TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting Held January 4, 1926

The President, Dr. Edward B. Hodge, in the Chair

BILATERAL CHARCOT'S JOINT DISEASE OF THE ELBOW

Dr. Charles F. Mitchell and Dr. Walter Estell Lee presented a man, forty-four years of age, who was admitted to the Pennsylvania Hospital, December 10, 1925, complaining of swelling of both elbow-joints. His history is somewhat inaccurate but apparently during the summer of 1924, he was suddenly aware of chilly sensations and fever which were associated with pains in both elbow-joints. He says that these joints began to swell and in a short time were three times their normal size. They were red and very painful. The pain, however, was not limited to these joints but involved other portions of the body for a short time. With the disappearance of the general pain the swelling of the joints remained the same and ten days after this acute onset he says that the left joint opened spontaneously, although he also made the statement that it had been incised by a physician. The latter statement seems the most probable. A very few days after the left joint opened the same thing occurred on the right side. Since the opening of these joints and their more or less constant drainage the pains have subsided. The deformities which now exist have gradually developed.

He had a chancre, and gonorrhœa in 1907.

An X-ray picture taken December 16, 1925, shows typical Charcot's disease of both elbow-joints. The blood Wassermann reaction, taken December 18, 1925, was negative. A spinal fluid Wassermann reaction, December 20, 1925, was positive. A colloidal gold test of the spinal fluid gave a characteristic curve of tabes. Neurological examination showed the man to have all the classical signs of tabes.

The reporter added that although Charcot's neuropathic arthropathy may affect any joint in the body, it shows a strong predilection for the joints of the lower extremities, and the elbow is one of the rarer sites of the disease. In addition to this, it is exceedingly unusual for the disease to be bilateral. In fact, a rather cursory survey of the literature reveals but two examples, both affecting the hip-joints; the first, a patient from the United States Naval Hospital, League Island, reported by Doctor DaCosta (*DaCosta's Surgery*, 9th Edition, p. 605), the second, a case presented to the College of Physicians of Philadelphia in April, 1925, by Dr. Walter Elmer (*Transactions of Philadelphia College of Physicians*, 1925).

The incidence of Charcot's disease is mentioned in but few text-books. Ochsner, quoted by DaCosta in his text-book of surgery (9th edition, p. 604), states, "Of 947 cases the knee was affected in 394 (41.6 per cent.); the hip in 210 (22.1 per cent.); the shoulder in 128 (13.5 per cent.); the foot in 89 (9.4 per cent.); the ankle in 50 (5.2 per cent.); the elbow in 39 (4.1 per cent.); the hand 16 (1.7 per cent.); jaw 2 (0.2 per cent.); miscellaneous 19 (2 per cent.)." Lovett (*Keen's Surgery*, vol. ii, p. 35) states that the lesion occurs in 5 to 10 per cent. of tabetics and in a series of 268 cases affected the

lower extremities 207 times (77 per cent.). He gives the elbow as among the more unusual sites.

On account of the combination of two rare conditions in this patient—namely, a bilateral Charcot's disease of the elbow, it was thought justifiable to present it before this society.

DR. B. F. BUZBY said that he had under his care at the present time a patient with a double, but not symmetrical Charcot joint. A woman with Charcot joint of the foot and all the classical signs of tabes came under his care two years ago and was put immediately under anti-tabetic and anti-syphilitic treatment and given a brace for her foot and in the course of this treatment developed a Charcot knee on the opposite side which has progressed in spite of treatment. The advance of the foot condition has been stopped, however, at least temporarily.

CARCINOMA IN ADOLESCENTS

DR. CALVIN M. SMYTH, JR., presented a man, aged twenty-three years, who was admitted to the Methodist Hospital, November 4, 1924, in the service of Dr. Damon Pfeiffer. His chief complaint was vomiting, which he attributed to dietary indiscretion. At the time of admission his bowels had not moved for four days. He had no pain at any time prior to his admission. The previous medical history was essentially negative, except for the fact that he had always been more or less constipated. Examination showed a fairly well-nourished man of twenty-three. He was having violent hiccoughs and vomiting small amounts of brownish material at half-hour intervals. The heart, lungs, reflexes, etc., were all negative. The abdomen was distended and tympanitic. There was slight rigidity over the left rectus; no masses could be palpated. Peristalsis was very active. A rectal examination revealed a mass rather high, presenting into the pelvis from above. Proctoscopic examination showed a mass which was thought to be extra-rectal, but which seemed to be discharging into the rectum. The discharge was bloody in character. An X-ray examination disclosed an obstruction above the rectum with considerable dilatation of the rectum. The blood count showed no increase in the white blood-cells, the red cells and hæmoglobin were quite normal, and the blood Wassermann was negative.

November 10, the abdomen was opened through a right rectus incision. A mass about two inches in diameter could be palpated in the sigmoid about three inches above the recto-sigmoid junction, but could not be brought up into the wound. The sigmoid and descending colon were therefore mobilized by incising the lateral leaf of the mesentery and stripping through the midline. The right leaf of the mesentery was then cut along about one inch from the margin of the bowel and the sigmoid with its mesentery lifted from the hollow of the pelvis. This still gave insufficient mobilization for a Mikulicz operation, and the operation having progressed to this stage, it was determined to amputate the bowel below the growth. This was done, the bowel being divided between Payr clamps. The rectal stump was invaginated by a purse-string suture of linen thread. The proximal bowel was dissected upwards, clamping the mesentery close to the attachment to the bowel until about eighteen inches of the gut had been detached, with its mesentery. The denuded area in the pelvis was covered in by suture and a cigarette drain placed in the hollow of the sacrum. The upper portion of the bowel was drawn through a two-inch incision in the left rectus and fixed to the perito-

neum and to the abdominal wall. The bowel was then amputated with the cautery, two inches from the abdominal wall, and a Paul tube placed in the end. There was no immediate escape of gas or fæces.

The post-operative convalescence was most stormy. The hiccoughing very violent, the vomiting continued and the bowel did not drain well. November 12, two days after the operation, jejunostomy was performed, under local anæsthesia. This was followed by a violent reaction during which the temperature rose to 104.3, the pulse to 160, and the respirations to 45, but after a very trying week or ten days, he began to improve, and January 7, 1925, he was discharged from the hospital, equipped with a colostomy bag, and feeling very well. The pathologist's report of the mass removed was adenocarcinoma.

The man exhibited did not present the general appearance of one who had any metastases. He had gained weight and was able to attend to his usual duties. He discarded his colostomy bag about three months after leaving the hospital, and got along very well without it. He was able to attend to his colostomy himself, and by taking an enema the first thing in the morning he was able to go without any protection during the rest of the day. This illustrated the fact that colostomy life was not the living death that we have been led to believe in the past.

DOCTOR SMYTH presented also a man, likewise aged twenty-three years, who was seen for the first time March 30, 1925. At that time he was complaining of "indigestion." His first symptoms appeared about three years ago, and consisted of a feeling of fulness in the epigastrium, heartburn and constipation. Under the use of antacids and carminatives his symptoms gradually grew less, and he enjoyed a period of comparative health until one year ago. His symptoms then returned. When seen by the reporter he was complaining of pain in the epigastrium which came on one to two hours after taking food. The pain was not relieved by alkalies, but was sometimes relieved by food. He was vomiting about once every two days, but had never vomited blood. He had lost about ten pounds in weight. The abdomen was not distended, but there was tenderness in the epigastrium, and slight rigidity. He had had tuberculous hip disease in childhood from which he had apparently made a good recovery. He had been operated upon for suppurating cervical adenitis five years ago, the scar of his incision being well healed and no evidence of recurrence being present. He was operated upon at the Methodist Hospital, June 1, 1925. The abdomen was opened through a right rectus incision. The peritoneal cavity contained a large amount of free fluid, blood-tinged in character. The stomach was drawn into the wound with some difficulty. There was a mass in the pyloric region about two inches in diameter, and about four inches long, very hard and nodular, and almost completely obstructing the pylorus. There was a stellate scar to the gastric side of the mass, which looked like a healed ulcer. There were many adhesions about the duodenum. The small intestine was studded with small hard nodules, and the pyloric and mesenteric glands were all enlarged and quite hard. The large intestine showed a similar involvement, although the liver was apparently free from metastasis. A palliative posterior gastro-enterostomy was done, and one of the glands removed for microscopic examination. The pathological examination confirmed the diagnosis of carcinoma. Apart from a little post-operative vomiting, which ceased after two gastric lavages, the patient made an uneventful surgical recovery. He was able to eat, had no pain, and was discharged from the hospital July 15. He died at his home, August 16, having been able to eat to within two days of his death, and at no time having had any pain.

This case is reported on account of the youth of the patient, the history and laboratory findings pointing to ulcer, and the operative confirmation of the existence of a healed ulcer.

DR. DAMON B. PFEIFFER reported having seen a case of carcinoma of the rectum at the age of sixteen. When he was confronted with the growth, it was impossible to resect and do an immediate anastomosis, for after mobilizing he was unable to bring it up far enough without undue tension on the distal end. He therefore cut the bowel just above the pelvic floor and turned in the lower end. He then made the colostomy and cut off the excess of associated mesentery. The growth was reported to be adenocarcinoma. No glands were involved.

DR. JOHN H. JOPSON reported a case of carcinoma of the recto-sigmoid in a girl of twenty-five years, which he removed six months ago in two stages by the Jones technic. To-day she is in good health and able to earn a livelihood.

STRANGULATED INGUINAL HERNIA IN AN INFANT

DR. BASIL R. BELTRAN reported the history of a male infant, nineteen days old, who was admitted to the Misericordia Hospital, September 8, 1925. The child was well developed, weighing 9 pounds 12 ounces at birth and presenting no apparent abnormalities.

On the morning of its seventeenth day after birth the mother noted that he was rather reluctant to taking of food. Several times the milk regurgitated. Frequency and quantity of defecation lessened. No bowel movement or micturition was observed the afternoon of the eighteenth day. When seen shortly after admission the infant appeared greatly toxic. There was a marked restlessness accompanied by greenish vomitus, marked abdominal distention and a scrotal swelling about the size of a large English walnut (5 cm.). The mass was bluish, doughy and well circumscribed, the upper margin ending abruptly at the inguinal ring. No attempt was made to perform taxis, but immediate operation was done.

An incision over the left scrotal and inguinal regions was made under local infiltration anæsthesia (novocaine 0.5 and adrenalin 0.25). As the peri-peritoneal structures were cut through, the tense congested gut was distinctly visualized. With great difficulty the fibrous external inguinal ring was incised. Immediately the scrotal peritoneum tore through due to the distended small intestine. Then owing to the infant's constant straining about 7 cm. of normal gut escaped through the opening. The sac contained about 5 cm. of livid small intestine. The glistening of the surface was faintly apparent. Following the application of warm compresses, evidence of returning circulation became marked. Repeated efforts to now reduce the intestines were futile, so for a few minutes which included tying of the peritoneal sac and reduction of intestines, ether was administered. Owing to the great amount of surrounding œdema and delicateness of the tissues it was with difficulty that a successful attempt was made to partially close the canal with chromic gut No. 0. The time of the operation, including infiltration, was thirty-five minutes. Though the pulse was imperceptible and respiration exceedingly rapid, the infant was but slightly cyanotic on leaving the table. The following morning, five hours and again seven hours after operation the infant had copious bowel movements of dark brown fluid. Defecation then progressed at irregular intervals, allowing the child to return to normalcy. The mother was allowed to nurse the babe eighteen hours after operation. The wound

healed by primary intention. Convalescence was rapid. No complications ensued. The patient left hospital twelve days after admission. In this case the strangulation lasted thirty-six hours or more.

The youngest case on record operated upon for strangulated hernia with recovery appears to be that of Woodbury's in 1874. The infant was forty-five hours old when operation became imperative. Collins,[3] in his paper in 1913 on the subject of hernia in infants, has covered the literature most thoroughly up to that time. After reporting his case of eighteen days he mentions various domestic and foreign observers as having reported cases eleven days to six months old, that were operated upon for strangulation with recovery. Our present remarks are confined to cases not more than one month old.

A. Ceballos,[1] in 1912, reports a child operated upon when eighteen days old. G. Brown,[2] in 1913, one, one month old. E. C. Hall,[6] in 1913, one, twenty-one days old. W. E. Lee,[7] in 1914, one, twenty days old. A. A. Matthews,[8] in 1914, one, thirteen days old. I. M. Guillaume,[5] in 1915, one, fifteen days old. J. E. Fuld,[4] in 1919, one, fourteen days old.

There may have been others recorded, if so, they have escaped the author's attention. Monihan's tables quoted by Carmichael show strangulation to be the most common during the first month of life and gradually less frequent up to one year. Strangulated inguinal hernia in very early infancy while rare is not rare enough to be disregarded as a possible entity in the etiology of conditions occurring at that period.

The symptomatology of strangulated hernia in babies differs greatly from that of adults, due to the lack of subjective signs and the greater tendency to collapse. Objectively are to be noted marked restlessness and crying, recurrent vomiting (often fecal in character), constipation accompanied by abdominal rigidity and distention, and a tendency to retention of urine. Locally a swelling is present that may be either hard or soft.

With an accurate history and the persistency of the above signs showing a tendency to rapid collapse, the diagnosis is made. However, there are a few stumbling blocks along the diagnostic way, the more common being an ectopic testicle, a hydrocele and inguinal adenitis. Hydrocele may be eliminated by the serious aspect of the rapidly increasing symptoms in strangulation. Transillumination should never be considered, for hernia in early infancy may be translucent. Inguinal adenitis if unilateral is nearly always a secondary condition, due to abrasions or contusions on the side involved. If bilateral then the child may be the victim of general adenopathy the result of heredity.

Delayed intervention is unquestionably responsible for the fatalities. The recoveries in a great many instances are due to the marked recuperative tendencies of infants, but this quality should not suggest procrastination.

In the treatment too much emphasis cannot be laid upon the avoidance of prolonged or vigorous taxis. In the presence of strangulation operation is demanded. As far as possible, as in the case reported, a local anæsthetic should be used. If the intra-abdominal tension should become so great as to prevent intestinal reduction, then let a general anæsthetic be given so as to allow reduction and closure of the sac. The operation is continued under local infiltration. As to the manner of suture, the simplest method, consistent with the severity of existing conditions should be used. To transplant the cord is unnecessary. Simple suture of the soft parts and closure without drainage is all that is desired. Care is especially taken to prevent inversion of the incised skin edges.

BIBLIOGRAPHY

[1] Ceballos, A.: Semana. Med., Buenos Aires, 1912, vol. xix, p. 982.
[2] Brown, G.: Brit. M. J., Lond., 1913, vol. i, p. 222.
[3] Collins, Arthur N.: ANNALS OF SURGERY, Phila., 1913, vol. lvii, pp. 188–202.
[4] Fuld, J. E.: N. Y. Med. J., 1919, vol. cix, pp. 233–234.
[5] Guillaume, I. M.: Lancet, Lond., 1915, vol. ii, p. 188.
[6] Hall, E. C.: Brit. M. J., Lond., 1913, vol. ii, p. 673.
[7] Lee, E. E.: ANNALS OF SURGERY, Phila., 1914, vol. lix, pp. 440–441.
[8] Matthews, A. A.: Hosp. Bull., U. of Maryland, Balt., 1913–14, vol. ix, pp. 196–198.

DR. JOHN H. JOPSON stated that he assisted the late Doctor Wharton to operate on a child about fourteen days old. He himself had operated in two or three cases a month old.

RETROPERITONEAL TUBERCULOUS LYMPHADENITIS

DR. ISIDOR S. RAVDIN read a paper with the above title.

DR. DE FOREST P. WILLARD said that a certain number of these cases of retroperitoneal tuberculosis come under the attention of the orthopædic surgeon and give a little different symptoms than those described. In these children the symptoms strongly simulate Pott's disease of the lumbar vertebra. In these cases psoas abscess symptoms are the ones which usually predominate; they usually have backache, dull pain, a certain amount in spine, but with a distinct mass in psoas region. In several cases which have been followed closely they have shown no sign of spinal tuberculosis. Under the treatment of rest, physical therapy and so on, these cases have reabsorbed the abscesses and have cleared up. One case in which abscess occurred, became so large that fearing rupture it was opened. At that time the abscess was unquestionably a tubercular one, there was no sign of a bony involvement, tissue taken from the depth of the abscess mass revealed under the microscope some broken-down lymph tissue, so they felt the diagnosis of lymphadenitis was correct. It very closely simulates spinal tuberculosis and the ordinary psoas abscess of Pott's disease.

PSEUDO-PANCREATIC CYST FOLLOWING CHOLECYSTITIS

DR. HENRY P. BROWN, JR., gave the history of a man of thirty-seven years, who was admitted in Dr. John H. Jopson's service at the Presbyterian Hospital, November 23, 1923, complaining of pain in his upper abdomen. He stated that four days previous he was awakened with severe cramp-like pain in his abdomen which was generalized in character. He took magnesium citrate and castor oil and the purgation which followed afforded him some relief. At this time he induced vomiting. Subsequent doses of oil and attempts to vomit did not improve his comfort and on the day of admission to the hospital he had been vomiting continuously and had constant abdominal pain with acute exacerbations which he described as being "knife-like." From his description the vomiting had been projectile in character but not fecal. He had been belching gas but had not passed anything by bowel for twenty-four hours, in spite of five enemas and eight drinks of whisky. He said that he had had a similar attack one year ago which lasted one day. There were no urinary symptoms and nothing in the history suggestive of gastric ulcer.

Physical examination showed a very obese man apparently suffering acute pain. The head, neck and chest with their contents were essentially normal, the abdomen somewhat distended throughout and slight tenderness in the mid-epigastrium. There was no tenderness or rigidity over the appendiceal or gall-bladder regions and peristalsis was not heard, probably due to the thickness of his abdominal wall. The admitting resident physician made tentative diagnosis of acute intestinal obstruction, acute pancreatitis or acute cholecystitis. The patient was placed in the Fowler position and given sodium bicarbonate and glucose by bowel.

The temperature, pulse and respiration were 98.2—76 and 22. Urine showed specific gravity of 1036 with a trace of albumin, no sugar, a few hyaline casts and mucus. The blood examination showed 4,860,000 red blood-cells, 11,000 leucocytes and 96 per cent. hæmoglobin. The blood Wassermann was negative.

Three days after admission his pain had disappeared, his scleræ were bile-tinged and his temperature, pulse, and respiration were 100.4–108 and 24. Four days later, the jaundice having disappeared and his urine being clear, his leucocyte count being 9000, he was operated upon by Doctor Pfeiffer, using nitrous oxide-oxygen-ether anæsthesia.

The peritoneum was opened through a mid-right rectus incision and the appendix delivered. It was apparently normal and was removed. Examination of the gall-bladder showed it to be so much inflamed that it was deemed best to remove it. This was a rather difficult procedure on account of the depth of the patient's abdomen. The cystic duct was isolated and ligated and the gall-bladder stripped out of its bed in the liver, the raw surface of the latter being covered with catgut sutures. A cigarette drain and rubber tube were inserted for drainage and the wound closed in layers. No mention is made in the operative notes as to the condition of the pancreas. The patient left the table in good condition, the duration of the operation having been one hour and forty minutes.

The drains were both out on the seventh day and the sutures were removed on the eleventh. On the following day the wound opened down to the fascia throughout its entire extent and Dakinization was started. At this time he also had projectile vomiting and eructated a considerable amount of gas.

On the fifteenth post-operative day he began to drain bile freely from the wound, the vomiting was less and he was more comfortable, his temperature varying from normal to 101°. He was discharged January 19 in good condition, wearing an abdominal belt.

The laboratory reported chronic diffuse appendicitis and chronic diffuse and suppurative cholecystitis. The gall-bladder showed the lumen entirely filled with cusped or faceted stones, varying from minute to about 7.5 mm. diameter. The entire mucosa was a mass of acute inflammation and cross-section of the wall showed a moderate degree of inflammatory action.

He was readmitted to the hospital fifteen days later, sixty-six days after his cholecystectomy, complaining of a tumor in his upper abdomen, and sent to Doctor Allen's service, to whom the reporter is indebted for the privilege of operating upon and reporting this case. He stated that during his convalescence he had noticed an increase in the size of his abdomen, especially of the upper part. This had been gradual in character and thus far had caused no discomfort whatsoever. His appetite was good, his bowels regular, and he had no gastric, cardio-pulmonary or renal symptoms. The temperature, pulse and respirations were normal. The urine showed a few hyaline casts and a very faint trace of albumin and the blood count was: red blood-cells, 3,580,000; leucocytes, 10,200; hæmoglobin, 70 per cent.; polymorphonuclears,

86 per cent.; large lymphocytes, 10 per cent.; small lymphocytes, 14 per cent. A diagnosis of cyst of the upper abdomen was made and he was operated upon eight days later.

The previous operative scar was sterilized with iodine and covered with a rubber dam, bound down with adhesive. The peritoneum was exposed by means of a high left rectus incision and upon opening it the lower border of the stomach and gastro-colic omentum appeared in the wound. There was a large cyst of the upper abdomen and this was tapped by means of a trochar and canula thrust through the gastro-colic omentum, the fluid being allowed to escape quite slowly. Five quarts of straw-colored fluid were removed from the cyst and the incision then enlarged sufficiently to admit the hand. A handful of pasty brownish necrotic material was removed from the bottom of the cyst. The cyst wall was then marsupialized to the abdominal wall. A large drainage tube was inserted and the abdomen closed in layers. He left the operating room in good condition and made an uneventful recovery.

The drainage was profuse for twelve days, at the end of which time the notes state that there is practically no fluid aspirated from the cyst, it is nearly closed, and the drainage tube is inserted with difficulty. The discharge caused excoriation of the skin, so that it was necessary to use boric acid strips and zinc oxide to protect it. The incision became slightly infected, but soon cleared up under treatment, and he was discharged to the Surgical Dispensary for dressings on the thirty-third day after operation.

The diagnosis was hemorrhagic pseudo-cyst of the pancreas.

The fluid removed from the cyst showed a sterile culture: 1.5 per cent. albumen and many red blood corpuscles. Later examination, sixteen days after operation, showed no lipase, trypsin or amylase. Staphylococcus aureus and B. coli were present. Smear showed 85 per cent. polymorphonuclears and 15 per cent. lymphocytes. The blood sugar was 93 mgm. per 100 c.c. of blood.

Microscopic examination of tissue removed at the time of operation showed fatty and connective tissue necrotic throughout with areas of fat necrosis and diffuse hemorrhage.

When seen October 24, 1925, both of the abdominal incisions were entirely healed, there was no evidence of recurrence of the cyst, he said that he was in splendid health, and regarded himself as entirely cured.

The reporter added that in reviewing the recent literature on pancreatic cyst following acute infections of the gall-bladder he had found only one case similar to the above. This was reported by Ballin and Saltzstein in the *Journal of the American Medical Association,* vol. lxxvi, No. 22, page 1484. This was a man of forty-six years who had had several acute attacks of upper abdominal pain. At operation a gangrenous gall-bladder filled with stones was removed. Pain recurred shortly after leaving the hospital and he was re-operated upon two and one-half months after the first operation. At that time a pancreatic cyst was found from which four quarts of brownish fluid were removed. Amylase was present and active and trypsin was present but weak.

In discussing this case they bring out the fact that stasis and infection are closely related in disease of the gall-bladder and associated pancreatitis. Nordman, quoted by the above authors, showed that in dogs, when the papilla of Vater was closed by a ligature, thus allowing bile to flow into the pancreas, he could not produce pancreatitis. If bacteria were then injected into the gall-bladder pancreatitis was produced, though the injection of bacteria without ligating the pancreatic duct produced no result.

The case reported by Ballin and Saltzstein and the one here recorded have apparently the same underlying pathology, namely: 1. Acute cholecystitis and

cholelithiasis with severe concomitant pancreatitis. 2. Cholecystectomy followed by some interference with the biliary flow. 3. Recurrence and accentuation of pancreatic inflammation with breaking down of pancreatic tissue followed by leakage of pancreatic secretions and bile into the lesser peritoneal cavity forming a cyst.

DR. DAMON B. PFEIFFER said that he recalled this case distinctly because of the operative complications. He was sure that he examined the pancreas at the time of the cholecystectomy, and was unable to note any particular abnormalities. Certainly he had no cyst there, or fat necrosis, or any of the recognizable evidences of pancreatitis. The diagnosis of pancreatitis was considered even before operation, but he was unable to verify this. Rupture of the wound followed the unwise removal of through-and-through sutures in a corpulent man, who was considerably distended, the wound breaking down all the way to bowel. He had a pretty desperate condition of affairs for some time. Though he had this extensive suppuration of his abdominal wall, he has absolutely no hernia.

To Contributors and Subscribers :

All contributions for Publication, Books for Review, and Exchanges should be sent to the Editorial Office, 145 Gates Ave., Brooklyn, N. Y.

Remittances for Subscriptions and Advertising and all business communications should be addressed to the

ANNALS of SURGERY
227-231 So. 6th Street
Philadelphia, Penna.