TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting Held March 1, 1926

The President, Dr. Charles G. Mitchell, in the Chair

CHOLECYST-DUODENOSTOMY

Doctor George P. Muller read a paper with the above title, for which see page 95.

In connection with the paper he presented a patient who had been subjected to operation May 20, 1924, for a growth involving the ampulla of Vater, which the biopsy demonstrated to be a carcinoma. It was destroyed with the actual cautery. The patient when presented appeared to be perfectly well.

HYPERNEPHROMATA

Doctor Albert E. Bothe read a paper with the above title, for which see page 57.

SUBDIAPHRAGMATIC AND LIVER ABSCESS FOLLOWING APPENDICITIS

Doctor E. L. Eliason read a paper with the above title, and illustrated it by lantern slides.

In illustration of his subject, Doctor Eliason presented a man, aged twenty-four years, who was admitted to the University Hospital, on the night of November 4, 1925, with a history that three days before admission he was taken with generalized abdominal pain. For two days he remained in bed with some abdominal pain and slight nausea. On the afternoon of the third day, the pain seemed to grow more severe and became localized in his right lower abdomen.

On admission the patient appeared acutely ill. Temperature, 101.4°; pulse, 100; respirations, 20. Examination showed a scaphoid abdomen, with marked tenderness and rigidity over the whole lower right abdomen. There was a suggestion of a mass about 4 cm. mesial to the right anterior spine. Peristalsis was active except in the lower right abdomen. White blood cells, 18,200.

He was operated upon shortly after his admission. A McBurney incision was made under local anæsthesia. The peritoneum was found thick and œdematous and adherent to the wall of an abscess cavity from which cloudy fluid escaped when opened. The opening was immediately over the appendix which was found gangrenous throughout almost its entire length and lying free in the abdomen, except for a slight attachment of its distal part to a bit of œdematous meso. The appendix was removed. The appendix had already become detached from the cæcum at its base; no other effort was made at ligation or inversion of the stump. A split rubber tube was inserted into the pelvis and three cigarette drains were placed around the caput cæcum.

The day following operation he seemed to be doing very well. Peristalsis was present and drainage was profuse. His abdomen gradually became quite

distended and peristalsis was much reduced. Hot flaxseed poultices were placed over his abdomen and finally one ampule of pituitrin was given. These measures relieved his distention almost at once.

On the eighth day after his operation the patient complained of a pain in his right chest on coughing or deep breathing. He had developed a slight cough two days previously. Examination revealed dullness at the right base and axilla with diminished breath sounds and few râles. The heart seemed pushed to the right side. The X-ray confirmed the clinical diagnosis of massive atalectasis—right base, or bronchopneumonia. The heart was in the normal position at the time the X-ray was made. The operative wound continued to drain profusely and the discharge was dark in color with a fecal odor, and at his dressings gas escaped from his wound.

The patient's general condition improved gradually and his chest cleared, but his temperature continued to be of the hectic type, rising to 101°–102° at night, suggesting pylephlebitis with liver abscess.

Leucocytes, 17,800. A Van den Bergh test showed no increase in bile pigments in the serum. His chest signs were clearing and he had no tenderness, œdema or dilated veins over his liver. His blood culture showed no growth.

A week later his chest signs seemed to change, with increased dulness at the right base. An X-ray showed fluid, which was aspirated, 120 c.c. of clear yellow fluid was obtained.

The day following this aspiration he showed for the first time tenderness over the liver area. A fluoroscopic examination demonstrated a high fixation of the right diaphragm.

December 2, twenty-eight days after his first operation, an exploring needle found pus just above the ninth rib in the anterior axillary line. Under local anæsthesia then a portion of the ninth rib was removed subperiosteally. In doing so the pleura was torn slightly, allowing some serous fluid to escape into the wound. No attempt was made to open the abscess, but the parietal and diaphragmatic pleuræ were sewed together around the needle to close the pleural tear.

Two days later the pus cavity was again located and opened with a cautery. The blunt aspirator inserted into the cavity evacuated about six ounces of thick foul pus. The tract was enlarged sufficiently to admit a large rubber drainage tube and packing.

Three days after his liver abscess drainage, the patient developed colicky abdominal pains, with increased peristalsis and hiccough. He was slightly distended. The next day he vomited. The temperature was normal. A diagnosis of partial intestinal obstruction was made and an enterostomy performed under local anæsthesia. A left gridiron incision was made and a catheter inserted into a distended loop of ileum. He drained freely through the tube.

From that time on he gradually improved. The fecal fistula drained less and less, and his bowels moved regularly. The enterostomy tube was removed fourteen days after its insertion, and the liver abscess drainage grew less.

He was discharged December 24, 1925. Since his discharge he has gained about 25 pounds in weight and his fecal fistula has remained closed since February 9.

Doctor John P. Jopson asked Doctor Eliason to what extent he relied on the aspirating needle for his diagnosis before operating. It had been his fortune to see a fairly large number of cases of subphrenic abscess, complicating intra-abdominal infections, and in only one was there evidence of liver infection, with free discharge of bile from the drainage tract, and this patient

died. The proportion of cases of liver abscess in Doctor Eliason's series is in striking contrast to the general experience.

DOCTOR ELIASON, in replying, said that in every one of his cases the needle was inserted into the abscess and with it still held in position, the rib was resected and then an opening made in the diaphragm and thence into the liver. In three of the cases there was a subdiaphragmatic abscess, but all these were connected with a liver abscess.

DOCTOR ASHHURST had said when one of these cases was reported before the Academy, that the foreign literature showed many cases of single abscess of the liver reported as following acute appendicitis. While the reporter hesitated to make the statement, the actual facts were that only three of the cases showed diaphragmatic abscess and they without exception had an opening into the abscess in the liver; hence it was taken for granted that they were primarily liver and secondarily subdiaphragmatic. All were diagnosed with the needle and many were from one-half to two and one-half inches deep in the viscus.

DOCTOR ELIASON also presented a man, sixty-six years of age, who was admitted to the University Hospital, November 1, 1925, after having had acute upper right abdominal pain and vomiting for forty-eight hours. He had had several such attacks during the three years previous to his admission with considerable indigestion and transient attacks of distention associated with palpitation. He lost about sixty pounds of weight during the year previous to his admission.

On admission the patient appeared acutely ill with considerable loose cough and in evident pain. Temperature 102, pulse 120, respirations 28. His examination showed an emphysematous chest with many râles throughout both lungs, but no areas of consolidation. He had a systolic murmur at the apex. His abdomen was rigid and acutely tender over the upper right quadrant and a mass could be felt below the chondral attachment of the ninth rib. Leucocytes 21,700.

He was operated on under local anæsthesia. A right rectus incision was made disclosing a mass composed of omentum adherent to a large, tense gall-bladder. The adhesions were separated from the tip and the gall-bladder was aspirated. About 2 ounces of white, purulent material were removed. The scoop inserted into the gall-bladder brought away several stones and considerable muddy, brownish material. Inflammatory œdema of the omentum and gastro-hepatic structures made exploration difficult, but no further stones were palpated in the gall-bladder or cystic duct. The head of the pancreas was enlarged and firm. A cholecystostomy was performed and drainage tubes placed about the gall-bladder.

The patient did fairly well after operation and drained bile on the third day. His tube was removed on the tenth day after operation and his wound gradually healed until he was discharged, twenty-seven days after his admission. The chronic bronchial cough persisted throughout his stay in the hospital.

The patient was admitted again December 16, 1925, after three days of acute upper right abdominal pain with vomiting, anorexia, and fever. He was found to have marked upper right abdominal tenderness and rigidity. His previous wound was healed. Temperature 101.5, pulse 110, respirations 22. A diagnosis of pericystic abscess was made and he was treated conserva-

tively for five days with hot flaxseed poultices in the hope that he would drain through his previous sinus tract.

December 21, under local anæsthesia, a transverse incision was made and the abdomen cautiously opened at the outer edge of the rectus. The opening was directly into a large abscess cavity which was aspirated of about 1500 c.c. of foul, purulent fluid. A rubber tube drain was inserted into the cavity. His pain was relieved immediately and he did well except for his persistent cough.

Five days after his operation the patient again seemed weak and listless, his temperature was of the hectic type between 100.3 and 98, his leucocytes were 20,600. His blood serum showed no increase in biliary pigment. He had no jaundice clinically. Examination of his chest showed marked râles over both bases. The right base showed percussion impairment, no diaphragmatic movement could be demonstrated on the right side. A subdiaphragmatic or intrahepatic abscess was suggested as the diagnosis. An X-ray of his chest made the day following showed a large subdiaphragmatic collection on the right side with fluid level and an adherent diaphragm. There was some lung reaction above the diaphragm.

Two days later, under local anæsthesia, a portion of the tenth rib was removed in the right anterior axillary line. An aspirating needle previously inserted above this rib obtained pus. The sharp-pointed aspirating trocar was inserted and about 1000 c.c. of thick, purulent material were evacuated. Incidental to the rib removal the pleura at the upper limit of the wound was inadvertently ruptured. This wound was immediately closed by sutures to the diaphragmatic pleura. An exploring finger inserted into the abscess cavity could palpate no area in which the process seemed to extend into the liver. Drainage tubes were inserted upward over the dome of the liver and downward toward the subhepatic abscess cavity.

Drainage was copious from these wounds, but six days later he again began to show temperature elevation to 102 and an attempt was made to obtain fluid by aspiration of the chest because there were signs of a fluid collection. No fluid was obtained. An X-ray taken four days later, however, showed a fluid level in a cavity in the right lower chest. The exact location could not be determined whether pleural or within the lung.

The following day, on aspiration above the eighth rib in the anterior axillary line, the cavity was located and considerable pus was obtained after resection of the rib. There seemed to be no connection between this cavity and the subdiaphragmatic collection which could be demonstrated.

Since this operation the patient has gradually improved. His thoracotomy wound rapidly closed, although a small collection was found above the anterior end of this sectioned eighth rib which was subsequently drained.

His abdominal wounds were dressed by irrigations and on February 3, 1926, the irrigation from the subhepatic drainage tube was found to appear at his subdiaphragmatic drainage wound. These sinuses were enlarged to admit the insertion of larger drainage tubes.

Since that time the patient has gradually improved, gaining strength and weight. His temperature has been normal since February 15, 1926, except for an occasional rise to 99. The drainage from his wounds is slight and is gradually decreasing.

DOCTOR H. K. PANCOAST remarked that a röntgenologic examination can materially assist in reaching a diagnosis of liver abscess or subdiaphragmatic abscess provided it is carried out in the proper manner, and with the true clinical picture of the case in mind. We have failed in the röntgenologic

diagnosis in several instances because of a lack of knowledge of the case, which was responsible for either a misinterpretation of findings or the carrying out of an incomplete or improper technic. In practically all of the cases in which surgeons have failed, some useful knowledge would have been gained by the proper conception of the pathological condition and a correct clinical understanding of the cases.

Many of the cases have presented a lung reaction of some kind in the röntgenogram. In some instances there has been a supposed lobar pneumonia and in a few, a sterile pleural effusion. Many of the cases came for their Röntgen-ray study with the clinical picture of an intrathoracic condition such as a pneumonia and not with the one referring to the abdominal condition. They were misled, therefore, in interpreting their findings from the standpoint of a chest condition. For example, with a clinical history of a very recent pneumonia, one would be led to believe that the high, fixed or restricted diaphragm due to the hepatic or subphrenic abscess was a sequelæ of pneumonia.

In order to carry out the examination properly, it is absolutely essential that every case have a fluoroscopic examination in addition to the radiographic part of the procedure. Röntgenograms alone will not show what is wanted to be known.

The röntgenologic characteristics of the condition are essentially: (1) More or less elevation of the diaphragm, depending upon whether a hepatic abscess is near the upper surface of the liver or the abscess has ruptured under the diaphragm. (2) Restriction of the diaphragm if hepatic or fixation if subphrenic abscess is present. (3) The absence of any condition above the diaphragm to account for these phenomena, except the usual lung reaction where suppuration is near the diaphragm. Only the proper conception of the true clinical picture will prevent misinterpretation of this lung reaction.

DRAINAGE OF THE URINARY BLADDER

Doctor Alexander Randall discussed the problem of drainage following suprapubic cystotomy, and the methods they were now using to keep the patient dry. At the time of operation, instead of using the Freyer drain, they are using a tube with multiple perforations at the distal end, which has been moulded to a short and gentle curve by boiling while stretched over a special frame. It allows of the tube being turned immediately at the level of the skin coming out under the dressings without kinking. On removal of the tube, on the third or fourth day, the patient is then dressed by a large rubber (or oiled silk) sheet, one yard square, with a hole in its centre one inch in diameter, which is placed over the wound with the hole centred on the fistula and the sheet secured to the skin by a special cement consisting of gum mastic thirty parts, Canada balsam five parts and ether thirty parts. This cement dries rapidly, sealing the dam to the skin. Dressings are then put over the fistula and the rubber sheet folded up at the sides

and ends, being held by Montgomery straps. Later when the patient is ambulatory, they are using a special cup, of German silver, developed by Doctor Muschat, of the Urological Staff, which is held over the fistula by perineal and belt straps, being sealed to the skin by boric ointment. Its principle is that the cup has a broad flange three to five cm. in width which distributes pressure and allows of water-tight sealing. This cup drains from the bottom and keeps the patient dry and at the same time allows of a complete estimate of urine output. A fourth apparatus used in severe toxic cases where complete aspiration of purulent bladder contents is desired, consists of an electric-driven pump working on a vacuum bottle. This machine, perfected by Doctor Moorhead, is driven by a silent electric motor at slow speed and suction is controlled by mercury pressure which can be gauged to any amount desired. These methods have been developed and proven in clinical use to be devoid of any deleterious effect for the primary healing of the wound where sutured, and have aided materially in the comfort of the patient, promptness of his convalescence and a saving in hospital supplies.

SAMPSON'S CYST OF THE OVARY

Doctor Floyd E. Keene presented a specimen typical of endometrioma of the right ovary with minute implants on the opposite ovary. The condition is by no means rare, being found in from 20 to 30 per cent. of abdominal operations on women. According to Sampson's conception, which has been almost universally accepted, cells from the endometrium or tube are carried out through the Fallopian tube finding lodgement on the surface of the ovary, which acts as an incubator for their growth into cyst formation. Minute transplants may be found on the ovary, as well as in the cul-de-sac on the surface of the sigmoid, posterior surface of the uterus, the appendix, etc. These cysts rarely, if ever, reach large size. They are always adherent and contain a chocolate-colored fluid which is old blood. While histologically the lesion is not malignant, according to Sampson's conception the endometrial cells follow out closely the dissemination of carcinoma in that he has demonstrated them in blood- and lymph-vessels, in inguinal glands, and the common tendency is to show penetration and perforation into surrounding organs, particularly the sigmoid, bladder and rectovaginal septum. The wall of the cyst is lifted by a membrane analogous to endometrium, although occasionally, particularly in very old cysts, this typical membrane may be partially or totally lacking.

Symptoms: Often there are no symptoms whatever referable to this condition. It is rarely seen in women under thirty years of age nor after the menopause. Dysmenorrhœa is commonly present, often premenstrual in type. Should there be invasion of the sigmoid or bladder, symptoms referable to this invasion are usually exaggerated at the time of menstruation, being quiescent often during the interval. Sterility is commonly present and irregular menstruation, particularly menorrhagia, may be noted.

Treatment: Because of the dense adhesions often associated with these cysts, radical removal is often necessary, although in young women resection of the cyst may be the advisable procedure. When symptoms arise due to invasion of neighboring organs, as for example bladder and rectum, resection of both ovaries should be done. Following upon this there will be a rather rapid diminution in the size of the secondarily affected organs with complete subsidence of symptoms, showing that excision of the transplants from the rectum or from the bladder is unnecessary.

TOXIC GOITRE

Doctors Charles H. Frazier and W. Blair Mosser read a paper entitled "Control and Treatment of the Toxic Goitre," for which see page 51.

Doctor Edward Rose remarked that the records of 201 admissions of patients with thyroid disease in Doctor Frazier's service from the latter part of September, 1922, to the middle of December, 1925, showed eighteen cases in which there was sufficient evidence of cardiac disease to warrant special medical observation and treatment. All were subjected to operative procedure—fifteen survived and three died. Of the three deaths, two were attributable to cardiac disease—the other was not. The majority of these cases were in the fifth decade; all had high basal metabolic rates; all exhibited tachycardia; all but one had lost a great deal of weight; and the majority had had arrhythmias at one time or another. Six had established auricular fibrillation, and three (all of the fatal cases) had paroxysmal fibrillation. The result of this study was to indicate, first, that digitalis is often not effective in controlling the heart rate or reëstablishing compensation; and second (which was rather surprising), that many patients with hyperthyroidism have a high degree of tolerance for digitalis. One patient received sixty-nine grains of powdered digitalis in eighteen days without any evidence of digitalis intoxication, but with marked improvement of his circulatory condition. Digitalis apparently has no effect in controlling the tendency to paroxysmal fibrillation, although it will often reduce the rate during a period of fibrillation. The judicious administration of iodine as Lugol's solution often has beneficial effects on the circulation indirectly in hyperthyroidism by reducing the basal metabolic rate, thus possibly allowing the digitalis to take hold, so to speak, more effectively. They were impressed by the good results which can often be obtained by careful pre-operative and post-operative observation and treatment of cardio-vascular conditions in cases of toxic goitre which at first seem almost hopeless.

Doctor J. S. Rodman asked Doctor Frazier how much tissue he leaves in his subtotal thyroidectomy. The question was asked because he has had more post-operative thyrotoxicosis than he would like to have. He was amazed to see the amount of tissue which was removed by one of the surgeons he saw operate in Chicago, and the very small amount he left behind. He thought this had a lot to do with the fact that post-operative thyrotoxicosis was becoming much less frequent in his experience.

DOCTOR FRAZIER (in closing the discussion on his paper) said that at the recent joint meeting of the New York Surgical Society and the Philadelphia Academy of Surgery, in discussing the surgical treatment of paralysis of the recurrent laryngeal nerve, he had touched upon the technic of thyroidectomy particularly with regard to protection of this nerve.

The two most important points in the technic are the protection of the nerve and the amount of tissue to be removed. In his clinic a safety line is established and no tissue is removed below that level. On the inner aspect of the lobe the safety plane is on a level with the anterior surface of the trachea. If one observes this rule the recurrent laryngeal nerve will never be damaged.

With regard to the amount of tissue to be left; upon this depends the degree and the permanency of the improvement. The greater the degree of toxicity, the smaller the amount of tissue which should be left. As a matter of practice he leaves a thin layer of thyroid tissue in that portion of the capsule which is in relation with the larynx and a corresponding surface of the capsule on the exterior aspect of the lobe. He used to think that the more tissue he removed the less the immediate reaction would be, but since he had been practicing hemithyroidectomy in selected cases, where one entire lobe may be left, without apparent effect on the immediate post-operative course, they had had to change their minds.

CALCIUM AND PHOSPHORUS METABOLISM IN THE FRACTURE OF BONES

DOCTORS I. S. RAVDIN and LEON JONAS read a paper with the above title, for which see page 37.