PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting held December 1, 1919

The President, Dr. George G. Ross, in the Chair

USE OF FREE SKIN GRAFTS TO REPLACE LOSS OF MUCOUS MEMBRANE OF MOUTH AND NOSE

Dr. George M. Dorrance read a paper with the above title, for which see page 360.

Dr. Robert H. Ivy said as to the success of the skin grafts in the mouth, such grafts had been used at the Walter Reed Hospital in some types of cases in which there was loss of mucous membrane. He showed four slides, giving a general idea of the operation and the appliances used in connection with it. The first showed a wire splint attached to the teeth with a loop to carry the modelling compound down into the buccal sulcus after the adhesions had been divided. The next slide showed the temporary appliance replaced by an artificial denture after the graft had taken. Another slide showed one of the grafts in the mouth. This was a case in which the upper lip was bound down to the jaw bone. An artificial plate bearing teeth was made of vulcanite. The scar tissue was then divided and the plate with its upper edge covered with the Thiersch graft was inserted and retained in the mouth for several days, by which time the free skin had become adherent.

Dr. John B. Roberts said that in carrying Thiersch epithelial grafts into the mouth, one of the difficulties is getting the graft to fit perfectly against the surface. If there is air underneath the graft, it is apt to fail to live. The important thing is to first have a model made of the surface in modelling compound, or wax, as Doctor Dorrance has used. The compound at ordinary temperatures is hard; but by moistening it with warm water it softens and, pressing it down to the surface, there results an exact negative. The skin side of the graft is placed against the negative which is then pressed into place and fits every little detail of surface. The important thing is to get the raw surface of the epithelium pressed right down upon the place where it is wanted to adhere and grow fast. This applies also in the eye socket or in ectropion operations for burns. As Doctor Dorrance and Doctor Ivy have said, it is of the greatest importance to have perfect contact of the raw surface of the Thiersch graft with the raw surface. It is easy to see that quick union will take place if the parts are not disturbed.

Doctor Dorrance, in closing, emphasized the fact that he made the cavity larger than he expected it to remain. The plate is not removed for

three weeks after it is introduced. He particularly impressed this point also, because there have been many failures due to taking the plate out before this time.

OPERATIVE TREATMENT OF UNUNITED FRACTURES OF THE MANDIBLE

DR. ROBERT H. IVY read a paper with the above title, for which see page 363.

DR. A. P. C. ASHHURST said that, while on duty at the Walter Reed Hospital, he had many opportunities to watch the work of Doctor Ivy and of his predecessors, and was very much impressed with the amount of improvement which can be obtained by the combination of prosthetic and surgical skill. It is a long and tedious process to get these jaws sufficiently aseptic for an operation; in the second place, to overcome any deformity that may be there, and then to secure union, the final stage of the operation. From what he saw at the Walter Reed Hospital and in other places it is evident that there has been a very great advance in surgery of this kind during the war.

DOCTOR IVY, in closing, said that in these cases he felt that he must sometimes feel the ends of the bone with his gloved fingers. He did not touch the graft with his fingers, but he did not see how it is possible to keep the fingers absolutely out of the jaw wound. He had had no experience with the rib graft, but had seen cases later in which the operation had been done by Doctor Dorrance with uniformly good results.

FRACTURES OF THE PELVIS

DR. WILLIAM J. RYAN read a paper with the above title, for which see page 347.

DR. GEORGE G. ROSS said that fracture of the pelvis when the femur is driven into the acetabulum, or so-called central luxation, is not such an uncommon injury. It occurs in three degrees: First, when the floor of the acetabulum is split; second, when the head of the femur is through the acetabulum; third, where the entire head has entered the pelvic cavity and the neck rests on the fractured edge of the acetabulum. It occurs as a result of force applied to the great trochanter, transmitted through the neck. There were several instances of this fracture in the hospital at Brest, and they all occurred as a result of falls down hatchways or from smokestacks. Some years ago such an injury came to him at the Germantown Hospital. Altogether there were six lines of fractures of the pelvis; one being central, luxation of the second degree. This case was treated by a circular band of adhesive plaster, taking in the pelvis and making pressure on the great trochanter. The patient made a very satisfactory recovery and is able to walk without support and without a limp.

DR. HENRY R. WHARTON expressed himself as much impressed with the high mortality in fractures of the pelvis mentioned by Doctor Ryan. His experience had been that the mortality of fractures of the pelvis, unless there are severe associated injuries, is rather low. He had seen cases recover in which there had been multiple fractures of the pelvic bones, with rupture of the bladder. He had recently under his care a case of fracture of the pubis, in which the patient had been caught between heavy pieces of iron and a wall, and in whom the urethra was torn from the bladder. Recovery occurred in this case after suprapubic cystotomy, retrograde catheterization, and perineal drainage. With regard to fracture of the pelvis in which the head of the femur is driven through the acetabulum, he had a case at the Presbyterian Hospital in which this occurred with other injuries in which the man made a good recovery. In this case, examination two years later showed that the patient walked easily and had no apparent shortening. With regard to the primary treatment, he had used a stout muslin binder, and, in some cases, plaster of Paris to immobilize the fracture. When the patient was able to get about he used a heavy canvas belt with straps and buckles to give good support in walking. He had been much impressed with the frequency of fracture of the pelvis in the last few years. It may be that routine X-ray examination discloses fracture of the pelvic bones formerly unsuspected.

DR. A. P. C. ASHHURST said that his experience agreed with what Doctor Wharton had said, that the mortality is not as high as the figures of Doctor Ryan would indicate, unless one considers only the cases diagnosed without the aid of skiagraphy. Looking up the records in the Episcopal Hospital about ten years ago, he found that the mortality was about 30 per cent. (*Trans. Phila. Acad. Surg.*, 1909, xi, 225), but within the last few years he doubted if it much exceeded 10 per cent. Thirteen years ago, when he wrote an article on rupture of the bladder, he called attention to the danger of overlooking rupture if one injects so small a quantity as one pint. While he was a resident physician at the Episcopal Hospital, Dr. Harry Deaver had a patient who had been injured in the abdomen. Doctor Ashhurst injected a pint of fluid into the bladder and all of it was recovered; nevertheless, at autopsy, an intraperitoneal rupture of the bladder was found. He made it a rule, therefore, to inject a quart; and sometimes even when one injects a quart, one may recover a quart and a half—showing that the fluid has gotten out of the bladder into the abdominal cavity, and that the catheter is draining the abdominal cavity. So that he has come to the conclusion that, unless the injected fluid causes the formation of a suprapubic tumor with the characteristics of a distended bladder, one cannot be sure the bladder is intact. He had come to the conclusion that in extraperitoneal rupture of the bladder, low down near its neck, it is safe to drain through the perineum. If there is a distinct rupture of the bladder easily found in the space of Retzius, one

would naturally drain there; but he was sure it is safer, where the lesion is deep in the pelvis and extraperitoneal, also to drain through the perineum.

Dr. George P. Muller said that he had had two interesting experiences in connection with the diagnosis of rupture of the bladder by means of bladder injections. Several years ago, a patient was admitted to the University Hospital with the history of having been injured in the abdomen. A routine examination failed to show anything. He was catheterized and clear urine obtained; the interne stated that a measured amount of boric solution had been injected and recovered. Twenty-four hours later symptoms of peritonitis ensued and again he injected boric solution into the bladder and recovered the same amount. There was no blood. However, the abdomen was opened and a vertical tear in the bladder found exactly opposite the urethral orifice. They had been catheterizing the pelvic cavity. Recently, a case of fractured pelvis was admitted to the University Hospital, in which the symptoms of the ruptured bladder did not appear for twenty-four hours, at which time toxic symptoms were accompanied by a bulging mass above and to the right of the pubis. He had a tear in the bladder about ½ inch above the urethral orifice and opening into the space of Retzius.

From his observations of certain of the cases reported by Doctor Ryan, together with other cases, he believed it would be best if they would develop a method of drainage through the perineum. Doctor Wharton has spoken with surprise of the mortality. As he remembered the fatal cases, most of them died within an hour or two from shock caused by the associated injuries; the remainder occurred weeks after from slow sepsis. In connection with this mortality should be remembered Doctor Moschcowitz's remark that "statistics from memory are often lower than statistics from analysis of case records."

Doctor Jopson said that in the examination of these cases the importance of rectal examination should never be overlooked, both for diagnostic purposes, and to determine whether injury of the rectum is present or threatened by the presence of spicula. In fractures of the rami of the pubis and ischium, there may be noted a reflex spasm of the adductor muscles of the thigh on the same side, as shown in movement of the thigh on the pelvis, which is of some diagnostic value. One of his former assistants, Dr. Douglas P. Murphy, devised an ingenious method of treatment for a case under their care, utilizing the principle of overhead extension. A heavy canvas sling, wide enough to include the entire pelvis and trochanters, was passed beneath the patient, a bar of corresponding length was passed through loops attached to the ends of the sling, and was attached in turn by cords to a longitudinal bar directly over the centre of the bed in a modified Balkan frame; the bar being only a short distance above the patient. In this manner the patient's pelvis was lifted clear of the bed, and the weight of his body furnished counter-pressure, which was conveyed through the sling to the sides of the pelvis

and trochanters, pressing on them and effecting reduction and fixation of the vertically-separated fragments. This position was exceedingly comfortable, and the care and nursing of the patient were much simplified. The result was entirely satisfactory, and the method was a decided improvement over that which we were accustomed to use, *viz.*, circular compression and support by a heavy duck binder, fastened by straps and buckles, or pinned around the pelvis.

DR. D. B. PFEIFFER said that he saw a case this summer, in the service of Doctor Wharton in the Presbyterian Hospital, which illustrated the statement made by Doctor Ryan that certain cases need drainage in anticipation of suppuration, and the further report of one case which did show suppuration and sepsis presumably secondary to infection of a hæmatoma. The case referred to was a young man who had been brought to the hospital after an accident in which he had been struck by a trolley car while in an automobile and rendered unconscious. He soon regained consciousness and was brought to the hospital in an ambulance. He was placed in bed and examined by the interne, who found nothing alarming in his general condition but suspected an injury of the pelvis. The patient did not seem to be in pain. In a short time, however, he began to complain of pain in the lower abdomen, which became more and more severe. The temperature remained approximately normal, but the pulse rate had risen markedly, being about 140 per minute and of poor quality. The face was pale and the expression anxious. The abdominal muscles over the whole lower abdomen were tense and pressure was painful. Dullness over this area was pronounced. Any motion or disturbance of the pelvis was painful and it was concluded that a fracture existed. There was no blood in the urine. The probability of hæmatoma formation, as a cause of the general and local symptoms above stated, was considered. However, the intensity of the abdominal symptoms, together with the existence of a contused abrasion of the abdominal wall above the symphysis, suggested an intra-abdominal injury. The abdomen was opened through a right rectus incision. On splitting the fibres of the rectus, the preperitoneal tissue was seen to be infiltrated with a huge amount of blood which was for the most part held in the meshes of the areolar tissue. However, between the peritoneum and the region of the internal aspect of the acetabulum on the right side there was a cavity filled with approximately 250 to 300 c.c. of blood clot. This was evacuated and with the finger a complete fracture of the superior ramus of the pubis was felt. Active hemorrhage seemed to have ceased. The peritoneum was opened and no visceral injury found. The pelvic cavity was not more than half its normal size, due to the massive subperitoneal infiltration which surrounded it on all sides. A rubber tube was placed just through the abdominal wall into the preperitoneal space and the wound closed. Considerable serosanguinous exudate drained for three days, when the tube was removed. Healing and recovery were uneventful

ful. It is probable that in this case there was a direct rupture of a vessel of considerable size, and while he would not have operated for this reason alone, there can be no doubt that the danger of infection of the hæmatoma was materially lessened by the evacuation of the clot and drainage of the preperitoneal space under all aseptic precautions.

DR. WALTER G. ELMER reported a rather unusual type of injury in a boy who was admitted to the Orthopædic Department of the University Hospital for tuberculosis of the hip. X-ray examination revealed that the head of the bone had been driven through the floor of the acetabulum and tuberculosis of the hip had followed.

DOCTOR RYAN, in closing, remarked in regard to the mortality, which, according to Doctor Wharton and Doctor Ashhurst, seems to be high, that three patients died within two hours of their admission, one in three hours and one in thirty hours.