sion, and situated on the anterior wall near the lesser curvature, and about 1 to 1½ inch from the cardiac orifice. The stomach wall was inverted, and an attempt made to stitch it by Lembert sutures. These held very badly, as the stomach wall for some distance around the ulcer was softened. The great omentum was then turned up, and a large patch stitched with interrupted sutures over the floor of the ulcer. The portion of omentum included in the stitches measured about 2 inches in diameter. The stomach wall with the attached omentum was then folded and stitched. The abdomen was irrigated with warm saline solution, and a large drainage tube was left in at the outer extremity of the transverse portion of the incision. About sixty Lembert sutures were put into the stomach and omentum, and the operation lasted nearly two hours. I received valuable assistance from my colleague, Mr. Spencer. For two or three days her condition fluctuated considerably, but it was always low. On January 7th, four days after the operation, it was noted that the abdomen had become flaccid. At this time severe diarrhoea set in, so that she could not retain the enemata, and it was necessary to feed her by the mouth with very small quantities of meat-juice and beef-tea. On the 13th she was not so well, but the diarrhoea had become somewhat less. On the 21st inst. she had a sharp attack of hæmatemesis, and also passed blood by the bowel. This attack seemed to be due and certainly followed the taking of a little hard-boiled yolk of egg which I allowed her. On January 26th she had another severe attack of bleeding, and died at 10.45 P.M. At the *post-mortem* examination it was found that the perforation was firmly closed, but the bleeding had come from the outer margin of the gastric ulcer, which was at such a distance from the site of perforation that it had not been included in the stitches.

CASE IV. Gastric Ulcer: Perforation: Operation Twenty-eight Hours afterwards: Recovery.—Miss C., aged 21, was seen by me on October 28th, 1898, in consultation with Dr. B. N. Dalton, of South Norwood. She had previously had some dyspeptic symptoms, but had never vomited blood. On October 27th, somewhat late in the afternoon, she had a sensation of cramp in the stomach, and took some hot tea for its relief. The pain immediately became worse, and she attempted to vomit. Dr. Dalton, who saw her very shortly afterwards, suspected that a gastric ulcer might have given way. She was seen by him the next morning, the 28th, and he, finding that the liver dulness had gone, diagnosed perforation. She was seen by Dr. Newton Pitt in consultation with Dr. Dalton on the afternoon of the 28th, and he fully concurred in the propriety of immediate operation, which was carried out the same evening. Just before the operation her pulse was 108, her temperature 99.2°, her respirations 28, and mostly costal, but the abdomen still moved. Her face was slightly drawn, but of fair colour, and she was not markedly collapsed. There was no great degree of abdominal distension. She complained of severe pain on touching the upper segment of the left rectus, which was firm and rigid. On the whole her condition was decidedly good. The operation was begun at 11 P.M. by the usual median incision. On opening the peritoneum gas escaped. On the anterior wall of the stomach some lymph was found just below the cardiac orifice of the stomach. From a spot in the centre of this patch, after pressing on the stomach, gas and fluid escaped. There was at this point a minute ill-defined perforation, situated 1½ inch below the cardiac orifice of the stomach, and 1 inch below the lesser curvature in the anterior wall. On more carefully examining the stomach in this position a large indurated ulcer could be felt about the size of half-a-crown, or perhaps larger, and there could be clearly seen in addition to the perforation three other doubtful spots which looked as if on the point of giving way. There was no food free in the peritoneal cavity, and there was no peritonitis. At first an attempt was made to infold a portion of the stomach wall, but it was soon seen that if sufficient of the wall were taken up so as to include the ulcer and give healthy tissue firm enough to hold the stitches little or no lumen would be left to the stomach at that spot. The fold plan was, therefore, abandoned, and the great omentum was turned up and a thick vascular portion of its free margin selected. This was laid over the whole ulcer so as to cover it and the stomach wall for half an inch beyond. A row of interrupted sutures was then put in about half an inch from the free margin of the omentum and across the base of the flap, taking care not to include all the blood vessels. A second set of sutures united the free margin of the omentum and the stomach wall, and another row was placed across the base of the first with the same precautions as to the vessels. The time occupied in suturing was considerably over one hour, and the total duration of the operation was two hours and a quarter. The breathing became very faint at times, so that the anæsthetic had to be stopped and brandy given hypodermically. Before the abdomen was closed the cavity was washed out with warm normal saline solution, and a considerable quantity was left in. A glass drainage tube was put into the abdominal wound and the remainder of it sewn up. The patient's recovery was slow but regular, with the exception of vomiting three or four times on the second day after the operation. No opium nor morphine was given, but some bismuth salicylate was administered by the mouth, with occasional teaspoonfuls of hot water to allay thirst. At the end of January of this year she went away to Hastings, and on March 5th she noticed some irritation about the wound, and a piece of silk made its appearance. This, no doubt, was the continuous suture with which the peritoneum was sewn up.

From the surgical point of view perforating gastric ulcer may be either acute, occurring into the general peritoneal cavity, or chronic, in which adhesions have time to form, giving rise to a localised abscess bounded by the neighbouring viscera and adherent peritoneum. The mode of procedure of course differs in these two classes of cases. The diagnosis of acute perforation is not, as a rule, difficult, unless the early symptoms be comparatively slight and the latent period well marked, as in Case II. The previous history of the case, and the lightning-like onset of exceedingly severe symptoms, are sufficient to arouse something more than suspicion. The diagnosis is confirmed by the localisation of pain to the upper segment of the abdomen, the rapid onset of peritonitis, and

the disappearance of liver dulness. If one waits for further symptoms the opportunity of saving life is gone. The all-important question here is one of time, and statistics show that of cases treated surgically within the first twenty-four hours over 40 per cent. recover, but that cases left till the third day are all but hopeless. There are many difficulties which confront the surgeon in dealing with these cases: among them are the finding of the perforation, its accessibility, suturing in a cramped and obscure corner of the abdomen, the softened state of the stomach walls for some distance round the ulcer, and the cleansing of the peritoneal cavity from food. These may be overcome by gentle and systematic searching of the whole surface of the stomach with the help of two trained assistants, a good light, together with persistent care in putting in all the sutures, and thorough irrigation of the peritoneal cavity with normal saline solution and efficient after-drainage. It is not always enough to merely drain from the front, but large drainage tubes should be passed through the loins avoiding the kidneys, if much of the gastric contents have escaped. There should be no haste to remove these. It seems to be always a good plan to reinforce the wall of the stomach at the ulcerated spot by grafting omentum on to it; it makes assurance doubly sure.

REFERENCE.

¹ Greig Smith, *Abdominal Surgery*, Fifth Edition, vol. i, p. 568.

ON THE SURGICAL TREATMENT OF UTERINE CANCER AND ITS RECURRENCES.

By DR. THEODOR LANDAU,
Berlin.

A SERUM for carcinoma which actually benefits the patient has not yet been found. Up to the present time there can be no doubt that of all methods the surgical still yields the best results, and the earlier the stage of the carcinoma when attacked the better. Therefore, it is the desire of our time to make the diagnosis as early as possible, and not only to extirpate the macroscopically diseased parts but also to remove as much as possible of the neighbouring lymph vessels and glands. That is well proved by the now recognised procedure of removing mammary carcinoma. At first only the diseased portions of the mamma were removed; then we removed the entire gland; next was added the extirpation of the neighbouring axillary glands. To-day we remove in addition the pectoral fascia, and even sometimes the entire thickness of the sternal portion of the pectoralis major. And why these more and more radical methods? Because the permanent results have become better in proportion as the operations increased in extent. Likewise similar tendencies are observed in regard to operations for carcinoma of the uterus.

Whoever has had the opportunity of observing the development and course of carcinomata of the various organs easily recognises that every organ has, so to speak, its cancer characteristic, both as regards its histological structure and also in regard to its tendency to metastasis. Thus we may say that carcinoma of the uterus has a marked tendency to remain local; so that the patients are destroyed much more frequently by the uterine cancer itself or by direct spread to neighbouring organs than by metastasis. This especially holds good for carcinoma of the body of the uterus. The course of the disease is usually the following: at first cancer is confined to the womb, then the pelvic connective tissue and its lymph vessels become involved; then it spreads to the vagina, rectum, bladder, ureters, and peritoneum, and affects the lymphatic glands and distant organs only very late, and after large portions of the parametrium have been destroyed. This is readily proved by the *post-mortem* findings in death occurring from uterine cancer or after its extirpation; it is daily shown by clinical observation that most cases of inoperable carcinoma are such, not because of metastasis in distant organs, but because we fear that bladder, ureters, and intestine may be injured by the operation.

The study of the recurrence gives a further support to the above claim. Whether we assume that the recurrence is only the growth of foci that have been left behind, or that it is

another new formation of carcinoma like the first, we have almost invariably the tendency to local recurrence in or around the scar. But a third point seems to me to support the view that uterine carcinoma is essentially a local disease; it is proved by observation that those operative methods by which the entire broad ligament is excised or necrotised, even in far advanced cases of carcinoma of the uterus, yield permanent results which are relatively splendid when compared with methods which attack the cancerous uterus alone. From these considerations, it follows generally that uterine cancer is adapted especially for surgical treatment.

In a paper read in 1893,¹ I summed up our principles and indications for the extirpation of the carcinomatous womb to consist in this—that the indication for removal depends solely and alone on the technical conditions present, that is to say, that if we are able by any method to totally extirpate the carcinoma in and around the uterus, the attempt should always be made.

From large experience, we recommended as a method by which the entire internal genitals, together with the entire broad ligaments, can be extirpated *per vaginam*. This is effected with the aid of clamps, not with ligatures, because with the crushing and necrotising effects of the clamp upon the tissues grasped, we can extend the operation to regions which the ligature cannot reach or where it must remain ineffectual. This method especially enables us to extirpate by the vagina approximately every carcinoma which is limited to the uterus. If the carcinoma has already spread to the vagina, then during the course of vaginal hysterectomy the posterior vaginal wall can be removed in its whole extent. When the anterior vaginal wall is affected, the bladder should be examined with the cystoscope, an instrument absolutely necessary to the modern gynaecologist. When the carcinoma has spread to the parametria and the uterus is not greatly enlarged in size, vaginal total extirpation is technically possible and therefore indicated. And lastly, in a case of carcinoma of the uterus complicated with tumours or inflammatory troubles of the adnexa, with the proper technique, vaginal hysterectomy can be performed and completed. Only when the enlargement of the uterus caused by the cancer itself or by complication with myoma is so great that not even with the aid of vagino-perineal incisions can the parts be brought out *in toto* through the vagina, is ventral hysterectomy superior to the vaginal method. But such cases of cancer complicated by great size of the uterus are very rare compared with the numerous cases which allow of vaginal extirpation.

In presenting the results of these operations during the last five years, it is clear that the permanent results can be the only criterion of the value of a surgical method in the treatment of an otherwise incurable disease. A method which shows 100 per cent. of recoveries from the operation and yet does not prolong life would be a delusion; a method, however, which gives a small mortality and also cures a surprisingly great percentage of patients, forces the surgeon to adopt it. It is self-evident that the strictest criteria must be used in the construction of statistics; among other things, only such cases should be included where the pathologist can demonstrate carcinoma in the extirpated specimen.

My results are as follows: Of 123 cases operated on under the above-described indications, 8 died from the operation; in 48 the operation was done more than five years ago; of these, 13—that is 27 per cent.—have remained well. In other words, with the operation of vaginal hysterectomy performed according to my method, we can count on permanently curing about 1 woman in 4. According to the observations of Bouilly and others, which coincide with my own, we may be sure of a permanent cure if at the end of five years no recurrence takes place. Quite a number of these cured cases presented complications—some with spreading of the carcinoma to the vagina and appendages, others with inflammatory or purulent affections of adnexa or peritoneum. Occasionally fibroid or ovarian tumours complicated the operation. Therefore the fact is established by these statistics, obtained with all possible precautions, that the vaginal radical operation with clamps furnishes excellent permanent results.

I desire now to speak of another means of improving the permanent results, namely:

THE SYSTEMATIC REMOVAL OF RECURRENCES.

This was first suggested by Rosenstein. He presented, in a meeting of the Berlin Medical Society on February 16th, 1898, a healthy woman on whom he had performed extirpation of the uterus for carcinoma of the cervix in August, 1893. In February, 1895, he found in the abdomen, 3 to 4 cm. above the left Poupart's ligament, a hard, immovable, ovoid tumour of the size of a small apple, and above this, deep in the pelvis, a round resistance. Rosenstein removed this glandular recurrence by means of an incision like that in use for ligation of the external iliac artery. Since then, that is three years after the second operation, the patient has remained well.

The following similar case I report from my own experience. The patient, now 37 years old, was operated on June 11th, 1895, by the vaginal operation, for a cauliflower carcinoma. In November, 1897, there was no sign of recurrence. In March, 1898, the patient presented herself again. Her health had failed; she looked pale and cachectic. In the site of the former smooth scar in the vault of the vagina could be felt hard, knob-like prominences, anteriorly a rigid, cone-shaped body projected into the vagina about the thickness of the little finger and the length of an almond; behind this, especially to the left, there were wart-like, irregular, friable masses which bled considerably during the examination. There could be no doubt that since last examined a circumscribed local recurrence had developed in and around the scar.

On March 10th I performed the radical removal of the recurrence. To obtain the freest possible access, and to be able to operate extensively and safely in healthy tissues, I commenced the operation with a deep vagino-perineal incision starting at the junction of the middle and lower third of the left labium majus, going around the rectum in a semicircle and ending at the tip of the coccyx. Without encountering serious hemorrhage, the left ischio-rectal fossa was separated up to the level of the vaginal vault. After the left lateral wall of the vagina had been cut in its whole extent, the entire field of operation was in full view. An incision was made around the carcinomatous excrescence $1\frac{1}{2}$ cm. from the edge of the visibly diseased parts. Separation from the base of the growth was easy on the right side, and on the posterior vaginal wall. To the left and anteriorly it was extremely difficult, on account of the close proximity of the bladder wall, which was marked by an introduced catheter. Only after I had entered the peritoneal cavity from the left was I able to separate completely and cut away the infiltrated masses from the bladder wall. To the right came into view loops of small intestine, some of which were firmly adherent to the vaginal vault. After they had been separated, the complete excision of everything that looked diseased could be finished.

The excised mass was about the size of a hen's egg. There remained in the peritoneum a slit about 6 to 8 centimetres wide, the extreme left point of which ended in the vagino-perineal incision. This slit was shortened by several catgut sutures, and the lateral vaginal wall was also sewn with catgut. A strip of gauze was introduced from the vagina into the peritoneal cavity. A thick drainage tube was placed from the perineal incision to the deepest part of the wound. The skin around was united with catgut. The drains (tube and gauze) were removed on the fifth day; everything progressed smoothly; the patient got up on the thirteenth day and was discharged on the fifteenth with completely healed wound.

As can be understood from the history and the specimens, this was not a case of metastasis in the glands, but of recurrence in the scar and around it. Such attempts to remove local recurrences after extirpation of the uterus for cancer are almost unknown in literature. I can mention only Winter, who reported a similar case in 1893.² My purpose in making this report is to call the attention of surgeons to the fact that if recurrence takes place after total extirpation of the genitals, it is possible to attack it radically with prospects of success.

REFERENCES.

- ¹ Transactions of the German Society for Gynaecology, vol. v. ² Zeitschrift f. Geburts. und Gynäk., vol. xxvii, p. 149.

THE friends of Dr. Nicholas Senn, Professor of Surgery in Rush Medical College, have put forward his name as a candidate for the Republican nomination for Governor of Illinois in 1900.