(Rule 11*), and thus I know the kidney is distended with fluid. The urine contains $\frac{1}{2}$ to $\frac{1}{4}$ pus acid and inodorous. I then know I have a hydro-pyonephrosis. A distended lower pole means ureteric block or pelvic outlet block; but when I notice a large dumb-bell shadow above the isolated collection I realize at once that this is a pelvic oxalate, and in order to produce distension of the kidney it must have a nose or projection upon it, and that this nose must be grasped firmly by the pelvic outlet. With such an extreme back pressure the upper pole nearly always suffers in the same way as the lower pole, hence I mark the upper pole as dilated. But how do I know there is a general distension? The shadows of the stone are well in the loin space, and not high up under the ribs; moreover, the kidney can be felt bimanually, and it is fixed, not mobile—therefore it is displaced. A displaced fixed kidney in a young man means a distended kidney (clinical rule). There are no shadows in the upper pole; hence no stones are in the upper pole. But how do I know that there is a cyst projecting from the cortex of the lower middle third? This is as easy of inference as the rest of the picture. I notice a boss projecting backwards on the stone shadow in the pelvis; clinically I recognize that the outer part of the dumb-bell must be tightly fitted in the mouth of a deep calyx. With such a tight fit there will be no exit for the urine in that calyx, and a cyst must be formed and must project.

The blackboard was photographed by Mr. Harnack, and the kidney was then drawn by Mr. Shiells (Fig. 3).

A Clinical Lecture ON CANCER OF THE OVARY.

DELIVERED AT MIDDLESEX HOSPITAL.

By J. BLAND-SUTTON, F.R.C.S. ENG.,

SURGEON TO THE HOSPITAL.

In a lecture on secondary carcinoma of the ovary published in the *BRITISH MEDICAL JOURNAL* of May 26th, 1906, I recorded some cases which were thought to be primary carcinoma of the ovary, but on careful examination a primary focus was found either in the colon or in the breast. Since then some other examples have come under my observation which further support the views expressed in that lecture, and also the opinion I have long entertained that primary cancer of the ovary is a rare disease, and one concerning which we know very little. We cannot form an opinion on this matter simply by studying reports issued from pathological laboratories dealing merely with the histology of an ovarian tumour; it is necessary to combine such reports with the clinical observations, and especially a statement from the surgeon that in the course of the operation he made a careful examination of the gastro-intestinal tract and gall-bladder for a primary carcinoma. The most remarkable feature of these secondary masses in the ovaries is the dimensions they sometimes attain—so big, indeed, that they often rival a football in point of size, whilst the primary growth is so small and inconspicuous as to be overlooked unless the surgeon, suspecting the nature of the case, makes a special search for it. How easy it is to overlook a small primary cancer in the colon when masked by a large solid ovarian tumour is illustrated by the following case:

An emaciated woman, 64 years of age, was placed under my care in the Middlesex Hospital by Dr. Badcock, Gillingham, on account of a large abdominal tumour associated with threatened intestinal obstruction and vomiting. The tumour exceeded a football in size, the abdomen above the tumour was distended and the patient vomited the foul-smelling fluid met with in cases of intestinal obstruction. On vaginal examination a rounded lump the size of a cricket ball could be felt in the pelvis behind the uterus. The large tumour was quite hard and had grown rapidly. A careful consideration of the symptoms made it fairly clear that the vomiting indicated intestinal obstruction rather than peritonitis, and I came to the conclusion that the case was very probably an example of secondary cancer of the ovary associated with a primary cancer somewhere in the gastro-intestinal tract. The patient urgently needed relief. I operated in July, 1906, and succeeded in removing the large tumour which replaced the right ovary; the left ovary, enlarged to the size of a cricket ball, was also easily removed. As soon as the pedicles were secured, and the oozing stopped I made an examination of the intestines. The ileum was thrice its usual size and its walls thickened; this was due to a growth around the margins of the ileo-caecal valve which obstructed the communication between the ileum and the caecum. The growth was small, contracted, and so inconspicuous that unless I had made a careful search it would not have been detected. The patient was too ill to permit resection of the caecum, so I joined the ileum, about 50 cm. above its termination, to the middle of the ascending colon by a lateral anastomosis. The patient recovered from the operation, and thinking that she could not live long, arrangements were made to transfer her to the Cancer Asylum. In the course of six weeks the woman had improved so much in health and strength that she preferred to go home. I have since learned that she died in September, 1907, having survived the operation fourteen months.

The tumours were carefully examined in the Cancer Research Laboratories connected with the Middlesex Hospital, and found to be composed of carcinomatous masses derived from columnar epithelium. The sections were examined by several pathologists actively engaged in research work on malignant disease in general, and they had no doubt that the histological structure of the ovarian masses accorded with a primary mass arising in the colon. Of course the great defect in this case is my inability to produce microscopic evidence of the nature of the primary growth in the caecum, but this is due to the unexpected good consequence of the operation.

Concerning another patient recently under my care in the hospital I am able to give a complete account.

An urgent request was received to admit a single woman, 32 years of age, on account of acute abdominal pain. On admission the patient complained of frequent actions of the bowels and pain. Examination disclosed a large hard tumour in the belly reaching as high as the umbilicus; its lower end filled the pelvis. The uterus was mobile, and did not appear to be enlarged, but it was difficult to decide whether the tumour belonged to the uterus or not. The diarrhoea of which

the patient complained was spurious, and consisted mainly of mucus. I came to the conclusion that the tumour was too hard for a uterine fibroid, and I thought it might be an ovarian fibroid which had become impacted in the pelvis and obstructed the rectum. The patient was definite in her statements that the tumour had only attracted her attention during the last few months. Two days after her admission coeliotomy was performed and a big red tumour removed; in shape it resembled a huge kidney, and had replaced the right ovary; the surface of the tumour was beset with small

Fig. 1.—An ovary converted into a solid mass of carcinoma secondary to a focus of cancer in the sigmoid flexure of the colon. It weighed 5 lb.

* Rule 11.—Discrete cortical shadows when grouped together denote a calyx distended by fluid, either urine or thin puriform urine.

knobs (Fig. 1). The pedicle was easily controlled, but much blood was lost from a sessile adhesion at the brim of the pelvis. The uterus and the left ovary appeared normal. On examining the abdominal organs before closing the incision I came across a hard mass in the sigmoid flexure of the colon, at the point where it comes into relation with the brim of the pelvis. The implicated piece of the colon was quite hard, and the mesocolon appeared to be infiltrated; it was quite clear that the bowel was obstructed, and that I had stumbled on the cause of the intestinal symptoms, namely, cancerous obstruction of the colon. I at once resected about 10 cm. of the bowel, and joined the cut ends of the colon by suture. The whole operation lasted forty minutes. The patient made an uneventful recovery.

The parts removed were examined in the laboratories connected with the hospital. The mass in the colon is a true cancer arising in the mucous membrane and obstructing the gut. It offers no features which distinguish it from the common form of carcinoma which so frequently arises in this part of the intestinal tract.

The tumour which replaced the right ovary measures in its long axis 25 cm. and in its narrow axis 15 cm. It weighed 5 lb., and is practically a mass of cancer composed of columnar cells. The appearance of the cut surface of the tumour shows that it consists of isolated nodules, irregular in shape, which tend in the central part of the lump to become confluent, but remain more or less isolated in the periphery of the tumour.

The microscopic examination of the primary and secondary growths shows that they have the same structure.

The view that these large malignant bilateral tumours in the ovaries are secondary to carcinoma in other organs rests on the fact that the structure of the ovarian mass varies according to the situation of the primary cancer. Some of these large tumours may be explained by the fact that the cancer cells may engraft themselves on a pre-existing ovarian cyst. Recently I was removing an ovarian cyst as big as a pregnant uterus at term from a woman 52 years of age. The tumour had been noticed two years; it was adherent to the pelvic brim, not by an ordinary adhesion but by an infiltration of new growth. I also noticed the Fallopian tube to be thick, distended, and hard. The whole mass, after careful removal and hardening, was submitted to microscopic examination, because I suspected, from its naked-eye characters, that it was a case in which a patient with a pre-existing ovarian cyst had also become the victim of primary cancer of the Fallopian tube, and the cancer, spreading from the tube, had implicated the cyst growing from the corresponding ovary. The microscopic examination supports this view completely; the growth in the ampullary portion of the tube presents the characters of the papillary variety of cancer which arises in the tubal mucous

membrane. The thick mass in the wall of the ovarian tube adjacent to the tube exhibits the same structure.

The right ovary is as big as a child's fist, and contains a soft mass of new growth identical in structure with that in the tube, and in the cyst which replaced the left ovary.

Our knowledge of primary cancer of the Fallopian tube has grown up in the last twenty years, and we have come to realize that it is a very fatal disease. Some years ago I published the details of two cases to show that the baneful effects of primary tubal cancer are greatly modified according to the condition of the coelomic ostium of the tube. When this ostium remains open the cancer cells quickly infect the pelvic peritoneum; if it becomes occluded—and this is, I fear, a rare circumstance—the infection of the peritoneum is greatly delayed. From an operative point of view these opposite conditions are of great importance. The removal of a cancerous Fallopian tube with a patent coelomic ostium is usually followed by recurrence in a few months. A patient from whom I removed the uterus which contained a large fibroid, one of the Fallopian tubes being stuffed with cancer, but with an occluded coelomic ostium, was alive and in good health three years later. In the specimen under consideration the coelomic ostium of the tube is not occluded, and is incorporated with what had the appearance of a stream of new growth flowing from the mouth of the tube over the wall of the ovarian cyst, when the specimen was fresh from the pelvis. A number of cases have been reported of primary cancer of the Fallopian tube associated with a large, and presumably ovarian, cyst; perhaps the conditions prevailing in the specimen represented in Figs. 4 and 5 offer an explanation of these hitherto somewhat puzzling specimens, which have been collected by Doran in the *Journal of Obstetrics and Gynaecology of the British Empire*, 1904, vi, 285.

We are apt to forget that the lethal effects of a carcinoma are not so much due to the primary tumour as to the accidents which arise from it. Cancer will attack an organ and cause no symptoms until it interferes with the function of the organ affected—as, for example, the colon or the pylorus. In many instances it pursues its course unnoticed, and even unsuspected, until it becomes infected with micro organisms; then sepsis and sloughing follow, and in due course produce the general toxic conditions which our seniors used to call cachexia, and regarded as something characteristic of cancer, whereas it is merely an indication of the onset of the terminal affections by which the lives of so many cancerous patients are terminated. Cancer of the body of the uterus sometimes illustrates in an excellent way these points. For example, the specimen represented in Fig. 6 shows a section through the uterus of a spinster, aged 56, containing a solid tumour mass attached to its fundus; the uterine walls are expanded

Fig. 2.—The same ovary as in the preceding figure, cut in its transverse axis to show the conglomerate nodules of cancer.

Fig. 3.—The sigmoid flexure of the colon cut transversely. The mass below the bowel is fat in the mesocolon, thickened by cancerous and inflammatory exudation.

Fig. 4.—An ovarian cyst infiltrated with cancer from a primary focus of cancer in the corresponding Fallopian tube.

and thin, resembling the urinary bladder rather than the uterus. The tumour resembles to the naked eye a fibroid, but in the cervical canal it becomes pointed

such patients who have had cancerous ovaries removed; if this be done, we should in a year or so accumulate a large number of valuable facts which would serve for our

Fig. 5.—A section through the cyst wall and Fallopian tube represented in the preceding drawing.

and a process projects at the mouth of the womb; this process is ragged and sloughy, and during life bled freely. Microscopically, the whole of this body in the uterus is a mass of typical carcinoma. The course of events here is not difficult to follow: a carcinoma arose in the endometrium at the fundus and gradually distended the organ. The patient being a spinster with a narrow cervical canal free from septic organisms, the cancer grew in security until a portion of it made its way through the "os" into the vagina; then infection and sloughing were the consequences, with the usual concomitant bleeding, which led to the discovery of the disease. When an ovary becomes infected with secondary cancer it is free for a long period from the usual liability to septic infection, and the cancerous masses may attain such unusual sizes as in the specimens which form the subject of this communication.

It is easy to understand, now the matter is explained, why the true pathological conditions underlying bilateral carcinoma of the ovary have been misunderstood. Few of us can have realized that metastatic cancerous masses could attain such large proportions in so small an organ as the ovary; there must be something favourable in this gland to allow cancer cells to engraft themselves and form such a large tumour. That the primary growth in the gastro-intestinal tract should be overlooked is not altogether a matter of surprise, for they are often small and inconspicuous in the colon, and, as a rule, in an ordinary ovariectomy the stomach is not seen. Even in patients in whom there is dissemination throughout the abdomen, this is usually regarded as arising from the ovarian tumour, instead of it being realized that the masses in the ovaries, like the nodules on the intestines and viscera, are secondary deposits.

It should also be remembered that the slow and insidious manner in which carcinoma grows in the colon, and especially in the gall-bladder, tends to make diagnosis difficult and uncertain.

To my mind it is quite clear that we must begin anew our studies of ovarian carcinoma; no case can now be accepted as primary cancer of the ovary merely on a laboratory report; it will be necessary to supplement the microscopic examination of tumours removed at operations, by statements that the operator examined carefully the gastro-intestinal tract, the gall-bladder and the mammae, to assure himself that they do not contain a primary focus of carcinoma. This method is also essential in reporting cases obtained after death.

It is also desirable on surgical grounds to carry out this investigation and follow up the post-operative history of

Fig. 6.—Coronal section through a uterus affected with primary cancer of the corporeal endometrium, and resembling to the naked eye a submucous fibroid. The mass measures 10 cm. transversely and 18 cm. vertically.

guidance in this matter, for I am sure the conditions are unfortunately more frequent than some at this moment may feel inclined to admit.

An Address

ON SOME

RECENT EXPERIENCES IN THE SURGERY OF THE LIVER AND GALL BLADDER.

DELIVERED BEFORE THE
SOUTH WALES AND MONMOUTHSHIRE BRANCH OF THE
BRITISH MEDICAL ASSOCIATION.

By J. LYNN THOMAS, C.B., F.R.C.S.,

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THE subject which I have chosen is one which has grown so rapidly since my student days that it seems hardly credible to-day that it was at that time practically non-existent, and I cannot find in my annotated copy of Holmes's *Surgery, its Principles and Practice* (1882), any reference to the gall bladder, except in the following passage:

When the laceration of the liver extends into the gall bladder the injury must prove fatal;

whilst in Roberts's *Theory and Practice of Medicine* (1883) one can detect evidence of the commencing growth of the incursions or raids of surgery into medicine from the following quotation in the chapter on treatment of gall stones and other diseases of the gall bladder:

Cholecystotomy has also been performed for removal of gall stones retained in the gall bladder or impacted in the cystic duct,

and

Inflammation of the gall bladder, from whatever cause, requires the application of poultices and fomentations. If pus forms, or if in chronic cases much fluid collects, it is sometimes requisite to puncture the gall bladder.

Although very great progress has been made since that time, there are still at the present moment many problems that require to be solved. It is as difficult to tear oneself away from time-honoured traditional conclusions handed down by generations of observers, as it is to grasp the real truth from the flood of unripe assertions which now overflow the banks and temporarily hide the true