TRANSACTIONS
OF THE
PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting held October 4, 1920

THE PRESIDENT, DR. GEORGE G. ROSS, in the Chair

IMPERFORATE ANUS

DR. JAMES H. BALDWIN presented a child, two and one-half years of age, who in August, 1920, was brought to the Methodist Hospital with the statement that it had swallowed a penny some time before, which had not yet been recovered from the stools. Upon examination the child was found to have an imperforate anus with the rectum opening into the vagina through which the fæces were being regularly discharged. In a pouch of the rectum beyond this fistulous opening the coin was found. It was removed through the vaginal fistula. An operation for the formation of a normal anus was contemplated at a future time.

DR. A. P. C. ASHHURST remarked that Rizzoli, an Italian, many years ago (1856) devised an operation for this form of imperforate anus. He claimed that the sphincter of the anus is not at the opening in the anal region, but at the opening in the vagina. Therefore, he dissected the opening in the rectum free from that location, bringing the vaginal opening of the rectum down to the proctodæum.

DR. JOHN H. JOPSON had had the opportunity of seeing and operating on a number of cases of imperforate anus in his service at the Children's Hospital and elsewhere. The cases of rectovaginal fistula constitute the commonest variety. In these cases he had been accustomed to operate when they were first seen, and usually within the first few months of life. The operation is easy as the rectal pouch is near the surface of the perineum, and can readily be brought down and sutured to the skin. There is always a tendency to contraction of the new anus which requires subsequent dilatation to maintain its patency. He had not had the opportunity of following the hospital cases in later life, and of closing the vaginal fistula.

CHONDRO-SARCOMA OF PLANTAR SURFACE OF FOOT

DR. JAMES H. BALDWIN reported the case of a man, aged forty-five years, who had had a growth on plantar surface of right foot for twenty years. Up to two years ago it was about the size of his thumb. Since then it increased until it was the size shown in the photograph (Fig. 1), and he was compelled to walk on the side of his foot. The tumor was subcutaneous, had a capsule of its own, and was easily shelled out. When

removed the flexor tendons were exposed. The wound healed without complications. The excision was done September 2, 1920. The pathological examination made by Doctor Russell Richardson shows this to be a mixed tumor, a chondro-sarcoma, a form of tumor, while not uncommon, he had not seen or heard of in this location. They probably arise

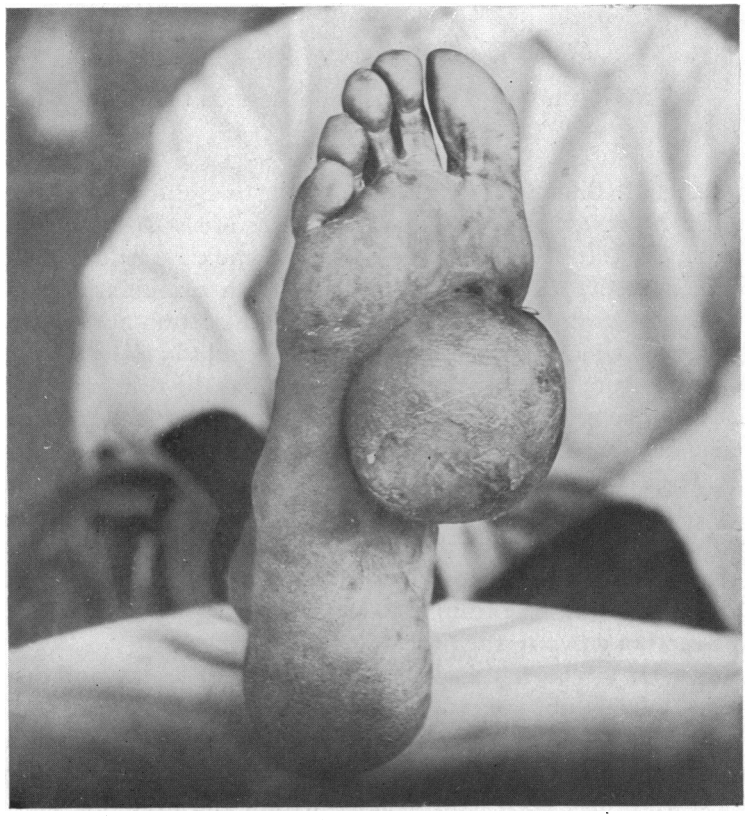

FIG. 1.—Chondro-sarcoma of foot.

from embryonal cells capable of producing more than one type of adult tissue and may descend from one or all layers of the embryo. They usually represent two, or at most three, types of cells.

POST-OPERATIVE ENDOCRINE DEATH

DR. GEORGE G. ROSS reported the case of a woman who was admitted to the Methodist Hospital in April, 1920, on account of persistent vomiting. She had been ill about two weeks. The attack began with a severe chill lasting for about fifteen minutes, followed by persistent vomiting and bleeding from the vagina, lasting for two days. She did not pass any clots or shreds that indicated interrupted pregnancy. She also stated that at the very beginning of her attack she was jaundiced. Her bowels had been moving regularly. At the time of admission she complained of slight

epigastric pain. She had suffered from indigestion for years. She had no symptoms referable to the cardiac, renal, nervous, or pulmonary systems.

When admitted her temperature was 97°; pulse, 100; respiration, 26. She was a very weak, sick-looking, emaciated white adult of twenty-two years. The skin was hard and very dry, mouth dry and tongue red. The conjunctivæ were pale. The patient's general appearance was one of a moderately advanced case of inanition. The thing that was the most striking was the impression she gave of being very much in need of fluids. There were no abnormalities about the head or neck. The tonsils were chronically diseased. The heart was negative except for a slight acceleration. The lungs were negative. Abdomen was soft throughout, no marked rigidity. There was a mass about the size of a lemon in the right upper quadrant under the costal margin. It moved downward with respiration, but was not movable otherwise. On account of the extreme thinness of the abdominal walls the mass could be palpated from the loin, but could not be pushed into the kidney pouch. The abdomen was otherwise negative except for slight tenderness on deep pressure over McBurney's point.

Blood.—Red blood-cells, 3,920,000; white blood-cells, 15,000. Heart-beats, 80.

Urine.—1020, acid, trace of albumen, no sugar, no casts.

The treatment for the vomiting having failed and as the woman was rapidly growing worse, it was decided to open her abdomen, as it was hoped the tenderness over McBurney's point and the leucocyte count indicated a low-grade inflammation of the vermiform appendix, and its removal would control her only symptom, vomiting, and that the incision in the abdomen would afford an opportunity to establish the character of the tumor. Operation by Doctor Ross. Right rectus incision. Gall-bladder normal. Stomach normal, pylorus patulous, duodenum normal. The mass felt upon abdominal palpation was found to be the right kidney displaced downward and forward. It could not be replaced in the kidney pouch. The left kidney was movable. There were adhesions about the cæcum, the appendix was thickened and sharply angulated in the middle. The appendix was removed in the usual manner. The pelvis was inspected and found negative. The peritoneum had no fluid in it and the rectus muscle had the appearance of dried beef. The abdomen was closed without drainage.

The patient reacted well from the immediate effects of the operation. She was given 1000 c.c. of salt solution by bowel before leaving the operating room, and after returning to the ward was given continuous proctoclysis. She recovered from the ether with no vomiting and as soon as she asked for water it was given her. She did not vomit this. The first twenty-four hours after operation were uneventful and the patient retained all the fluid that was given her both by mouth and by bowel. At the end of this time her pulse and temperature rose rapidly from 100 and

99°, respectively, to 170 and 106°. She had passed both gas and fæces since the operation and had voided 50 ounces of urine. In spite of ice packs the temperature and pulse continued to rise and the patient died in a convulsion about thirty-six hours after operation.

Doctor Ross reported also the case of a woman who was operated upon in 1918 for repair of the cervix and intra-abdominal shortening of the round ligaments. Patient had had an attack of abdominal pain two weeks before her admission to the hospital. On the fourth day of this attack she had a severe uterine hemorrhage confining her to bed. There was a temperature of 101°. She vomited foul-smelling, brownish material. On the fifth day she experienced relief from the pain upon the passage of flatus and fæces as a result of an enema. The vomiting stopped immediately. A day before admission she had a recurrence of her symptoms. A diagnosis of incomplete intestinal obstruction was made, and for the second time her symptoms were temporarily relieved by an enema. An appendectomy had been performed twenty-two years ago.

Previous medical history, family history, and social history negative. Physical examination negative—except for a general tenderness of the lower abdomen, especially marked on the left side. Vaginal examination demonstrated a slight bloody discharge. The cervix was enlarged, soft, and the os dilated. The uterus was enlarged and tilted to the left and was fixed in this position. There was a left-sided pelvic mass the size of the fist which was tender to palpation.

Ten days after admission she was operated upon for a fibroid uterus and a sub-total hysterectomy was performed. This was attended by considerable difficulty, owing to the fact that the bladder was adherent to the fibroid uterus in front and sigmoid behind. The left ovary and tube were badly diseased and were adherent in the pelvis behind the broad ligament. It was necessary to dig the ovary out of its adherent bed. There was little or no hemorrhage. The wound was closed without drainage. The operation took one hour and a half. At the termination of the operation her pulse was 135; skin was dry and warm; color of mucous membranes, pink. A few hours after she was returned to her room the temperature began to mount rapidly until it reached 104 2/5°, ten hours after operation. An ice pack of two hours reduced the temperature 2 degrees. Within fifteen minutes after its discontinuance the temperature had reached 105°. Seven hours later the temperature was 107° and the pulse uncountable. Patient became unconscious and died. Patient developed slight distention. There was active peristalsis. She passed flatus and fecal matter as a result of an enema.

This death is one that is compared with that which occurs in the toxic goitre. Doctor Ross believed these two cases to be deaths due to chemical toxæmia, a result of hyperactivities of the ductless glands, probably of the adrenals.

In the second case it is possible that the traumatism caused by the

removal of the ovary may have liberated a chemical toxin which, being driven into the circulation, might account for the subsequent events.

DR. H. R. OWEN said that two or three years ago, during the month of August, he operated on a child at the Orthopædic Hospital on an excessively hot day. The temperature in the operating room must have been over 100°. The operation was tendon transplantation—an operation which should have been postponed until a cooler day. During the operation he noticed that the patient became very flushed and the skin felt very hot, and was not perspiring. The child's temperature was taken and found to be 106°. Pulse was running between 140 and 150. Both temperature and pulse had been normal previous to the operation.

He believed that this child suffered from a heat stroke. The child was very ill for about forty-eight hours, but recovered.

The moral this case taught him was never to operate on any case, excepting an emergency, on an excessively hot day.

He did not know whether Doctor Ross's two cases were in the same category as this case, but when he stated that one of his operations had been performed in August, Doctor Owen recalled this case of heat stroke, which he feared for twenty-four or forty-eight hours was going to terminate in a fatality.

DOCTOR ROSS rejoined that he was familiar, as all are, with the sunstroke which may occur during operation, having seen it develop with the patient on the table. These two women complained of great heat while their extremities were cold; there was a peculiar expression about the face and there was semiconsciousness. The first woman died with convulsions. He had been groping for some plausible explanation of the phenomena presented and had thought of the endocrine theory only because it seemed to him to be about as reasonable as any other.

ACUTE PANCREATITIS COMPLICATING PREGNANCY

DR. W. P. KROGER (by invitation) reported the following case of acute pancreatitis complicating pregnancy on account of its extreme rarity. The patient, a married woman, twenty-four years of age, and seven months pregnant, was admitted to the Lankenau Hospital in August, 1920, to the service of Dr. George Ross. Her chief complaint was acute pain in the upper left abdomen. Her health had been very good until two weeks before admission to the hospital, when she took a long automobile ride. Following the trip she began to notice mild, generalized, abdominal discomfort. She felt tired and vaguely ill. Two days previous to entering the hospital she developed sudden pain in the upper left abdomen. This pain gradually became more severe and in twelve hours it was very acute. She then began to vomit and continued to vomit frequently and profusely. At first there was a little blood in the vomitus which she thinks may have come from her throat. Later the material became dark green or brown. No fecal odor to this material. No purgative was given and several

enemas gave only a slight result. The pain continued to be severe, she became very weak and was sent to the hospital.

There was nothing of importance in the past medical history. Her menstrual history was negative and she had one healthy child.

Examination revealed an obese adult. Skin was cold and clammy and she was evidently in a condition of shock. The pulse was weak, running about 160. The temperature was subnormal, about 97°, and the respirations were 36. Her blood-pressure was 96 systolic and 64 diastolic. The head was normal. Face was pale and the tongue was heavily coated. The neck was negative. Aside from rapid rate, the heart was in good condition. The lungs were clear. The abdomen was distended with a pregnant uterus. There was moderate tenderness throughout the upper abdomen, especially on the left of the midline. No rigidity was noted and no masses were felt. Peristalsis was diminished. The uterus was enlarged, hard, slightly tender and freely movable. The vaginal examination was negative. The extremities were cold.

A blood count showed 80 per cent. of hæmoglobin, 5,000,000 red cells, 30,000 white cells, and 90 per cent. of polymorphonuclears. The urine contained no sugar, a slight amount of acetone and diacetic acid, and a few granular casts.

About six hours after her admission the patient complained of severe pain in the lower abdomen and she suddenly aborted a dead fœtus with the membranes intact. Following the abortion she became much weaker, her temperature arose to 103°, and the pulse became very rapid. Her condition continued from bad to worse, she became cyanotic, and twenty hours after entering the hospital she died.

An autopsy was performed. Upon opening the abdomen a considerable amount of dark brown fluid was noted, the "beef broth" fluid of pancreatitis. The stomach and upper intestines were dilated. The lower ileum was markedly constricted. The omentum contained many white areas of fat necrosis. The pancreas was acutely inflamed and showed almost total destruction by necrosis. The liver, gall-bladder, and other abdominal organs were apparently normal. The microscopic sections showed acute suppurative hemorrhagic pancreatitis and fat necrosis of the omentum.

When making a diagnosis of this case a number of conditions should be considered. Chief among these are acute cholecystitis, acute pancreatitis, perforated peptic ulcer, and acute intestinal obstruction.

Doctor Gatewood, of Chicago ("Surgical Clinics of Chicago," vol. iv, No. 4, page 801, August, 1920), reports a case similar in some respects to this one, but in his case the initial symptoms occurred directly after pregnancy. He operated upon his case, draining the pancreas and the gall-bladder. His case recovered. He advises operative interference in all cases. Other than this no similar cases could be found in the literature.

Dr. George G. Ross said that this woman was sent into the hospital

with the diagnosis of acute perforation of the stomach or duodenum. I could not satisfy myself that such was the condition. The woman's pregnancy obscured the situation. He was unable to make a diagnosis, but was able to stay his hand, and the post-mortem proved the wisdom of not doing anything, for the whole pancreas was sloughed away.

ISOLATED FRACTURE OF THE LESSER TROCHANTER OF THE FEMUR

DR. E. B. HODGE reported the history of a woman, aged seventy-four years, who was admitted to the Presbyterian Hospital with a diagnosis of "broken hip." She had become dizzy and fallen on her left side. There was tenderness over inner upper left thigh, slight eversion and no shortening. X-ray showed a fracture of the lesser trochanter. The leg was treated by light extension with the thigh in moderate flexion. X-ray one month later showed satisfactory callus. Ashhurst, "Principles and Practice of Surgery," Second Edition, quotes Metcalf as having in 1915 collected seventeen cases of isolated fracture of the lesser trochanter.

DR. GEORGE G. ROSS said that he had seen two cases of fracture of the lesser trochanter, both in baseball players. The injury had occurred in their effort to recover their balance after having missed the ball. Both were dressed with partial flexion.

ISOLATED FRACTURE OF THE TUBEROSITY OF THE ISCHIUM

DOCTOR HODGE also reported the case of a man, aged forty-five years, who was admitted to the Presbyterian Hospital in March, 1920. He had fallen 40 feet from a tree, landing full on his buttocks upon a macadam roadway. There was considerable shock. No gross injury could be found except a tender swelling in the region of the right tuberosity of the ischium. X-ray showed fracture at this point only. Besides the rarity of the fracture, a point of interest was the high degree of paresis of bowel and bladder. Early in the case the diagnosis of rupture of the bowel had to be seriously considered. There was ultimate union and patient walked out of the hospital in seven weeks. He has, however, not yet recovered from the effects of the shock to his nervous system.

W. D. Haines (ANNALS OF SURGERY, February, 1920), in recording an instance of isolated fracture of both tuberosities, states that search of the literature showed no record of an uncomplicated case. Ashhurst, *loc. cit.*, states that the tuberosity has been detached by muscular violence. Haines properly emphasizes the importance of rectal approach for diagnosis and reposition of fragments.

GUNSHOT WOUND OF THE SHOULDER

DR. JOHN H. JOPSON presented a woman seen at the Presbyterian Hospital. She had been shot the previous evening at close range by a 38-calibre revolver, the bullet entering on the left side at the anterior border of the deltoid muscle, near the apex of the axilla, and lodging in the

bone at the level of the base of the greater tuberosity. There was no evidence of vascular or nerve injury. The usual operation of *débridement* was done. The ball had traversed the deltoid muscle and lodged in the bone. It was removed from this bed, and found to be partially wrapped in a portion of cloth from the patient's dress. Cultures were taken from this. Owing to the length of time elapsing since the wound was received, twenty hours, it was not sutured, but packed with Dakin gauze. This was removed at the end of twenty-four hours, and the Carrelling of the wound begun. Cultures and counts were made from the wound on the second day. Laboratory reports were as follows: From the cloth wrapped about the bullet two organisms were obtained, *viz.*, a Gram-positive bacillus unidentified, and colon bacillus. From the wound two days later, a Gram-positive bacillus, non-spore bearing, identified culturally as the Hay bacillus, and present in the proportion of 1.5 organisms per field. With these reports the completion of the suture by the delayed primary method, was undertaken with complete confidence. On the third day, after anæsthesia and complete preparation of the field antiseptically, including iodine, the deep structures were approximated with chromic catgut, and the skin edges with silkworm-gut. No drainage. Three times was the patient anæsthetized. Primarily with ether; the Dakin packing was removed while under Savariaud, and the final closure was made under nitrous oxide gas. The case was a demonstration in civilian practice of the applicability of the lessons learned in many thousands of cases during the war. The result was a perfect one, and the period of disability negligible after her discharge from the hospital twelve days after injury.

MIXED TUMOR OF KIDNEY

DOCTOR JOPSON also reported the history of a little girl of three years, and exhibited the specimen removed. The child had a negative family history, and enjoyed good health until six weeks before her admission to the Presbyterian Hospital. At this time she began to be peevish and fretful. One week before admission her mother while lifting her noted the presence of a tumor in the right side of the abdomen. Examination of the urine showed the presence of red blood-cells, and the child was seen to be anæmic.

On admission to the hospital she was in fair general condition. The blood report showed red blood-cells, 3,650,000; whites, 10,085; hæmoglobin, 48 per cent. The urine report was as follows: Specific gravity, 1022; reaction, acid; sediment, slight flocculent; albumen, very faint trace; sugar absent; red blood-cells in small amount, and white cells more numerous. A large tumor was readily detected on the right side extending several inches below the costal margin, and visible, palpable and movable. No evidence of metastasis could be found. The tumor was evidently of rapid growth, as the mother was an observing woman, a

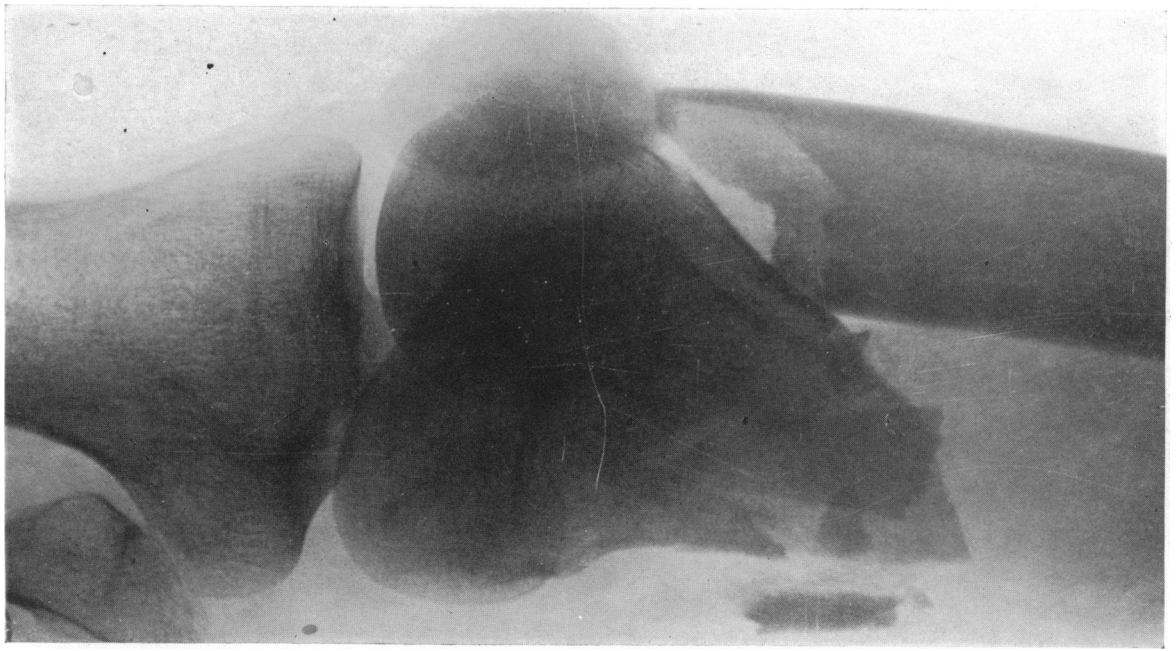

FIG. 1.—Supracondyloid fracture of femur.

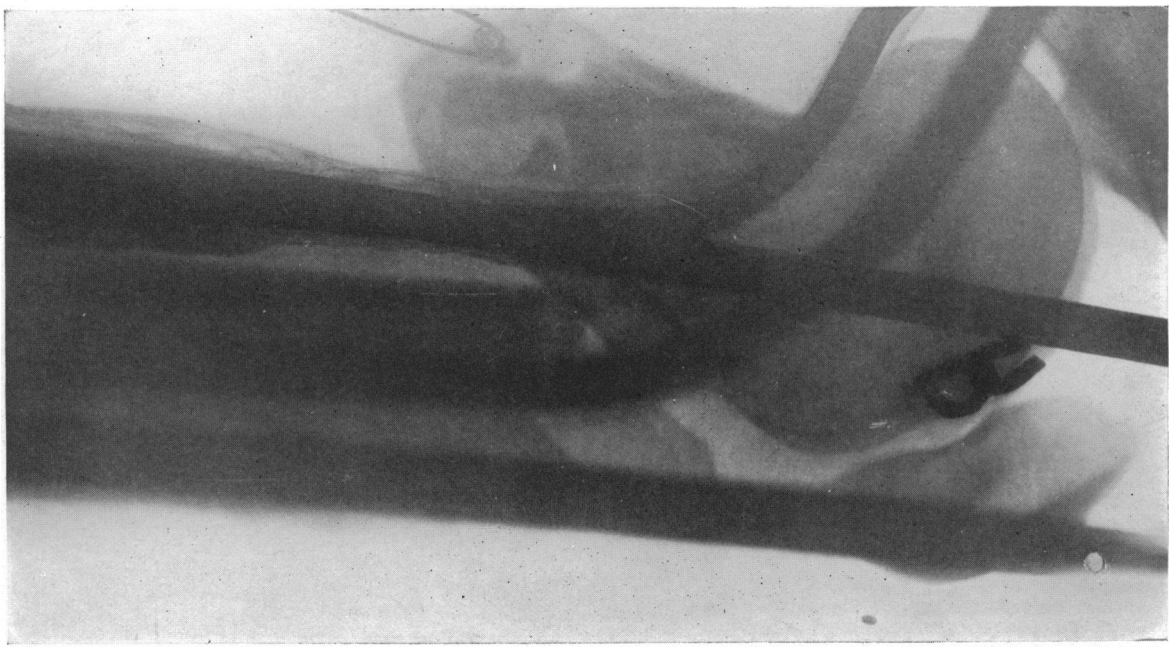

FIG. 2.—Imperfect reduction by traction tongs applied to the tuberosity.

trained nurse, and the widow of a physician, and it had only attracted her attention a week before.

Four days after admission a transperitoneal nephrectomy was done through a right rectus incision. The large tumor was adherent to the subperitoneal structures, and ruptured while being lifted and separated. Some thick gelatinous degenerated tumor content escaped. There was no bleeding to speak of, and the operation was simple of execution. There was considerable shock immediately following removal. The wound was closed without drainage. Reaction was rapid, and convalescence smooth.

Two weeks after operation the patient was subjected to radium treatment by Doctor Newcomet at the Oncologic Hospital. After which she was sent home in good condition. For about six weeks she seemed in fine health, gaining weight, of good color, playing, and in fine spirits. She then again became peevish and languid, her appetite failed, and she complained of pain in the abdomen. There was no definite demonstrable sign of local recurrence, although this was suspected. There was a short period of acute illness, with vomiting and collapse before death which occurred on September 8th, two months after operation, and a little longer time after detection of the condition.

The pathological report by Doctor Speese is as follows:

Specimen consists of a kidney which measures 16 x 8 x 7 cm. The external surface is smooth. For the most part the growth is mushy and presents a soft reddish-white mass which in places has undergone necrosis and shows much hemorrhage. On cross section a portion of the kidney cortex measuring 1 x 3 cm. in diameter is apparent. Elsewhere the kidney tissue is destroyed. Microscopic examination shows a very cellular growth composed of small cells, spindle in shape, which are closely packed together, particularly in the region of the blood-vessels, the walls of which seem to be formed of tumor cells. The stroma in this region is scant, but elsewhere is well developed. The sarcomatous elements predominate, but a few atypical gland formations are seen, which indicate that the growth belongs to the *mixed tumors*. Extensive areas of necrosis and hemorrhagic infiltration are encountered. The kidney tissue which persists is the seat of hyaline degeneration and cloudy swelling.

The fatal outcome of the case, illustrating, as it does, the exceptional malignancy of this type of tumor, corresponds with what we have observed in all the cases coming under our attention. Albanan could find but seven cases in which a child survived operation longer than three years. The classical case of Abbe, which carefully traced from childhood to adult life showed no recurrence, illustrates the very rarely obtained cure, and at the same time demonstrates that this is within the realm of possibility.

A second case was reported by Doctor Jopson, a tumor of the kidney occurring in an adult male, aged forty-eight years. The tumor had existed at least eight or nine years. It was discovered at that time by a physician during the course of an examination to determine the cause of vague symptoms in the way of discomfort in abdomen and back. The surgeon at that time informed him he had a floating kidney. The symp-

toms, which he describes as a heaviness in the right iliac region, and pain in the lumbar and sacro-iliac regions, have increased somewhat in severity, and the tumor has probably increased in size. Moreover, he has become somewhat neurasthenic concerning himself and his condition. He also describes a bloated feeling and has some diarrhœa. His general health has been good, and he has worked steadily at his trade of inspector of air brakes. He was referred to the Presbyterian Hospital by Doctor Steinmetz.

His family and previous history aside from the above are negative. His general condition is good. Weight is 145 pounds. In the right side of the abdomen is a large tumor, occupying the hypochondriac and lumbar regions, the size of a child's head. Owing to the relaxation of the abdominal wall, it is visible as well as palpable, moves with respiration, and with the patient in the left lateral decubitus falls to the left side. Bimanual examination shows extension to the loin space. It is insensitive, of smooth surface, and semi-cystic in consistency.

X-ray examination by Doctors Newcomet and Steinmetz shows the ascending colon displaced far to the left, and the stomach pushed upward. They believed they could outline the right kidney separate from the tumor. Urine report: Specific gravity, 1016; sediment, none; albumen, none; sugar, none; microscop., 2″ ? and few epithelial cells; very few hyaline casts. Functional P.S.P. test, (1) Amt. 40″ P.S.P. 15. (2) Amt. 60″ P.S.P. 25.

Blood examination: Red cells, 4,810,000; leucocytes, 10,500; hæmoglobin, 91 per cent.

Operation, September 3, 1920: Long right rectus incision from ribs to below navel. Palpation shows opposite kidney normal, and no intraperitoneal pathology. Ascending colon displaced by tumor much to left. The thin external layer of the ascending mesocolon was split. Numerous perinephric adhesions were divided, the tumor was lifted out of the abdomen, and found to spring from the lower pole of the kidney, which was fused with it. The ureter was clamped, divided, and cauterized after ligation. Two large clamps were applied to the proximal side of the vascular pedicle, one to the distal side, the pedicle was divided, and the tumor removed. Vascular adhesions and pedicle were ligated. The posterior peritoneum was sutured. The abdominal wound was closed in layers, using chromic catgut. No drainage. After operation the patient did well for three days. He could not void, and was catheterized at regular intervals, passing large amounts of urine of normal character. On the second night, being uncomfortable, he sat up twice on the edge of the bed in an effort to void. On the evening of the 5th of September he vomited, and this persisted through the night and the following day. The patient was partially collapsed with thready pulse, cold skin, and seemed very ill. The dressings were dry. Stomach washings gave temporary relief. In the afternoon inspection of the wound showed that the

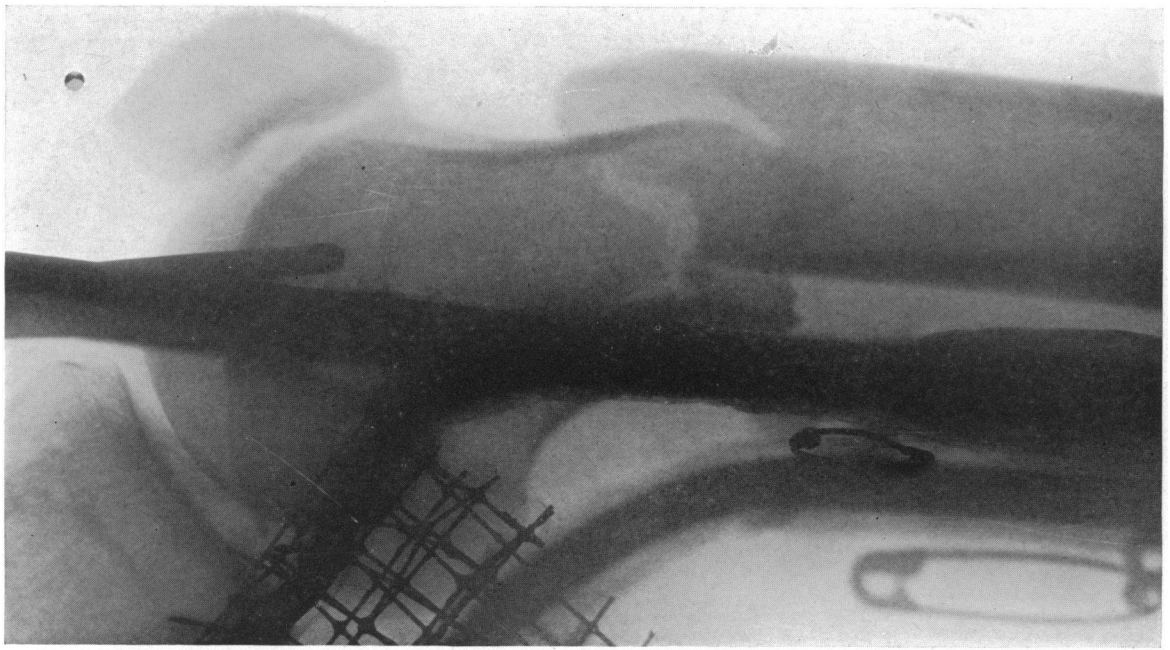

FIG 3.—After application of tongs and traction to condyles of femur.

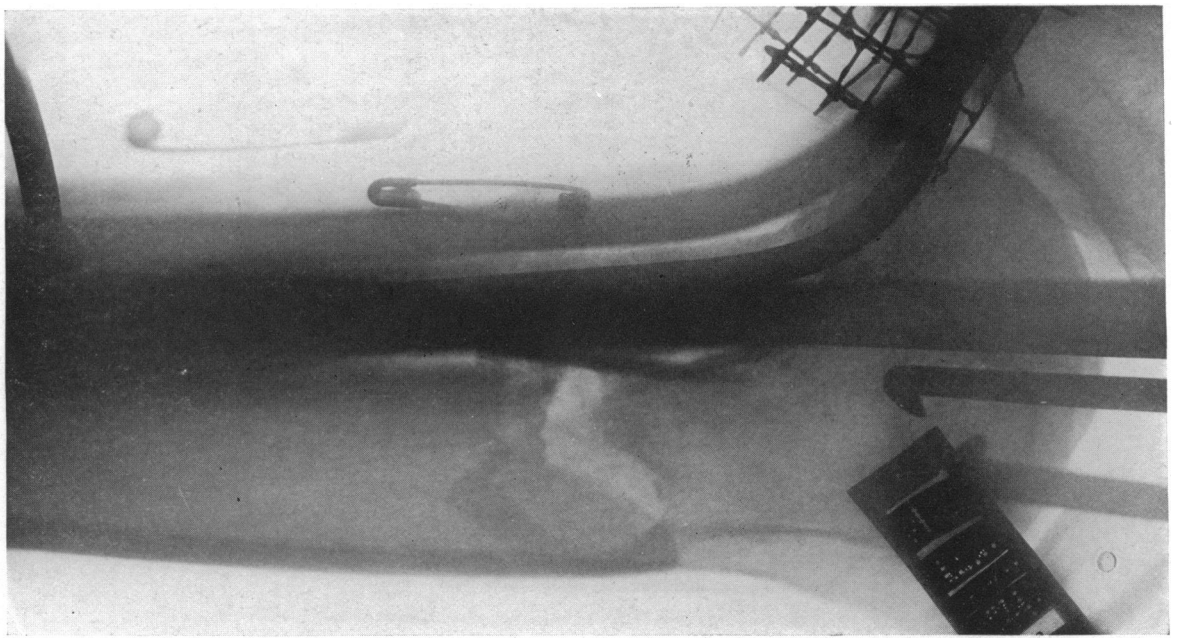

FIG. 4.—Showing further correction by elevation of tongs and traction after partial reduction.

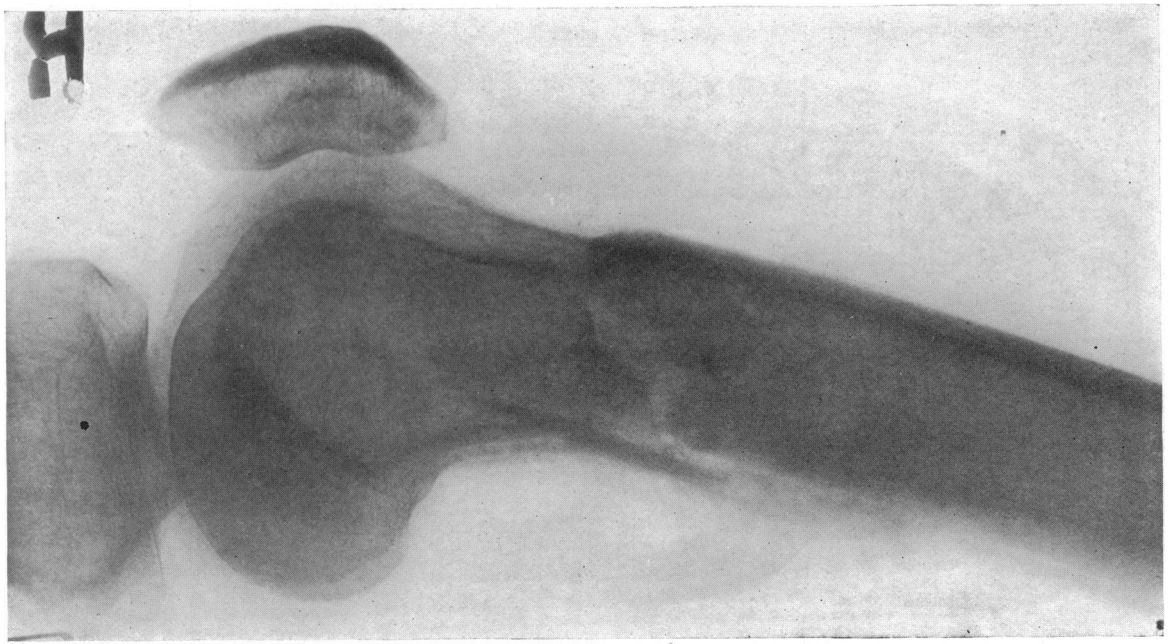

FIG. 5.—The fracture after final consolidation—all apparatus removed.

deeper stitches had given away, and there was nothing but skin stitches holding. The wound was reopened, the intestine covered by omentum reduced, the peritoneum found perfectly clean and sterile. The wound was resutured under gas, and the patient pronounced himself a short time later as feeling relieved, as indeed he was. His condition at once improved, all symptoms of peritoneal irritation disappeared, and he gave no further cause for anxiety.

Report on specimen by Dr. John Eiman is as follows:

Gross: Kidney and tumor attached to the lower pole. The kidney and tumor weigh 1380 grams, and measure 21 x 11 x 8.8 cm. The tumor mass is roughly spherical, and measures 14 cm. in diameter. The lower half of the kidney is split in the median line and the tumor is wedged in the kidney tissue. The kidney is pale purple in color and fairly firm in consistency. The tumor is reddish yellow in color, elastic in consistency and feels like a huge cyst. The surface of the tumor is covered diffusely with fibrous adhesions and shows numerous large distended vessels and a network of finer vessels. On pressure over the tumor there exuded from the renal vein a few c.c. of dark red blood. The renal veins show no gross lesions.

Specimen was opened after hardening for about two weeks. On cross section it showed a solid tumor mass attached to the lower pole of the kidney. The tumor was surrounded by a definite capsule which varied in thickness from 1.5 to 2.5 cm. In that portion of the capsule which separates the kidney tissue from the tumor were seen huge irregular blood-channels which in some places measure 2 cm. in diameter. The tumor was elastic in consistency, dirty grayish yellow along the periphery, and bluish black in the centre. (The dark discoloration probably due to faulty fixation.) Roughly in the central portion of the tumor is a stellate core made up of fairly dense fibrous tissue. Microscopic Diagnosis: Hypernephroma. Grawitz type.

SUPRACONDYLOID FRACTURE OF FEMUR

Dr. John H. Jopson reported a case of supracondyloid fracture of the femur complicated by fracture of the tibia and fibula on the same side, treated by tongs extension. He exhibited lantern slides showing stages of reduction of the fracture. The patient, a male aged forty-two years, injured in a railroad accident and admitted to the Presbyterian Hospital, had the lesions mentioned, and additional complication to treatment in the shape of abrasions around and above the knee, at the points where it was desired to apply the tongs extension. He was therefore somewhat in the position of a battle casualty, as the chances of infection were materially increased by applying the extension at these areas. The skiagrams showed an oblique fracture about 4 inches above the articular surface, the lower fragment rotated backward and pulled upward in the manner common to this fracture. The end of the upper fragment was in contact with the upper margin of the patella. There was an oblique fracture of the tibia, and a transverse fracture of the fibula, in fair position, in their lower thirds.

In view of the abrasions, tongs traction was first applied to the tibial tuberosity, in accordance with Blake's teaching, and twenty pounds weight applied, the knee flexed and supported in a combination of Thomas and Cabot splint to fix the fracture of the tibia and fibula. This

treatment was ineffectual in bringing about reduction, although some separation of the fragments was obtained. Seven days after injury, the skin wounds having healed, the tongs were applied above and anterior to the axial centre of the condyles, and twenty-four pounds weight applied. A few days later another X-ray showed reduction almost complete. To assist in overcoming the backward displacement and downward pull of the gastrocnemius muscle, upward traction by a canvas cuff above the knee with a pull of eight pounds was used. Later the line of extension through the tongs was raised to lift the lower fragment into line with the shaft of the femur. Slight lateral displacement amounting to one-half inch persisted. Tongs were removed after six weeks. Knee exercise was hampered beyond that obtaining in the ordinary type of similar cases by reason of the complicating fractures of tibia and fibula. At the end of eight weeks, when apparatus was removed, there was limitation of knee movement to 25 degrees. This improved rapidly, and at time of discharge, nine and a half weeks after the injury, it was inconsiderable.

Doctor Jopson said that the suspension method of treatment of fractures, which is sometimes known on the continent as the American method, has largely displaced the operative treatment of fractures of the upper and lower extremity alike. It renders it unnecessary in a very large percentage of fractures which resisted reduction by the old methods, and which were therefore considered as suitable cases for plating, slide-grafting, or open fixation by other methods. Its advantages, now generally recognized, are (1) that it secures relaxation of the deforming muscles of the fractured member, and this relaxation, produced in part by posture, when increased by a combination with traction applied by one of several methods, permits the bone fragments to fall into their proper relation. (2) It permits of mobilization of the joints of the part from the moment of beginning treatment, and thus insures prompt recovery and preservation of function, without the atrophy of muscles, and crippling adhesions which only too frequently were the bane of the surgeon who treated fractures by the non-operative or operative methods. (3) Permitting of functional rest, it also permits change of posture and relieves pain. (4) Circular constriction of the limb is avoided, and (5) in all cases of compound fracture, infected or clean, access to the wound and ease and comfort of dressing are facilitated to a degree possible by no other means. The recognition of the advantages of continuous traction by weight extension, of skeletal traction as contrasted with the Buck's extension or strips glued to the skin, naturally followed the general adoption of the suspension method in large series of cases during the war. It appears, however, that a considerable number of surgeons have been slow to give up the practice of open operation in certain of the rarer fractures, and that they would profit by a careful study of the papers of Blake, Lyle, and their assistants and associates, and would perceive the possibility of a wider application of the principles which they have emphasized. In

this connection we would like to present the following series of slides showing the possibilities of treatment in supra-condyloid fracture of the femur.

FRACTURE OF TIBIA AND FIBULA WITH NON-UNION TREATED BY OPEN OPERATION AND TONGS EXTENSION

DR. JOHN SPEESE showed the X-ray plates of a fracture of the tibia and fibula which he thought would be of interest in conjunction with Doctor Jopson's remarks. The fracture of six weeks' duration was so firmly fixed and overlapped that open operation and mobilization of the ends was necessary. The wounds were closed, tongs extension applied to the malleoli, and the leg placed in a Thomas splint. A second X-ray taken five days later showed satisfactory reduction, the slight eversion of the lower fragments was readily corrected by changing the line of extension.

While the use of tongs extension is admirably adapted to the correction of such fractures of recent occurrence, it has a distinct advantage after open operation has been resorted to. Its use in such cases insures reduction and avoids the more prolonged and dangerous operations of fixation of the fragments by metal plates or bone grafts.

DR. GEORGE P. MULLER said that a number of cases had been treated by " tongs extension " in his wards during the past few months and they have been much pleased with the results. The method seems to be without serious inconvenience to the patient, only in one case did any trouble occur, and in this some skin necrosis resulted from improper introduction of the tongs. He believed that the method will be of particular use not only in curing deformity as seen in the case reported by Doctor Jopson, but also in difficult cases of comminuted fracture in the lower third of the leg. He thought it would be simpler and more satisfactory to use the metal plate in cases of fracture high in the shaft of the femur.

DR. GEORGE M. DORRANCE said that he had had some experience with the use of tongs in Evacuation Hospital No. 1. Most of the fractures where he used the tongs were compound. In the ordinary case he does not find it necessary to use the tongs, if the Thomas splint is correctly applied. In supracondylar fractures, he had used the tongs in three cases. It has the added advantage that one can flex and extend the leg, thus avoiding the stiff knee-joint that commonly follows the old methods of treatment.

DOCTOR MCKNIGHT said that in the use of the Steinman pin he had had few infections. Riedel reports forty cases of fracture of the femur and lower leg treated in this manner, and in only four did he have delayed healing of the pin openings, one for four months and the others for fifteen weeks, and these were in alcoholics. The Groves modification of the Steinman apparatus is more efficacious when the extension is to be applied to the cancellous end of bones. This consists of a small triangular plate with three pins a quarter of an inch long. They are in-

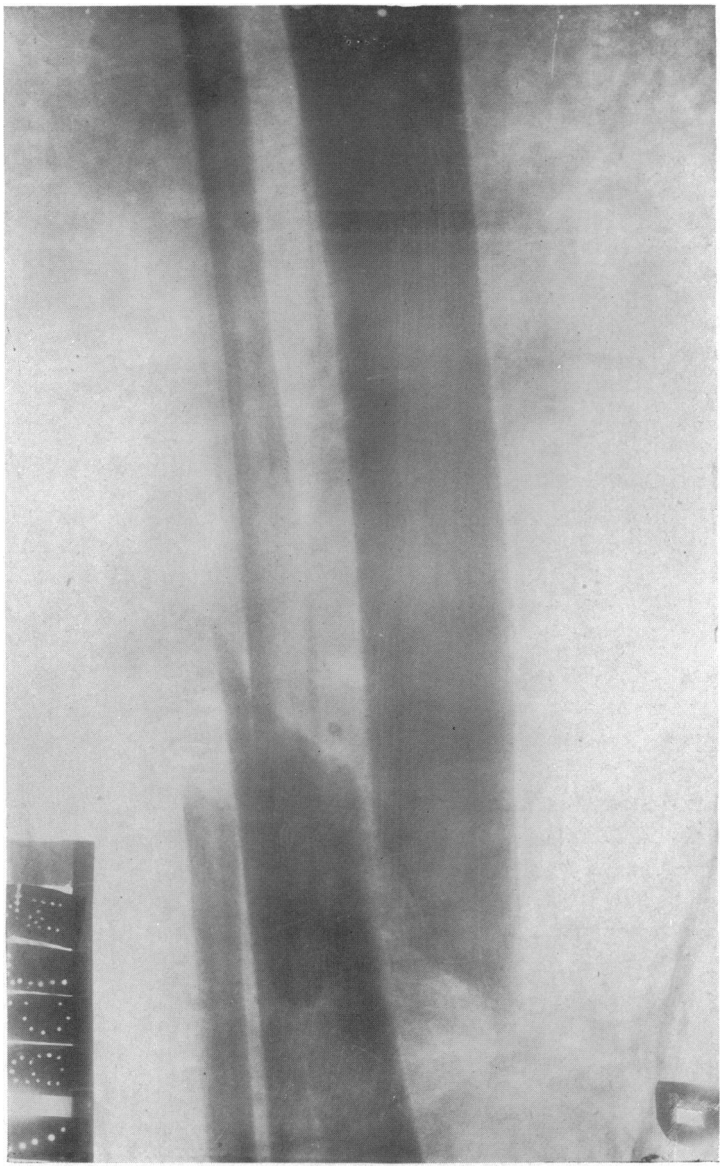

FIG. 1.—Fracture of tibia and fibula before application of tongs.

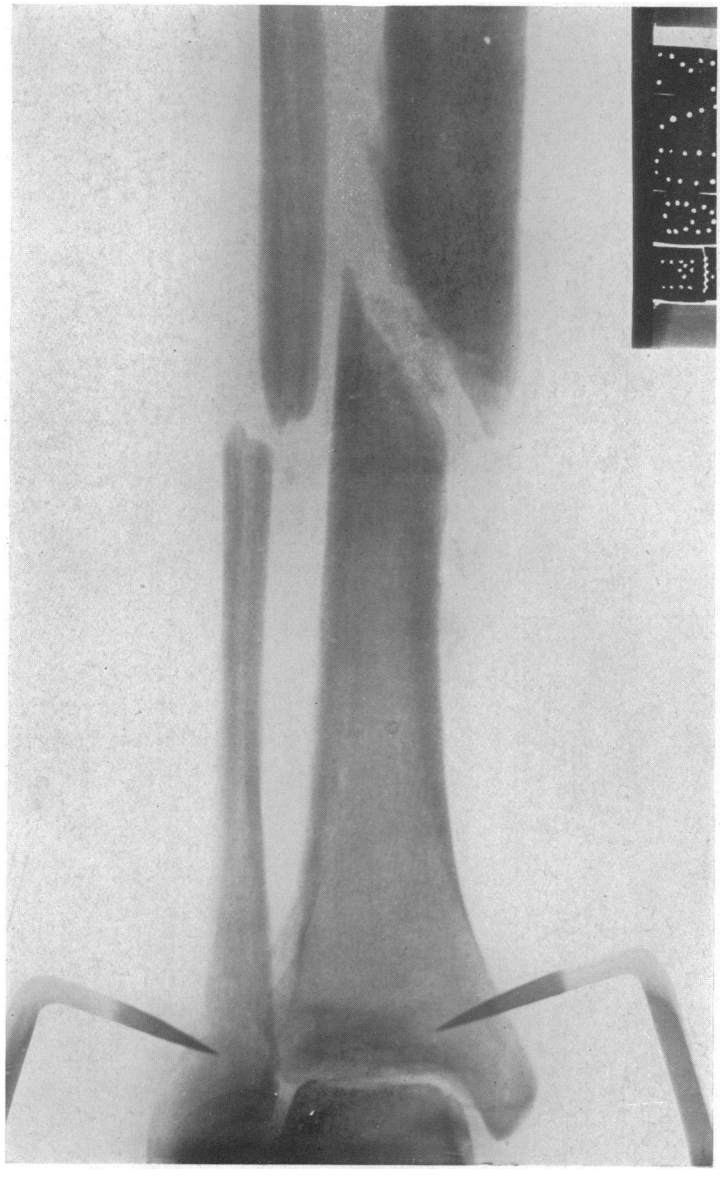

FIG. 2.—Reduction by tongs extension.

serted into the condyles and are less apt to tear out or injure bony tissue than the tongs. In fracture dislocations of the ankle with anterior displacement a partial tenotomy with direct bone extension is the best treatment in this rather difficult deformity. In applying the tongs the skin should be retracted upward to prevent direct pull on the soft tissues. This method of fracture treatment is not brutal nor so painful as indirect traction of twenty or thirty pounds pull on the muscles, tendons, and ligaments as occurs in Bucks' extension.

SUSPENSION TREATMENT IN FRACTURE OF THE PELVIS

DR. JOHN H. JOPSON exhibited a slide (Fig. 1) illustrating the application of suspension apparatus as devised and used on Doctor Jopson's service by one of his former assistants, Dr. Douglas P. Murphy, for treatment of frac-

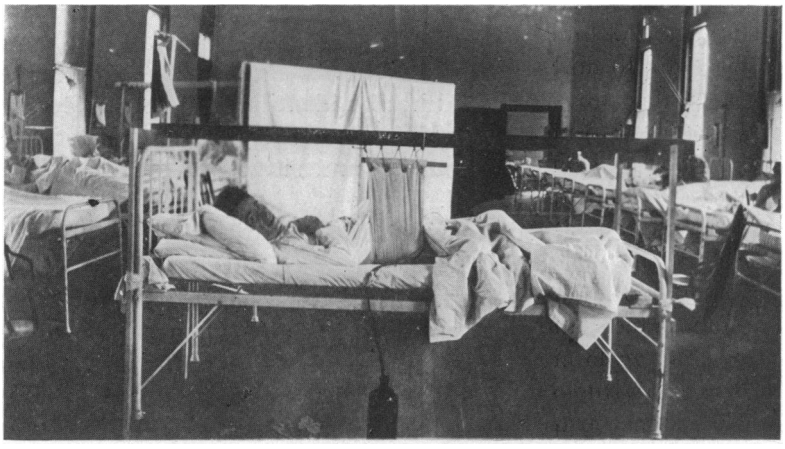

FIG. 1.—Fracture of pelvis (bilateral) with rupture of urethra and suprapubic drainage (Doctor Hodge's service). Treatment by suspension and satisfactory results from all standpoints.

tures of the pelvis. This particular patient, under Doctor Hodge's care in the Presbyterian Hospital for a fracture of the pelvis, complicated by rupture of the urethra, was a severe test of the method, and Doctor Hodge pronounced it satisfactory. Doctor Jopson had used it in several cases, including a fracture of the pelvis, with multiple lines of fracture, anterior and posterior, in a child of five years. This case, submitted to exploratory laparotomy by Doctor Speese, and later suffering from extensive sloughing of the skin and subcutaneous tissues of the back, from the fracturing force, was handled with ease by suspension in this manner, until the bones had united. All adult patients in whom it had been used voiced their satisfaction with it.

CONGENITAL STENOSIS OF THE COLON

DR. H. P. BROWN reported a case of congenital stenosis of the colon, sigmoid and upper rectum in the person of a female infant who was admitted to the service of Doctor Jopson at the Children's Hospital, June

18, 1920. She was in fair condition when born; had one black meconium evacuation after birth.

She began to vomit on the morning of the fourth day, day of admission, and continued doing so all day. The vomitus was dark green and fecal in character.

On admission the temperature was 100°; pulse, 150; and respiration, 42.

Examination shows a fairly well-nourished child in rather poor condition. The head and chest are apparently normal. The abdomen is somewhat distended and a little firmer than usual. There is not any palpable mass present. The rectum admits the little finger up to the first joint without detecting anything abnormal.

Operation (10.30 P.M. day of admission): A 3 cm. incision was made below and to the left of the umbilicus, through the rectus muscle. On opening the abdomen free fecal material was evacuated. The small intestine was considerably distended, and of a dusky red color. A small mass was palpated in the region of the lower sigmoid, but it could not be exposed. The large bowel could not be identified. A distended loop of bowel was brought into the wound, its mesentery transfixed with a glass rod, the bowel opened and evacuated, and sutured to the wound. The abdomen was drained and closed.

The child left the table in fair condition and died three hours later.

At autopsy, the peritoneal cavity was filled with fæces. The opening of the enterostomy was in the small intestine, about 24 inches from the pylorus. The small intestine was greatly distended, and showed a gangrenous perforation in the jejunum, about 1 inch in diameter, 12 inches from the pylorus. The bowel at the site of perforation had been especially distended before it ruptured. The mesenteric lymph-nodes were considerably enlarged. The cæcum was in the right iliac fossa, small and firm, and had a small appendix attached. The entire colon, including the sigmoid and rectum to within 2 cm. of the anus, was hard and firm, and cord-like in character, and approximately 0.4 cm. in diameter. The lumen would admit only a small probe, and section showed that it contained a small amount of clear jelly-like material.

Weiland,[1] quoting from Thremin several years ago, states that of 111,451 patients in the Vienna Foundling Hospital, there were only two cases of congenital occlusion of the intestine.

Lockwood,[2] in the St. Bartholomew's Hospital reports, states that in 16,030 surgical cases, 19 were for colotomy, which was fatal in 12 cases. Twice the great intestine could not be found. In one of these cases there was no post-mortem, and the other showed absence of the ascending colon.

Quoting from Sir Chas. Ball:[3] The hind gut is all that portion behind the communication with the yolk sac, which eventually forms the entire

[1] Weiland: Med. News, New York, 1896, lxviii, p. 44.

[2] Lockwood, C. B.: St. Bartholomew's Hosp. Reports, vol. xix, 1883.

[3] Ball, Sir Chas.: Rectum, Diseases and Developmental Defects, 1908.

large intestine and portion of the ileum. In the adult, no indication of what was formerly the mid gut normally remains, but its position is not infrequently marked by congenital malformation—Meckel's diverticulum —which is usually found in the ileum tolerably near its termination. If then the hind gut has not developed, we find the rectum and other portions of the intestine absent in whole or in part, or rudimentary, and the small intestine ending in a cul-de-sac, or having an opening at the umbilicus from persistence of the vitelline duct.

He reports a case of a child three months old with imperforate rectum and anus, extroversion of the bladder and urachus to the umbilicus, and an opening between the ureters through which fæces escaped freely, and through which the intestines prolapsed. At post-mortem the rectum, entire colon, and mesocolon and cæcum were absent. The ileum opened into the extroversion and was continued beyond the opening as a short contracted diverticulum, like a vermiform appendix, the sole remnant of the hind gut.

Dodd[4] reports a case in which the symptoms appeared when the child was three weeks old. It died in the twelfth week, vomiting having gradually increased and the bowel movements decreased. Autopsy showed congenital contraction of the ascending and transverse colon to the size of a lead pencil. The descending colon, sigmoid, and rectum were distended but otherwise normal in appearance, with the exception of a partial annular constriction of the sigmoid.

Dr. John H. Jopson said he had seen one case of congenital stenosis of the colon which resembled to some extent that described by Doctor Brown, but in which the condition of intestinal occlusion was of even greater degree. There was a congenital atresia of the entire colon, but not of the rectum. In addition, there was a stenosis of the upper portion of the jejunum at a number of points, and a great narrowing of the lower portion of the ileum. The portion of the small intestine between these points was greatly dilated. The condition of the colon was discovered as in this case when a colostomy was attempted without avail. The condition is, of course, incompatible with life. He had recently seen a case of congenital stenosis of the sigmoid, with chronic incomplete obstruction in an infant, which when seen at the age of seven months, weighed six pounds and twelve ounces. The bowels were always constipated, and after a few weeks moved only with injections, and there was frequent vomiting after feedings. A palpable mass revealed the position of the dilated and frequently impacted colon above the pelvic brim, and the X-ray examination showed an extreme degree of stenosis of the sigmoid. Only by the most skillful care and nursing had the child been carried along to this age, and operation was suggested, but as yet has not been agreed to. It now weighs eleven pounds, and is eleven months of age. The condition of the colon shows practically no change, and the dilatation is still confined to its lower end.

[4] Dodd, A. H.: Lancet, 1892, I, 1299.