

TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting Held November 7, 1927

The President, DR. CHARLES F. MITCHELL, in the Chair

RUPTURE OF OVARIAN CYST

DR. DAMON PFEIFFER reported the case of a young girl aged eighteen, who had been seized with an attack of acute abdominal pain associated with vomiting, elevation of temperature and leucocytosis. A diagnosis of acute appendicitis was made by the attending physician and the physical examination on admission to the hospital tended to confirm this. At operation the condition proved to be intra-abdominal hemorrhage due to rupture of a small ovarian cyst. The speaker had called attention to this condition in some detail in a case reported to the Academy in 1926 and at this time wished merely to reiterate that this condition must be borne in mind as a cause of acute abdominal symptoms.

TRAUMATIC RUPTURE OF THE URINARY BLADDER IN CHILDREN

DR. LLOYD B. GREENE, by invitation, reported two cases of traumatic rupture of the urinary bladder in young children. The first case was that of a boy, aged eleven, who was admitted to the accident ward of the Methodist Hospital, September 21, 1927, having been injured by an automobile. The patient was a deaf mute. There was an irregular deformity of the lower third of the left thigh and an irregular laceration of the lateral surface below this deformity. There was considerable bleeding from this wound. There was also a fracture of the descending ramus of the left os pubis. The abdomen was rigid and tender. A catheter was passed easily and pure blood obtained. Fluid introduced through the catheter was only partially recovered. A diagnosis of rupture of the bladder was made and operation was performed in the course of a few hours. The parietal peritoneum and the viscera were intact. There was considerable free blood and clots in the pelvis. The bladder was well mobilized in its lower half, and revealed a ragged punctured wound in the left lateral wall of the bladder near the sphincter and a clean tear about one inch in length in the anterior wall about the midline running to but not involving the sphincter. There was considerable bleeding from the lacerated pelvic fascia. The bladder was opened for thorough inspection and the laceration was closed from without. A number ten French catheter was fixed in the urethra and a DePezzer catheter fixed in the bladder and brought out through the suprapubic wound. The pelvis was packed with gauze and the wound closed. Urine was passed through the catheter seven hours after operation. The urethral catheter was removed on the fifth day. The packing was removed on the sixth day and there was no further bleeding. The DePezzer catheter was removed on the twelfth day, at which time normal urination had been fully established. The fracture was treated by overhead suspension in a Bryant frame. The child is still in the hospital.

The second case was that of a girl, aged four, who was admitted to the accident ward of the Methodist Hospital, August 5, 1927, after having been

struck by an automobile while playing in the street. There were bruises in the region of the both hips and slight bleeding from the vagina. The child was pale and listless, temperature 100.6, pulse 144, respiration 40. There was some rigidity over the entire abdomen, more pronounced on the left side. Pressure over the entire lower quadrant seemed to cause considerable pain. The signs of free fluid or gas in the peritoneal cavity were absent. She was given a hypodermic of morphine and soon thereafter slept. The X-ray examination showed a fracture of the right ischium without displacement. A number ten French catheter was introduced into the bladder and a few c.c. of blood were obtained by suction. A small quantity of water was introduced through the catheter but could not be recovered. The catheter was left in the urethra for half an hour. A few c.c. of blood were collected during this period. A tentative diagnosis of extraperitoneal rupture of the bladder was made and operation was elected. Through a left rectus incision the peritoneal cavity could be inspected without opening it. There was no evidence of intraperitoneal injury. The pre-peritoneal tissues in the region of the pelvis were suffused with blood. There were many clots and quite active bleeding, apparently from the depths of the pelvis. The bladder presented in the midline, above the pelvic brim. The urethra was torn across completely just distal to the bladder, the internal sphincter being intact, apparently. There was complete mobilization of the bladder except for the upper posterior segment. There were about 60 c.c. of clear urine in the bladder. The anterior and lateral walls of the vagina were severely lacerated and torn away from their anterior attachments back to the cervix. A small strip of the posterior vaginal wall, in which there were several longitudinal tears, was left in place. The cervix was readily seen by very gently retracting the bladder upward. The rectum was intact. The pelvic fascia was severely lacerated and bleeding profusely and the patient's condition was critical. A suprapubic cystotomy was done. A catheter was introduced through the external urethral orifice into the bladder and fixed with catgut. The bladder was drawn down into its normal position, using the urethral catheter as a tractor. The pelvis was packed with gauze and the wound closed. The patient reacted satisfactorily. The urinary output was small during the first fourteen hours. The pulse gradually came down and she secreted 840 c.c. of urine during the next twenty-four hours. The packing was removed on the tenth day. There was considerable bleeding and the wound was packed again. The urethral catheter which had been expelled from the bladder was lying free in the vagina and was removed. A strip of rubber tissue was placed in the vagina for drainage. There was a considerable secondary hemorrhage during the night. On August 20, blood count showed the hæmoglobin was 67 per cent., erythrocytes 2,250,000. She had a chill at this time followed by a temperature of 103° F. The urinary output fell to 400 c.c. The temperature assumed a septic type but returned to normal, after about one week. The suprapubic tube was draining very little, but the perineal dressings were constantly wet. Blood chemistry was within normal limits. The suprapubic tube was removed on September 9, and the wound allowed to close. On October 17, a small cystoscope was passed into the vagina and a ureteral catheter then introduced into the bladder. Sixty c.c. of five per cent. sodium iodide solution were instilled into the bladder and a cystogram made. This showed a normal bladder outline with slight displacement of the bladder to the left. The child was discharged on October 17. She now controls her urine and we hope at some future time to attempt reconstruction of the urethra by plastic operation.

SUTURE OF THE TENDONS AND NERVES IN BOTH WRISTS

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DR. DANA WEEDER, by invitation, presented a patient aged twelve, who was admitted to the Germantown Hospital, November 2, 1926. This patient was shown for two reasons, first, the short time in which practically complete function had been obtained after the suturing of tendons and nerves, and secondly, to stimulate an interest in the study of the facts and details of anatomy. There is a tendency that has been growing in recent years to depreciate the value of knowledge of the details of anatomy and to curtail the time allotted to its study. This patient presented a problem, to be sure a little unusual in the extent of injury to structures, that would have disillusioned the mind of any surgeon of the wisdom in neglecting the careful study of anatomy. In being pursued by a playmate on November 2, 1926, this boy attempted to push open a swinging door, using both hands. His hands slipped from the lower half of the door, which was of wood, and broke through two panes of glass in the upper half of the door. He sustained two very jagged and extensive wounds of the flexor surfaces of both forearms. On the right side the four tendons of the flexor sublimis digitorum, the four tendons of the flexor profundus digitorum, the tendon and muscle fibres of the flexor carpi radialis and flexor longus pollicis, the median nerve, one-third the ulnar nerve, the radial and ulnar arteries and part of the annular ligament were cut. In the left forearm the tendons of the flexor carpi ulnaris, the flexor sublimis digitorum tendon to the little and ring fingers, the ulnar artery and part of the annular ligament, were cut. Within an hour after the injury the repair of the injured structures was begun. Badly torn muscle fibres and pieces of fascia that would have sloughed were excised, the ends of the cut tendons and nerves were freshened before suturing them. The tendons were sutured with No. 1 chromic catgut as were the torn muscles, and the nerves were sutured with fine silk. A very careful preparation of the hands and forearms with tincture of green soap, water, alcohol, ether and iodine was made before repair. A review of anatomy of the forearm and hands will aid in a better understanding of this case and show what to expect if normal function is to be reestablished. There are three flexors of the wrist, one of the radial side, the flexor carpi radialis, one for the ulnar side, the flexor carpi ulnaris, and one for the middle, the palmaris longus which is sometimes absent as in this case. The flexor carpi radialis also aids the extensor carpi radialis longior in abducting the wrist and the extensor carpi ulnaris aids the flexor carpi ulnaris in adducting the wrist. There is one flexor for the second phalanges of the four fingers, the flexor sublimis digitorum and one flexor for the third phalanges of the four fingers, the flexor profundus digitorum. The flexor longus pollicis flexes the second phalanx of the thumb. These muscles receive their innervation in the upper third of the forearm. The restoration of function therefore is only dependent in these structures upon proper suturing and union of the severed tendons. The foregoing accounts for the muscles that flex, abduct and adduct the wrist and the flexors of the second and third phalanges of the four fingers and the flexor of the distal phalanx of the thumb. The muscles that produce the other actions of the fingers are found in the hand and are innervated by one or two nerves, the median or ulnar. The muscles that aid in the flexion of the first or proximal phalanges of the four fingers are the four lumbricales and the anterior and posterior interosseous muscles. Beside their flexing action, they all by virtue of their insertion into the extensor tendons of the four fingers aid in the extension of the second and third phalanges. The lumbricales because of their insertion on the radial side of the fingers aid in drawing them laterally toward the thumb. The anterior interossei also draw

the fingers toward the middle finger, including the thumb, and the posterior interossei separate the fingers (moving the middle finger to either side) except the thumb and little finger this action being brought about in the case of the little finger by the abductor minimi digiti and of the thumb by the abductor pollicis. The little finger is further supplied with a short flexor inserted in the base of the first phalanx, the flexor brevis minimi digiti and an opponens minimi digiti which flexes and adducts the metacarpal of the fifth finger. The thumb is further supplied with a short flexor, the flexor brevis pollicis and an opponens pollicis which flexes and opposes the metacarpal of the thumb toward the ulnar side and an adductor pollicis which adducts the thumb. Considering now the nerve supply of the muscles of the hand, all are supplied by the ulnar except the abductor pollicis, flexor brevis pollicis, opponens pollicis and the two lumbricales on the thumb side which are supplied by the median. It is seen then that the ulnar supplies the greater number of muscles. Paralysis of the ulnar would result then in loss of flexion of the first phalanges of the four fingers, incomplete extension of the second and third phalanges of those fingers, inability to close and separate the fingers and partial inability to oppose the little finger on the thumb. The characteristic appearance of the hand in ulnar palsy is claw hand. Paralysis of the median nerve would result in loss of flexion of the first phalanx of the thumb, inability to abduct the thumb and partial inability in opposing the thumb to the little finger and a slight loss of power in drawing the index and middle fingers toward the thumb. As to sensation, both the ulnar and median nerves being mixed nerves, the median supplies the greater area of skin—the skin over the palm of the hand to the junction of the outer and middle thirds, the skin of the palmar surface of the thumb, index, middle and half of the ring fingers and the dorsum of those fingers over the distal phalanges. The ulnar supplies the rest of the skin on the palmar surface of the hand and the little finger and half of the ring finger.

Returning now to the patient, it was noted that he had perfect flexion, adduction and abduction of the wrists; strong flexion of all the phalanges of the four fingers and thumb on both sides; perfect opposition of thumb and little finger of both hands and separates well the fingers of both hands and closes them, except for a partial inability to close the little finger against the ring finger of the left hand. This is the only muscular disability. There has been a partial restoration of sensation over the palmar surfaces of both hands and all the fingers. The sense of touch is not as acute as normal yet; but with education and application the acuteness should return. It was interesting to note that motor fibres had regenerated more quickly apparently than the sensory. As to the post-operative treatment and course; the hands and forearms were kept in straight splints with roller bandages under the palms of the hands, for three weeks. They were not disturbed for two weeks. Every other day during the third week the fingers and wrists were moved and the splints reapplied. In a month passive motion and massage were begun twice a day and electrical stimulation with galvanism and faradism was given twice a week for five months. At the end of two months he was given a moderately hard tennis ball to carry with him to squeeze. The passive movements and massage were continued until four months ago. During the past four months he has had no special treatment except encouragement to continue doing wood carving and finger exercises on the piano. In December, one month after the injury, there was a spotty return of sensation in small areas. This gradually increased until there was sensation throughout in May. The muscles supplied by the median nerve on the right hand were the first to show regeneration which occurred about the end of December. Fairly complete muscle control was reestablished about the

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middle of February, excepting the lateral approximation of the little and ring fingers of the left hand and a weakness in extension of the second and third phalanges of these fingers. Complete muscle control, excepting for this residual weakness in approximating the little finger against the ring finger was established by the end of the tenth month. The wounds remained absolutely free from infection until they had completely healed, which made possible to a large degree the excellent result.

DR. JOHN H. JOPSON said that two months ago he was summoned to the Bryn Mawr Hospital at 2.30 in the morning to see a man who had cut the tendons of the back of his hand. He had put his hand through the windshield of an automobile, cutting both tendons along the short extensor of the thumb between the metacarpal and the phalanx. The preparation and suture of the tendons took about an hour and a half. The speaker believes that such time is time well expended. He has now in his care a patient with a number of lacerations of the hand, who was first treated in another hospital and who now presents a condition opposite to that shown to-night; his hand was saved with difficulty and will be probably functionally useless as long as he lives. In this last case Doctor Jopson used black silk; for some time, he has been dissatisfied with chromic catgut as it has worked out in cases of suture of the flexor tendons, and black silk is superior in that there is less local irritation.

DR. DAMON B. PFEIFFER said that almost everyone sutures tendons differently. The books describe a great variety of complicated sutures. The speaker has finally adopted a suture devised by Doctor Harmer, of Boston, which he finds very simple, consisting of whipping over the sides of the tendon and tying both ends. The other methods of suture described, seem to be very complicated. In the last few years there has been a great deal of emphasis laid on the necessity for a suture which will allow early mobilization. This case of Doctor Weeder's would seem to show that this is not as important as we have been led to believe, as his case was mobilized two weeks later, with good results.

DR. HUBLEY OWEN said that cases of severing of tendons and nerves are not uncommon in the Police and Fire Department. Often a wall falls down on the hands or wrists of a fireman while he is going up a ladder. There is a great deal of incapacity for active duty due to these injuries. Doctor Owen has been fortunate with his results in suturing the tendons, but not the nerves. The speaker showed before the Orthopædic Club, a man who while hunting, fell and cut the extensor tendons of the wrist. The tendons were sutured but apparently the tendons of the little finger and those of the fourth finger got mixed. Nature finally corrected the mistake after a few months and coördination was obtained.

DR. GEORGE M. DORRANCE said that he has seen a number of cases of primary suture which have later broken down. A number of years ago he gave up the primary suture, in cases where the wound might be infected, and used the secondary suture. He has had no reason to change his opinion. If the wound is presumably infected, he would rather clean it up first and

later do the secondary suture. The speaker's results have been better than when he did primary suture in wounds which he knew were filled with dirt and might be infected.

HERNIA INTO LESSER PERITONEAL CAVITY FOLLOWING GASTRO-ENTEROSTOMY

DR. CALVIN M. SMYTH, JR., reported the case history of a woman, aged sixty-one, who was admitted to the Methodist Episcopal Hospital on April 27, 1927, in the service of Dr. Damon B. Pfeiffer. For the past ten years she had suffered with pain in the epigastrium and vomiting. The pain was invariably worse after food had been taken, but was relieved by vomiting. The patient denied that the vomiting was ever induced and described it as being projectile in type. The pain was described as being "worse than labor pains". Occasionally there would be an abatement of symptoms for a few weeks, but never for longer than two months. Six years ago she was operated upon at which time she was told that her gall-bladder was drained and appendix removed. Following this operation she was somewhat improved for a period of one year, but for the past five years her symptoms had become progressively worse. Recently there had been an alternating constipation and diarrhœa; at times she would have as many as ten stools in a day and again the bowels would not move for three or four days at a time. She had had considerable gaseous distention. There had been no loss of weight. Apart from the operation, six years ago, the past history was negative, except for the passage of a tapeworm three years ago. Physical examination was essentially negative, except for the abdomen, which showed a moderate amount of distention and hyperperistalsis. There was vague tenderness over the entire right side, more prominent in the upper portion. The scar of the previous operation indicated that a right rectus incision had been made. No mass could be palpated. The usual examinations of blood, urine, fœces, gastric contents and the tests of kidney function were all within normal limits. Gastro-intestinal X-ray examination disclosed a dilated stomach which retained two-thirds of the opaque meal at the end of twenty-four hours. During the course of these studies the patient had two attacks of pain which were followed by vomiting of enormous quantities. Gastric and colonic lavage gave relief. A pre-operative diagnosis of chronic pyloric obstruction, probably benign, was made. At operation, May 6, on opening the abdomen the entire small intestine was markedly distended. In searching for the point of obstruction, it was found that the entire small bowel had herniated through an opening in the transverse mesocolon, passing into the lesser peritoneal cavity and in turn emerging through a second opening in the gastro-hepatic omentum, finally coming to lie in front of the stomach. After the "geography" of the situation had been worked out and the intestine restored to its normal relations, the upper abdomen was explored. There was no evidence of any operation having been done upon the gall-bladder; the stomach was tremendously dilated and there was a gastro-enterostomy located practically into the pylorus. The stoma was almost closed and showed the extensive induration characteristic of marginal ulcer. In view of the somewhat shocking procedure which the replacing of the intestines had entailed, it was thought unwise to subject the patient to gastric resection. A second posterior gastro-enterostomy was therefore made to the cardiac side of the existing one. Great care was observed in closing the defects in the mesocolon and the gastro-hepatic omentum. The patient made an uneventful recovery and was discharged from the hospital on May 27, 1927. She reported by letter in October, 1927, that she was quite well and entirely free

REDUCTION "EN BLOC" OF STRANGULATED HERNIA

from the symptoms for which she sought relief. This case was reported on account of the very unusual nature of the hernia and as an illustration of the trouble which may arise from failure to close the opening in the gastro-colic omentum in the operation of gastro-enterostomy.

REDUCTION "EN BLOC" OF STRANGULATED HERNIA

DR. CALVIN M. SMYTH, JR., reported the case of a woman aged thirty-one, who was admitted to the Methodist Episcopal Hospital on March 29, 1926. For the past five months she had noticed a swelling in the right groin which fluctuated in size and at times completely disappeared. The mass had at no time been painful or tender. On the evening of her admission to the hospital, the patient was seized with an acute colicky pain in the abdomen and at the same time the mass in the groin became larger and exquisitely tender. She felt nauseated but did not vomit. A physician who was called, diagnosed the condition as strangulated inguinal hernia and sent her to the hospital. He made no attempt to reduce the hernia by taxis. At the hospital she was examined shortly after admission but no mass could be demonstrated. Her temperature, pulse and respirations were normal and she complained of no pain. The following morning the patient wished to go home, but on further examination a mass the size of a hazelnut could be palpated in the groin. This was thought to be a gland, but on account of the previous history, she was advised to stay in the hospital for another twenty-four hours for observation. Thirty-six hours after admission the pulse rose to 130°, but the temperature remained normal. A blood count revealed 18,000 white blood-cells. She was seen by the reporter at this point. Doctor Smyth advised operative investigation of the mass. At operation on March 31, through an inguinal incision, the mass was exposed and was found to consist of a tab of pre-peritoneum fat which was protruding through the internal inguinal ring. On opening the peritoneum a foul odor was noticed and a finger introduced into the abdomen palpated a mass to the inner side of the ring. A piece of gauze was placed over the inguinal incision and the abdomen opened in the midline. A loop of ileum was delivered which proved to be completely gangrenous and was perforated at one point. A segment eight inches long was resected with the cautery and the continuity of the bowel restored by end-to-end anastomosis. A jejunostomy was made through a separate incision high in the left side and a catheter sewn in. The midline incision was closed without drainage; the inguinal incision was left open and the abdomen drained through this opening with two cigarette drains. The post-operative reaction was severe but the bowels moved normally on the fourth day. The drainage from the jejunostomy gave considerable trouble. The catheter came out on the fifth day but the opening continued to drain for seventeen days. This drainage was highly irritant to the skin, but excoriation was prevented by applying a thick paste of bismuth and zinc oxide. The drainage was removed from the inguinal incision on the sixth day and on the seventh day feces was discharged through the wound. The leak, however, must have been a small one, as drainage soon ceased and the wound was healed solidly at the end of the sixth week. The patient left the hospital at the end of the eighth week. She has been seen at regular intervals since and has had no trouble of any kind. In spite of the fact that the inguinal canal was never sutured in any way, there is no evidence of hernia. Doctor Smyth remarked that reduction "en bloc" is a comparatively rare accident. In the great majority of cases it follows an attempt at reduction by taxis. In this case as in a similar one reported to the Academy in 1926 by Dr. Stewart Rodman, no taxis had been employed. In a series of 137

cases reported from the literature by Comer and Howith, there was a mortality of 48 per cent.

SPLENECTOMY FOR PERNICIOUS ANÆMIA

DR. SELLING BRILL, by invitation, presented a woman, aged fifty-seven, who was admitted to Doctor Stengel's service at the University of Pennsylvania Hospital, July 2, 1926, with the chief complaint of weakness. Her family and past history were irrelevant. She was a multipara. She did ordinary work of a housewife, and previous to the present illness slept well and followed an ordinary, well-regulated diet. The present illness began in April, 1925, when, following the death of her infant daughter, she became mentally depressed, and generally weak. She went to the seashore for six months to recuperate, but returned in October, 1925, unimproved. She remained in bed for six weeks. In March, 1926, she was sent to a local hospital for study. There she complained of vague abdominal pains, weakness, a peculiar feeling of her tongue, which she described as "a swelling", and a "pulling" feeling in her calf muscles. No numbness or tingling. Her temperature varied from 100 to 101°. For four months preceding entry to the University Hospital she had been mentally confused and grew weaker, and during the last four weeks she was confined to bed. Physical examination showed an elderly emaciated woman, constantly moaning and restless, very weak, with a peculiar lemon-yellow tint to the skin. She was dyspnoëic on any exertion. Mentally confused and disoriented, the conjunctiva were pale and had a lemon tint. She complained of buzzing in the ears. Cardiovascular system essentially negative. The abdomen was essentially negative, except for a palpable, moderately enlarged spleen. The eyegrounds showed moderate hemorrhages in both fundi. Vibratory sensation decreased in both lower extremities, especially the right. Patellar and Achilles reflexes decreased.

Clinical Pathology.—Urine—16 examinations—average specific gravity 1003 to 1015, averaging 1010. Reaction acid, albumen faint trace. Sugar negative. Red blood-cells once—white cells few to loaded. Casts of all kinds on many occasions. Urobilin one on the one examination made. The phthalein test showed forty per cent. in two hours. Blood urea nitrogen 19 mg. per 100 c.c. Blood—in fourteen examinations the red count varied from 900,000 to 2,000,000; hæmoglobin 23 per cent. to 50 per cent., both higher figures were following transfusions. The color index at all times was one. The average of all blood counts 1,500,000 red blood-cells, average hæmoglobin 36 per cent., giving an average color index of 1.2. The white count varied from 2900 to 11,600—average 4800. The smear showed nothing unusual in the distribution of the neutrophils and lymphocytes. The differential count showed on the average of monocytes 3 per cent., eosinophiles 3 per cent., myelocytes 2 to 4 per cent., marked polychromatophilia, anisocytosis, poikilocytosis, macrocytosis; normoblasts 1 to 2 per cent., megaloblasts 1 to 5 per cent. Cabot ring bodies were noted twice. Reticulated reds 1.5 per cent. on one examination and 4 per cent. on another. The fragility test showed hæmolysis beginning at .450 and completed at .375. The Van den Bergh test was direct negative, indirect 3.2 units. Blood culture negative. Blood Wassermann negative. Bleeding time three and a half minutes, coagulation time five minutes (capillary method). Platelets 50,400 one examination. Fæces—six examinations—were made, of which four were positive for occult blood. All were positive for bile pigments.

Patient remained on the medical service until October 10, and had eight transfusions averaging from 200 to 500 c.c. She kept going steadily downhill

SPLENECTOMY FOR PERNICIOUS ANÆMIA

and in view of the fact that the X-ray of the gastro-intestinal tract showed "constant constriction of the pyloric region due possibly to carcinoma", surgical consultation was asked for and laparotomy advised. At this time the patient weighed 88 pounds. She was transferred to the surgical service and operated upon by Dr. George P. Muller, October 16, 1926. The stomach, pylorus and duodenum disclosed no pathology. The gall-bladder was slightly thickened, contained two rather large stones and the spleen was found to be twice the normal size. After some discussion it was decided to remove both. Toward the end of the operation she was transfused—250 c.c. of blood by the citrate method. Closure in layers without drainage.

Pathological report of the gall-bladder showed a chronic interstitial cholecystitis. Pathological report of the spleen showed the usual hypertrophic change, but nothing of significance. The patient made an uneventful recovery and repeated examinations of the blood showed a steady improvement.

At the examination of the follow-up clinic in February of this year note was made that she was looking remarkably well, had gained over twenty-five pounds in weight, color was good, had regained strength, had good appetite and good digestion. She was seen again the following May and had gained another twenty-five pounds. She was last seen October 26, 1927, she weighed 149 pounds, had no soreness of the tongue, or paresthesias of the extremities. Physical examination showed no jaundice and a normal tongue. The blood examination at this time showed: Red blood-cells, 3,940,000; white blood-cells, 10,900; hæmoglobin, 96 per cent.; platelets, 272,000. Fragility test begins at .450, complete at .275. Reticulocytes 0.5 per cent. Van den Bergh direct negative, indirect 0.2. Clotting time ten minutes. Clot retraction normal. Cell volume, 47 per cent. Differential normoblasts, 50 per cent.; small lymphocytes, 31 per cent.; monocytes, 4.5 per cent.; eosinophiles, 3.5 per cent.; basophiles, .5 per cent. Smear—macrocytosis marked. Many Howel Jolly bodies. A few basic stypled macrocytes. No nucleated red cells. Some giant platelets. A gastric analysis had never been done because the patient had never been able to swallow a stomach tube. She has eaten about one pound of liver a week since discharge.

The reporter said that this was a fairly clear case of primary pernicious anæmia, although three things were lacking. More definite cord symptoms, a better history of glossitis, and gastric analysis. The diagnosis of hæmolytic ictero-anæmia was considered, but in this disease the anæmia is very rarely severe in the familial type, color index is usually low, microcytosis is the rule instead of macrocytosis as in this case. The finding of gall-stones is more in favor of the diagnosis of hæmolytic ictero-anæmia. From the present laboratory examination this patient still suggests primary pernicious anæmia. The color index is high, macrocytosis is marked. The cell volume is well above normal for women. In considering the excellent result there are three factors: the operative procedures, including splenectomy and cholecystectomy, and the liver diet that the patient had followed since discharge. The liver diet although definitely inadequate (Minot recommends at least 200 grams daily) has been sufficient quantity to have possible effect on pernicious anæmia. Patient said she has eaten one-half pound of liver twice a week, which amounts to an average of 60 to 70 grams daily. Splenectomy has been generally given up in pernicious anæmia. However, it has undoubtedly helped some cases of the hæmolytic type and is known to produce clinical cure of hæmolytic ictero-anæmia. The association of primary pernicious anæmia with chronic gall-bladder disease was first noted by Georgi in 1887. More recently, Jones and Joyce in two reports in 1924 and 1927 report 24 consecutive cases, 15 of undoubted pernicious anæmia and 7 of probable or

borderline anæmia, all complicated with gall-bladder disease, and the anæmia remarkably improved in several cases following cholecystectomy.

DR. GEORGE P. MULLER said that including the case reported by Doctor Brill, he had performed splenectomy eight times for pernicious anæmia. All of the cases recovered from operation. One patient lived twenty-three months but was given five transfusions—at irregular intervals. Four cases were not improved at all and died, two, three, seven and seven months respectively, after operation. One patient was operated upon in June, 1915, and eleven years later was under the speaker's care for an infection of the thumb complicated by diabetes. He can be considered as entirely cured of the pernicious anæmia and was undoubtedly case diagnosed by Doctor Stengel. Another patient had the splenectomy done in November, 1922. Five years later he reported himself well, but Doctor Muller found that his hæmoglobin was twenty-four per cent.; the red cells 1,370,000. The blood picture is that of pernicious anæmia. It will be interesting to note the effect of a "liver diet". While it is probable that splenectomy will now be performed less frequently, yet Griffin has recently (1927) stated that it is probable that splenectomy combined with other methods of treatment may eventually have a more significant place in the management of pernicious anæmia.

PLASTIC OF FACE AND JAW FOLLOWING EXCISION FOR CARCINOMA

DR. GEORGE P. MULLER reported the case of a patient who had a repair for a defect of the face and jaw following excision for carcinoma. The patient, forty-nine years of age, was referred by Dr. George Pfahler in June, 1923, suffering from an extensive carcinoma of the cheek with extension on to the alveolar process of the lower jaw. The X-ray shows erosion down to the level of the inferior dental canal. There is metastasis to the submaxillary lymph-nodes. Doctor Pfahler proposed destruction of the diseased area by electro-coagulation with dissection of the lymph-nodes and excision of the inferior maxilla. Preceding the operation he gave him treatment with the high voltage rays externally and surface applications of radium internally. On June 21, 1923, the operation was performed and included a bloc dissection of the neck upward from the omohyoid and removal of the entire lower jaw from about one inch from the symphysis backward. The electro-coagulation destroyed almost the entire cheek from the zygoma to the jaw and included the angle of the mouth. He was discharged on July 7, 1923, to report back to Doctor Pfahler for post-operative radiation treatment. On December 12, 1923, Doctor Pfahler reported a small area at the lower edge of the scar which looked suspicious. It was destroyed by electro-coagulation after a biopsy, but this showed evidence of recurrence. He was then given a dose of high-voltage X-rays. Shortly thereafter we began to think of ways and means to close the hole in the face. The first intention was to turn up the flap from the neck and cover the outer raw area with a second graft from the neck nourished through a Gilles tube. The first stage of this operation was done on February 11, 1924, but a few days later a flap of skin which had been turned up showed gangrene and ultimately sloughed away. A few weeks later a second Gilles tube was made and in April flaps were dissected corresponding in size to the opening in the cheek and were then sewed back into their place. A few weeks later they were again detached, the raw areas apposed, and both flaps buried into one of the sites in the neck. A week later, the flap faced on both sides with skin and connected by two Gilles

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tubes, was sutured into the defect in the face. The flap healed pretty well and the patient was sent away for the summer. In October, 1924, and subsequently through 1925 a succession of small plastics was done until all holes leading into the mouth were sealed up, except that a communication above with the edge of the superior maxilla could not be closed owing to osteitis of bone. At no time has there been any evidence of recurrent malignant disease and to-day, about four and a half years after the primary removal, he seems free of malignancy.

COLONIC ANÆSTHESIA IN OPERATIONS UPON THE BRAIN AND SPINAL CORD

DR. CHARLES H. FRAZIER read a paper with the above title, for which see page 161.

DR. FRANCIS C. GRANT said that in Doctor Frazier's absence this past summer, he used colonic anæsthesia, particularly in laminectomies and where he was doing rhizotomy for pain in the mouth and neck following carcinoma of the jaw and neck and in which we did not want to give anæsthesia by mouth on account of the slough carried into the oral cavity. He used the technic which Doctor Frazier outlined and it proved to be very satisfactory. Of course the pre-operative preparation seems very elaborate and that technic should be carefully followed in order to get the best results. Doctor Grant thought that the procedure did not lend itself to general surgery, because of the necessity of speed in handling a number of cases. All the neurological surgeon expects it to do is to keep the patient quite still and it will accomplish that. Where a major procedure is being carried out under local anæsthesia, often the patient will start to fret and the pulse goes up and one must resort to ether. There is no such difficulty with colonic anæsthesia. There is only one objection that the speaker has and that is when one needs enteroclysis given on the table.

DR. ROBERT IVY remarked that he reported to the Academy in 1926 the results in the use of colonic anæsthesia in 30 or 40 cases of operation about the face and head and he believes that this is the ideal method of anæsthesia in cases taking longer than one hour, because the anæsthetizing apparatus is always away from the parts being operated upon. In addition there are the advantages which Doctor Frazier has outlined. For shorter operations, the amount of preparation necessary for colonic anæsthesia does not make it worth the trouble. The speaker has found that the results are better with women patients than with men; he thinks that this is due to the fact that the male patients are prepared by orderlies and are not prepared as thoroughly and carefully as are the women patients, who have the care of nurses.