

TRANSACTIONS OF THE NEW YORK SURGICAL SOCIETY.

Stated Meeting held at the Roosevelt Hospital, January 22, 1913.

The President, DR. CHARLES L. GIBSON, in the Chair.

COMPRESSED AIR FOR OPERATING-ROOM AND EMERGENCY USE.

DR. KARL CONNELL (by invitation) demonstrated an apparatus forming part of the equipment of the Roosevelt Hospital, by which compressed air was supplied from a central plant for delivering anæsthetics and for emergency use. He stated that after careful investigation, it had been found that the cheapest, most stable and reliable compressor for the service desired was the reciprocating steam pump. Rotary mechanism was eliminated from consideration on account of the waste and wear and unreliability of high speed machinery, while electric pumps were eliminated on account of the greater first cost, the less direct and more expensive form of energy used, but chiefly on account of the lack of reliability. Steam pumps, on the other hand, were cheap at first cost and cheap maintenance in energy consumed.

In conjunction with the air supply, Dr. Connell also demonstrated the permanently installed low pressure supply of nitrous oxide and oxygen, of which only the supply cocks and pressure gauges showed in the operating room.

Dr. Connell further demonstrated an anæsthetic meter for automatically delivering exact amounts and percentages of ether vapor, air, and exact mixtures and quantity of two or more anæsthetic gases.

PERFORATED DUODENAL ULCER.

DR. KARL CONNELL presented a man, thirty-two years old, who was admitted to the Roosevelt Hospital on January 7, 1913. For twelve years, periodically, he had suffered from indigestion, with anorexia and eructations of acid food. For four years he

had had attacks of epigastric pain, coming on usually three hours after the evening meal, and relieved by food and beer. After his Christmas dinner, he suddenly experienced a cramp-like pain in the epigastrium. This was relieved by vomiting, but persisted with lesser severity until New Year's Day, when, after another hearty meal, he experienced a similar and more severe attack, and was subsequently confined to bed with general abdominal pain localized in the right upper quadrant.

On admission, there was generalized rigidity and tenderness in the right upper quadrant. He had a slight rise of temperature, and a blood count showed a moderate leucocytosis. The abdomen was opened through a right rectus incision, and a small abscess was found between the stomach and the anterior abdominal wall, with a perforation on the anterior face of the pylorus, distal to the pyloric ring, and sealed by omentum. The ulcer was inverted by suture, a posterior gastro-enterostomy was done and the wound closed, with drainage over the site of the abscess.

Cultures from the abscess showed a non-hæmolyzing streptococcus of low virulence and in pure culture.

Two hours after the operation, symptoms of acute gastric dilatation presented; these were relieved by prompt lavage and turning the patient on his face. The post-operative course was otherwise without unusual incident.

ACUTE SUPPURATIVE OSTEOMYELITIS OF THE SCAPULA.

DR. JAMES I. RUSSELL presented a girl, ten years old, who was admitted to the Roosevelt Hospital, in the service of Dr. George E. Brewer, on January 4, 1913. The history obtained was that five weeks prior to her admission she began to suffer from pain, swelling and stiffness of the right shoulder, and at that time she felt ill and feverish. The fever and pain gradually subsided, but the stiffness and swelling persisted and the difficulty in moving the arm gradually increased.

When the patient entered the hospital, abduction was limited to about 45 degrees; flexion and extension to about 50 degrees. The contour of the right scapula was obliterated and there was an area of fluctuation over the suprascapular fossa from which the staphylococcus aureus was obtained by aspiration and at the time of operation, as shown by culture. There was no history

of a previous injury. The patient had had measles, mumps, whooping-cough and tonsillitis, but none of these illnesses immediately preceded the present condition. An examination of the blood showed 15,800 leucocytes, 4,000,000 red blood cells, 75 per cent. hæmoglobin, and 65 per cent. polynuclears. The Von Pirquet and Wassermann tests were negative; the urine showed nothing abnormal.

An operation revealed pockets of pus burrowing through the supraspinous fossa, extending along the posterior border of the scapula through the spine, involving the infrascapular fossa and the lower angle of the bone. The cavity thus formed was lined with soft granulation tissue containing several sequestra. The granulations were scooped out, the cavity swabbed with carbolic acid and alcohol and then filled with Mosetig-Moorhof paste. The case was progressing favorably, and the patient was still under treatment in the hospital.

PAPILLARY CYSTADENOMA OF THE MALE MAMMARY GLAND.

DR. RUSSELL presented a man, fifty-six years old, who four months prior to his admission to the hospital noticed a small, hard, painless lump in the left breast. This had gradually increased in size until it was as large as a small orange, involving the entire breast, which was tender and fluctuating at the nipple, the surrounding area being hard and nodular and not tender to palpation. The skin was adherent at the nipple and the entire mass moved on the deep fascia. There were no palpable axillary glands. The patient could recall no injury to the breast, he did not think that he had lost weight, but was not as strong as he was a year ago. He had suffered from a slight cough during the past year, but was otherwise well. There had been no secretion or bloody discharge from the nipple.

A complete removal of the breast was done. Pathologically, the growth proved to be a papillary cystadenoma.

STRANGULATED FEMORAL HERNIA: PARTIAL ENTERECTOMY.

DR. RUSSELL presented a woman of sixty who was admitted to the hospital on November 26, 1912. For four years she had had a right femoral hernia which she had been able to control

by a truss. Three hours before admission she was seized with cramp-like abdominal pain and vomiting, and found that she could not reduce the hernia. Upon admission, her temperature was 102° ; pulse, 92; leucocytes, 12,400; polynuclears, 87 per cent.

Operation, which was done by Dr. Russell about six hours after the onset of the symptoms, revealed a gangrenous loop of intestine, necessitating a resection of 8 or 10 inches of intestine, which was done by an end-to-end suture through a right rectus incision. The patient's convalescence was uneventful until the eighteenth day, when she developed a right lobar pneumonia, from which she made a good recovery.

In connection with this case, Dr. Russell called attention to the advantage of an incision through the right lower rectus muscle in dealing with a femoral hernia in which a resection was necessary.

ACUTE UNILATERAL HÆMATOGENOUS INFECTION OF THE KIDNEY: NEPHRECTOMY.

DR. RUSSELL presented a man, twenty-three years old, who was admitted to the hospital on December 27, 1912, with the history that eighteen hours before his admission he was seized with a sharp pain in the right lumbar region. He felt nauseated, but did not vomit. There was frequent, burning urination. On admission, his temperature was 101.6° ; pulse, 84. A blood count showed 14,000 leucocytes; 67 per cent. of polynuclears and 33 per cent. lymphocytes. There was tenderness over the right kidney, the lower pole of which was palpable.

Eight hours after his admission, the temperature had risen to 104.4° , and it ranged between this and 103° for 48 hours. It fell to normal on the third day, and upon cystoscopic examination pus and red blood cells were observed coming from the right kidney. The left showed nothing abnormal. His temperature, with the exception of one sharp rise, remained practically normal for six days and then suddenly rose to 103.8° , where it remained for twenty-four hours, when the right kidney was removed. The patient's convalescence was complicated by a severe bronchitis, but was otherwise smooth. The urine, which contained much pus and some red blood cells before the operation, still contained a trace of pus, but no blood cells.

URETEROLITHOTOMY.

DR. WILLIAM DARRACH presented an iron-worker, thirty-one years old, who nine months before his admission to the Roosevelt Hospital began to suffer from daily attacks of hæmaturia. About a month after their onset he had a sharp attack of pain in the left lumbar region, followed by the passage of gravel and a subsidence of the pain. During the next two months the hæmaturia persisted, but without pain. About four months ago the pain recurred in the left lower quadrant and left kidney region, the attacks usually coming on at night, preventing sleep, and associated with burning urination. Occasionally, the pain radiated downward to the head of the penis. Since that time there had been no hæmaturia, but a persistent pain in the left lumbar region.

A physical examination at the time of the patient's admission to the hospital was negative. Upon cystoscopic examination, the urine from the bladder was found to be slightly turbid. There was some congestion of the bladder walls, but the bladder tolerance was good. The right ureteral orifice was normal, and a catheter was passed to a point 23 cm. from the bladder wall, where it was obstructed. From this catheter there was an immediate and rapid flow of urine, which was clear in its gross appearance. Indigo-carmin did not appear in the flow within thirty-five minutes after its injection, showing that the function of the kidney was evidently below par. The left ureteral orifice was large and somewhat congested, and the catheter became obstructed after passing it for a distance of nine cm. Pressure at this point produced pain, which was referred to the head of the penis. No urine was secreted through the catheter, and movements of the instrument within the ureter were followed by the discharge of a small number of pus flakes.

Operation (August 31, 1911).—An incision was made from the tip of the twelfth rib downward and forward toward the anterior, superior spine. Upon incising the muscles and exposing the kidney, the latter seemed to be enlarged and was studded with white spots. The ureter was large and distended. With the fingers, the kidney capsule was freed from adhesions, but owing to its short pedicle it was impossible to deliver the kidney into the wound. The ureter was now freed with the

fingers, and a stone felt just at the pelvic brim. The stone was milked upwards until it could be reached through the wound. A half-inch incision was then made into the ureter longitudinally directly over the stone, and the latter removed with forceps. The calculus was about one cm. in length. There was a considerable discharge of urine through the wound in the ureter. A flexible director was introduced, but no more stones could be detected. The incision in the ureter was closed with fine chromic gut, the wound was irrigated and a cigarette drain inserted to the kidney bed. The muscles were sutured with heavy chromic gut and the skin with silkworm gut. The cigarette drain was removed on the sixth day, and when the patient left the hospital, on the twenty-second day, the wound had completely healed. Since that time, over sixteen months ago, he had been free from pain and discomfort, and there had been no hæmaturia.

Dr. Darrach said he had spared the kidney in this case because it seemed to be chiefly hydronephrotic, and because the function of the other kidney was somewhat impaired. The upper route was followed on account of the importance of inspecting the kidney itself.

CARCINOMA OF THE STOMACH: PARTIAL GASTRECTOMY: PULMONARY THROMBOSIS: ABSCESS OF THE LUNG.

DR. DARRACH presented a stableman, thirty-two years old, who until nine months prior to his admission to the Roosevelt Hospital had enjoyed unusually good digestion. He then had a sudden attack of vomiting which recurred once or twice daily, and was at first associated with considerable abdominal pain, but later with almost no discomfort. More recently he had vomited almost everything he had eaten, the vomiting usually occurring two or three hours after meals, although some times not until the following morning. He had never vomited blood nor had he noticed that his stools were abnormal in color. In spite of the fact that his appetite remained good, he had lost 25 pounds in weight and felt very weak.

Upon admission, beyond marked emaciation and scattered palpable lymph nodes, the physical examination was negative,

except for the abdomen. This was slightly distended, the superficial veins being visible. The left upper quadrant seemed fuller than normal, and the liver edge could be felt just below the costal margin. Gastric peristalsis could be seen on tapping the abdominal wall, the greater curvature being outlined about the level of the umbilicus. A blood examination showed 5,090,000 red cells, with 52 per cent. of hæmoglobin, 8,000 leucocytes and 68 per cent. of polymorphonuclears. Gastric analysis showed in a total amount of 60 c.c., a total acidity of 12, with no free hydrochloric acid, a questionable lactic acid reaction and no blood.

Upon operation, a mass was found on the lesser curvature of the stomach near the pylorus, involving both the anterior and posterior surfaces. A little more than the distal half of the stomach was removed, and a posterior gastrojejunostomy was done. Pathologically, the growth was pronounced an adenocarcinoma of the stomach, with lymph node metastases.

On the second day after the operation, the patient's temperature rose to 102°, falling to normal on the fourth day. On the eleventh day, after a sudden attack of pain in the left infra-scapular region, the temperature again began to rise, and examination of the chest showed an area two and a half inches in diameter which gave bronchial voice and breathing sounds, with crepitant râles. The temperature reached 102° on the fourteenth day and then ran an irregular course for two weeks, ranging between normal and 103°. The sputum gradually became more profuse and very foul-smelling, containing many pus cells and cocci; no tubercle bacilli were found.

When the patient left the hospital he had a troublesome cough, with foul-smelling expectoration, which was very profuse on rising. He was sent to the day camp on the roof of the Vanderbilt Clinic, where his cough and expectoration gradually cleared up, and within three and a half months he had gained over 20 pounds.

At the present time he had no digestive symptoms of any kind excepting a sense of fulness after a large meal. His appetite was excellent. There was still a slight cough, especially in the morning, but with little or no expectoration. He is now 14½ pounds over his normal weight.

PARTIAL EXCISION OF LOWER SHAFT OF ULNA FOR
DEFORMITY FOLLOWING COLLES'S FRACTURE.

DR. DARRACH presented a waiter, thirty-eight years old, who seven weeks before his admission to the hospital fell, striking on the dorsum of the flexed wrist and sustaining a fracture of the lower extremity of the radius. He was treated by splints for four weeks, followed by massage and baking. At the end of six weeks, both pronation and supination were limited to one-half; there was flexion to 135 degrees, extension to 200 degrees, normal abduction and no adduction. Attempts at supination and adduction caused pain. The X-ray showed marked comminution of the lower radius, with considerable radial shifting. The lower extremity of the ulna was below the level of the radial articular surface.

Because of the good results obtained after the subperiosteal removal of the lower extremity of the ulna in an old, unreduced forward dislocation of the head of the ulna, it was thought that the condition in this case might be improved by a similar procedure. The pain and limitation of function were believed to be due to the relatively lower position of the ulnar head, and the resulting strain on the inferior radio-ulnar and radio-carpal articulations. As it seemed unwise to try to lower the radial articular surface, it was decided, at the suggestion of Dr. Kirby Dwight, to shorten the ulna, preserving the ulnar articular surface.

Through a small posterior incision the lower end of the ulna was exposed, its periosteum carefully reflected and about half an inch of the shaft removed. The bone was cut through with cutting forceps, resulting in a good deal of splintering, an effort thus being made to obtain a more rapid regeneration. The hand and forearm were put up in a starch bandage in strong adduction and left in that position for five weeks, the first dressing being done at the end of two weeks. At the end of seven weeks supination and pronation were limited to one-fifth. There was flexion to 135 degrees and extension to 225 degrees, with twenty-five degrees of adduction. There was no pain on extreme supination, but slight pain on extreme pronation still persisted. There was still slight motion at the site of the fracture.

Dr. Darrach said that this operation seemed indicated in old

cases of fracture of the lower extremity of the radius where, through impaction or comminution, the level of the radial articular surface was sufficiently raised above the level of the ulnar head so as to interfere with the movements of pronation, supination and adduction. When there was much radial shifting it would seem wiser to remove the whole lower three-fourths of an inch of the ulna, not including the styloid process, as the speaker said he did in a previous case of old, unreduced forward dislocation of the head of the ulna. That case was already on record.

DR. CHARLES A. ELSBERG said he could recall several cases where he had met with considerable difficulty in getting union in the ulna. In one instance it was two years before satisfactory union of the bone occurred.

DR. DARRACH said that in two out of three cases of partial osteotomy of the ulna that he had performed, solid union had taken place without much difficulty, but that there still existed in the present case a little motion at the site of the operation.

PARTIAL ENTERECTOMY FOR INTUSSUSCEPTION IN A CHILD FIVE DAYS OLD.

DR. CHARLES N. DOWD presented this case with remarks, for which see page 713.

DIVERTICULITIS ILLUSTRATING THE LIMITATIONS OF THE TWO-STAGE METHOD OF PARTIAL COLECTOMY.

DR. DOWD presented a man, sixty-four years old, who was operated upon in the Roosevelt Hospital in June, 1912, for a left scrotal hernia of the so-called "sliding" variety. It was not possible to adjust a satisfactory mesocolon for the displaced intestine, although this intestine was returned to the abdomen in fairly good condition and was only slightly constricted by later adhesions.

In September, 1912, the patient returned to the hospital suffering from attacks of constipation and from pain in the left side of the abdomen, where a large mass could be felt. An incision was made through the left side of the abdominal wall, and the mass was found to be connected with the descending

colon. Subsequently, it was found to be due to an intestinal perforation caused by diverticulitis; the intestinal contents had escaped into the peri-intestinal fat, and had formed an encapsulated abscess which was connected with the intestinal lumen by a small channel. This fatty tissue was very extensively indurated, and was thoroughly incorporated with the intestinal wall. The mass was six or eight inches in diameter, and was only slightly movable. In appearance it suggested carcinoma, and manifestly a resection was necessary whether the condition was due to carcinoma or to diverticulitis. The peritoneum was therefore divided at the left of the descending colon, thus mobilizing that portion of the intestine and the indurated fat in which it was encased. The entire mass was then delivered through the abdominal incision. The afferent and efferent portions of the intestine were clamped, their walls were sewn together internal to the clamps for a distance of three or four inches, and the abdominal incision was closed up to the point of their emergence. A silk ligature then replaced the clamps which closed the emerging intestine, and the entire mass was removed, leaving the afferent and efferent portions of intestine projecting from the wound, somewhat after the manner of a double-barrelled gun.

The silk ligatures were left in place for 72 hours, which was much longer than the observer had supposed possible. By that time good wound healing had resulted, and a satisfactory artificial anus was established. The partition between the two portions of intestine was included in a pressure clamp after the method of Krause.¹ This pressure was begun on the fifth day, and the opening was complete on the seventh day. Fecal matter then passed to the anus, but as there was still much leakage by the stoma, the rest of the partition was included in a clamp and similarly divided. An attempt to close the stoma under cocaine was only partially successful.

Owing to absence from the city, further treatment was delayed until November, when under ether anæsthesia the intestinal margins were liberated and the edges freshened and brought together. They were then reinforced by a second row of stitches

¹ Krause: *Cent. Chir.*, 1900, 57.

and further supported by a row of skin sutures. Healing promptly resulted, and the patient had enjoyed excellent health since.

Dr. Dowd said that the method of lateral anastomosis with immediate wound closure after intestinal resection had been very widely adopted. It presented many advantages, and any one who employed a different method might well be expected to give his reasons for doing so. The first reason must be that patients with cancer of the large intestine were usually very poor surgical risks; most of them are much debilitated by their disease and many are in a condition of acute obstruction when they come to the hospital. The mortality rate of resection and immediate anastomosis must be very high in debilitated patients who have large amounts of retained intestinal contents.

Again, much peri-intestinal inflammation may be present, owing to perforation from diverticulitis or ulceration, and such inflammation greatly increases the difficulty of successful anastomosis.

Again, there is sometimes a great deal of fat about the wall of the large intestine; this lies between the peritoneum and the muscular coat of the intestine, and increases the difficulty of getting peritoneal apposition.

Mikulicz studied these conditions with much care, and by adopting a two-stage operation for cancer of the large intestine reduced his mortality rate from 43 per cent. to 12½ per cent. Bier, Braun and Kummel, in their *System of Operative Surgery*, have devoted twelve pages to the consideration of the two-stage method of resection of the large intestine. In von Bergman's system this method is given as the operation of choice for the large intestine. Any one who has had the very disagreeable experience of treating one of these patients with an artificial anus will avoid the method if possible, but without doubt it is a life saving procedure in certain instances.

The following details of technic may be mentioned: 1. The afferent and efferent portions of intestine should be joined by a running catgut suture for three or four inches, thus providing a septum which is to be divided at a later date. 2. A pressure clamp should be applied as soon as practicable. Many such

clamps had been devised: Dupuytren's, which was the pioneer, was a very good one. An ordinary, long-jawed clamp does excellently. The handles may be filed off, and the remaining shank included in an ordinary rubber band so as to secure pressure. 3. The temporary closing of the intestinal ends in ligatures is an advantage. If these ligatures can be left on 24 to 72 hours, they prevent intestinal leakage and hence do much to secure wound healing. It is an application of the same principle which Dr. Charles H. Peck has used in resection of the rectum.

PERICARDOTOMY FOR HEMORRHAGIC PERICARDITIS.

DR. CHARLES N. DOWD said that in the past there had been numerous cases of adherent pericardium in St. Mary's Free Hospital for Children. Dr. George M. Swift, who had had these patients in charge, published an article on the subject in the *Medical News*, February 28, 1903. At that time there had been eighteen cases, the patients giving symptoms of advanced cardiac disease, hypertrophy, regurgitation, dilatation, and, finally, failure of compensation. These cases were uniformly fatal. There had been autopsies on many of them, and the heart was found to be enormously dilated; the pericardial sac was obliterated by adhesions between the pericardium and the heart wall, there were also adhesions between the pericardium and the lung and mediastinum.

Since the publication of Dr. Swift's paper there had been a succession of similar cases in the hospital, and they had been on the lookout for a case where an operation might be of some value. The case shown to-night was the first one that had seemed suitable for operation, and the patient was not presented as a cured case, but as a slight contribution to the subject.

The patient was a boy, six years old. Early in October, 1912, he became ill with symptoms of pneumonia. When he was brought to the hospital, about November 1, there was an increased area of cardiac dulness, with pericardial friction sounds. The heart sounds were normal, but impaired. The X-ray showed a very large pericardial sac. The edge of the liver was one inch

below the free border of the ribs. The boy failed to improve under ordinary treatment and an operation was finally decided upon in the hope of relieving the pericardium from its contents.

At the time of the operation, which was done on December 6, 1912, the liver edge extended three inches below the free border of the ribs. The operation was done under intra-pharyngeal insufflation anæsthesia administered by Dr. Karl Connell. An incision was made from the middle of the sternum down to the xiphoid cartilage, and a flap turned to the left. The fifth and sixth costal cartilages were removed for an inch and a half to the left of the sternum, together with a small piece of the sternal edge. This gave an exposure of the pericardial sac for an area of about one by one and a quarter inches. On endeavoring to extend this area to the left, a small opening was made through the pleura which was quickly closed by a catgut stitch. An aspirating needle was then inserted through the pericardium, and blood was withdrawn. Blood also oozed through the hole which the needle had made, and a similar result followed the introduction of other aspirating needles. An incision was then made through the pericardium, which was found to be thickened, and there was considerable material of a loose, spongy texture on its inner surface. A probe was inserted; this entered a large cavity and the heart beat could be felt against it. The incision was then enlarged, and a finger inserted, coming in contact with a spongy material which seemed like coagulated blood. Blood oozed through the opening in large amounts; it was thin and dark, and had the appearance of old blood which had been in the sac for a long time. Several ounces of this material were removed, and it spurted through the incision with each pulsation of the heart. At last this flow ceased, and the heart seemed to be in contact with the pericardial wall. During a part of these manipulations the child's pulse was considerably above 200, and very weak, but it gradually increased in force and was stronger when he was taken from the table. On the following day he was still weak, but made a good operative recovery. The liver, which had been below the free border of the ribs, was retracted to that border. An X-ray, however, taken a few days later, showed that the cardiac area had not diminished as much as had

been expected, and the child, in the meantime, had not gained satisfactorily in strength.

Dr. Dowd said he expected to do another operation in this case, in the hope of more radically relieving the pericardial contents. At the time of the first operation he believed that the pericardial sac was empty, but he now thought that clots or a reaccumulation of fluid must be present. He naturally had not felt like exploring to an indefinite degree the interior of the pericardial sac of a very weak child, from which blood had just been spurting in large amounts. He did not drain the sac because he thought the danger of introducing sepsis would more than counterbalance the possibility of resulting benefit.

Dr. Dowd said he had found very little in the literature about hemorrhagic pericarditis. Most of the operations on the pericardium had been done for purulent pericarditis; hence there was little about the type of case here described. The references to pericarditis indicated that it was usually caused by a malignant disease or tuberculosis, or by a hemorrhagic tendency similar to that found in purpura hemorrhages. The best suggestion that one could offer for this case was that the boy had a serous pericarditis, and that it was accompanied by an effusion of blood, just as such an effusion may be found in the joints of patients who have purpuric hemorrhages. There was, however, no other indication of a hemorrhagic tendency in this child. The X-ray indicates that the thymus is enlarged.

PERINEPHRITIC ABSCESS OF INTESTINAL ORIGIN.

DR. CHARLES H. PECK presented a Russian tailor, forty-eight years old, who was admitted to the Roosevelt Hospital on December 2, 1912, complaining of pain in the left flank. This was of uncertain duration, with a recent exacerbation dating from an attack of constipation. The presence of a renal or ureteral calculus was suspected, but cystoscopy, radiographs and urinary examinations were all negative, and there were no bladder symptoms. As the patient had no fever, and no surgical lesion could be detected, he was transferred to the medical division and kept under observation until January 13, 1913, when he was re-ad-

mitted to the surgical service. In the meantime, his temperature, which had been elevated, had gradually fallen to normal, the pain had abated, and for about ten days he seemed to be getting well. Then his pain recurred and persisted, and the temperature gradually rose to 103°. The only local symptom was tenderness in the left flank.

Upon operation, which was done on January 14, a chronic, well defined suppurating tract was found in the perirenal fat, its upper extremity reaching nearly to the 12th rib. On cutting through its anterior lining wall, the fat immediately surrounding the kidney, as well as the kidney itself, seemed perfectly normal. Traced downward, the tract extended towards the pelvis, becoming somewhat larger in its lower part. On lightly curetting the lower end of the tract, a small amount of fecal matter was recognized. No attempt was made to identify the portion of the gut communicating with the tract, on account of the inaccessibility of the perforation. It was probably the lower sigmoid or upper rectum. Wrapped tube drains were placed in the lower end of the wound, the remainder of which was closed. A fecal fistula had subsequently developed in the drainage tract.

Dr. Peck said the condition probably originated in the perforation of a small diverticulum, with the formation of a retroperitoneal abscess. The chronicity of the case would suggest that drainage into the intestine must have afforded partial relief from time to time, the slow extension upward in the perirenal fat having occurred when this drainage was blocked.

CHRONIC ULCER OF THE LESSER CURVATURE OF THE STOMACH.

DR. PECK presented a man, forty-eight years old, who was referred to the Second Surgical Division of the Roosevelt Hospital on December 12, 1912, by Dr. William G. Lyle, who had observed him at irregular intervals for about two years. For six or eight years the patient had complained of pain in the epigastrium, constant and scratching in character, which was not relieved by vomiting nor by taking food, and which occurred irrespective of meals.

An examination of the gastric contents showed free hydrochloric acid, 60, with a total acidity of 78; no blood. Bismuth radiographs showed no evidence of stasis and nothing definite to aid in the diagnosis. The patient was kept under observation in the ward for nine days, when, on account of the persistence of the pain, which was apparently severe enough to disable him, an exploration was decided upon.

On operation, which was done on December 21, 1912, a callous, saddle-shaped ulcer of the lesser curvature of the stomach was found, about three inches from the pylorus. It was excised, together with a V-shaped segment of the lesser curvature and the anterior and posterior stomach walls, and the defect carefully sutured with two tiers of linen sutures.

The pylorus and duodenum and the remainder of the stomach were normal, and as the line of suture did not seem likely to cause obstruction, a gastro-enterostomy was not done.

The patient's convalescence was uneventful up to about the twentieth day, when, after eating a rather heavy meal, he vomited once and had some gastric disturbance. A temporary return to liquid diet relieved the symptoms. The patient was still under observation.

CARCINOMA OF THE RECTUM: TWO-STAGE OPERATION: PERMANENT COLOSTOMY.

DR. PECK presented a man, sixty-nine years old, who was admitted to the Roosevelt Hospital on October 10, 1912, with a large, ulcerated carcinoma of the rectum, about three inches from the anus. The growth was somewhat adherent posteriorly and had evidently infiltrated the perirectal tissue. He had had repeated small hemorrhages during the past eight months, with emaciation and loss of strength, and with gradually increasing symptoms of obstruction. Although an examination of the blood showed 85 per cent. of hæmoglobin with 5,000,000 red cells, his appearance indicated a marked degree of cachexia and extreme weakness.

After careful consideration, a two-stage operation, with permanent colostomy, was decided upon, as this method seemed best

suited to the advanced local condition and the site of the growth, which precluded the possibility of preserving the sphincter. The extremely weak and unfavorable condition of the patient also led to this determination.

An exploration through the left rectus, which was performed on October 12, 1912, showed that there were no metastases in the liver or elsewhere in the abdomen, and no higher glandular involvement. A loop of sigmoid was stitched into the lower angle of the wound and opened three days later with the cautery, a complete spur being formed. On November 16, excision of the rectum was performed by the posterior route, after excision of the coccyx, the entire anal segment and sphincter being removed. The sacral glands and perirectal fat in the hollow of the sacrum were removed, several of the glands being involved, and the fat showing much inflammatory infiltration. The rectum was divided as high up as possible, its proximal end being carefully closed by a purse-string suture and two tiers of linen Lembert sutures, leaving a short, blind pouch distal to the colostomy. The attempt to keep the field aseptic failed, as the growth had ulcerated through the rectal wall, and leakage had occurred during the manipulation. Free drainage was employed, and there was a good deal of sloughing and discharge during the healing. His convalescence was slow, but during the past month he had shown marked improvement in his condition and had gained about five pounds in weight.

Dr. Peck said that an interesting condition had been noted in the blind pouch of gut distal to the colostomy. The spur was complete, and no fecal matter could pass from the proximal to the distal loop. The speaker said he was much surprised, therefore, when, about five weeks after the operation, a discharge of fecal matter through the posterior drainage tract was reported. A finger passed into the distal pouch from the colostomy opening showed a large mass of solid fecal matter in the blind pouch, and a perforation of the closed end, with discharge of some of the fecal matter into the drainage tract. This fecal matter had evidently formed in this completely isolated segment of gut. The possibility of such formation in completely isolated segments of colon was demonstrated, by Dr. Joseph A. Blake in studies on

intestinal exclusion in dogs some years ago. This was the first time, Dr. Peck said, that he had had the opportunity to observe it in the human subject.

The selection of the best method suited to meet conditions in each case of carcinoma of the rectum was a matter of great importance. The procedure employed in this case had been much used in England and Scotland, and to some extent at the Mayo clinic, and was indicated for debilitated patients with fairly advanced growths in whom the one-stage operation, especially by the combined method, would seem too great an operative risk.

DR. HENRY H. M. LYLE said he recalled one case where about a year after the operation the patient returned, and upon examination it was found that the segment of the gut, which had been tied off and isolated, had developed into a large mucocyst occupying the whole pelvis. The removal of this cystic gut entailed considerable difficulty.

DR. CLARENCE A. McWILLIAMS said that he had operated upon one case of cancer of the rectum in the manner described by Dr. Peck. At the conclusion of the perineal removal, he thought it best to make an inguinal colostomy. This he did by drawing out the sigmoid, dividing it and sewing up completely the distal end which he dropped back. The perineal end was likewise closed and a drain inserted to it. This was five years ago and the man is still alive and well. Occasionally there is a slight discharge of muco-pus from the upper part of the sacral scar, but not enough to be annoying and soon ceasing.

DR. WILLIAM C. LUSK said that once, in a case of amputation of the rectum, on the advice of Dr. Bryant, he had isolated a segment of the pelvic colon without any disturbing sequel. At a preliminary operation the sigmoid loop was divided, and with the proximal end a permanent artificial anus was established, while the distal end was closed by suture and returned to the peritoneal cavity. Subsequently by the perineal route, the rectum was amputated through its extra-peritoneal portion after pushing upward the recto-vesical pouch, the lower end of the segment of bowel remaining in the pelvic cavity was inverted and sewed up, and the stump sutured at the middle of the skin incision which was closed over it. The wound at first healed completely, but soon after a sinus developed, which, on being laid open thirteen

months after the operation, was found to be associated with two retained silkworm gut sutures. There was no communication whatever with the closed off segment of bowel. The wound then healed completely and no sinus ever developed subsequently. The patient died of a pneumonia three years and four months after the bowel segment was isolated. Dr. Lusk said that the case was reported in the *Medical and Surgical Report of Bellevue and Allied Hospitals*, vol. i, 1904.

EMPHYEMA, WITH CHRONIC SINUS FORMATION.

DR. GEORGE E. BREWER presented a man, twenty years old, who was admitted to the Roosevelt Hospital on February 19, 1912, with the history that two years prior to his admission he had an attack of pneumonia, which confined him to bed for six weeks. Following this attack there was profuse expectoration of a greenish, yellow sputum, most abundant on rising, with severe cough when lying on the right side. About ten days later a tender mass developed to the right of the sternum; when this was incised there was a discharge similar in character to the expectoration, which then immediately ceased, together with the cough. Subsequently, three additional abscesses formed; these were incised, and left sinuses which were still discharging at the time of his admission to the hospital. The patient said he had lost 30 pounds in weight. There was no history of chills or fever.

An examination showed a scoliosis of the spine, with the convexity to the left. Expansion of the chest was two and a half inches on the left side; absent on the right. There were four discharging sinuses along the right side of the costochondral articulation, lined by unhealthy looking granulations. An examination of the blood showed 17,000 white blood cells, with 68 per cent. of polynuclears. The von Pirquet test was positive.

Dr. Brewer did a partial ostectomy of the 4th, 5th, 6th, 7th, 8th, and 9th ribs, followed later by the application of Bier's cup. When the patient left the hospital, on June 10, 1912, he still had a shallow sinus, with slight discharge. His general health was much improved, and up to the present time he had gained about twelve pounds in weight.

He was readmitted to the hospital on January 21, 1913, because of a slight hemorrhage from the sinus about a week ago. He stated that since his discharge last June the sinus had closed

four times, remaining closed about a week each time. At present, it discharged about two ounces of pus daily.

A pathological examination of some of the tissue from the sinus showed tuberculosis, with chronic inflammation.

PERFORATING DUODENAL ULCER.

DR. BREWER presented a man, thirty-five years old, who was admitted to the hospital on September 14, 1912, with the history of epigastric pain which had come on about three o'clock in the afternoon each day for the past two weeks. He gave no previous symptoms. For two hours prior to his admission he had suffered from an acute pain, colicky in character, which was more or less general, but most severe in the epigastric area. His bowels were constipated; he felt nauseated, but did not vomit. An examination of the blood showed 17,000 leucocytes, with 91 per cent. of polymorphonuclears.

An immediate operation by Dr. Brewer revealed a duodenal ulcer, about the size of a buckshot, about an inch below the pylorus. There was much free fluid in the peritoneal cavity. A posterior gastro-enterostomy, with suture, and an enterorrhaphy were done, and the patient made an uneventful recovery. His temperature reached normal on the third day, and he was discharged on October 2, 1912.

Dr. Brewer presented also a man, forty-three years old, a peddler, who was admitted to the hospital on September 16, 1912. His present illness dated back two years, when he began to have epigastric pain, burning in character and radiating through to the back. The pain was constant, but most severe about two hours after meals. He usually had one or two daily attacks of vomiting, about two hours after meals, when his pain was most severe. The vomitus was sour; there was no blood. The bowels were constipated; the stools very dark in color. A blood count showed 68 per cent. of hæmoglobin; 4,000,000 red blood cells; leucocytes, normal in number. A gastric analysis gave 87 per cent. of free hydrochloric acid, with a total acidity of 105. An X-ray, taken after the ingestion of bismuth, showed no retention.

Upon operation, which was done on September 18, 1912, a duodenal ulcer was palpated two and a half inches below the

pylorus, and upon pulling aside the stomach, gastric adhesions were found over a seeming previous perforation. When these adhesions were loosened, duodenal contents leaked out. As in the previous case, a posterior gastro-enterostomy, with suture, and enterorrhaphy were done, and the patient went on to uninterrupted recovery.

GASTRIC AND DUODENAL ULCER IN THE SAME PATIENT.

DR. BREWER presented a woman, twenty-five years old, who was admitted to the hospital on February 4, 1909. Her previous history had no bearing on her present illness. About two hours before admission she was seized with severe colicky pain in the epigastric region, and was unable to stand or walk. An immediate operation was done, revealing an induration, about one inch in diameter, on the posterior surface of the stomach, near the lesser curvature. In the centre of this indurated area was a small perforation, and the peritoneal cavity contained much cloudy free fluid. A gastrorrhaphy was done. The patient made an uneventful recovery, and was discharged on February 20, 1909.

On March 5, 1910, the patient was readmitted to the medical division of the hospital. At this time she complained of weakness and pain in the epigastrium, coming on after eating or after exercise. She had never vomited and blood had never been noticed in the stools. She improved under a palliative diet and was discharged on April 2, 1910. After this she remained free from symptoms for five months, when she again began to suffer from epigastric pain coming on about an hour after meals and persisting until she would produce vomiting. She had never noticed blood in the vomitus or stools.

The patient was again admitted to the hospital on November 20, 1910. At this time an examination of the blood showed 38 per cent. of hæmoglobin; 2,900,000 red blood cells, with a normal leucocyte count. An analysis of the gastric contents showed free hydrochloric acid, 50, with a total acidity of 90. No lactic acid nor blood. No blood could be found in the fæces and the urine was negative. The patient was put on Lenhardt's diet, and left the hospital on December 19, being instructed to return if necessary. She reappeared at the hospital three weeks ago

complaining of loss of appetite and a sense of weight in the epigastrium; she had no pain or other gastric symptoms. Three days before admission she had vomited a large quantity of blood, which had temporarily relieved the sense of fulness in the epigastrium.

Operation (January 11, 1913).—A small indurated area, the size of a buckshot, was found in the first part of the duodenum. A gastro-enterostomy, with suture, was done, and the patient made an uneventful recovery.

ULCER OF THE DUODENUM.

DR. BREWER presented a man, twenty years old, a machinist, who was admitted to the hospital on January 11, 1912. The history obtained was that for nine months prior to his admission he had suffered from pain in the right upper quadrant of the abdomen, which occurred about three times weekly and had no relation to the taking of food. It was never very severe and did not radiate. For the past three months, however, the pain had become more severe, it was now almost constant and was accompanied by vomiting. The vomitus was bitter rather than sour and contained no blood. His bowels were regular; he had never noticed that his stools were darker than normal.

Examination showed a point of slight tenderness in the mid-clavicular line, just below the right costal margin. A stomach analysis showed free hydrochloric acid, 34, with a total acidity of 60. No lactic acid; no blood.

Operation (November 16, 1912).—The gall-bladder was found normal; there were no stones. The first portion of the duodenum was thickened, and there was an ulcer, about one-quarter of an inch in diameter, located an inch from the pylorus. The patient made an uneventful recovery and left the hospital on December 1, 1912.

Dr. Brewer presented also a man, forty-nine years old, a farmer, who was admitted to the hospital on October 22, 1912. For the past two years he had complained of epigastric pain of increasing severity. At first these attacks were periodic in character, lasting about a month, but for the past five months the pain had been almost constant; it was worse just before meals and was temporarily relieved by eating or by the administration

of alkaline remedies. The patient often induced vomiting to relieve the pain. The vomitus was clear and exceedingly sour, and three months ago he had vomited a cupful of dark, clotted blood. The stools had been dark on numerous occasions. The patient stated that about eight years ago he had had a similar attack, lasting three months, during which he had vomited blood twice. He had never been jaundiced.

On admission, the patient's blood count was normal. A gastric analysis showed free hydrochloric acid, 64, with a total acidity of 98. No blood. The X-ray showed no retention.

Upon operation by Dr. Brewer on October 20, 1912, an infiltrated area, with a puckered scar on its surface, was found in the duodenum just below the pylorus. A posterior gastro-enterostomy, with suture, was done, and the patient made an uneventful recovery, leaving the hospital on November 14, 1912.

Dr. Brewer, in reply to a question as to his method of treating the peritoneal cavity in the cases of perforating duodenal ulcer, said that if he felt fairly well assured that he had gotten rid of all the dead matter, he closed the wound tightly; if, however, there was any doubt about this, he inserted a large cigarette drain directly into the wound, or, in some cases, through a stab-wound in the bottom of the pelvis. In none of these cases had he closed the pylorus; he did this in cases of bleeding ulcer, but not in perforating ulcer. If we had at our command a rapid method of closing the pylorus, he thought it might be wise to resort to it in some of these cases, and he was now doing some experimental work with that object in view.

In cases of acute perforation in the duodenum, Dr. Brewer said he always washed out the peritoneal cavity. While he had no doubt that the peritoneum could take care of a certain amount of infection, he was in favor of removing as much of the infective material as he could without endangering the life of the patient.

DR. WILLIAM A. DOWNES said he had operated on perhaps fifteen cases of perforating gastric and duodenal ulcer, and had never washed out the peritoneal cavity. In cases where there was a good deal of soiling, he had used the suction method. Under this treatment the majority of their cases at the New York Hospital had recovered.

DR. A. V. MOSCHCOWITZ said that in dealing with chronic

duodenal ulcer he made an attempt to close the pylorus by infolding it by means of a series of sutures. He thought by doing this future disturbance might be prevented, and he believed that this occlusion of the pylorus functionated, at least long enough to give the ulcer a chance to heal.

DR. BREWER said that while theoretically he appreciated the fact that the pylorus should be closed off, he had yet to see a case of duodenal ulcer that was not permanently relieved by a gastro-enterostomy without closure of the pylorus.

DR. ERDMANN said he could not recall how many gastro-enterostomies he had done at the Post-Graduate Hospital and in private practice without occluding the pylorus, and he had never seen any bad results follow.

DR. EUGENE H. POOL said that in connection with the discussion concerning doing a gastro-enterostomy and leaving the pylorus patent he had in mind another procedure which he thought could be done in a limited number of cases of small chronic ulcer of the anterior wall of the first part of the duodenum, in which there were not many adhesions. Under those conditions he thought we could do a Finney operation, at the same time removing the involved area, and getting a wide low outlet draining the lowest part of the stomach. Dr. Pool said he had followed this method in a case which came under his care last July, and the results were admirable. Of course, this could only be done in a very limited class of cases.

DR. PECK thought that a gastro-enterostomy opening, properly made, did not close with a patent pylorus as quickly as was the general impression to that effect. He recalled a case where several years after a gastro-enterostomy bismuth passed very readily through the artificial opening, as shown by radiographic pictures. He thought it had not been proven that such a closure did generally occur, and that the gastro-enterostomy opening failed to functionate when the pylorus was left open.

DR. MOSCHCOWITZ said he could recall two cases where the gastro-enterostomy opening could not even be found at a second operation, and there were barely traces of adhesions between the jejunum and stomach. In order to show how difficult it is to occlude the pylorus, he would mention a recent case in the service of Dr. Arpad G. Gerster in which the pylorus was ex-

cised and both ends sewn up and a gastro-enterostomy was done. The patient subsequently returned with a recrudescence of symptoms and an X-ray showed distinctly that bismuth was passing down not only through the gastro-enterostomy opening, but also through the pylorus, connection through this having been re-established with the stomach within eight months after the primary operation.

DR. CHARLES A. ELSBERG said that experimentally it had been found very difficult to make an excision of the pylorus in dogs, as the connection with the stomach was often re-established. The same was true after excision of the common ducts and tying off the ends.

EXSTROPHY OF THE BLADDER.

DR. GEORGE E. BREWER presented a lad, sixteen years old, with an exstrophy of the bladder which had been unsuccessfully operated on in childhood. When the boy was admitted to the Roosevelt Hospital, on November 12, 1912, he had an open, granulating area in the suprabubic region, through which the posterior wall of the bladder could be seen. Below this was a rudimentary glans penis and the testes could be felt below the inguinal rings.

A week after admission, Dr. Brewer did a sigmoid implantation of the ureters. The boy's temperature rose to 103.8° on the fourth day after the operation; then it gradually fell to normal on the ninth day and remained below 100° until January 8, 1913, when there was a sudden rise to 103° , and on the following day to 104.4° . There was no explanation for this temperature excepting slight costovertebral tenderness on both sides. His blood count at the time showed 17,000 leucocytes, with 82 per cent. of polynuclears. A blood culture was negative. Two days later the temperature fell to normal and had remained so up to the present time.

For five days following the operation the patient had passed from 21 to 60 ounces of urine daily in small quantities and at frequent intervals. During this period he was given colonic irrigations twice daily. During the next two weeks he passed about two ounces of urine every two hours, and since then he had been passing about four ounces every four hours. The urine

was cloudy, alkaline in reaction, with a specific gravity of 1020. It showed a faint trace of albumin and a few white blood cells; no casts.

Dr. Brewer, in reply to a question as to the possibility of a resulting nephritis after implantation of the ureters into the bowel, thought that complication would doubtless follow in a fair proportion of cases. In the two cases where he had thus far resorted to this procedure, there had been no nephritis.

Dr. ERDMANN said that in one case where he had transplanted the ureters into the bowel, by the Maydl method, the patient, a child, survived the operation about 12 days, dying from pneumonia. Since then he had done a direct implantation in two patients; both ended fatally by ascending infections after the 10th to the 15th day.

Dr. ELSBERG said he had one case where he implanted the ureters into the sigmoid and made lateral entero-anastomosis at the base of the loop so as to exclude the fecal stream as much as possible. The patient died a month or two later from double kidney infection.

ULCER OF THE STOMACH.

Dr. BREWER presented a man, fifty years old, who was admitted to the hospital on March 4, 1912. The history obtained was that during the past three years he had suffered from six attacks of abdominal pain, accompanied by vomiting, each lasting perhaps four or five weeks. The pain was of a burning or gnawing character, located in the epigastrium, radiating to the back, but never to the shoulder. The pain came on within fifteen to thirty minutes after eating, and lasting from a few minutes to an hour, being relieved by vomiting. The vomitus consisted of acid tasting food and sometimes contained remnants of food that had been taken twenty-four hours before. Vomiting was usually preceded by sour eructations.

The patient's present attack began ten days ago and since its onset he had on three occasions vomited dark, coffee-ground material, the last time 48 hours before admission. He had never noticed this kind of vomitus during previous attacks. He was usually constipated, especially during these attacks. Blood had never been noticed in the stools, nor were they of an unusually dark color. During one of his attacks, about a year ago, he had

been jaundiced. No chills nor fever. During these attacks he dieted himself strictly and lost in weight, but his lost weight was regained during the intervals. Examination revealed epigastric pain; no masses.

Upon operation, which was done on March 4, 1912, a saddle-shaped ulcer was found on the lesser curvature of the stomach, involving both the anterior and posterior surfaces, and located about three inches from the pylorus. In its centre was a round, punched-out area, three-quarters of an inch in diameter and half an inch deep, with a surrounding indurated area an inch and a half in diameter. The stomach was dilated; there were no adhesions.

A partial gastrectomy was done. The patient required an intravenous infusion at the completion of the operation. There was no nausea nor vomiting. The wound healed by primary union, the sutures were removed on the eleventh day, and the patient left the hospital on March 31, 1912. Pathological report: Chronic inflammation in gastric ulcer.