

TRANSACTIONS
OF THE
NEW YORK SURGICAL SOCIETY
AND OF THE
PHILADELPHIA ACADEMY OF SURGERY

Joint Meeting Held March 12, 1924

DR. JOHN H. JOPSON, in the Chair

HYPERNEPHROMA OF THE SUPRARENAL IN CHILDREN

DR. JOHN H. GIBBON said that the most striking feature of suprarenal tumors in children, and often the first to be observed, is precocious sexual development. This is of the hetero-sexual type with little or no somatic change. These tumors are much more frequent in girls than in boys. In 22 cases collected by Hoag (*American Journal of Diseases of Children*, June, 1923), 19 were girls and 3 were boys. Sexual precocity in boys is usually of the homo-sexual type and is due most frequently to tumors of the testes and the pineal gland. Hypernephroma in children, elsewhere than in the suprarenal itself, does not produce precocious sexual development. It is rare to find in these cases any disturbance of the pituitary, pineal, thymus or thyroid gland, nor has there been any reported case of involvement of both suprarenals. The immediate operative mortality is extremely high, complete removal has not been attempted, or has proved impossible in most of the cases, and in no case reported has there been a complete cure.

The above statements in regard to this very distressing condition are illustrated by the following case, which occurred in the Pediatric Service of Dr. E. E. Graham at the Jefferson Hospital.

The patient was a female child of three years, operated upon at the Jefferson Hospital, February 29, 1924. Four months before admission the parents noticed an enlargement of the abdomen and an excessive growth of hair on the pubes, labia, in the axilla and on the back. The hair grew very rapidly and that on the pubes and labia was nearly as marked as in a girl whose menstruation is well established. This growth of hair was followed by marked over-growth of the eye brows and a growth of down on the upper lip and face. The child was of normal intelligence and exhibited no somatic change. There had been no menstruation, the clitoris was markedly hypertrophied, and at operation the uterus and ovaries were found to be infantile, thus illustrating the statement that the precocity is of the hetero-sexual type. There had been no nervous manifestations, although in a number of cases reported, epileptic seizures are noted. There was no enlargement of the thyroid and the X-ray showed no enlargement of the thymus. There was a huge tumor in the upper left quadrant with marked dilatation of the superficial veins. No blood was found in the

urine on repeated examinations. The Wassermann test was negative and several differential blood counts showed no abnormality. The X-ray examination showed no change in the bones of the skull and no enlargement of the thymus. Carbon dioxide gas was injected in the peritoneum and a diagnosis made of a large tumor in close relation to the upper pole of the left kidney. There was no evidence of lung metastasis.

Under ether anæsthesia an oblique incision was made into the peritoneal cavity, just below the left costal border, and the large tumor readily exposed.



FIG. 1.—Hypernephroma of the suprarenal.

There was no excess of peritoneal fluid and the uterus and ovaries were infantile. The descending colon and splenic flexure were displaced to the right and the posterior peritoneum spread over the tumor contained a large number of dilated vessels. The peritoneum was divided and the tumor quickly and easily enucleated, but not without rupture. The mass was very easily separated from the upper pole of the kidney and there was apparently no involvement of the kidney, which was normal in size. The inner edge of the posterior peritoneum was sutured to the right edge of the anterior peritoneum and in this way the abdominal cavity was shut off. Two

rubber covered drains were inserted and the wound closed. The child was in good condition at the close of the operation, but the temperature began to rise and the next morning it had reached 105° and the respirations were 60. The child died rather suddenly about 20 hours after operation.

Specimen consisted of an encapsulated, rounded mass, weighing 720 gms. and measuring 13 cm. in diameter. Histological diagnosis.—*Hypernephroma*.

INDICATIONS FOR BRONCHOSCOPY

DR. CHEVALIER JACKSON said that he was often asked, in what class of cases of lung abscess he would advise bronchoscopy for treatment. In answer he could very truthfully say in no case whatever should bronchoscopy be used for treatment and thoracotomy delayed. In any case, however, in which for one reason or another the internist or surgeon feels that external

INDICATIONS FOR BRONCHOSCOPY

surgery should be delayed it might be well to carry out bronchoscopic aspiration and possibly contribute to the diagnosis. The situation here is different from that which exists in foreign body suppuration in the lung. Foreign body suppuration in the lung has a tendency to get well. Diagnostically and pathologically it differs from post-pneumonic inflammation and suppuration. In the foreign body form there is a barrier built up ahead of the inflammatory process. In others there is no barrier and the suppuration gets in from underneath and proceeds in a different way from suppuration due to foreign body. For instance one of his foreign body cases, a boy was supposed to have a pin in his lung, the mother would not consent to operation and for eleven years he spit up pus. Tuberculosis was diagnosed and the patient kept in bed and outdoors for the most of the eleven years in California. He came to the speaker after being in bed continuously for six months during which time he had gained 15 pounds in weight which was supposed to negative any possibility of the contention of the mother being correct as to the foreign body. The bronchoscope was put down. A pin was located deep in the right lower lobe; the pin was removed through the bronchoscope and the boy got entirely and completely well. This is something one does not see in cases of post-pneumonic or post-influenza processes. There the patients do not recover promptly after bronchoscopy.

Bronchoscopy can contribute in another and important way to the work of the surgeon. It can contribute just as the cystoscopic examination contributes to the work of the genito-urinary surgeon. The genito-urinary surgeon wants to know if pus is present in the urine coming from the bladder or kidney and if from the kidney he wants to know whether one or both and if one, which one. These are things for which he develops certain means of diagnosis. Then too there is the X-ray man. He can tell him something. When the cystoscopist and the X-ray man get together they can tell a good deal more. Just so the bronchoscopist can contribute to the work of the thoracic surgeon. For instance, a patient came to him badly exsanguinated from hemorrhage; had been bleeding off and on for two years; trouble dating from influenza four years before. Patient only twenty-eight years of age. On going down, the bronchoscope in the right lower lobe struck a deformity. This is one great characteristic of cancer of the lung and it was from this deformity that the blood came. A specimen taken from the tumor was reported to be adenocarcinoma. Had it come back negative one would have felt that it was malignant just the same because of the nodular tumor associated with the deformity. In regard to the treatment of lung suppuration.—Suppose when one goes down into the bronchus instead of finding this bronchus normal, one finds the middle lobe of the bronchus ulcerated, granulation tissue and pus streaming from the orifices. If one does not find it in the lower lobe and if the pus below is aspirated and does not recur, one can then tell the surgeon that the suppuration is in the middle lobe. If he decides to postpone operation one can take out the

NEW YORK SURGICAL SOCIETY

granulations and aspirate the pus as frequently as necessary with the bronchoscope. Just as the genito-urinary surgeon will set aside certain cases for cystoscopic treatment, just so there are certain cases which the thoracic surgeon will set aside for bronchoscopic treatment.

It is utter folly to hope to remove malignancy through the bronchoscope. But suppose the bronchoscope has been used six months earlier in the case, and given a definite diagnosis when the growth was limited to the interior of the right lower lobe, the surgeon would have had a chance to amputate the lung. When a patient is twenty-eight years of age and suffering from such a condition the patient wants a definite diagnosis. The bronchoscopist gets the specimens and the laboratory makes the diagnosis of adenocarcinoma. Thus is obtained definite information on which to proceed. One wants to be sure about the diagnosis before performing lobectomy. The bronchoscope may help in this. The time has come when the thoracic surgeon has as much need for the assistant familiar with the use of the bronchoscope as the genito-urinary surgeon has for the assistant familiar with the cystoscope.

RADIUM IN PELVIC CARCINOMA

DR. JOHN G. CLARK said that he recently had made a very careful study of the follow-up from the standpoint of five-year cures in cancer of the uterus by the use of radium. In the study of this question one has to take into account the quantity of radium which has been used by the various investigators or applicators. He had one rule which is 100 mgms. for 24-hour application. Formerly he repeated this 2 or 3 times but from the further study of cases as he went on, he came to the conclusion that the impact was made at the first application, and accordingly since then he had sometimes applied it twice but practically never three times. In other words, if the radium does not control the growth on the first application one may hope that something further may occur on the second application but if this fails, never apply the third dose because this is just a supernumerary operation that may do more harm than good. If it does not do much good at the first application he may be skeptical of the future. At first there was the original controversy between abdominal hysterectomy and vaginal hysterectomy. He gave up the vaginal hysterectomy in favor of the abdominal and then finally went to the more radical abdominal operation.

The following tables were submitted:

(1) *Vaginal Operation*

Total of Cases	1205
Operability	654 - 58.1 per cent.
Primary mortality	192 - 9.35 per cent.
Of cases traced	29.67 per cent.
Of cases operated upon	17.75 per cent.
Of cases applying for treatment	9.62 per cent.

RADIUM IN PELVIC CARCINOMA

(2) *Carcinoma of the Cervix*

Total cases	5027
Operability	1720 - 24.31 per cent.
Mortality	1090 - 18.23 per cent.
Of cases traced	35.41 per cent.
Of cases operated upon	19.32 per cent.
Of cases applying for treatment	11.72 per cent.

The objection to the radical operation for carcinoma of the cervix is the high mortality.

The following tables are from the results reported by different men and form an interesting comparison.

(1) *Graves*

Total applying	189 cases
Operability	64 per cent.
No. of operations	119 cases
Primary mortality	5 per cent.
Five-year cures	34.2 per cent.

Radical operation for carcinoma of the cervix.

(2) *Peterson*

Total applying	380 cases
Operability	15.7 per cent.
No. of operations	60 cases
Primary mortality	26.6 per cent.
Five-year cures	40.9 per cent.

He was convinced that there is a wide range between what one man calls a radical operation and what other men call radical. In other words one sometimes starts in to do a radical operation, but does not do it although the chart states that he did. Here too is seen the wide range between two men as to what they consider operability. The only way to calculate statistics is from the standpoint of how many cases one has seen in the course of a year and at the end of five years how many of these are alive. All men vary; one day if one feels particularly peppy and looks at a case, he calls it operable; the next day if one is not so peppy and were to see the same case for the first time he would probably say it was not operable. Much depends on the way the individual feels.

(3) *Martzloff*

Total applying	387 cases
Operability	46 per cent.
No. of operations	178 cases
Primary mortality	14.2 per cent.
Five-year cures	26.6 per cent.

NEW YORK SURGICAL SOCIETY

These results are from the Johns Hopkins Hospital and are not from clinical studies alone but from the laboratory reports, so that they found there were some cases which ten years before were diagnosed as carcinoma but which today laboratory men would not consider such owing to the endometrial changes. One will notice from these charts the great range of operability and mortality statistics.

(4) *Bailey and Healy*

Operability	27 per cent.
Border line cases	24 per cent.
Inoperable	14.5 per cent.
Recurrent inoperability	22 per cent.
All cases over five years.	

(5) *Burnham (These statistics are not up to date)*

Operability	50 per cent.
Border line cases	24 per cent.
Inoperability	9 per cent.
Recurrent inoperability	11 per cent.

(6) *University Hospital*

No. of cases	144
Operability (22)	27.2 per cent.
Inoperability (118)	6.7 per cent.
Recurrent inoperability (4 cases + recovery) ..	25 per cent.
Total five-year cures	10.4 per cent.

Radical operation had 8 per cent. mortality. He thinks the cases were all in the operability class. The best results he had ever received before using radium was 33 per cent. with 8 per cent. mortality. My own experience could not be compared with that of anyone else, but he thought the present radium statistics are better than his previous statistics. The radium treatment means two or three days in the hospital at the most, with immediate return to the home for the patient, and the whole picture is better. So even if one does not get any better results with radium than with the radical operation, one has at least helped the surgeon, has done a service to the patient from the economic standpoint. Of the large number treated there will be a considerable number who never bleed again and in whom the discharge is reduced to a minimum, a certain number who are relieved of pain. As time goes on and he studies his cases, he finds few operable cases, and most of these come at the end of the day when his operable judgment is not its best. He has not entirely given up the operation but had only done three or four cases a year and these mostly on tradition. The results he had shown are for his first five years of radium treatment and he believed those for the next five will be better. He practically never applies radium now without anæsthesia, he now thoroughly packs the vaginal wall as he found that he could not apply the lead plates without packing and not have

COMPOUND FRACTURE-DISLOCATION OF ELBOW

here and there a crevice for them to get through with the possibility of burning a hole in the rectum or vagina. The first series had a large percentage of fistulæ. Doctor Keene informs me that since 1920 we have had no fistula cases following radium application and he attributes this to the more careful application with anæsthesia and the packing back of the antero-posterior wall away from the radium.

COMPOUND FRACTURE-DISLOCATION OF ELBOW

DR. JOHN H. JOPSON presented a man, fifty-six years of age who was admitted to the Presbyterian Hospital, November 28, 1923, having been struck by auto. Sustained lacerated wounds of scalp and eye-brow, an impacted fracture of the stump of an old amputation of right arm below the shoulder, and a fracture-dislocation of the left elbow, compounded; also abdominal contusions. X-ray showed an impacted fracture of the surgical neck of the right humerus stump, a fracture of the left olecranon process, the detached fragment pulled upward and backward, with an anterior dislocation of the shaft of the ulna, and the head of the radius, both riding forward and upward on the anterior surface of the condyles. There was a wound the size of a lead pencil on the posterior surface of the elbow, communicating with the fracture of the ulna. There was considerable swelling of the elbow. The patient complained of pain especially in right shoulder and abdomen. Attempts were made by Doctor Pfeiffer and Doctor Jopson to maintain reduction by traction from elbow outward, using 8 pounds weight, in combination with an internal angular splint. The fracture of the humeral stump was impacted, and required no special dressing. An X-ray made on December 3, showed little change in position. The wound in elbow was granulating. On December 4, 1923, reduction was effected under anæsthesia and the arm re-dressed on a right angle splint. The following day traction was added over upper surface of forearm. On December 12, straight extension was applied to overcome the recurring displacement of both bones, but without effect. The wound was not healed sufficiently at this time to permit of the open operation which was seen to be needed. On December 21, 23 days after the injury, the wound being healed, an open operation was performed. Two incisions were necessary. A straight posterior one over the elbow, in the median line, and a Kocher incision over the outer condyle and head of radius. The head of the radius was excised, and a portion of the upper end (articular surface) of ulna removed, before the detached olecranon process could be approximated to the shaft of the ulna, where it was fixed by two silver wires, passed at right angles through drill holes in the bone fragments. This maintained reduction, and a plaster case was applied with elbow flexion nearly at right angle. The wounds healed cleanly, and the case was removed on January 12, 1924, the X-ray having shown perfect reduction of dislocation and apposition of fragments. A removable plaster dressing was applied, and light massage and assisted active movements begun. The fixation of the joint at this date was almost complete. All dressings were removed after 5 weeks, and massage, hot packs and general physio-therapy measures begun. The man still in hospital. Movement improving. Supination and pronation incomplete, about 50 per cent. of normal motion. Flexion and extension still limited, but improving. About 60° of motion 12 weeks after operation. Arm is strong; can push and pull with strength. This is important, as this man is a switchman, and has but his left arm to depend upon to earn his living.

NEW YORK SURGICAL SOCIETY

SEPARATION OF LOWER EPIPHYSIS OF THE FEMUR WITH FRACTURE OF THE SHAFT OF THE TIBIA

DOCTOR JOPSON presented a girl, aged seven years, who was admitted to the Presbyterian Hospital, June 28, 1923. On the preceding day she jumped down from a stone wall on which she had been sitting. A large stone was displaced as she jumped, and struck her on the posterior surface of the left lower extremity. On admission the left knee and leg were swollen. At least one-half inch shortening was present. There was an anterior displacement of the knee, due to forward and upward displacement of the lower femoral epiphysis with overriding, and a transverse fracture of the tibia, middle third, with forward displacement of the upper fragment. The problem presented was to effect and maintain reduction of the femoral epiphysis, as well as of the fragments of the broken tibia. Doctor Speese and Doctor Jopson had treated supracondyloid fractures of the femur with tongs extension in the last few years, and with satisfactory results. They had used skeletal traction in a number of cases of fracture of other types which were formerly treated by open operation. Doctor Jopson applied tongs to the epiphysis in this case and used extension in conjunction with the Thomas splint, balanced suspension and self-contained traction over the end of the splint, using 8 pounds weight. The knee-joint was flexed, and the leg encased in moulded plaster splints, and supported on a Cabot splint attached to the Thomas splint. Three days later X-ray showed reduction of overriding of the epiphysis, but 20° forward angulation remained. This was overcome by bending the Thomas splint above the knee, changing the direction of pull on the epiphysis. The tongs were removed after 9 days, and the fixation maintained by bandaging the thigh to splint, and continuing suspension. X-ray showed good position on this date. One week later the leg and thigh were encased in plaster, with the knee slightly bent. The case was split before discharge, on July 23, to her home in the country, with instructions to remove it at the end of 8 weeks, after which guarded use of the limb was to be begun. The results in this case were very satisfactory. Various methods of effecting and maintaining reduction are advised in displacement of this epiphysis, and most authorities emphasize the danger of displacement of the epiphysis after apparent satisfactory reduction. This is the only case in which he had used tongs traction in children, but in the Bellevue Hospital series reported by Burdick and Siris, (*ANNALS OF SURGERY*, June, 1923) calipers were applied in 5 cases of fractured femur in a total of 268 cases, and credit given the method as a means of avoiding open operation.

DR. MORRIS K. SMITH (New York) said that one reason why cases of separation of the lower femoral epiphysis are regarded with dread is, that the type of accident causing them is likely to be so severe that the associated injuries add to the seriousness of the case. MacAusland has collected thirty-six cases of which ten came to amputation and four died.

It was his own impression of separated epiphysis that union sets in more promptly than after diaphyseal fractures, so that a delay in coming to reduction may increase the difficulties disproportionately.

He had recently had a case of separation of the lower femoral epiphysis in a boy of twelve years of age who, while climbing a fence, fell with his shoe caught in a picket. The lower end of the shaft was displaced posteriorly

SEPARATION OF LOWER EPIPHYSIS OF THE FEMUR

into the popliteal space as in Doctor Jopson's case. He was fortunate in seeing him within two hours of the injury. Under anæsthesia it was possible to reduce the displacement by extension, but by flexing the knee, traction and pushing the upper fragment forward, reduction was satisfactorily accomplished. The leg was maintained in flexion with adhesive plaster strapping for two weeks. The boy left the hospital on crutches at the end of three weeks, and was walking without crutches within two months.

It is too early to know whether shortening will eventuate, but the study of end results in separated epiphyses leads one to emphasize that the prognosis should be guarded.

DR. JOHN GERSTER (New York) reported the case of a girl of eight with a transverse supracondylar fracture of the femur at the epiphysis, easily reduced by manipulation in extreme flexion and maintained in this position; the child was walking perfectly at the end of four weeks.

A case similar to that of the elbow fracture reported by Doctor Jopson was in a powerful young man injured in a motor-cycle accident. A slightly compounded fracture of the olecranon whose line of fracture running transversely through distal half of articular surface of ulna, permitted lower fragment of ulna and radius to move together freely up anterior surface of humerus, was immediately operated through a lateral longitudinal curved incision one-half inch to outer side of ulna, the subcutaneous aspect of bone being exposed and a four-screw Lane plate applied. Passive motion from the first day. Lane plate removed under local anæsthesia four weeks later. Several years later (in 1917) he was passed by Draft-board as he had no physical disability. In addition to his elbow injury he had a simple oblique fracture of the upper third of femur (treated by nail extension for three weeks and then plated at open operation) and a compound comminuted fracture of both bones of the leg—lower third—(plaster case). All fractures were on same side of body.

DR. JOHN H. GIBBON (Philadelphia) thought that in all elbow fractures, too much attention was paid to exact co-adaptation of fragments and the fixation of the joint and urged the importance of early passive and active movements. As the preservation of flexion is of the greatest importance, he thought that even neglect of the olecranon fracture might be advisable in certain cases, in order to preserve flexion and keep up motion; even where the olecranon is fixed by open operation to the shaft, the arm should be dressed in acute flexion and early motion practiced. Unless there is wide separation of the olecranon from the shaft, one can count upon a fibrous union with a good functional result. Nature does a great deal by shortening muscles to make up for a permanent separation of the fragments, if there is a good fibrous union. One often sees wide separation of the patella, following fractures, with a fibrous union and a good function. Early and constant movement he considered one of the most important parts of the treatment.

In regard to the separation of the lower femoral epiphysis, he also urged the fixation of the leg in acute flexion and early motion. He advised against

the use of case or splint in these cases and recommended that acute flexion be maintained by a figure-of-eight passed about the ankle and thigh.

DOCTOR JOPSON in closing, said that in the case of compound fracture dislocation of the elbow, he agreed that immediate operation would probably be preferable. Should he encounter another such case he would operate immediately, if conditions permitted. He did not agree with Doctor Gibbon when he advises not to operate in such cases. The wide separation of the fragments would greatly diminish the strength of the arm, and an operation

would certainly be required eventually. He recalled one such case in which Doctor Pool operated for non-union of the olecranon, and secured a good result, but had to do a plastic lengthening of the triceps tendon. The same thing sometimes happens in fractures of the patella. He had operated on two cases in which a failure of bony union followed non-operative treatment of the fracture, in both of which the patients were crippled before operation and were completely cured after operation.



FIG. 1.—Branchial fistula, discharging at lower end of anterior border of right sternomastoid muscle. Note ++ on borders of picture, as guides to site of orifice.

EXCISION OF A BRANCHIAL FISTULA

DR. ASTLEY P. C. ASHHURST showed a man, nineteen years of age, on whom he had operated at the Episcopal Hospital, December 19, 1923. The patient complained of a more or less constant semi-purulent discharge from a minute opening on his neck, situated at the anterior border of the right sternomastoid muscle, about 3 cm. above the clavicle (Fig. 1). The patient pointed out that a cord, about the size of a pencil, could be felt running upward from this point for a few centimetres, when it seemed either to stop or to become lost in the deeper tissues. The patient stated that he had had this discharging sinus, to his knowledge, since the age of five years; and that it was a constant annoyance, staining his underwear and making him uncomfortable. Whenever he swallowed, this sinus was retraced a little upward. He presented no other abnormalities. A diagnosis of branchial fistula was made, and Dr. W. R. Watson, otolaryngologist to the hospital was

EXCISION OF A BRANCHIAL FISTULA

asked to examine the pharynx: this he reported as normal; the lad's tonsils had already been removed.

Operation.—December 19, 1923.—Ether was administered by intrapharyngeal tubes. The fistula was injected with melted paraffin, its orifice being barely large enough to admit the end of a fine cannula. An incision about 10 cm. long was made in the line of the skin folds, excising an island of skin including the fistulous opening. On dissection, the tract, which was about the size of the omohyoid muscle, was found to extend upward along the anterior border of the sterno-mastoid muscle as far as the upper border of the thyroid cartilage, where it became deeper. To expose it better, a second incision, 7 cm. long was made in the same direction as the first, below the border of the mandible. The portion of the fistulous tract already dissected was then delivered through this upper incision, and traced further. It passed between the external and internal carotid arteries, and was followed to its

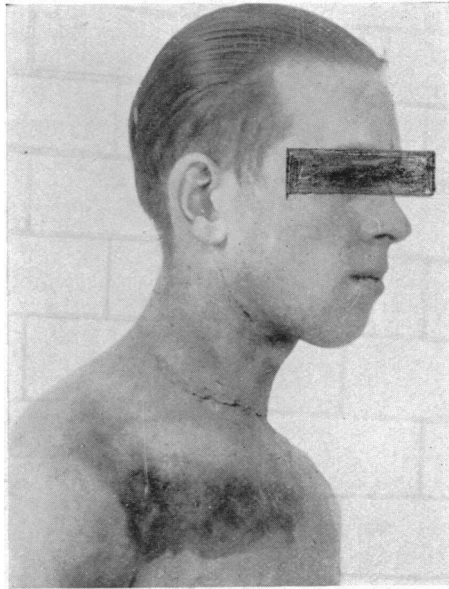


FIG. 2.—Patient eleven days after operation—inconspicuous scars.

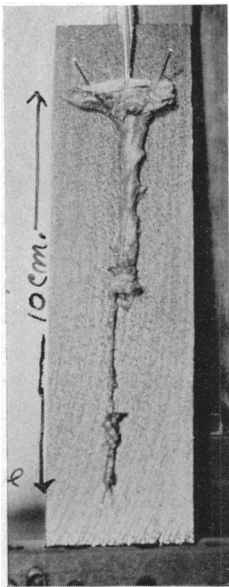


FIG. 3.—Specimen of branchial fistula, after hardening and shrinking in formalin.

origin in the wall of the pharynx just below the digastric muscle. Every time the patient swallowed the tract was drawn up toward the pharynx, and its attachment to the pharynx was seen to be funnel-shaped. The end of the tract was ligated, the tract cut off, and the stump swabbed with carbolic acid, and then buried by a purse-string suture of chromic catgut, as the appendix stump is treated. There was considerable difficulty in placing the purse-string suture, owing to the depth of the wound and the comparative thinness of the pharyngeal wall. During the dissection the fistulous tract broke almost in two at one point, while rather strong traction was being made on it; pressure on it then caused an extremely fine pencil of paraffin or inspissated pus to exude from its lumen. This pencil of paraffin was about the size of an ordinary cambric needle—one-half to three-quarters of a millimetre in diameter. As the upper and lower neck wounds communicated with each other by an opening only just large enough to thrust the fistulous tract through, it was thought safer to drain each wound separately, with a strip of rubber tissue.

The wounds were closed in layers with chromic catgut, and with lock stitch of equisetene for the skin.

The drains were removed after 48 hours, and the incisions healed promptly, leaving inappreciable scars (Fig. 2). On the third and fourth days after operation

there was some swelling and pain in the right tonsillar fossa. Dr. W. R. Watson examined the throat about two weeks after operation and found no evidence of any abnormality. For some weeks after operation the patient complained of pain in the throat at the site of the purse-string suture, but this gradually disappeared, and at present, three months after operation, he is free from symptoms. As the entire tract was removed, there is no reason to fear a recurrence.



FIG. 4.—Microphotograph of cross-section of branchial fistula in its upper third; showing the lumen lined by stratified columnar ciliated epithelium; lymphoid tissue in the walls; muscle tissue at the periphery.

The fistula, after hardening in formalin measured about 10 cm. in length (Fig. 3).

Microscopical examination was made by Dr. C. Y. White of sections cut from the specimen at four different levels. These showed a tube lined by stratified ciliated columnar epithelium, except in the section from the extreme end near the pharynx, which showed no lumen. The section nearest the skin showed no lymphoid tissue in the walls of the tract; that next above showed a little lymphoid tissue; the third showed much lymphoid tissue (Fig. 4); while the fourth, at the pharyngeal wall showed only muscle.

INSULIN IN SURGERY

DR. JOHN SPEESE (Philadelphia) said that the introduction of insulin has so revolutionized the treatment of diabetes and the results of its use are so well known that it is unnecessary to dwell upon the medical aspect of the question. The interest now is more particularly in ascertaining to what extent insulin can be used in surgery or in surgical cases complicated by diabetes, the latter constituting a class regarded as critical and in which surgical intervention has not always been followed by the most encouraging results.

Diabetic acidosis is controlled so readily by insulin that its use in other conditions, giving rise to acidosis, naturally followed. Insulin may have its greatest use, from the surgical point of view, in the treatment of various forms of acidosis, whether pre-operative or post-operative. It is a well known fact that if glucose is given by rectum, subcutaneously or intravenously there is a gradual disappearance of the acidosis encountered in a variety of conditions. Since insulin causes rapid utilization of glucose in the body it follows that its injection ought to clear up the effect of acidosis

INSULIN IN SURGERY

more rapidly than when glucose alone is given. While the number of reports of patients so treated is comparatively small, the results are encouraging and indicate that the intravenous administration of glucose controlled by insulin makes safe for operation many cases of starvation acidosis and controls the acidosis seen in post-operative conditions. Pre-operative acidosis constitutes a grave complication of the condition for which surgical intervention may be necessary, and may be so severe that valuable time is lost in the treatment by glucose injections alone. Response to its use with insulin is so prompt that many desperate cases may be saved by this more rapid and more specific method of treatment.

In diabetes complicated by infection, insulin by rapidly controlling the diabetes raises the patient's resistance and increases his chance to combat the infection. In such cases active measures against the infection should be instituted early and valuable time not lost in an attempt to control the diabetes with insulin. In several cases of severe wide-spreading infection, insulin had little or no effect upon the diabetic acidosis until the infected area was excised.

In rapidly spreading gangrene of the moist variety with acidosis associated with diabetes, and probably increased by absorption from the gangrenous part, immediate amputation followed by insulin therapy has given better results than preliminary insulin injections followed by amputation. In the dry variety of gangrene, on the other hand, with less infection and less acidosis, preliminary treatment with insulin can be used with less danger of delay. Several cases of incipient or threatened gangrene in diabetes seemed to be prevented by insulin.

There is no doubt that diabetic patients undergoing operations for chronic surgical conditions can be rendered good surgical risks by a combination of dietetic treatment and insulin. Many cases apparently hopeless from acidosis and coma first have been treated with insulin after which the surgical lesion has been attended to successfully. The effect of dietary measures alone is not to be minimized for such regulation accomplished much heretofore. Insulin, however, assures a more rapid response in the treatment preparatory to operation.

He had had the opportunity of administering insulin in the post-operative treatment of one case of acute hemorrhagic pancreatitis complicated with calculous cholecystitis. Drainage of the gall-bladder and pancreas was performed, on the following day there was a pronounced increase in blood sugar, acidosis and impending coma. The use of insulin with active carbohydrate administration was responsible for the rapid disappearance of the acidosis and hyperglycemia. Later a normal blood sugar ratio was controlled and maintained by regulation of the diet and insulin injections. In conclusion he emphasized the necessity of careful medical supervision of these cases, both in the administration of insulin and in the regulation of the diet.

NEW YORK SURGICAL SOCIETY

ACUTE MECHANICAL INTESTINAL OBSTRUCTION TREATED BY HIGH TEMPORARY JEJUNOSTOMY

DR. WALTER ESTELL LEE (Philadelphia) read a paper with the above title for which see page 45.

DR. SEWARD ERDMAN (New York) believed that the high enterostomy which has been brought to the notice of the surgical world in recent years, is of the utmost importance in the treatment of ileus whether of mechanical origin or of the paralytic type which latter so often accompanies peritonitis. During the past three years he had had the opportunity of following this method of treatment as applied to appropriate cases on the Second Surgical Division of the New York Hospital in the service of Dr. E. H. Pool. Including cases in private practice, they had now a series of 35 jejunostomies, two of which were for the sole purpose of feeding. There remain 33 cases performed for the relief of ileus associated with peritonitis and the mortality was 51 per cent. All of these were desperate cases where the expectant mortality is extremely high in the presence of spreading or general septic peritonitis and they feel that 49 per cent. recoveries represents the benefit of high intestinal drainage in such cases, and that some lives were thus saved.

The advantage of early intervention is shown by the fact that in those cases operated upon and the jejunostomy performed within 48 hours of the onset of ileus symptoms, the mortality was only 35 per cent., whereas in cases where jejunostomy was delayed to the third day or later, the mortality rose to 63 per cent. The 33 cases include fifteen jejunostomies for general peritonitis from acute appendicitis; eight for peritonitis of pelvic origin; five for peritonitis from traumatic rupture of the intestine; three for strangulated ventral hernia, and two for unusual forms of pyloric obstruction. One of the pyloric cases developed high obstruction immediately following the resection of the jejunal ulcer at the site of a previous gastro-enterostomy. In this case they performed early a jejunostomy for feeding and at the same time a Witzel gastrostomy for drainage of the stomach.

The relief of vomiting was immediate and jejunostomy feeding was very effective. After three days both tubes were withdrawn and the wounds healed promptly with relief of all symptoms.

DOCTOR VAN BEUREN (New York) reported statistics at the Presbyterian Hospital from Dr. Beverly Smith of 59 cases of enterostomy done in the ten years preceding 1916. Of these there were 47 done for acute intestinal obstruction. About 45 per cent. of these patients had peritonitis more or less diffuse. The mortality in cases of enterostomy (high or low) in cases of acute ileus was 90 per cent. Now the general mortality in cases of acute ileus was something like 50 per cent. It was, therefore, very surprising to find that the enterostomy which is expected to increase the chances of survival actually appeared to have increased the mortality. On going over the cases in some detail it was discovered that in very many of them the enterostomy was not performed until a relatively late moment in the course of the disease and that death occurred within a few hours after the enterostomy.

FECAL FISTULA

He was finally forced to the conclusion that enterostomy had been used in most of these cases rather as a last resort than as prophylactic or curative procedure. It ought to be emphasized again that enterostomy is a procedure which should be employed early. Other things being equal, the severity of the symptoms in proportion to the length of time they have existed should give one a lead as to whether to operate or not and, if operation is performed, whether an enterostomy should be included in the operation or not. The more severe the symptoms in proportion to the time that they have existed the more urgent the need for operation and the more probable the need for enterostomy. The procedure outlined by Doctor Lee is the one which had been in use at the Presbyterian Hospital for the last two years.

FECAL FISTULA

DR. JOHN B. DEEVER read a paper with the above title for which see page 56.

DR. WALTON MARTIN (New York) said that there are two important things to consider: whether the fistula is due to the stump of the appendix or due to erosion or sloughing of the bowel wall. Doctor Deaver had mentioned the rigid drainage tube and thought it might be a factor in producing necrosis. The speaker had not had occasion to see many cases due to this in the last few years. Another type is that where fecal concretions escape from the appendix opening and remain at the bottom of the sac.