

TRANSACTIONS
OF THE
PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting held May 10, 1920

The President, DR. GEORGE G. ROSS, in the Chair

DISLOCATION OF THE SHOULDER AND FRACTURE OF THE SURGICAL NECK OF THE SCAPULA, CAUSED BY MUSCULAR ACTION DUE TO ELECTRIC SHOCK

DR. GEORGE M. LAWS exhibited a man of twenty-eight years, with no history of previous fracture except fractured ribs from adequate trauma, who, in the early days of his experience as an X-ray operator four and a half weeks ago, received a shock in this manner. His hands were outstretched so that they were a few inches from the wires and happened to be cold and wet. The current entered his left hand, passed across his body and out his right hand, holding both of them in contact with the wires. The left upper extremity was fully extended, forward and horizontal, and in order to break the circuit he pulled it downward and backward with all his strength. Suspecting a dislocation of the shoulder from his symptoms he made a film which confirmed it, and then went to his physician who reduced it, whereupon he went back and made another film. A few days later the physician brought him to me to clear up some doubtful features of the case. He then presented the signs of a minor injury at the acromio-clavicular joint and a fracture of the surgical neck of the scapula which was better shown by subsequent radiograms. Union is not yet firm and tenderness persists at the suprascapular notch and at the site of fracture on the axillary border. Incidentally he received a burn on each hand.

DR. T. TURNER THOMAS said that he had never recognized a case of fracture of the surgical neck of the scapula. The X-rays in this case are a little bit vague, but show clearly damage done to the glenoid process. He had seen in a number of cases operated on for recurrent dislocation of the shoulder more or less of the anterior part of the glenoid process broken off. He recalled one case where the glenoid process was broken in half; the anterior part being entirely separated from the scapula and the posterior part being continuous with the scapula.

PYCOLPOS AND PYOMETRA IN A CHILD AGED SIXTEEN MONTHS

DR. DAMON B. PFEIFFER reported the case of a female child aged sixteen months who was admitted on February 4, 1920, to the service of Dr. J. P. Crozer Griffith in the Hospital of the University of Pennsylvania.

The chief complaints were retention of urine and fever. The patient was one of twin girls normally born. Both were bottle-fed, and had been pale and rather delicate, but had had no serious illnesses. This child had always been constipated. The father, mother, and two older sisters were living and well. The child was in her usual health until about ten days before admission, when she became fretful and feverish. The mother noticed that she strained as if in pain and passed no urine. The family physician was called and he removed ten ounces of urine by catheter. Since that time she has required catheterization four times daily. On questioning, however, the mother stated that the child had been "always wet" before the onset of the present illness. On admission the temperature was 103° F., pulse 128, and respirations 28 per minute. The temperature remained high with moderate variations throughout the course of the illness.

The child weighed 19 pounds and was rather fat, but presented an unhealthy, yellowish pallor. She was feverish, fretful, and uneasy. The head, neck, and chest were negative except for slight evidences of rickets. The abdomen was tense and much distended. Above the umbilicus the abdomen was tympanitic. Below the umbilicus there was dulness over an oval area corresponding to the position which would be occupied by an enormously distended bladder. Here a firm, somewhat resilient mass could be felt rising from beneath the symphysis. It was smooth except at the summit, where a definite nodule was palpable. There was no evidence of free fluid within the abdomen. There was tenderness in the right loin posteriorly. Catheterization obtained 12 ounces of urine of specific gravity 1006, acid in reaction, showing a trace of albumin and much pus, otherwise negative. After catheterization the mass previously felt was slightly smaller but otherwise unchanged in character. Rectal examination revealed a mass filling the cul-de-sac anteriorly which was similar in character and evidently continuous with the suprapubic mass. The vaginal outlet was normal in appearance. It seemed to have a lumen, did not bulge, and no attempt was made to examine vaginally. It was the consensus of opinion that the mass was a tumor, probably of embryonic sarcomatous character and inoperable. On the day after admission the blood examination was as follows: Hæmoglobin, 21 per cent.; red blood-cells, 2,930,000; white blood-cells, 23,800; polynuclears, 80 per cent.; lymphocytes, 16 per cent.; mononuclears, 2 per cent.; transitionals, 2 per cent.

The course was down grade. On the ninth marked venous stasis appeared in the left leg. Radiographic examination was inconclusive but suggested to Doctor Pancoast that the mass was cystic. On the following day, thinking that it might be possible to drain a suppurative cystic collection with a minimum of time and trauma, for it was apparent that the child was almost moribund, under light ether anæsthesia the abdomen was opened over the mass, which was at once perceived to be cystic. On the summit the uterus and adnexa were perched, normal in appearance

RETAINED DRAINAGE TUBE FOLLOWING CHOLECYSTOTOMY

except for distention of the uterus to about 4 cm. in length and 3 cm. in width at the fundus. Recognizing the condition as cystic dilatation of the vagina and uterus, the wound was covered and the vagina dilated. Just within the vestibule was an imperforate septum which was punctured with immediate discharge of about a litre of watery, yellowish pus. Unfortunately, at this stage the child ceased to breathe and died in spite of attempts at resuscitation.

An immediate post-mortem examination showed marked bilateral pyonephrosis and pyoureter. The anatomical conditions and relations suggested that the cavity of the vagina had become infected by direct extension from the lower end of the infected ureters, though it can not be denied that the pyocolpos may have preceded the urinary infection which would then have been favored by pressure and stasis.

RETAINED DRAINAGE TUBE FOLLOWING CHOLECYSTOTOMY

DR. MORRIS BOOTH MILLER reported the following case as worthy of note as an unusual accidental sequel of cholecystotomy. Incidentally it furnishes an additional though rare argument in favor of cholecystectomy in gall-bladder disease. It further carries a lesson to the hospital interne who was probably responsible for the mishap which required reoperation eight years later.

T. F., aged fifty years, a native of Poland, was admitted to the Medico-Chirurgical Hospital on March 18, 1920, with chief complaint of pain in the right epigastrium. As he could only speak Polish a history was obtained through an interpreter and this at its best was inexplicit and unsatisfactory. As nearly as could be learned he had been troubled with pain in the epigastrium since the age of thirteen. He was operated on in Troy, N. Y., eight years ago for this pain and was somewhat improved but not entirely relieved. As to the after-treatment he states that "a large tube was in his side and that when this came out a smaller one was put in." He seemed totally ignorant of the cause which led to the second operation, and naturally and for obvious reasons, he has not been enlightened. Two years ago he commenced to have pains in the upper abdomen resembling sticking of pins; sometimes the pains radiated to the back or right side; no vomiting at any time, but has had occasional periods of nausea; no noticeable loss of weight; has been generally constipated. No history of colic.

Physical examination revealed practically no phenomena of importance. Heart and lungs were normal, no enlargement of spleen or liver. There was a scar over the right rectus commencing at the costal margin running straight downwards for about 10 centimetres. Abdomen soft with no distention, and the only unusual feature which was noticed was slight rigidity over a small area about the upper portion of the scar. Even this was apparently voluntary and thought to be associated with the place where he felt the pain. He breathed freely without increase of pain.

There was no jaundice. The urine reports showed nothing suggestive and gastric analysis gave no material departure from the normal. Blood examination showed a small increase in leucocytes to 8700, dropping in two days to 6500, but otherwise negative. As he was entirely afebrile he was kept under observation as a probable mild case of cholecystitis, possibly due to stone formation. Further investigation, however, with the aid of the X-ray, revealed the cause beyond a question of doubt, as the shadow of a piece of drainage tube was distinctly shown lying transversely below the liver.

Incision through the right rectus revealed many adhesions between the parietes, stomach, duodenum, and liver. Patient dissection exposed the fundus of the gall-bladder lying well under the liver, less than half its normal size, with moderately thickened walls and densely bound down by adhesions. The fundus was probably 8 or 10 centimetres from the surface of the abdomen. Upon opening it a small quantity of foul-smelling bile escaped, and at once a piece of drainage tube 8 centimetres long was picked out. Apparently the gall-bladder had shrunk down until it represented an approximate sheath for the tube. No adventitious stones were found, but one end of the tube was filled with stone formation making a partial cast of the tube. An attempt to do a cholecystectomy was only partially successful as the difficulties of the dissection, as well as the impossibility of identifying relationships, made it necessary to leave a more substantial stump than otherwise would have been done, and even then it was necessary to leave an angled clamp on the stump for seventy-two hours. Recovery was smooth and uneventful.

The probable explanation of this mishap is very simple. When the original drainage tube came away a tube of shorter length and likely lesser calibre was inserted into the drainage track without safety pin or other guard. This shorter tube slipped down the track until it came to rest at the lower end of the gall-bladder, and in course of time the drainage track closed above it. Whether the disappearance of the tube was carelessly explained at the time by being lost in the dressings, or whether the interne or surgeon did have some qualms of misgiving is a matter of interesting speculation.

The reporter had not been able to make a search for similar cases in the literature. For obvious reasons, if they exist in any numbers, they are not apt to be dwelt upon except perchance by the lawyers. He had, however, had his attention called to a case recently reported by Arthur Dean Bevan in the *Surgical Clinics of Chicago* for February, 1920, in which a gauze sponge was removed from a gall-bladder eleven years after the original operation. In this case operation was performed for supposed malignancy which the physical findings seemed to indicate. It is furthermore interesting in that the meshes of the gauze sponge furnished a nidus for stone formation, so that when removed it had the form of a cast of the entire gall-bladder.

STRANGULATED EPIGASTRIC HERNIA

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DR. CALVIN M. SMYTH, JR., said that by epigastric hernia was to be understood any hernia through the linea alba, or sheath of the rectus, between the ensiform and the umbilicus. Epigastric hernia is not common, and strangulation of such herniæ is exceedingly rare. Four types of epigastric hernia are recognized: (1) There is a protrusion of preperitoneal fat through a slit in the linea alba. This is not a true hernia in the stricter sense. (2) In addition to the preperitoneal fat, there is a process of peritoneum protruded, thus forming a sac. The sac, however, is without contents. (3) The sac contains all or a part of the great omentum. (4) Both omentum and gut are protruded.

The last type is the rarest and the one less frequently operated upon. This is due in part to the fact that patients suffering from this variety of hernia do not so frequently present themselves for treatment, because they suffer little or no pain. This is in contradistinction to the other types which give severe pain noted by Moschowitz. In reviewing the literature he had found only about fourteen cases of strangulated epigastric hernia on record, and in only five of these did the hernia contain gut. The most recent of these cases was reported by Gatewood in 1910. In his report he states that only four such cases were on record prior to his. To the best of our knowledge the subject of this report is the sixth one.

The explanation, or at least one explanation of the rarity of this condition, may be found in a consideration of the anatomical factors present. The linea alba is a very strong structure composed of dense fibrous connective tissue, the fibres running in three directions. The transverse fibres are the coarsest and the strongest, therefore, most of the defects are in this direction. Another fact to be borne in mind is the tension of the peritoneum in this region in contrast to the comparative flaccidity of the lower abdominal peritoneum. Then, too, the epigastric viscera are of a size which makes herniation unlikely; for example, a defect which would permit of the protrusion of a loop of small gut would not be large enough to allow a loop of transverse colon to escape from the abdominal cavity. Transverse colon is nearly always the portion of the gut that is encountered in these cases. The rarity of this condition would seem to warrant the report of one more case.

The case reported by Doctor Smyth was as follows: A white woman, aged sixty-eight years, para 6, weighs 268 pounds, was admitted to the service of Dr. G. G. Ross at the Methodist Hospital, December 19, 1919, with the chief complaint pain in the abdomen and vomiting.

For the past eight years she has had a mass in the abdominal wall, above the umbilicus. For the past four years it has been gradually increasing in size, and during this period she has worn a combination truss and abdominal binder. The mass always became prominent at night and it has been her custom to replace it each morning on arising. She

has never had any difficulty in accomplishing this until the morning of her admission to the hospital. This morning she was unable to reduce it and sent for her doctor. About half an hour after rising she was seized with a sharp stabbing pain in the epigastrium. The pain was somewhat relieved by vomiting, which she induced. The relief, however, was only temporary, and in the course of the next three or four hours she vomited eight times. The pain became steadily worse. Her physician then ordered her removal to the hospital. No attempt at reduction had been made prior to her admission.

On admission the patient was in a state of exhaustion, although she was not suffering much pain. A mass about the size of a small grapefruit was felt in the epigastric region about four inches above the umbilicus. It projected far out to the right and was hard and immovable. The percussion note was dull. Auscultation of the abdomen disclosed markedly exaggerated peristalsis, and there was a slight distention of the abdomen. An enema which was given proved very slightly effectual.

Operation.—Under ether the abdomen was opened in the midline and the hernial sac was located without difficulty and incised. The opening of the sac was followed immediately by a gush of clear straw-colored fluid amounting to about 250 c.c. The omentum, which had evidently been present in the hernia for some time, was in an advanced state of degeneration. It was adherent to the sac and was freed with considerable difficulty. A loop of transverse colon about five inches long then presented itself, and following this down with the finger, the opening through which the hernia had occurred was located. This opening was found to be a transverse slit in the linea alba which would not admit two fingers. A grooved director was passed into the opening and it was enlarged by cutting upward. The gut was discolored but still retained its resilience, and after the constriction was relieved soon returned to the normal. The gut was then returned to the abdomen and the degenerated omentum excised. The sac was treated in the usual manner. The anterior sheath of the rectus was then dissected up on either side of the opening and for about three inches in the longitudinal direction. The flaps thus made were overlapped and secured by several interrupted mattress sutures. The rest of the wound was closed in the ordinary manner. Uneventful recovery. She was discharged from the hospital on the twenty-first day after operation, and when last heard from was in perfect health. There has been no recurrence of the hernia.

DR. MORRIS BOOTH MILLER said that for many years he had, midway between the umbilicus and the ensiform, a little flat tumor about the size of a 25-cent piece which he could feel through the tissues, but which had never given him any direct trouble. Although for some of these years he had digestive trouble, which some of his friends thought was due to duodenal ulcer, this condition was never definitely diagnosed. During the late winter of 1917-1918 while serving on the United

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States ship *President Grant*, they were subjected to severe weather and considerable exposure on the east bound voyage. During the latter part of that trip he caught a bad cold which terminated in cough. The night after Brest was reached he had an attack of coughing which kept him awake. During the night he was taken with an especially severe paroxysm, during which he felt something in his upper abdomen give way, and noticed that the little flat tumor had grown to the size of an egg. He did not vomit, although he had some nausea, but the tumor was so painful that he could not stand erect. The next morning he was sent to Naval Hospital No. 5 where he saw Doctor LeConte and Doctor Ross. The diagnosis was an incarcerated epigastric hernia, and operation was advised. He returned to the United States and was operated upon at the Naval Hospital, Philadelphia. Dr. W. A. Angwin, the operator, stated that on opening the abdomen he found a small sac which had omentum in it which showed evidences of recent inflammation. The opening in the linea alba was the size of a lead pencil. Uneventful recovery.

THE SURGICAL TREATMENT OF BURNS

DR. W. ESTELL LEE read a paper with the above title.

DR. HUBLEY R. OWEN said that he had under his care at the present time a child who, three weeks ago, while melting paraffine, set fire to her clothing and she was badly burned. Her burns would undoubtedly have been much more serious had she not had the presence of mind to fall on the floor and wrap herself in a rug. Her burns extended from above her ankles to her groins anteriorly, and from above her ankles to above her buttocks posteriorly. He saw her four or five hours after she had been burned. In the emergency her father had covered the whole burned area with picric acid, and applied it very freely. This picric acid dressing was removed at the first visit and boric acid ointment applied. In spite of the fact that the picric acid had been applied to the burn only a few hours, she developed symptoms of absorption of picric acid the following day.

Amberine was used for a few days until sloughing developed. It was then discontinued and Dakin's solution applied over the burned area. Dakin's solution was somewhat painful, but cleared the burn up wonderfully. Her kidneys were in good condition, and, under light anæsthesia, the sloughs were cut away. Hypertonic salt solution was tried, but this was very painful and had to be discarded.

He believed the whole secret in the treatment of a burn is cleanliness—not only keeping the burned area surgically clean by removing sloughs, but also keeping the surrounding skin clean. This cleansing is best accomplished under an anæsthetic.

One of the worst burns he had ever had occasion to treat was in the person of a child, in the service of Doctor Wharton at the Children's Hospital, many years ago. She was burned around her abdomen, vagina, thighs, and buttocks. In the treatment of that child a cradle was used to

hold the bedclothes away from the burned area, and an electric light was placed under this cradle to keep the child warm, and keep the burn surgically clean. Of course, at that time Dakin's solution had not yet been devised, but in that case salt solution was used.

DR. GEORGE P. MULLER said a good many burns are admitted to his service at the St. Agnes and Polyclinic Hospitals. In association with his assistant, Doctor Ryan, he had tried to reduce the mortality and to improve the methods of external dressing. To understand the phenomena of burns one must consider three factors, namely, shock, toxæmia, and infection. Therefore, from the moment of admission to the hospital the patient, usually a child, must be considered as in a state of shock or on the verge of it. Too often they remain in the receiving wards, which are usually cold and draughty and noisy, to have a preliminary dressing applied before admission to the wards. He tried to have a blanket thrown over the patient and an immediate admission made. The patient's clothing should be rapidly cut away, the patient placed on a blanket and covered with some form of frame for holding electric light, over which another blanket can be thrown. When the electric lights are turned on the body is in a warm chamber, the temperature of which can be regulated at will. The foot of the bed should be elevated, moderate doses of morphine given, and a continuous enteroclysis of salt solution started. Hot drinks and the other accessories useful in shock are added.

Many terribly burned cases come out of shock nicely but die a few days later with manifestations of intense toxæmia. Some have lived several weeks and then died, even though the external surface was clean. They had pushed water to the utmost and had used sodium bicarbonate a good deal, intravenously and by the mouth, but it would seem as though the patients became sensitized and then succumbed from further absorptions of the poison.

To control the infection they had in the last year routinely used dichloramine-T, sprayed upon the burned surface every six hours at first and later every twelve hours. He did not find it hurt the patient after the first spraying if the oil is perfectly fresh. If it smells acrid it should be discarded. Some cases crust up too much and wet dressings are useful for a time. In such cases he protected the surface with paraffine mesh, but had stopped entirely the paraffine film method. One gets just as good results from the perforated mesh and a great deal of time is saved. If an occlusive dressing is needed adhesive strapping is as good as the paraffine film. Fortunately, male adults are usually burned on the hands, face, and neck. There is no difficulty keeping women and children extensively burned on the entire body and trunk under the frame and with no covering.

Therefore, he believed that if the shock is controlled and if attention is paid from the very beginning to the nature of infection, practically all burned cases do well except the hyperacute toxic cases who die appar-

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ently for no reason at all. Some German writers have advocated removal of the entire burned area by curettage, but it seemed to him that the trauma and the hemorrhage would offset the advantages.

DR. JOHN H. JOPSON said there is one effect of amberine which he had observed and after no other dressing, and that is very rapid epithelialization over the whole surface. He recalled one man who suffered a typical airman's burn over the surface of his face which was unprotected by his helmet. He was dressed with amberine from the start, and the spread of skin over the surface was very different from that observed ordinarily. Each day it was as if one had used a powder shaker over it. These epithelial cells must have been partially undestroyed, but the protection afforded by the amberine had prevented their being washed off. I think Doctor Lee's contribution is a notable one on sterilization. It would be interesting in these cases to plot out the rate of healing by Doctor Macy's method. Fauntleroy in his paper reporting a large series of burns discusses the value of occasional change of character of dressing, which he calls "switching time." In other words, if we treat these cases by any one antiseptic we find that the granulating surface becomes habituated to that type of dressing and healing slows up. We have seen this exemplified in the sterilization of other types of wounds.

DR. GEORGE G. ROSS said that he had an unusual opportunity of observing cases treated by dichloramine-T in the service in France. He was impressed by observing what Doctor Jopson noticed, the islands of epithelial cells growing widely over the granulating surface, as if thrown on by a pepper box; healing was much more prompt and the scars better. A great many burn cases came into the hospital at Brest. He remembered on one occasion an ammunition ship was blown up and sixteen men were brought in, four died immediately. On another occasion six or seven were brought in and they had two to sixteen or twenty men real badly burned all the time. They tried out every known method of treatment and finally came to the conclusion that wide mesh paraffine gauze with dichloramine-T was the most comfortable and easiest method by which a burn could be easily sterilized and unquestionably gave the best type of scar.