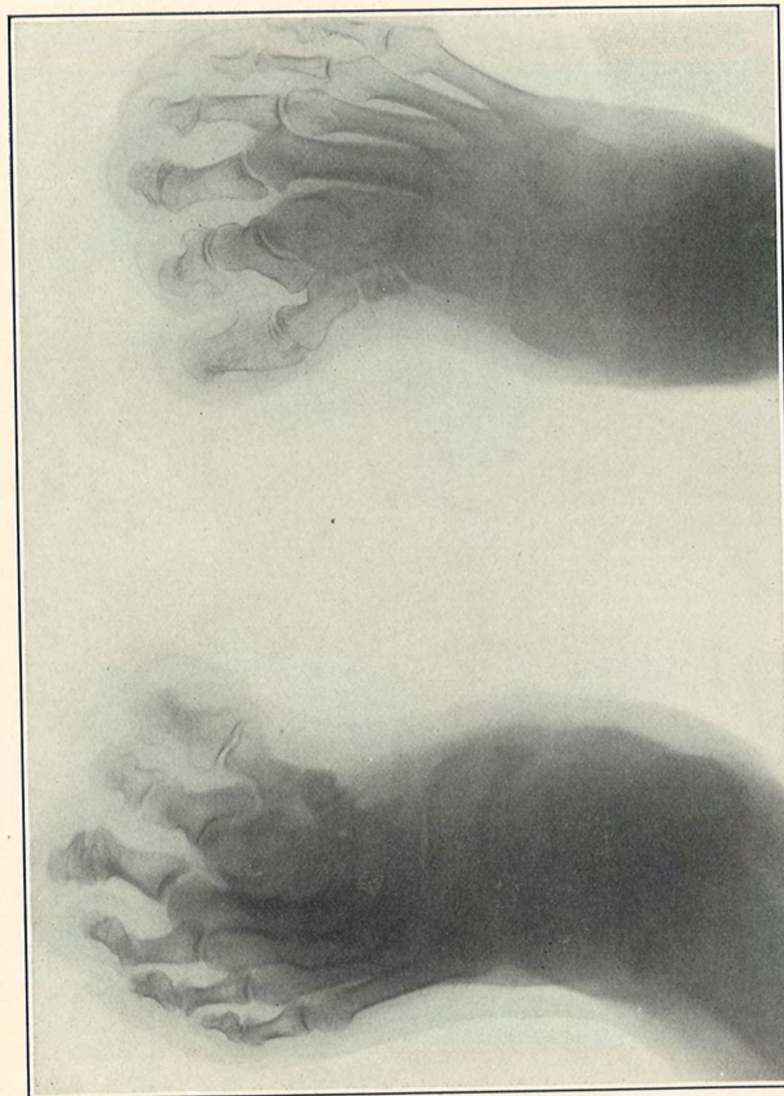


Fig. 3.—Malformation of feet. "Brachydactylia." Supernumerary Toes.

STATED MEETING, DECEMBER 7, 1903.

The President, Richard H. Harte, M.D., in the Chair.

CHOLECYSTOTOMY.

Dr. Lewis W. Steinbach presented three patients who had been subjected to operation for cholelithiasis.

The first case was a woman, aged forty years, who was admitted to the Polyclinic Hospital, June 17, suffering since one o'clock in the morning with intense abdominal pain, which could not be relieved by hypodermic injections of morphine administered within the limits of safety. There was vomiting, tenderness over upper half of the abdomen, and a slight yellow discoloration of the scleræ. An immediate operation was decided upon. The patient was anæsthetized with ether. A long incision through the abdominal parietes exposed an enlarged, tense gall-bladder, in which no stones were felt until after evacuation of the fluid contents by means of a trocar. The fluid evacuated approximated eight ounces in quantity and resembled normal bile. The neck of the bladder contained three gall-stones, while a fourth was separated by a valve-like partition and was removed with some difficulty, the thumb and forefinger of the right hand steadying the cystic duct while the left hand manipulated forceps or scoop. The stones were globoid with facets, were of almost equal size, each one having about three-fourths of an inch in diameter. A sound was passed into two branches of the hepatic duct and into the common duct without detecting other calculi. In order to verify this condition, a colleague probed the biliary passages and perforated the common bile duct. An elongated gauze pad was placed in contact with the perforation in the common duct, a large rubber drainage tube was inserted into the distended cystic duct and stitched with the edges of the incision in the gall-bladder to the parietal peritoneum at the lip of the abdominal incision; the sutures were permitted to remain long. Three additional stitches secured the gall-bladder to the peritoneum.

The abdominal wall was closed with through-and-through silk-worm-gut sutures, except where it was required to leave an open space for the removal of the gauze pad. On the day following the operation, healthy bile in large quantities saturated the dressings; the urine was free from bile pigment. On the ninth day the patient was allowed house diet, on the eleventh day the sutures were removed, and the drainage tube on the twelfth day. Patient was sitting up on July 7. Discharge of bile diminishing gradually, ceased entirely by July 8. Patient is well and comfortable and was discharged as cured on July 23. Observation continued until November. Patient remains free from pain, has no jaundice, gall-bladder cannot be palpated, enjoys excellent health.

The second patient was a woman, thirty-eight years of age, mother of nine living children, who, since the birth of her first child, twenty-one years ago, had suffered at intervals from attacks of pain in the region of the gall-bladder accompanied with jaundice. The attacks at first came at intervals of one or more years, gradually becoming more frequent. For the past three months the attacks came every week and had remained continuous for the past three weeks. Patient takes very little food, has lost much of body weight, and is said to have had obstinate constipation, for the relief of which various purgatives, including croton oil, have been administered by different practitioners. On admission, on August 13, to the Polyclinic Hospital, her temperature was 100.6° F.; pulse, 96; respirations, 24. Decidedly jaundiced. Systolic murmur at apex. Urine is dark reddish-brown, acid, specific gravity 1040, no albumen, no sugar. On August 14, operation under chloroform anæsthesia, the patient being prepared by thorough purging with magnesium sulphate enemata and lavage of the stomach immediately before the operation. Incision about six inches long was made over gall-bladder. Gall-bladder exposed and found adherent to the omentum. Adhesions were ligated and divided. The gall-bladder was aspirated and several ounces of greenish-brown, turbid fluid withdrawn. About twenty many-faceted stones were removed from the gall-bladder with forceps and scoop, after it had been opened by an incision one and one-half inches long. The gall-bladder was thoroughly washed out. With the finger in the abdomen, several stones were pressed into the gall-bladder from the common and cystic ducts. Irrigator could then be passed into the common and hepatic ducts, which were flushed out, and on probing found free from calculi. In all eighteen large gall-stones one-third of an inch in diameter and nine small ones were removed. A large-sized drainage tube was passed into the gall-bladder and fastened to its edges by a silk suture whose ends were left long. The bladder was stitched to the peritoneum with catgut sutures, cut short, and with one silk suture whose ends were left long. Abdominal incision closed with through-and-through silkworm-gut sutures. Bile discharged freely through the tube into the bottle immediately after the operation, the amount gradually lessening day by day. On the ninth day the sutures were removed and the drainage tube on the tenth. Jaundice disappeared entirely and the urine was free from bile pigment. The patient was discharged on September 3, twenty days after operation, with moderate discharge of bile and mucus. The sinus did not close completely until three weeks later. In October and again in November patient has had an attack of colic accompanied by jaundice.

The third patient was a man, aged forty-four years, who had had during the past three years several attacks of colic, for the relief of which narcotics had to be administered; never marked jaundice. Operation under ether anæsthesia preceded by lavage of the stomach. Long abdominal incision exposed a contracted bladder containing numerous small calculi; the cystic, common, and hepatic ducts likewise filled with biliary gravel. Irrigation of gall-bladder and ducts. The case was treated like the preceding one. The discharge was moderate in amount, greenish mucus, never resembling healthy bile. Drainage tube was withdrawn and reinserted on the fourth day, sutures removed on the ninth day, patient sitting up on the tenth day. On September 8, the gall-bladder was irrigated and three small calculi washed out. Patient was discharged on the nineteenth day after operation, with one abdominal suture remaining and the sinus discharging small quantities of bile-stained mucus. After complete closure of the orifice, the gall-bladder became distended and palpable. Patient remains well.

It remains to be pointed out that ever so careful a probing and irrigation have failed in two out of three cases to remove all the calculi during the operation. In one instance they passed

subsequently through the drainage tube, whilst in the other case they are passing through the cystic or common duct.

RUPTURE OF THE LIGAMENTUM PATELLÆ.

Dr. George G. Ross reported the case of a man, forty years of age, who was admitted to the German Hospital, September 27, 1903, with an injury to the right knee. A wagon toppled over, striking him on the back; he was forced into a kneeling position, the legs being flexed on the thigh and the thigh on the body. He could stand on the right limb after being released from the very uncomfortable position, but could not extend the leg.

On admission there was moderate distention of the joint, pain, and tenderness. There was a separation of about two inches between what was thought to be a fracture of the lower half of the patella. An X-ray negative showed the separation and a deeper shadow at the position of the supposed lower fragment. It was accordingly diagnosed as fracture of the lower end of the patella, the fragment being very small.

On September 30, the joint was laid open by a longitudinal incision and the patella exposed. The patella was found to be intact and uninjured. The ligamentum patellæ was torn completely through about one-half inch below the lower border of the patella. The shadow on the X-ray plate, which was thought to be a fragment of patella, proved to be a small blood-clot.

The torn ends of the ligament, which were badly frayed, were trimmed up and united by kangaroo tendon, the upper loops of the continuous suture including the capsule of the patella. The superficial wound was closed and the limb placed in a plaster case. The patient made an uneventful recovery, and at the present time has a very fair functionating joint. Extension is good, and there seems to be a complete union between the ends of the torn ligament.

Dr. Francis T. Stewart, as illustrating the result that might be secured by sewing together the ends of a divided quadriceps extensor tendon, mentioned a sailor who had had the tensor severed by a knife thrust. Three months after the injury he was seen by Dr. Stewart, who found the joint distended with fluid and a distinct depression above the patella, the patient being unable to extend the leg. The diagnosis of severed tendon was made, and

by an anterior incision the depressed area was exposed. The severed ends of the tendon were found to be separated a distance of four inches in the middle line, this distance gradually diminishing as the muscles at either side were approached. With some difficulty the ends were approximated and sutured with kangaroo tendon. The knee was immobilized for three weeks. The functional result was practically perfect, as the patient was able to resume his occupation and work in the rigging as before the injury was received.

ACUTE INTUSSUSCEPTION OCCURRING AS A COMPLICATION OF TYPHOID FEVER.

Dr. George G. Ross reported the history of a lad, seventeen years of age, of good family and personal history, who was admitted to the German Hospital on the eighth day of an attack of typhoid fever. Temperature ran fairly regular course, although the daily range of temperature was considerable, the difference between highest and lowest for a day being as much as 3° F. The highest recorded temperature was 104 $^3/_5$° F.

On the twenty-first day he had a blood-stained, liquid stool. Tubbing stopped. On the twenty-fifth day the highest temperature was 102° F., the lowest 101° F. The tub baths had been resumed at patient's request. At 8 P.M., temperature, 101 $^3/_5$° F.; respiration, 24; pulse, 112. After bath, temperature, 99 $^3/_5$° F.; respiration, 24; pulse, 104. At 9.40 P.M., hæmorrhage, 120 cubic centimetres. At 11.35, another hæmorrhage, 650 cubic centimetres. Temperature, 99 $^3/_5$° F.; respiration, 24; pulse, 96.

At 1.30 A.M. of the twenty-sixth day patient awoke with a violent abdominal pain without any particular point of intensity; there was some rigidity of the right rectus muscle. The patient screamed with pain for fifteen minutes, and was only relieved by morphine .01. At 2 A.M., temperature, 98° F.; respiration, 20; pulse, 80. At 4.40 A.M. he had another hæmorrhage, 820 cubic centimetres. Between the time of onset of the pain and 3.30 A.M. there was a slight increase in the abdominal distention. There was a leucocytosis of 16,000. It was thought that the patient had had a perforation, and the abdomen was accordingly opened without further delay.

Immediately upon opening the peritoneal cavity it was evi-

dent that perforation had not occurred, as there was entire absence of gas or fæcal matter. There was no lymph or inflammatory exudate. It was thought wise to make a search of the small intestine. The terminal twenty inches of ileum was moderately distended, and showed the typhoid ulcers and the bleeding points very distinctly through the thin bowel wall. From this point to the duodenum the bowel was completely collapsed. About three feet from the junction of the duodenum and jejunum an intussusception about two and a half to three inches long was discovered; the invagination being from above downward. It was readily reduced and the bowel slowly distended. The sides of the invaginated portion were slightly sticky, and very soon would have become adherent. The peritoneal cavity was filled with salt solution and the abdominal wound closed without drainage. Intravenous transfusion of 1000 cubic centimetres salt solution was given. The patient's temperature remained at 98° F. after operation, rising gradually to 101° F.

On the twenty-seventh day the patient had two hæmorrhages, one of 120 cubic centimetres and one of 250 cubic centimetres.

Temperature normal on the twenty-eighth day.

Thirty-fourth day, temperature normal and the patient's general condition good. He has since made an uneventful recovery.

Dr. W. W. Keen said that the case of intussusception reported by Dr. Ross as occurring during the course of typhoid fever was extremely unusual. No case of the kind was recorded in his book on the "Surgical Complications and Sequels of Typhoid Fever," published in 1898, and covering the results in 1700 cases.

Dr. John B. Deaver said that the case of intussusception showed the importance of operating early in the presence of urgent abdominal symptoms during the course of typhoid fever. Had this case been allowed to continue, obstruction would undoubtedly have occurred, and perhaps made necessary an extensive operation, which in the enfeebled condition of the patient would have been exceedingly dangerous.

Dr. Ross rejoined that during a somewhat extensive search of the literature he had found intussusception during typhoid fever mentioned in three instances, one in an article on typhoid fever by Dr. J. C. Wilson, in Keating's "Encyclopædia of the Diseases of Children." There the condition was simply mentioned without reference to actual cases. Two cases are on record, one by Ash (*British Medical Journal* for May 3, 1903), in which operation was done and the patient recovered. The second case was reported by Watkins Pitchford in the *British Medical Journal* for September, 1902. In this case the condition occurred during convalescence from typhoid, and was only discovered at the post-mortem. Both of these reports were kindly furnished by Dr. John H. Gibbons.

GANGRENE OF THE SUPERFICIAL FAT OF THE ABDOMINAL WALL, FOLLOWING OPERATION FOR INCARCERATED UMBILICAL HERNIA.

Dr. Ross reported the history of a woman, aged sixty-seven years, and weighing 250 pounds, who had an umbilical hernia of twenty years' standing, which had been irreducible for twenty-four hours before her admission to the Germantown Hospital, October 23, 1903. The abdomen was pendulous and flabby. Bowels had not moved for forty-eight hours, severe crampy pains. Pulse, 104. Tongue moist, coated white. There was a large hernial protrusion about the size of a small melon extending halfway to the symphysis pubis. The covering of the hernia consisted of attenuated skin and peritoneum which had become adherent one to the other. The sac when opened contained a large knuckle of gut and omentum, which was tightly adherent to the inner side of the sac, but had not ulcerated through. The gut was not strangulated, although the fæcal circulation had been cut off. The gut was reduced and the adherent omentum loosened, tied off, and reduced. The sac was removed close to the peritoneal opening, which was closed with kangaroo tendon. The closure was reinforced by lateral flaps of aponeurosis. The wound was closed and rubber drainage introduced, coming out at the lower angle of the wound. The pressure of the sac and its contents had destroyed the fat in the superficial fascia for an area corresponding to the size of the tumor.

The patient was not shocked after operation. The pulse went down to 80 and the temperature to normal. The bowels moved on the second day, and she vomited but once after ether. Drainage tube was removed on the third day, at which time a foul odor was noticed. The superficial fat was gangrenous. The

gangrenous process spread until it involved the entire right side of the abdominal walls down to the loin space. The wound above the tube healed by first intention.

The urine was lost in bed, so that only an estimation of the amount could be arrived at. It was probably above normal. Several specimens examined on different days showed albumen, casts, but no sugar. The patient developed slow coma without delirium, and died in coma. Two days before death a patch of gangrene developed on the right thigh just below Poupart's ligament.

The operation wound had healed by primary union, and had not become involved in the gangrenous process, which had been confined to the superficial fat, not involving the aponeurosis below or the skin above.

In spite of the absence of sugar in the urine, he believed that diabetes was the determining factor in the patient's death.

JACKSONIAN EPILEPSY; TREPHINING; RECOVERY.

Dr. W. Barton Hopkins reported this case, stating that he did so for two reasons: First, because it added one more to the list of epilepsies cured, at least temporarily, by the operation of trephining alone, in which no discoverable lesion had been found to exist; and, second, because he had employed for the first time on a living subject the trephine which he had devised and previously demonstrated on the cadaver before the Academy.

T. T., a man, aged twenty-one years, born in Italy, came to the Pennsylvania Hospital, July 15, 1903, with the following history. Was naturally healthy until three years ago, when he became epileptic. The condition was attributed to fright; while being lowered into a well he was suddenly impressed with a dread that he would fall, and became very much alarmed. About one week afterwards he had his first convulsion. At first these were occasional, but gradually increased in frequency, until of late he has had three or four a day. On admission appears a healthy, well-nourished individual, of fair intelligence; examination of his urine, eye-grounds, chest, and abdomen are negative. On the day of his admission he had three seizures, and during the night two. One of the latter was described by the nurse as beginning in the left upper extremity and involving the upper part of the body; was accompanied by unconsciousness, and during the attack the patient was very violent. During one of the seizures there was observed clonic movement at the elbow; then the head rotated to the left and the eyeballs turned upward and to the left. There were also some general bodily movements and apparently unconsciousness. There was no bleeding at the mouth. This seizure lasted about five minutes, at the end of which time the left arm was still twitching. Before recovering from the convulsion another similar one occurred, followed by still a third. The three seizures occupied about twenty minutes. The left arm was very painful afterwards. The nurse reported numerous convulsions up to midnight, when he was given a large dose of bromide of sodium, after which he slept.

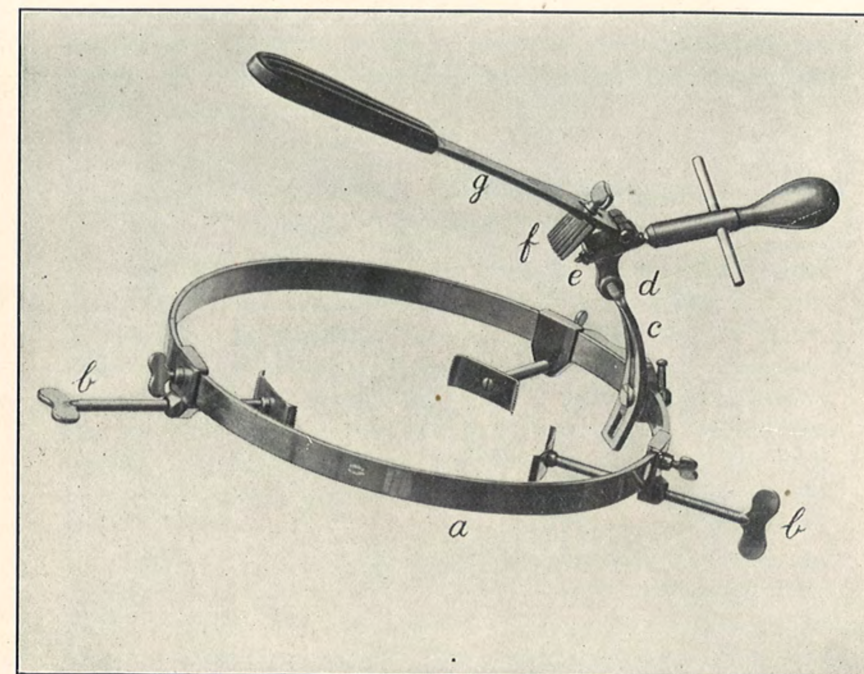
The following observations were made by Dr. Charles K. Mills, who kindly saw the patient: Left upper extremity, some weakness in grip of hand and in special movements, as of little finger and thumb. Awkwardness with movement of left hand and fingers, especially with eyes closed, but all movements retained, all forms of sensation retained, response to touch prompt, but to pain and temperature diminished and retarded. Asteriognosis of the left hand present, but not absolute; recognizes common objects, such as a knife, a coin or a key, by feeling them with his eyes closed, more promptly with the right hand and sometimes not at all with the left. Sensation similarly affected in the left lower extremity. There is no facial paralysis, no paralysis of the proximal portion of the arm and none of the lower extremities. Knee-jerk present on both sides; no plantar cutaneous reflex on the left except tarsal response at first. This latter may have been involuntary; tarsal and metatarsal responses on the right probably voluntary. No ankle clonus. Deep reflexes present in the upper extremities, probably more marked on the right.

July 23 the patient was anæsthetized with anæsthol. The topographical lines were carefully pencilled with aniline, and a point for the centre of a three-inch flap was located about three-quarters of an inch posterior to the middle of the right Rolandic fissure. The time required in cutting and reflecting back the osteoplastic flap, after adjustment of the instrument, was six minutes. A good exposure of the dura mater was thus obtained. The latter appeared perfectly healthy; pulsation was apparent

to view and touch, and there was no abnormal tension. The dura was freely opened by a crucial incision, and a probe was inserted at one point into the cortex. A flat probe was also carefully insinuated between the brain and dura beneath the peripheral opening in the skull. No diseased area nor tumor being detected, the flap was replaced and the scalp approximated with a continuous catgut suture. The patient's condition was good throughout. The next day he had a slight convulsion, but otherwise was in satisfactory condition, and the grip of the left hand was found to have become very much stronger. His recovery from the operation was uneventful. Three weeks later, August 14, 1903, he was discharged from the hospital cured, the final note being made that his general condition was excellent; that he still complained of curious feelings on the palmar surface of the left wrist; that there was no anæsthesia of the hand, no asteriognosis, as tested with a knife and watch, and the grip of the left hand, which before the operation was very feeble, was about as strong as on the opposite side. Has been quite free from convulsions since the day after the operation. The patient, seen a month after his discharge, appeared to be in perfect health.

The trephine used may be described as follows:

This instrument, through the firm fixation of its centre-pin and the powerful control of its cutter, renders the forming of large osteoplastic cranial flaps comparatively easy and very expeditious. It will cut a three-inch bone-flap in from three to five minutes, and it cuts so smoothly that the shock from cranial jar is, in this preliminary step to operations upon the brain, avoided. Its adjustment may be carefully and deliberately effected as follows: The circular frame (*a*) is clamped by set-screws (*b*) to the head in a position which will bring the adjustable bracket (*c*) approximately over the proposed site of operation, and in a plane beneath the greatest diameter of the head. The pressure of the pads of the set-screws need not be excessive; they can be brought to bear on points best able to stand pressure, and they are made to adhere closely to the integument by covering their surfaces with rubber adhesive plaster, adhesive side out. The curved bracket is next set by a binding-screw in a position which will bring the centre-pin (*e*) nearly in place, when a small incision is made into the scalp to receive it. The final and accurate adjustment is then completed by setting up the lock-joint



OSTEOPLASTIC TREPHINE. *a*, circular frame; *b b*, set screws, to which pads are applied; *c*, curved adjustable bracket; *d*, lock-joint; *e*, centre-pin with drill-point; *f*, cutter; *g*, lever.

(*d*) while the centre-pin is held absolutely perpendicular to the cranial dome. The drill-point of the centre-pin is then, by a few turns of its handle, made to engage in the bone. A circular incision of the integument may be made with a scalpel in a line indicated by a gentle impression of the teeth of the cutter (*f*), or a knife may be inserted in the notch of the lever corresponding to the size of the proposed flap. The notches 1, 2, 3, and 4 in the lever, in one of which the cutter is held by the binding-screw, cut flaps two, two-and-a-half, three, three-and-a-half inches in diameter.

PANCREATIC CARCINOMA; GASTRO-ENTEROSTOMY; PECULIAR COURSE OF THE DUODENUM AND JEJUNUM.

Dr. De Forest Willard reported the history of a woman, aged fifty-six years, who was admitted to the Medical Ward of the Presbyterian Hospital, October, 1903, under the care of Dr. Stryker, with a history of indigestion for two years. She presented marked emaciation and deep jaundice, with increasing loss of flesh for last two months; loss probably twenty-five pounds. Continuous pain at and below epigastrium for four months; vomiting persistent; bowels constipated; fæces contain fat.

Diagnosis.—Cancer, probably of pancreas; possibly involving stomach or gall-bladder. She was transferred to Surgical Ward for exploration and possible gastro-enterostomy, in order to drain the stomach. She was in exceedingly low condition, deeply jaundiced.

On examination, large, dense, nodulated masses were plainly palpable between the epigastrium and the umbilicus, extending along the spinal column nearly to the bifurcation of the aorta, and upward to the stomach; also extending across to the right in the direction of the gall-bladder. Aortic pulsations imparted to tumor. Left lobe of the liver not enlarged, but the liver is discoverable below the ribs. To the right was a smooth tumor of shape and feeling of an enlarged gall-bladder. Has vomited blood, dark in color. Has also sugar in the urine to the extent of 1.63 per cent.; also bile pigments, albumen, and granular casts; fæces contain fat. The temperature was subnormal. Pain was very severe and the exhaustion great. There was no history of

the violent attacks such as are found in cholelithiasis of the common duct.

Upon palpation the liver could be discovered below the ribs, but nodules could not be felt on its under surface. The gastric symptoms were not as positive as is usually the case in stomach cancer; there was less vomiting of blood. The absence of the pancreatic secretion from the intestines was not tested by giving salol and noting the absence or presence of its products carbolic and salicylic acids in the urine: salol under normal conditions should be decomposed into these two substances in the duodenum. Examination of the gastric contents showed free HCl present; total free HCl, 16; total acidity, 28; erythrodextrin present; microscopic examination, starch.

Operation, October, 1903. Patient's condition very unfavorable; within fifteen minutes from beginning of operation pulse became unrecognizable at wrist. Patient in collapse throughout nearly whole time; salt solution, hypodermoclysis, oxygen, stimulants, etc., freely used. Upon opening the abdomen, dense nodules occupying the site of the pancreas were reached. These nodules filled the curve of the duodenum, extended across to the left beyond the spinal column, and up and down the spine. Pylorus not involved. Liver free and normal. Gall-bladder greatly distended. The duodenum could be traced from the pylorus through the first three inches, then it disappeared behind the cancerous mass and could not be reached. On lifting the omentum, large dense masses were found adherent to the posterior part of the omentum, and, as the duodenum could not be reached nor the first part of the jejunum, a loop of bowel was caught and a posterior gastro-enterostomy done with a Murphy button, as the most rapid method. Patient's condition forebade any additional entero-enterostomy. The gall-bladder, the size of a small orange, was sutured to the abdominal wall and drained through a second opening. Several ounces of very dark green, thin bile were secured, with four small dark gall-stones. No stones found in ducts. In spite of saline injections and stimulation of all kinds, the patient only rallied slightly, and died the night after operation.

At autopsy the duodenum and the first part of the jejunum were entirely lost behind the cancerous pancreas. Upon reflecting the great omentum the under surface was found adherent to the upper surface of the mesentery, still further concealing the

course of the upper intestine. A probe could be passed through the cystic and common ducts into the duodenum, meeting no obstruction. The dilated gall-bladder and changes evidently had been due to pressure upon the duct. The infiltrated glands extended up the spinal column as far as the diaphragm. The left kidney showed secondary carcinoma deposits; liver and right kidney free.

Pathological Diagnosis.—Primary carcinoma of pancreas with metastases to the mesenteric, retroperitoneal, and peripancreatic lymphatic glands; also of the left kidney. Pressure on the duodenum and common bile duct; carcinomatous adhesions between the great omentum and mesentery enclosing transverse portion of the duodenum.

Dr. J. Dutton Steele, Pathologist, reports as follows: "Carcinoma of pancreas; the organ considerably sclerosed, with atrophy of the secreting glandular tissue; cancer nests infiltrating the newly formed connective tissue. Sclerosis does not affect the islands of Langerhans, and they are quite numerous in proportion to the glandular epithelium. Cancer evidently of glandular origin. The kidney shows secondary deposits; the acute parenchymatous degeneration or cloudy swelling as seen in cases of intoxication in poison and in malignant disease."

Dr. Willard remarked that these tumors of the pancreas may sometimes be reached by dividing the gastrocolic omentum below the greater curvature, where the tumor may be covered by the posterior layer of the lesser sac, or they may be reached by turning up the omentum and tearing through the transverse mesocolon into the lesser sac; as they usually push the transverse colon downward, it is sometimes necessary to pass through both layers of peritoneum forming the greater omentum, together with the posterior layer of the peritoneum of the lesser omentum.

A dozen or more cases of attempted removals of cancer of the pancreas have been reported by Robson and Moynihan in their work on "Diseases of the Pancreas." Portions of the gland have certainly been safely taken away in some cases, and in one or two instances it is said the whole gland; but this procedure seems doubtful, especially when one considers the close relations of the large splenic, superior pancreaticoduodenal branches from the hepatic, and the inferior pancreaticoduodenal branches of the mesenteric. The hæmorrhage from any one of these vessels in

the already weakened condition of these patients would be a serious matter. Directly behind the head also lies the inferior vena cava, the left renal vein and the aorta, to which vessels adhesions might have been contracted, while the tail of the organ is in intimate relation with the spleen and with the duodeno-jejunal flexure.

SPINA BIFIDA, WITH ANTERIOR OPENING, FORMING ABDOMINAL CYST.

Dr. De Forest Willard presented a female Italian child, who at his first examination, when the child was two months old, presented a dorsal tumor the size of a small orange, which occupied the whole lumbar region. It was covered by normal skin; was semifluctuating in character, but was too dense to permit accurate information as to an opening into the spinal column. The impression imparted to the hand was that of a lipoma, with an underlying spinal cyst. Pressure upon the mass did not give the child pain nor apparent cerebral distress. It was rendered somewhat tense in crying, but the child was apparently in no pain and did not cry out when handled. The right half of the abdomen and flank were filled with a large semiliquid tumor, giving the impression of a sarcoma of the kidney. The child does not use its lower limbs. The baby at present is four months old, and observation for the last two months does not reveal any perceptible increase in either tumor, and the child is thriving, thus rendering the diagnosis of sarcoma improbable.

The abdominal tumor bulges on coughing; is tympanitic in points, as though the colon was pushed forward, but with the possibility of it being an anterior spina bifida. Tapping it has not been resorted to, and the condition is so uncertain that he had preferred to delay operative measures upon either posterior or anterior tumors until the diagnosis was more sure, and until the child should be older.

The dense shadow in the tumor, as seen in the skiagraph, denser even than the bones of the spinal column or pelvis, renders the condition a puzzling one. The tumor might be a teratoma containing fœtal remains.[1]

[1] International Encyclopædia of Surgery, Ashhurst, Vol. iv, pp. 902–905.

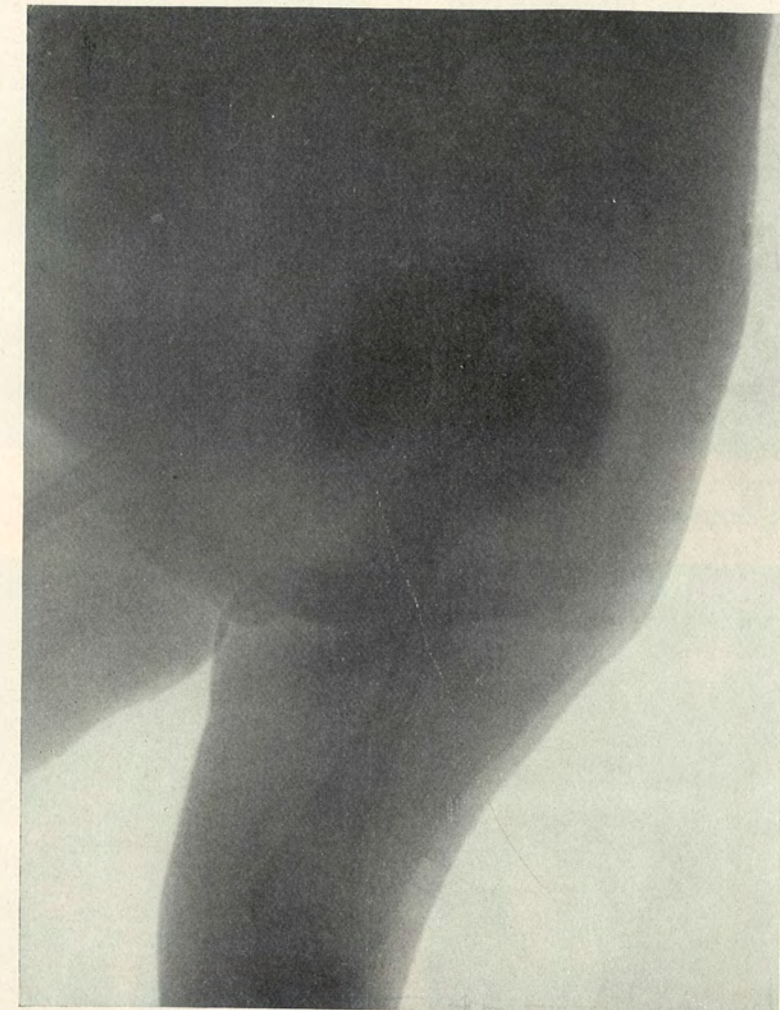


Fig. 1.—Skiagraph of case of spina bifida, posterior and anterior.

Fig. 2.

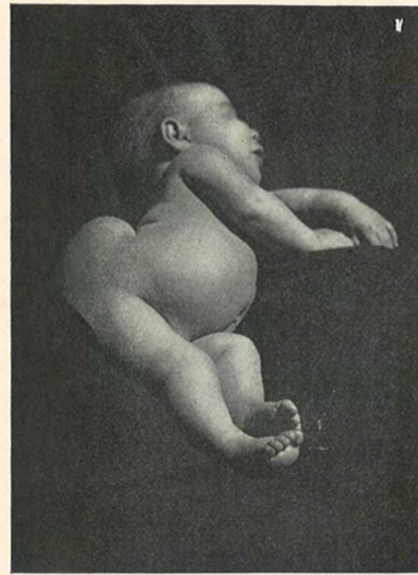


Fig. 3.

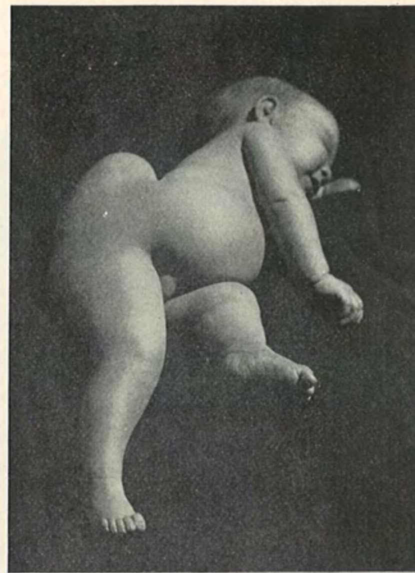


Fig. 4.

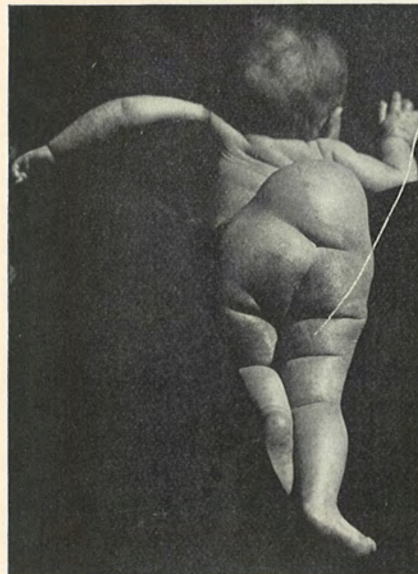
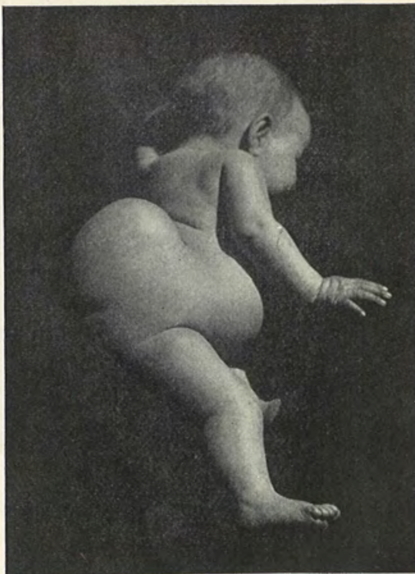


Fig. 5.



Spina bifida, posterior and anterior.

Spina bifida anterior is a very rare condition.[2] Robinson[3] states that there is no clinical record of a similar experience to his own; but Emmett[4] reports such a tumor diagnosed as an ovarian cyst in a woman of thirty-six years, which cyst extended into the pelvis, filled up the curve of the sacrum, and was aspirated through the rectum. The woman died on the seventh day. The cyst contained three quarts of fluid, and was found to be connected through the three lower sacral bones with the spinal canal.

In Robinson's case of a child of eleven months old with club-feet, there is no record of a posterior tumor; but the right side of the abdomen was occupied by a large tumor, which received an impulse on straining; the cutaneous veins were enlarged. The fingers could be dipped between the costal margin and the cyst. The diagnosis was that of a parovarian or broad ligament cyst, or some fœtal remnant. Celiotomy was done at the right of the median line. A pint of fluid was removed from a thin-walled cyst, and a finger inserted into the cyst passed into an opening into the spinal column. The sac was ligatured close to the spine with silk and cut away. No nerves were found in the sac. The fluid was colorless; specific gravity, 1002; alkaline reaction; contained a trace of proteid and some chlorides. The child lived ten days. Temperature persistently high. Five days after operation the anterior fontanelle was fuller. No tetanic contractions in hands or arms. At the post-mortem an extensive defect at the right side of the last dorsal and of the lumbar vertebræ was discovered. The pedicles of the transverse processes of these vertebræ were absent; the bodies of the vertebræ were irregular and fused. The two lumbar had a very poorly formed ossific nucleus on its right half; the third had no ossific nucleus on the right side. The spine was curved laterally, concavity to the left. There was a marked dilatation of the central canal of the cord.

One other case is found in the Royal College of Surgeons

[2] Willard. International Encyclopædia of Surgery, Ashhurst, Vol. vii, Supplement, p. 653, 1895.

[3] Medical Press and Circular, London, p. 477, 1903. Transactions of Clinical Society, London, 1903.

[4] American Journal of Obstetrics, 1871, p. 623.

Museum,[5] but there is no clinical record attached. In this case there is a marked defect on the left side of the last lumbar vertebræ; but the case is probably one of posterior rather than anterior tumor.

Bryant[6] reports a case of a woman aged twenty-five years dying from an accident, who presented an anterior spina bifida.

Jacobi[7] reports operation upon a supposed lipoma in the lumbar region of a child four months old, which at birth presented a tumor the size of an English walnut. It grew rapidly, however, and at the operation, after cutting through one and three-quarter inches of fat, a spinal sac the size of a thimble was found connecting with the two lower lumbar vertebræ. The child died in convulsions in forty hours.

Johnson[8] reports a recovery from an excision of a fatty tumor overlying a spina bifida.

Dr. John B. Deaver said he believed the case to be one of spina bifida. Both tumors contain fluid, as fluctuation can be elicited in each. Both posterior and anterior are in connection with the spinal canal. The paraplegia as well as the anterior tumor especially increasing in size when child cries favor this diagnosis.

Dr. William L. Rodman believed the tumor on the sacrum to be a combination of lipoma and spina bifida. This is not a rare condition. Dr. Willard exhibited another such case to this Academy a year ago, and Dr. Rodman has seen several such cases. Bland-Sutton has particularly called attention to this condition. The anterior tumor is of doubtful nature. It is possible that the posterior one has become cut off from the spinal canal by closure of its communication and the fluid is going anteriorly. This seems to be a rational explanation of the situation, but the anterior tumor is tympanitic. The presence of coils of intestine might be in part responsible for this tympany, yet there seems more than would come from these and a moderately distended cyst. Another possibility in this case is that it may be one of

[5] Clinical Society, London, Spina Bifida Reports, Vol. xviii, pp. 358, 359.

[6] London Pathological Society Transactions, Vol. ii, 1860, p. 299.

[7] American Journal of Obstetrics, 1871, 631.

[8] Transactions of Pathological Society, London, Vol. viii, p. 16.

lumbar hernia presenting in Petit's triangle. Spina bifida is usually accompanied by other developmental faults, such as hernia, talipes, hydrocephalus, etc. Dr. Rodman was quite sure that the condition is not one of sarcoma of the kidney.

LIVER ABSCESS FOLLOWING AMŒBIC DYSENTERY; DRAINAGE THROUGH GASTROHEPATIC SPACE.

Dr. De Forest Willard reported the history of a woman, sixty years of age, who in August, 1903, in the midst of good health, and without having visited the tropics, was seized at Atlantic City, New Jersey, with pain, mucous stools without blood; passages eight or ten daily; temperature as high as 104° F. Soreness on pressure continually present. Amœba found in stools. She was seen in consultation with Dr. Musser late in September suffering with great pain over the region of the liver, with tenderness on pressure. Below and to the right of the epigastrium was a tender, semifluctuating tumor, visible to the eye. There was slight jaundice with continuous bowel pain and vomiting. Hæmoglobin, 60 per cent.; red blood-corpuscles, 2,745,000; leucocytes, 22,000.

On account of danger of rupture into the peritoneal cavity, immediate operation advised, which was done September 29, 1903. (At the operation he was fortunate enough to have the assistance and counsel of Dr. W. J. Mayo.)

Upon opening the peritoneum no adhesions were found between the two layers. The edge of the liver was plainly seen, but there were no signs of protruding abscess upon either upper or lower surfaces. Beneath the liver, in the gastrohepatic space, was a large elastic tumor, suggesting cyst of the pancreas. After circumferential packing had been introduced, a half-pint of greenish-yellow fluid was evacuated, thin in consistency at first, later thicker and more glutinous; finally, masses of dark, broken-down liver tissue and partially organized coagula were discharged. In the cavity was a large ragged mass of firm consistency, which it was deemed unwise to detach with the fingers lest hæmorrhage be started. The walls of the abscess were stitched with catgut to the aponeurosis, and a large rubber drainage tube inserted to the bottom of the cavity, together with a strip of gauze.

Laboratory examination. Fluid from amœbic patient. Spe-

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cific gravity 1002; albumen, $4^4/_{10}$ per cent.; clear green fluid; no pancreatic ferments; no change in milk, and no production of peptone in alkaline media. Microscopical examination. No pus; few fat droplets and granular débris; no bacteria. Culture in agar (plate), sterile; no growth. Necrotic tissue, apparently old blood-clot, containing no amœba and no bacteria. The fluid proved to be sterile; did not respond to the tests for pancreatic juice, while it was also negative as regards bile tests. The hardened masses removed showed broken-down blood-corpuscles, etc.

As the patient vomited on fourth day, the packing was removed, lest its pressure upon the stomach might act as an irritant. The drainage from the cavity was left undisturbed. The peritoneal cavity was quickly blocked off and never became infected. The masses within the sac separated and came away as slough. Drainage continued for weeks from the cavity, which was six inches deep from the surface, but which slowly granulated.

October 4, 1903. Agglutination test with bacillus of dysentery in dilution, 1 to 20; negative. In dilution, 1 to 50; negative. Gastric contents, total amount, 58 cubic centimetres. Total free HCl, 0.4 cubic centimetre. $^n/_{10}$ NaOH Sol. 0.014584 per cent. Lactic acid absent. Microscopic fat globules abundant; starch granules few; sarcinæ absent; Oppler Boas bacilli negative.

October 5, 1903. Hæmoglobin, 75 per cent.; red blood-corpuscles, 4,238,000; leucocytes, 14,900. Gauze dressings suggestive of biliary elements; staphylococcus pyogenes albus.

October 30, 1903. Amœba coli present in the abdominal discharge and in stools.

The varying conditions of the presence or absence of amœba agree with the statement of Kieffer (*Philadelphia Medical Journal,* February 21 and 28, 1903) in his excellent lectures on "Tropical Abscess of the Liver."

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