covering the inferior leaf of the mesentery. The small intestine, mesentery, and posterior abdominal wall had their usual peritoneal covering; this space was a closed cavity, except for the aperture giving exit to the ileum; the duodeno-jejunal flexure, instead of emerging from behind the peritoneum into the general peritoneal cavity, emerged into this compartment. The posterior wall was a fixture, and could not expand; the anterior wall could, and did so, in every direction except at its upper end; but here the pressure of its contained bowel kept open the space between the left central portion of the pancreas and the corresponding portion of the posterior abdominal wall, each being covered with its own layer of peritoneum. These normally fuse together. In this region, also, the normal development of the transverse mesocolon was interfered with; it remained in its central portion as a bridge passing over the sac.

For sixty-six years the small bowel had functioned satisfactorily, enabling the patient to carry on his arduous duties without any great disability; but, finally, an indiscretion in diet had fired the mine and converted the potential stricture into an actual one, and a vicious circle was set up between an ever-increasing distension of the sac and an ever-increasing pressure of the bridge.

TWO CASES OF OVARIOTOMY IN WOMEN OVER 70 YEARS OF AGE.

BY

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OWING to the comparative rarity of the operation of ovariectomy in women over 70 years of age the following two cases which were under my care in the "unit" beds of the new obstetric hospital, University College Hospital, seem worthy of publication. Including the 10 cases published by Dr. H. R. Spencer¹ in 1923, 147 such cases of ovariectomy had been recorded up to that date. Since then the records of the following 8 cases have been found in the literature. For assistance in this search I am indebted to Mr. Malkin, the second assistant on the obstetric unit.

In the following list I have not included the 4 cases of malignant ovarian tumours in women over 70 years of age found among 13,259 cases admitted to the University Hospital, Philadelphia,² for it is not stated whether they were operation or *post-mortem* specimens.

Cases found in the Literature since 1923.

Tixier, L., and Pollosson, E.: *Gynéc. et Obstét.*, 1925, tome xi, observation vii. Mme M., aged 73. Right ovariectomy, February, 1924.

Moulouguet-Dolérès, P.: *Gynéc. et Obstét.*, 1924, tome ix, observation v. Patient aged 70. Hysterectomy and ovariectomy; serous cyst of left ovary.

Reynes, H.: *Marseille-méd.*, 1924, lxi. Patient aged 74. Laparotomy; recovery.

Koucky, J. D.: *Annals of Surgery*, 1925, lxxxi. Mentions one ovarian dermoid occurring in the decade 70-79.

Pribram, E. E.: *Zeit. f. Geburtsh. u. Gynäk.*, 1924-25, lxxxviii. Three cases. (1) Frau Th. L., aged 70. Left ovariectomy, 1921. (2) Frau L. W., aged 70. Left ovariectomy, 1920. (3) Patient aged 70. Ovariectomy. (These three cases do not appear in Dr. Spencer's "extra cases.")

Isbruch: *Zentralbl. f. Gynäk.*, 1926. Frau L. F., aged 70. Right ovarian dermoid removed together with uterus and left appendages, December, 1923. (This case is also mentioned by R. Mayer: *Zentralbl. f. Gynäk.*, 1925.)

The Author's Cases.

CASE I.

E. S., aged 75. A married woman who had had seven children, the last confinement being at 39 years of age, was transferred from the surgical wards of University College Hospital to the New Obstetric Hospital on August 6th, 1926. There had been no miscarriages, and the menopause occurred at 50 years of age.

She complained of constant pain in the lower part of the abdomen for the past week. The pain first began at night, waking her up, and had recently been steadily increasing in severity. Up to five months before admission micturition had been normal, but during the last few months urine had frequently been passed involuntarily in small quantities.

The abdomen was distended, resonant to percussion in the flanks, but dull in the umbilical and hypogastric zones. A tender cystic tumour could be felt rising out of the pelvis and reaching to $\frac{1}{2}$ inches above the umbilicus. No fluid thrill could be obtained.

On vaginal examination it was found that the cervix had been pulled up to a high level, and the pelvis felt empty. The diagnosis of twisted ovarian cyst was made and ovariectomy recommended.

The patient, who was a cheerful and intelligent woman, asked for time to consider if it was "worth it" at her age, and to consult her husband; but the pain increased, and she soon decided to undergo the operation.

On August 10th ovariectomy was performed under chloroform anaesthesia. Some little difficulty was experienced owing to the friable nature of the pedicle, but the operation was completed in twenty minutes, the cyst being removed intact. Contrary to my usual custom, I used catgut in suturing the abdominal wall (I was trying catgut on a series of cases at that time)—continuous for the peritoneum and three sections of continuous suture for the fascia. The skin was united by clips and an anchored dressing fixed by deep "through-and-through" silkworm-gut sutures.