TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY

STATED MEETING HELD APRIL 4, 1932

The President, DR. JOHN SPEESE, in the Chair
CALVIN M. SMYTH, JR., M.D., Recorder

VENTRAL HERNIA—HERNIOPLASTY—LIPECTOMY

DR. HUBLEY R. OWEN presented a woman, aged fifty-six years, who was admitted to the Philadelphia General Hospital January 22, 1932, with the chief complaint of incisional hernia. In 1925, she had had laparotomy for prolapse of the uterus and a second gynæcological operation in 1930. Shortly after the second operation she fell heavily to her knees and thereafter noticed a swelling in the abdominal wall which had been increasing in size and for the past few months has been painful.

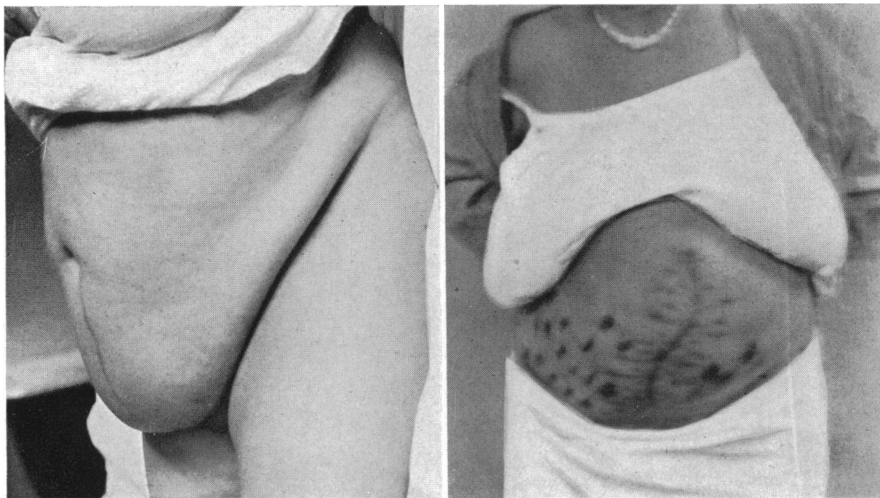

FIG. 1. FIG. 2.

FIG. 1.—Ventral hernia before operation.
FIG. 2.—Result of operation on condition shown in Fig. 1. Photo taken four weeks after operation.

The examination of the abdomen disclosed below the umbilicus a large misshapen protrusion which hung like an apron (Fig. 1) along with natural adiposity over pūbis. This mass contained gurgling gut. An ill-defined rectus diathesis could be palpated

At operation, two longitudinal, eliptical incisions were made from below the ensiform cartilage to above the symphysis. Subcutaneous tissues and peritoneum dissected free of hernial sac. An area of skin and subcutaneous tissue measuring ten inches by nine inches was removed. The contents of hernial sac were replaced in the abdomen. Peritoneum was closed and both the posterior sheath and the anterior sheath of the rectus muscle were overlapped and sutured with interrupted No. 2 chromic gut. When the closure

of the skin and subcutaneous tissue was undertaken it was found on account of the large amount of tissue removed that it was necessary to "pie-crust" (Fig. 2) on either side of the suture line in order to relieve the strain on the skin sutures. The patient was discharged February 16, 1932, twenty-one days after operation.

LOCALIZED TUBERCULOSIS OF THE CHEST-WALL

Dr. Richard H. Meade, Jr., read a paper with the above title for which see page 247.

ELEPHANTIASIS NOSTRA

Dr. George P. Muller and (by invitation) Dr. Claus G. Jordan read a paper with the above title for which see page 226.

SPLENIC ABSCESS

Dr. Eldridge L. Eliason reported the case of a man, aged twenty-three years, who was admitted July 21, 1931, to the Medical Service of the University of Pennsylvania Hospital, complaining of pain in the left side of chest following rupture of a left peritonsillary abscess. He had developed sore throat June 16, 1931, and was admitted to the hospital June 20, 1931, after a fainting spell, associated with a very high fever. While in the hospital a left peritonsillar abscess ruptured June 25. On the next day a severe pain was noted in left side of the chest near costal margin in the anterior axillary line. This pain spread to entire left upper quadrant of the abdomen. Decided tenderness to palpation was noted over the left upper abdominal quadrant. The patient was coughing up profuse mucopurulent sputum and was experiencing nausea, vomiting, weakness and sweating He had had definite chills and his temperature was 104.2°.

Fluoroscopical examination of the chest July 22 disclosed a small empty abscess cavity in the right upper lung, with a fluid level beneath the diaphragm on the left side lateral to the stomach; and a fixed left diaphragm indicative of subdiaphragmatic abscess. X-ray examination July 25 showed in the lateral view that the abscess in the right lung was in the base of the upper lobe. A blood culture showed a staphylococcic septicæmia. A surgical diagnosis of (1) splenic infarct with abscess formation secondary to acute tonsillitis was made and drainage advised; (2) lung abscess and septicæmia (the former appears to be draining adequately by the postural method of treatment).

Following a transfusion of 250 cubic centimetres of blood the patient was operated upon July 27 through a left modified Kocher incision. On opening the peritoneal cavity there was a gush of reddish-gray purulent matter, evidently under pressure and accompanied by a malodorous gas, comparable to that draining from the peritonsillar incision. Approximately one litre of pus evacuated. Pulp-like tissue escaped in shreds, not unlike splenic pulp. Soft rubber tissue cigarette drains were inserted and wound packed with plain gauze. The pulse was 160 at the close of operation, which took fifteen minutes. The patient was again transfused after operation, but he became progressively worse and succumbed about twenty-seven hours later. The post-operative course was marked with a severe hyperthermia, the temperature reaching 108°.

At an incisional post-mortem, the spleen was found the seat of an enormous abscess which had ruptured, causing a localized subdiaphragmatic abscess bounded by the liver, stomach, colon and lateral abdominal wall. It

contained pus and small quantities of soft mushy tissue, which on extraction were found to be portions of the spleen which had undergone necrosis and sequestration. The right lung showed a large abscess. Further exploration was not permitted.

Doctor Eliason remarked that abscess of the spleen is thought to be a rare disease. This fallacious idea is due to the fact that it is rarely reported as such, because it is seldom diagnosed and treated surgically. It is, however, frequently found at post-mortem as a complication in septicæmia, typhoid fever, relapsing fever, *etc.,* its existence before death not being suspected or rather being masked by the serious nature of the primary disease. The above case was diagnosed and treated surgically although with fatal result. It illustrates also the sequestration phenomenon noted by Kuttner in his series of abscessed spleens.

ECHINOCOCCUS CYST OF THE LIVER

Doctor Eliason reported the case of a man who was admitted to the hospital of the University of Pennsylvania April 7, 1927, complaining of severe pain in the mid-epigastrium. The patient had been perfectly well until three years and five months before admission, at which time he was seized with a severe pain in his upper abdomen which doubled him up, persisting for ten minutes, and then disappeared entirely. These attacks became periodic in type, recurring at intervals of from three weeks to two months, and lasting from ten minutes to twelve hours each time. Soon after the original attack the patient was admitted to the New York Polyclinic Hospital where X-ray studies and duodenal drainage were done. He was informed that all examinations at that time were negative. The pain had no relation to food and was not accompanied by nausea, vomiting, dizziness or headache. It was severe, usually localized in the mid-epigastric region, though it occasionally radiated through to the interscapular region posteriorly. Nausea and vomiting appeared as a feature only with the attack immediately before the patient's admission to the hospital. There were no other gastro-intestinal symptoms in the patient's past history and the cardiorespiratory, nervous and urological systems were negative.

When admitted the upper recti were markedly rigid and there was definite tenderness about one inch below the ensiform cartilage in the mid-line. The lower recti were soft, the liver, spleen and kidneys were not palpable and no other masses were made out. Peristalsis was absent. The leucocyte count on admission was 22,300. The fluoroscope revealed a large mass extending upward from the anterior portion of the right lobe of the liver, considered to be probably non-inflammatory since the diaphragm moved readily above it. In view of this finding immediate operation was postponed. The following morning the abdomen was soft, the temperature, pulse and respirations normal and the patient felt quite comfortable. The leucocyte count had fallen to 11,900. Because of the X-ray findings, the slight icterus and the patient's nationality (Greek), a tentative diagnosis of echinococcus cyst of the liver was made which was further confirmed by the presence of a positive complement fixation test for hydatid disease.

The following day a portion of the right tenth rib in the mid-axillary line was resected, the diaphragm was sutured to the pleura and the wound packed with gauze. Two days later a needle inserted into the cyst cavity obtained typical "spring water" fluid and a cautery was carried along its

course toward the cyst. As there did not appear to be sufficient adhesions present between the liver and the diaphragm at this time, however, and to prevent the possibility of peritoneal soiling, the wound was again packed with gauze for three days. May 2, 1927, the cyst was entered by means of the cautery. It was found to be about the size of an orange, filled with daughter cysts of all sizes and containing a quantity of yellow mucoid material. After removing many of the cysts the cavity was packed with gauze. Four days later the gauze was removed and the cavity explored by means of a cholecystoscope. Many small daughter cysts were found lining the wall of the cyst cavity; about a cupful of these were removed with moderate difficulty. During the next few days the general condition of the patient rapidly improved, the drainage from the cyst cavity decreased and he was discharged to the surgical out-patient department. Four months later he was enjoying excellent health, at his old work and symptom-free.

The patient had no symptoms until January 1, 1932, when, after a heavy meal, he again experienced a moderately severe pain in the epigastrium which continued for twelve hours. This was followed by a feeling of soreness which extended from the epigastrium down to the anterior superior spine on the right. For the next four days he remained in bed, felt feverish and experienced several chills, although his appetite was good and there was no digestive upset. He was admitted to the hospital January 5, 1932, with a temperature of 99°, pulse 84 and respirations 20. In the abdomen a large mass was palpable extending down from the right costal margin to the level of the umbilicus. The mass moved with respiration, had a definite edge, was moderately tender and extended on percussion to the fourth right interspace in the mid-clavicular line. Recurrent echinococcus disease of the liver was evident. Surgical drainage was instituted by means of the transthoracic approach in two stages. The cavity in the right lobe of the liver was found to be about the size of an adult fist. From this approximately a cupful of daughter cysts of varying size were removed. At operation the cysts were seen attached to all sides of the cavity. Palpation revealed the presence of some calcification in the wall of the cavity beneath the daughter cysts. The cavity was packed with gauze and a large drainage tube inserted. Postoperatively the patient drained great quantities of bile-stained serum, in which many daughter cysts could be seen. Irrigations with 1.5 per cent. iodine solution were instituted but the pain incident to these irrigations was so great that they had to be stopped even though the concentration was reduced to .5 per cent. An X-ray plate taken after the injection of lipiodol into the sinus showed the entire hepatic duct system plainly outlined, the ducts appearing somewhat larger than normal. The hepatic ducts and the common duct were particularly dilated, but a small portion of the lipiodol was seen to enter the duodenum. This plate demonstrated conclusively an existing connection between the echinococcus cyst and the biliary tree and suggested the presence of some obstruction in the common duct. The patient continued to discharge great quantities of bile through the wound, although there were no signs of biliary insufficiency manifest. The biliary drainage decreased gradually though he continued to require two dressings per day. March 1, 1932, the patient was discharged to the care of his family physician. At this time there was no jaundice, the stools were brown and he was free from all symptoms except the profusely discharging biliary fistula at the operative site.

March 10, 1932, the biliary drainage from the fistula ceased and coincident with this the patient developed chills, fever, pain in the epigastrium and became definitely jaundiced with acholic stools. His physician probed the

biliary sinus which resulted in a great outpouring of bile and the jaundice with its accompanying symptoms promptly disappeared within the next few days. The man was again admitted to the hospital March 17, 1932. On this admission there was no definite jaundice although the sclera had a subicteroid tinge. The biliary fistula in the right chest continued to discharge copious quantities of bile each day. The stools were brown and the urine showed no bile salts. Under gas-ether the abdomen was opened through a modified Kocher incision. The gall-bladder was of normal thickness and color, was not distended and contained no stones. Palpation of the superior surface of the liver showed this tightly adherent to the right diaphragm. There were many adhesions along the cystic and common ducts. The cystic duct was but slightly dilated, while the hepatic duct when seen was found to be greatly enlarged, being approximately the size of one's thumb. The common duct as it passed behind the duodenum was also seen to be similarly dilated. The gall-bladder was opened and found to contain no bile. It was then carefully explored with the cholecystoscope but no calculus was found which might account for the absence of bile from the gall-bladder. The hepatic duct was then opened and found to be filled with bile in which streaks of purulent material were noted. A catheter introduced into the common duct through the hepatic duct readily entered the duodenum. Flushing out the common duct with normal salt solution failed to disclose the presence of any calculus or daughter cysts in this portion of the ductal system which might be responsible for the obstruction. The catheter was then passed up the hepatic duct into the liver. Approximately five centimetres up the hepatic duct, within the liver, a partial obstruction was encountered, although the catheter could be forced by this point. Instilling salt solution in the hepatic duct through the catheter resulted in the discharge of several small typical daughter cysts through the opening in the hepatic duct. It was therefore felt that the obstruction was of the partial type, due to the transplantation of echinococcus cysts, located high in the hepatic ducts. Drainage of the common duct or a cholecyst-duodenostomy in such a case would serve no useful purpose so the incision in the hepatic duct was closed and a drain placed to this site. A cholecystostomy was performed and the abdomen was closed. Post-operatively the patient did well. Small quantities of bile were discharged through the cholecystostomy tube although the biliary sinus in the chest continued to discharge considerable quantities of bile requiring daily dressings.

INTRAMURAL ABSCESS OF THE STOMACH

Dr. L. K. Ferguson reported the case of a colored woman, thirty-eight years old, admitted in the service of Dr. E. L. Eliason at the Philadelphia General Hospital March 29, 1931, complaining of severe epigastric pain. Following a drinking party one week before admission, the patient had an attack of acute upper abdominal pain associated with marked vomiting and elevation of temperature. Her pain continued and became localized slightly to the right of the mid-line in the epigastrium. There was radiation of the pain to the back and to the right shoulder. Two years before admission the patient had a severe gastric hæmorrhage which was thought to be due to a gastric ulcer. Since that time she had suffered from occasional gastric upsets usually following the taking of alcohol in excess.

There were no abnormal signs in the lungs. The abdomen was distended and was markedly tender and rigid in the epigastrium, especially on the right side. No masses were palpable. Peristalsis was greatly diminished. A scar of a previous operation in the lower abdomen was not tender. The blood

count showed 4,620,000 red cells and 21,200 white cells of which 92 per cent. were polymorphonuclear leucocytes. A flat plate of the abdomen showed no gas under the diaphragm and was reported as not suggestive of a ruptured viscus.

The abdomen was opened through a right rectus incision under spinal anæsthesia. A small amount of clear, straw-colored fluid was aspirated. An examination of the stomach showed a diffuse thickening of the pyloric end, more marked on the lesser curvature and anterior wall. There was marked œdema of the tissues of the gastrohepatic omentum which extended upward to involve the subhepatic structures. The gall-bladder was indurated but did not contain any stones. Clear, yellowish bile was aspirated from it. No pathological condition could be found in the lesser peritoneal cavity. A cholecystostomy was performed and the wound was closed about the tube.

The first post-operative day was uneventful. On the second day the abdomen became distended and peristaltic sounds were diminished. Glycerine enemas appeared to relieve the distension somewhat. Temperature and pulse gradually increased. On the evening of the third day when the distension was still marked the patient was found out of bed. During the night she was delirious and incontinent. The pulse and temperature gradually mounted, the distension increased and the patient died on the morning of the fourth post-operative day.

Post-mortem examination revealed a generalized fibrino-purulent peritonitis. The stomach was the seat of an acute phlegmonous process. About two centimetres above the pylorus there was an abscess lying between the mucosa and muscularis. The abscess cavity was about six centimetres in diameter and contained about ten cubic centimetres of fluid pus. There was marked induration and œdema of the surrounding stomach wall. The duodenum also was involved in the acute inflammatory process and there were many ulcerations of the mucosa.

Doctor Ferguson remarked that Rankin and Miller have recently reported that abscesses of the gastric wall form about 12 per cent. of the purulent inflammatory lesions of the stomach. They occur so infrequently, however, that the diagnosis is rarely made except at operation or at necropsy. As a rule they represent an advanced stage of phlegmonous gastritis, the exciting causes of which may be grouped under five general heads: food, alcohol, chemical irritants, infections and infectious fevers. In addition, local inflammatory lesions may be set up by occupational, accidental or operative trauma to the stomach wall. The abscesses are usually located in the submucosa but they may involve all the layers of the stomach.

The predominating organisms are usually streptococci or staphylococci and occasionally pneumococci. The surgical treatment of gastric abscess is attendant with a very high mortality. Incision and drainage, excision and drainage and gastric resection have occasionally been used in the treatment of this condition. It occurs so rarely, however, that the lesion is often not diagnosed even at operation. Symptoms of gastric abscess are varied. The patients are usually young and often the history may be obtained of an alcoholic debauch or some food intoxication. There is sudden loss of appetite, nausea and vomiting occur, and vomiting becomes a prominent symptom. As a rule, the fever is high, varying between 103° and 105° and is often of the

septic type. On examination there is marked pain and tenderness in the epigastrium, at times referred to the back and to the shoulder. The X-ray findings usually are interpreted as gastric ulcer.

MUSCULOSPIRAL PARALYSIS—TENOPLASTY

Dr. George M. Dorrance presented a boy, aged nine years, who was admitted to St. Agnes' Hospital September 1, 1931. Four years prior to admission this child was struck by an automobile and sustained a compound fracture of the humerus and severe laceration of the upper arm. He was treated in another institution. All the muscles of the upper arm were torn loose from their points of insertion and the skin and fascia was devitalized over a large area. The musculospiral nerve was exposed and during the fifteen weeks' stay in the hospital, it ruptured and the ends became buried in the scar tissue. The infection cleared up before his discharge. He had practically no power to raise his forearm; he had wrist drop. One year prior to his admission to St. Agnes' Hospital, Doctor McShane and the reporter reunited the ends of the musculospiral nerve but as there was no return of function he was admitted for a tendon transplantation. September 2, 1931, the following operation was performed: The tendon of the flexor carpi radialis was cut close to its insertion at the base of the second and third metacarpal bones; the tendon of the flexor carpi ulnaris was also cut close to its insertion in the pisiform bone. Next the four tendons of the extensor communus digitorum and the extensor longus policus were exposed just above the posterior anular ligament. Each of these tendons was slotted—then the free end of the tendon of the flexor carpi radialis was threaded through from the radial side and drawn out for a distance of one inch on the ulnar side. The flexor carpi ulnaris tendon was threaded through from the ulnar side and drawn out for an inch on the radial side. The free ends were turned back on themselves and sutured. A suture was placed through each of the tendons also at the openings in the communis digitorum and extensor longus policis. The wounds were closed and for four weeks the arm was placed in a plaster case with the wrist extended. After four weeks massage was begun and passive motion instituted. The child was encouraged to move the wrist. Almost complete restoration of the power of extension was accomplished by this procedure.

March 31 the patient was examined by Dr. Milton Meyers who tested the extensor muscles and the supinator longus to see if the musculospiral nerve had regenerated, so perfect was the function. Doctor Meyers had examined this patient before the operation and reported that the muscles supplied by the musculospiral had undergone atrophy and showed signs of degeneration. Today he reports partial return of musculospiral function. This illustrates the point that return of function after nerve suture may not manifest itself for eighteen months or longer.

TEMPOROMANDIBULAR ANKYLOSIS

Dr. George M. Dorrance presented a girl, aged six years, who was admitted to St. Agnes' Hospital November 21, 1931, with the diagnosis of bony ankylosis of the left temporomandibular joint. At the age of one year, a large cervical abscess complicating septicæmia developed. Incision and drainage was performed and the patient was under medical supervision for four months. Eight months later, she developed a septic sore throat. In attempting to treat this, the physician forcibly opened the jaws. Since then, according to the mother, the jaws became fixed. Physical examination was negative

except for the complete bony ankylosis of the left side of the jaw. X-ray showed atrophic bone changes in articular process of the left side and complete bony ankylosis.

November 13, 1931, under ether anæsthesia, resection of the left mandibular joint was done. Not only was the condyle fixed but the coronoid process was fixed by ossification to the base of the skull. It was necessary to resect about one inch of the bone. Convalescence was complicated by an acute otitis media but was otherwise uneventful. The patient was instructed to open and close the jaws every fifteen minutes after the tenth day. This procedure was painless from the start—the chewing of gum proved to be a valuable adjunct in keeping the jaws in motion. At the present time she has no difficulty in opening the jaws to the normal limits.

RESECTION OF MANDIBLE

Dr. George M. Dorrance presented two patients operated upon for malignancy of the jaw. The first patient was a man who was operated upon twelve years ago by the later Dr. Francis T. Stewart, at Jefferson Hospital, for a multilocular cyst. Recurrence of the condition led the reported to do a resection of the lower jaw, after having ligated the external carotid artery.

This man has had metastasis to the glands of the neck, a fact not sufficiently emphasized when discussing the relative benign nature of adamantinomas. He wears a double inclined plane appliance made by Doctor Webster and has little deformity and can masticate quite satisfactorily.

The second case was that of a woman who had had one-half of the jaw resected for a sarcoma. She does not wear any splint or appliance. Unfortunately, a local recurrence necessitated removing the bone well beyond the mid-line into the second incisor area on the opposite side. Doctor Dorrance has been agreeably surprised to find that while this procedure did increase the deformity considerably, it has caused comparatively little disturbance to the patient.

These two cases were shown to illustrate the fact that when necessity dictates resection of half the jaw, the ensuing deformity need not be too seriously considered.

ARTHROPLASTY OF JAW FOR ANKYLOSIS

Dr. A. Bruce Gill presented two patients on whom an arthroplasty of the jaw had been done. The first patient was operated upon in 1927, when five years of age. When she was a baby she had pyogenic infection of the right hip which was not recognized. She was being treated for tonsillitis for a number of weeks. During that time an abscess developed in the region of the right temporomandibular joint which was opened and drained. Bony ankylosis resulted. The lower jaw did not develop with the other bones of the face. At the present time she has normal mobility of the jaw and the lower mandible has developed almost to normal size.

The second patient was operated upon January 21, 1932. She is eleven years of age. The ankylosis of the temporomandibular joint occurred when she was two years of age. At the time she was in the Municipal Hospital for a period of sixteen weeks with scarlet fever, diphtheria, pneumonia, mumps and measles in succession. She had a blood-stream infection which produced abscesses in the left thigh and the left arm and wrist. A bony ankylosis of both temperomandibular joints resulted. Bilateral arthroplasty was done. At the present time she is able to open her mouth about one and a half inches and the range of motion is increasing

Doctor Gill did his first operation for this condition in 1919. His method of operation has always been as follows: Incision is made through the skin about one inch in length along the lower border of the zygoma. Another incision of the same length at a right angle to the first one is carried down just in front of the ear. The soft tissues are divided down to the lower border of the zygoma and are pushed downward by blunt dissection. In the majority of his cases it has been found that both the condyle and the coronoid process have been ankylosed to the skull with obliteration of the sigmoid fossa. With a thin-bladed osteotome the ramus of the jaw is divided about one-half inch below the lower border of the zygoma and then the upper portion of the mandible is separated from the zygoma in the same way. If this is done carefully no injury is done to vessels, nerves or parotoid gland. A piece of superficial fascia and fat is removed from the thigh and placed between the skull and the mandible. The wound is closed without drainage.

The after-treatment consists in keeping the mouth open with plugs made of rubber or with a wooden screw or with dental plates which have arms attached to them to which are fastened rubber bands. It has been found that these mechanical means are not needed after the first two or three weeks as the patient then begins to move the jaw freely. One case of relapse occurred in a patient in whom he did not interpose any soft tissue between the bones at the time of operation. A second operation was necessary. It resulted in good function. In practically all of the speaker's cases the condition was due to a pyogenic infection apparently accompanied by the presence of osteomyelitis in other parts of the body. After function of the jaw is established it has been found that the jaw develops. Of course, the younger the patient at the time of operation the more rapid and more complete is the result.