TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting Held October 3, 1921

The President, GEORGE G. ROSS, in the Chair

GAS GANGRENE

DR. FRED L. HARTMANN reported the following case of gas gangrene because of its rarity in civil life:

The man, an adult male, was admitted to the service of Doctor Ross in the Lankenau Hospital, September 5, 1920, on account of an obscure abdominal condition. Upon opening the abdomen, an abscess posterior to the cæcum was revealed. The postoperative course was much disturbed by persistent hiccough. On the seventh day the urinary output had dropped to 700 c.c. For the purpose of stimulating the kidney action, a hypodermoclysis in the thighs of 1000 c.c. normal saline solution was performed. The usual aseptic precautions were observed.

Thirteen hours later the man began to complain of vague pains in the right leg and thigh. These gradually grew worse until after twenty-three hours, a small area about two inches in diameter of emphysematous crepitation was felt at the site of the hypodermoclysis needle puncture of the right thigh. Two hours later the pain had become much more severe, and the examination revealed that the region had become emphysematous from a little above Poupart's ligament down to the ankle. The limb was pale in color and cold with purplish mottling on the dependent portions. The thigh was drum-like but not tender to pressure. No emphysema of the muscles of the lower leg, the gas being under the skin. Temperature, 101.3°; pulse, 110; respiration, 32.

Multiple small incisions were made in the thigh. Gas of a pungent odor escaped. There was no bleeding. Incisions were continued until the entire thigh had been laid open by multiple incisions extending down to the bone. Skin incisions were made in the lower leg. No bleeding was encountered. The blood-vessels were collapsed. The muscles were pale and spongy. The wounds were flushed with hydrogen peroxide and wet dressings of potassium permanganate were applied. The patient was relieved by this treatment but rapidly grew weaker and died two hours after the thigh was laid open. His mind remained clear until the end. At no time did he have convulsions.

After death the right leg on both skin and muscle surfaces was deep purple in color, giving out a pungent foul odor of rotting fish. Examination of cultures two hours after they had been made revealed glucose agar broken up by gas bubbles. No gross growth visible.

The speaker said that it is of importance for surgeons to know that the bacillus of Welch in its most virulent form is not confined to the peculiar soil of Flanders and France, but is present in the vicinity of Philadelphia. He was cognizant of three cases of traumatic gas gangrene in Philadelphia within the past two years.

The source of infection in this patient may be a matter of discussion. The first and most logical one is that the organism was carried to the muscles by the hypodermoclysis needle. On the other hand in this patient there was present an old omental abscess communicating with a perforated appendix. It is a well-known fact that human fæces harbor the bacillus of Welch. Is it not possible that during the post-operative period, especially when the gauze drain was removed, opening up avenues of absorption, the organism already present in the abscess cavity may have gained access to the blood and have been carried by the blood stream to the muscle at the site of the saline injection, where there existed a focus of devitalized tissue?

HIGH LIGATION OF THE CYSTIC DUCT IN CHOLECYSTECTOMY

Doctors Hartman, Smyth and Wood presented a paper with the above title recording the observations made in the Laboratory of Surgical Research of the University of Pennsylvania. For this paper see page 203.

Dr. Murat Willis, of Richmond, Va., called attention to the experimental work if Doctors Judd and Mann, where they found dilatation of the extra-hepatic ducts following removal of the gall-bladder. They concluded that this dilatation was purely mechanical, but among their experiments they reported one in which the muscle of Oddi was cut but still there was dilatation of the extra-hepatic ducts. He agreed with the essayist that in all likelihood this dilatation is a physiological or compensatory dilatation. From clinical observation he felt satisfied that any pressure sufficiently great to produce dilatation of the extra-hepatic ducts would be sufficient to produce jaundice. Nobody reports jaundice following cholecystectomy.

Dr. J. E. Sweet, Philadelphia, said that his work upon the function of the gall-bladder has led to the conclusion that its function is perhaps more simple than had been thought.

The lymphatics of the gall-bladder are very highly developed. If a suitable solution is placed within the gall-bladder, and the lymph coming from the gall-bladder is collected, the presence of the injected fluid can be demonstrated in the lymph in a very few seconds. Therefore they are coming to the conclusion that the function of the gall-bladder is simply to store the bile which is secreted between the periods of active digestion, or, possibly, not so much to store it, since this implies future use, as to deviate it from the intestine during these periods; and since the capacity of the organ is so small, relative to the total amount of bile secreted during this time, the effectiveness of the process is increased by a process of concentration, or inspissation, accomplished by handing back to the system the fluid part of the bile through the lymphatics.

As to the question of the mechanism by which the gall-bladder empties itself, they had been unable to reach a definite conclusion. Surgeons talk about the contractions of the gall-bladder. But these movements refer to the demonstration of the waves of contraction which are due to the contraction of the smooth muscle, waves common to all smooth muscle, and which are too trivial to play any part in the emptying of the organ. They are inclined to the belief that the only mechanism which can empty the gall-bladder is the general intra-abdominal pressure, supplemented, possibly, by the filling of the stomach.

DR. NICHOLAS M. ALTER, of Pittsburgh, agreed with Doctor Sweet as to the importance of the gall-bladder, when it has normal function. The question arises, however, how the gall-bladder will perform its function under pathological conditions, when mostly bile-stained mucus is contained in it and its wall is inflamed. The biliary ducts may also undergo considerable changes. Whatever the function of the normal gall-bladder may be, it cannot be a contra-indication for the surgical treatment of a diseased gall-bladder.

CARCINOMATOUS PAPILLOMA OF THE RENAL PELVIS

DOCTORS LANDON and ALTER read a paper with the above title.

DR. B. A. THOMAS remarked as to terminology which seems to be somewhat confusing, so far as papilloma and carcinoma of the urinary tract is concerned.

Carcinoma of the kidney begins either in the parenchyma or in the pelvis. As he interpreted this presentation the case is one of a carcinomatous degeneration of papillomata of the kidney. Obviously when a papilloma undergoes carcinomatous change, it ceases to be any longer a papilloma. It is then a carcinoma—a papillary carcinoma, if you please. It seems to be going a little bit astray in the pathology of tumors of the kidney to speak of a carcinomatous papilloma. The classification of these tumors, when of the bladder, is a matter of considerable moment, for upon their correct identification treatment depends; if papilloma, fulguration, cystoscopically, invariably; if carcinoma cystoscopic fulguration never. In the urological mind this question has been threshed out and today urologists are in perfect accord and understanding on the matter. With others the question still seems difficult and chaotic. This kidney tumor is certainly an unusual one. Even a papilloma of the kidney is a very rare condition. He believed there was only one case found in some ninety-four cases of kidney tumor covering a period of ten years at the Massachusetts General Hospital, and Charles H. Mayo found one case in over seven hundred cases of kidney tumor. When it comes to a malignant or carcinomatous degeneration of a papilloma, certainly Doctors Landon and Alter have presented a very rare specimen.

There is no question but that the diagnosis in these cases is difficult. Hemorrhage is not as important a factor as has been commonly believed. It certainly does not occur in more than fifty per cent. of the cases as a primary

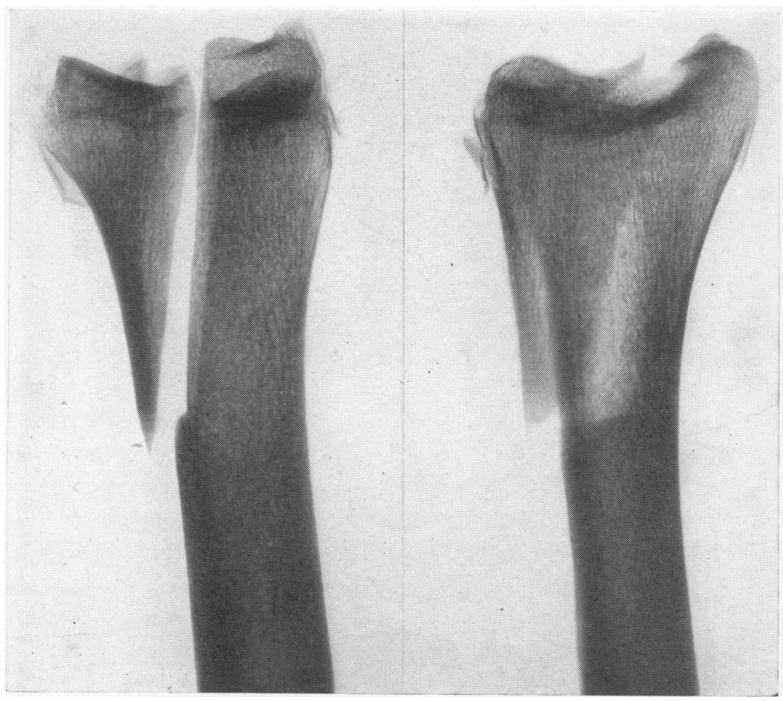

FIG. 1.—Experimental fracture of lower end of tibia extending into ankle joint.

symptom; tumor in not more than thirty per cent., and pain in less than ten per cent. Too great reliance cannot be placed upon this clinical sign as a guide to diagnosis.

DOUBLE FRACTURE OF THE TIBIA INVOLVING THE ANKLE-JOINT

DR. A. P. C. ASHHURST referred to a skiagraph which had been shown by Doctor McKnight at the May meeting, which had been reported as a "double fracture of the tibia," but of which only the antero-posterior view had been presented. Doctor Ashhurst at that time had ventured to disagree with the diagnosis, and had suggested that very similar appearances would be presented by a skiagraph (antero-posterior view) of a fracture splitting off a large wedge from the postero-lateral surface of the lower articular surface of the tibia. Such a fracture had been produced experimentally by Doctor Ashhurst, and the skiagraphs of the lesion (Fig. 1) made by Doctor Holloway were now presented to the Academy; the antero-posterior view, he thought, was much the same as in Doctor McKnight's case, while the lateral view showed clearly the single fragment which was detached.

CRANIAL DEFECT

DR. J. S. RODMAN reported the following cases:

CASE I.—A. G., woman, age twenty, on April 6, 1917, was kicked in forehead by horse. Sustained a compound comminuted fracture of frontal bone and right eye was destroyed. Comminuted fragments removed at once at hospital. Right eye enucleated April 9th. Remained in the hospital four weeks and in bed at home four weeks. A bulging about size of a fist developed on side of injury immediately after fracture. This mass pulsates. Patient states that it is smaller when she is lying down. She was admitted to Dr. J. B. Roberts' service in the Polyclinic Hospital, March 2, 1919, with pulsating meningocoele in right supra-orbital region about size of lemon—right eye missing. Sac of meningocoele tapped on three occasions and a clear fluid removed.

Operation, March 20, 1919, was: Operated 8.30 A.M.; 25 c.c. clear fluid removed from sac. Transverse incision. Opening found in skull —long diameter horizontal about one inch below surface, about three inches in length and one inch wide. Piece of fat and occipito-frontalis fascia made into free graft and stitched into opening with fascial side to brain. Fine silk used as suture material. Graft removed from supra-orbital region. Remains of sac stitched close over graft; redundant scar and skin removed. Only normal skin saved.

Patient seemed markedly improved following operation and remained so for about six months. Pulsation returned in meningocoele, however, and general condition gradually grew worse. Status epilepticus suddenly developed March 19, 1921. Epileptiform convulsions began about 3 A.M. of one morning and ended at noon of same day. No convulsions since then.

April 4, 1921, was operated upon for relief of the cranial defect. Traumatic supra-orbital and frontal—right side. About size of hen's egg. Closure—first stage plastic—skin. Removing an elliptical por-

tion of skin about three inches long—one and a half inches in width. Skin edges mobilized and brought together over defect. (Black silk.)

CASE II.—Woman, age twenty-three years, was admitted to the Presbyterian Hospital, February 9, 1921. She complained of convulsions starting in left leg or left hand and with a slight drawing up of the left corner of the mouth. These convulsions become progressively worse, lasting thirty seconds to one minute, and ending quite abruptly.

These attacks started about four years ago. At that time there was only a slight twitching of the left side of the face. For the past four or five days she has had Jacksonian type of convulsion as described above. She seems to know when the convulsion is coming because she indicates this to the nurse; also seems to be conscious during the attack. Pupils equal but contracted and seem to be fixed (due to morphia?), not contracting to light or accommodation. Ocular movements normal in all directions.

Voluntary movements of facial muscles on right side are normal; on left side the angle of the mouth cannot be drawn up as well as the right, but it is not completely paralyzed. Masseter muscles contract normally. Muscular power of upper and lower limbs is equal and normal. Biceps and triceps reflexes also knee jerks are equal and distinctly exaggerated. There is no ankle clonus and plantar reflex is normal on each side. Sensation for pin point seems to be normal everywhere.

During examination patient had two attacks in which facial muscles of left side *only* were involved. There was at first tonic contraction and then clonic convulsion, chiefly of lower facial muscles, but the orbicularis and frontalis were also involved. The tongue was drawn to left lower jaw; was moved clonically. Platysma and sternocleidomastoid stood out prominently on left side, but none of muscles of shoulder or upper limb were affected. Patient states, however, that attack is ushered in with a sensation over left thigh.

During these attacks just described it is positive that upper and lower limbs were *not* involved. After the attack ceased, there was no twitching of facial muscles. No loss of consciousness during the attack.

Provisional neurological opinion probably a lesion in Rolandic region or right side in lower portion, involving chiefly the face area.

Report of eye examination (Doctor Radcliffe): Right and left pupils dilate regularly. Media clear. Disc outlines distinct. No pathological changes in eye grounds with exception that there is a slight fullness of the optic disc. Wassermann negative. States that facial contractions do not come as often as yesterday. Attacks come less frequently, but seem to last longer. States that since yesterday "aura" began in left hand. Before this aura seemed to begin in left foot. More or less constant, moderately severe headache and vertigo. Examination shows distinct weakness of left face, chiefly of lower muscles—upper portion seems almost normal. The left upper limb does not seem distinctly weaker than the right, but movements and grip of left hand are suggestive of beginning impairment of function—but it is very indefinite. Patient yawns frequently. Sensation of fifth nerve distribution is normal. Complains of pain in teeth of left side.

DOCTOR CADWALADER, in consultation, recommended operation on right side of skull for lesion probably situated in face area of motor cortex. It is not certain that lesion is a tumor.

February 17th: Operation by Doctor Rodman. Ether anæsthesia. Patient in sitting posture. Incision semicircular in temperoparietal region. Osteoplastic flap laid back. Dura exposed; apparently normal except for perhaps a slight bulging over motor area. Dura incised and flap laid back. The brain substance protruded through the incision a little further than normal. No tumor or other lesion demonstrable. Palpation revealed no evidence of any definite mass under the bulging area. An exploratory puncture was made at this site but no fluid obtained. The dura, pericranium and skin were sutured in three separate layers. Patient required a stimulation for about twelve hours after operation. After a stormy period of twenty-four hours convalescence uneventful. Symptom free since.