TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, June 1, 1896.

RESULT AFTER PIROGOFF AMPUTATION AT THE ANKLE.

DR. ADDINELL HEWSON presented a man, thirty-six years of age, who, in December, 1895, had been subjected to a Pirogoff amputation at the right ankle, by Dr. Todd, of Roxborough, on account of a crush of the foot. Considerable trouble from septic disturbances attended the after-progress of the wound, but after eight weeks the healing had sufficiently advanced to warrant his discharge from hospital, and after-care as an out-patient. The patient now presents a much shrunken stump, with a depression on the anterior and outer aspect where a slough took place. He is able to bear his weight upon the stump, but this is by no means firm enough for him to continue to use it; and consolidation is apparently not yet complete. To show, however, the exact condition of the parts, Professor Goodspeed, of the University of Pennsylvania, kindly took radiographs twenty-one and a half weeks after the injury. Two views were taken, determining conclusively the degree of bony union. In these the attached surface of the calcaneum appears not to extend entirely across the severed ends of the tibia and fibula, but the union is firm to the central portion of the tibia. This union has taken place more towards the posterior part of the severed surface of the tibia, and apparently not at all to the anterior portion of the tibial cut surface, from which was removed the piece of necrosed bone, and it can be seen that the space has not yet been filled up. They also show the tension of the tendo Achillis upon the calcaneum and the possibility of its rotation if the extremity is used to any extent. Owing to the injury as stated above there is 4.5 centimetres shortening. Attention was called to the artificial foot which the patient was wearing. The heel was well stuffed, and a great amount of pressure was removed

therefrom by the quasi socket in which the leg was held from the tubercle of the tibia down to the ankle.

DR. G. G. DAVIS said he thought the question of the Pirogoff amputation to be an interesting one. Dr. Hewson had stated that the bone had been removed to a greater extent than usual. Personally he believed in removing a very large extent of the tibia and fibula and in going very high up in performing this operation. The object of this is, in case the patient desires to wear an artificial limb, a cylindrical joint can be used in the mechanism of the ankle instead of two lateral joints. If the patient wears an apparatus without any ankle-joint, of course these remarks will not apply to so great a degree. The objection to this apparatus is the extreme breadth of the ankle, which attracts attention, as it is considerably broader than the normal ankle. If the amputation is done above the malleoli, as suggested, then the side irons can be applied close to the leg, and the addition will not make any greater thickness than would the extreme protuberance of the malleoli. If such an operation is done and such an apparatus is applied, one will have a result which is much less visible and will attract much less attention than one like that in question. In performing the Pirogoff operation, he preferred cutting the extremity of the calcaneum quite short. The difficulty in performing this operation is almost always in getting the part which remains attached to the tendo Achillis up against the extremity of the tibia. He did not believe in performing a section of the tendo Achillis, but rather in making the bone section extremely liberal, leaving a comparatively small piece attached to the tendo Achillis and removing the part high up on the leg.

DR. HEWSON added, with reference to section of the calcaneum, that if the incision is made obliquely with the long axis of the calcaneum the difficulty is increased, while if the incision is made vertically,—that is, with the long axis to the extremity of the tibia and fibula, greater ease in adjusting the fragments results. He agreed with Dr. Davis that a vertical section should be made, but his experience in these cases was that surgeons do not wish to take away any more of the calcaneum than they have to. When the final adjustment of the parts is being made, it may be found that there is not sufficient of the calcaneum to make the part comfortable, and, consequently, a second section has to be made. By using a more vertical incision, less difficulty in adjusting the bones results.

EXTRAPERITONEAL RUPTURE OF THE BLADDER.

DR. H. C. DEAVER reported the following case: A man, forty-two years of age, was admitted to the Episcopal Hospital early in the morning of August 18, 1894, with a history of having fallen out of a second story window while walking in his sleep. He fell on the pavement landing on his buttocks. He complained of great pain in his lower abdominal region, especially in the hypogastrium, and radiating into the iliac and inguinal regions, and an urgent desire to urinate, but only a few drops of bloody urine were passed. There were no signs of any external abdominal injury, nor was there any evidence of fracture of the pelvic bones. The resident passed a catheter, and drew away a small quantity of bloody urine, then ten ounces of boracic solution were injected into the bladder, when only a small quantity of the injected fluid returned. Four hours later, when seen by the reporter, his general condition was fair, pulse of 90, temperature 100° F. His pain was very severe. There was dulness over the lower quadrant of the abdomen, but it was not so marked as the tenderness, especially over the hypogastric and right iliac regions. Rectal examination was negative, there being neither tenderness nor fulness in the recto-vesical space. The urethra was patulous throughout, a No. 30 steel bougie being passed readily, the withdrawal of which was not followed by any bleeding. After the field of operation was thoroughly prepared for a suprapubic cystotomy, the bladder was injected with eleven ounces of boracic acid solution, four of which returned.

The usual incision for a suprapubic cystotomy was made. When the prevesical space was exposed, urine and boracic solution escaped, and apparently more freely from beneath the abdominal walls to the right of the median line. The bladder was partly contracted, and the rent was not discovered, as he did not think it wise to cut the rectus muscle to gain the necessary room for exploration, and the abdominal walls were thick. He opened the bladder wall in the median line a little below the upper margin of the pelvis, and drained it in the usual way, making no button-hole in the perineum, as the suprapubic drainage was perfect. The prevesical space was drained and the usual dressing applied. The urine, which was alkaline and somewhat ammoniacal in odor, began to irritate the skin from leakage around the drainage-tube. There

was an extensive dermatitis over the hypogastrium, the scrotum and upper portion of the thighs anteriorly; this soon subsided under appropriate treatment. The prevesical space was infected by the urine leaking around the tube. The prevesical fat escaped as a large slough the twelfth day after the injury. After the separation of this slough the recovery was rapid. The wound was healed the twentieth day, the patient discharged September 15. He passed urine per urethram the fifteenth day. When he was discharged he was urinating four to six times daily.

The success of an operation for rupture of the bladder depends upon the early recognition of the injury and prompt operative interference. Delay for even a few hours may be followed by disastrous results. In the majority of cases there should be little difficulty in diagnosing the presence of rupture of this viscus. A measured quantity of a solution of boracic acid should be injected into the bladder through a catheter, which has been previously passed to determine the presence of urine or blood and its character, when, if the full amount thrown in is not recovered, there can be no question of the nature of the injury. When the tear is so small as to prevent the full escape of the injected fluid, or when the opening in the bladder is valve-like, caused by a loop of intestine herniating itself through the rent, this means of diagnosis may fail. In either event the prevesical space should be immediately opened, when it can be decided whether an extra- or an intraperitoneal rupture exists. If it be extraperitoneal the fluid will usually escape as soon as the prevesical space is opened. The urine may escape in one of the following directions: into the connective tissue around the neck of the bladder, along the sides of the pelvis, and between the anterior parietal peritoneum and abdominal walls. The prevesical space should always be drained through the abdominal incision. When the urine has found its way along the sides of the pelvis drainage should be introduced through an incision above and to the outer side of the middle of Poupart's ligament, and the bladder opened by a lateral incision through the perineum.

THE TREATMENT OF FRACTURES BY MASSAGE.

DR. G. G. DAVIS read a paper on the above subject, for which see page 661.

DR. A. HEWSON, in discussing this paper, stated that to his knowledge there was only one general hospital in the city of Phila-

delphia that had a masseur in attendance upon the dispensary service. In this hospital massage is employed at each change of the dressing. The hospital is St. Timothy's, in Roxborough. During the past winter a number of cases of fracture have been massaged every time the dressings were changed. He particularly emphasized the necessity for this treatment in children. It gives great benefit to the child, and has a very good effect upon the skin. It has been used in the out-door service more than in the ward, although in the case of fracture of the patella referred to by Dr. Davis, massage was employed with great benefit and comfort to the patient and to the surrounding portions of the limb. It was not used in the knee-joint, but above and below the knee; it gave great satisfaction to the patient. He was glad to hear Mr. Davis allude to those peculiar forms of rheumatoid affections which appear about the joints, and was particularly pleased to hear him refer to the cases where there was excessive swelling, and to the advisability of passive motion. It had been his experience that after the first passive motion there is a great flare-up in and around the seat of the fracture, and the inflammation has been so bad in some cases that he had seen a teno-synovitis result. In some cases he had attributed this to the rheumatic tendency of the patient.

HERNIA OF URINARY BLADDER COMPLICATING INGUINAL HERNIA.

DR. ROBERT G. LECONTE reported a case of inguinal hernia complicated by firm adhesions of the intestine to the sac, of the sac to the surrounding tissues, with a concealed hydrocele of the cord, and evidently a partial protrusion of the bladder. The patient was a man, fifty-four years of age, who presented himself at the Methodist Episcopal Hospital with a right scrotal hernia, the size of a large orange. His history was as follows: While engaged in active service during the war, in 1861, he was lifting a heavy log, and felt something give way in the region of the groin. On examining himself he found a very tender painful lump the size of a walnut in the right groin. This was reduced and a truss applied, which he wore for six weeks and then abandoned it. Fifteen years later he procured another truss, which he has worn off and on up to the last year, when he again abandoned it owing to pain. The tumor steadily increased in size, and he would occasionally have attacks of pain, sufficiently severe to

prevent his working for a few days. He claimed he had always been able to reduce the tumor. On examination the external and internal rings were found large and lax, and close together, and the hernia could only be partially reduced, and recurred instantly on removing the pressure. There were no urinary complications or any history of such.

March 9, 1896, the patient was etherized and the incision made for radical cure after the method of Bassini. The cord with the sac were hooked up with difficulty from the surrounding tissue owing to strong adhesions. In attempting to separate the sac from the cord an encysted hydrocele was discovered. The hydrocele was tortuous, as thick as a man's thumb, and covered with a thin transparent membrane. This was punctured and about two ounces of a thin pale-yellow, non-odorous fluid escaped. In a further attempt at separation, the sac was ruptured and showed the omentum and part of the large intestine firmly adherent. The sac was then opened more extensively, the omentum ligated, and returned to the abdominal cavity. The large intestine was so firmly adherent, and resisted separation so strongly, that parts of the sac had to be ligated and returned to the abdominal cavity with the intestine. The wound now presented a large, raw bleeding surface with shreds of sac and bits of adhesion everywhere and most landmarks gone.

The remains of the sac were collected as well as possible with hæmostatic forceps, still further freed at the internal ring, and the whole ligatured and returned to the abdomen. The scrotal portion of the sac was allowed to remain untouched. In sewing up the floor of the new canal, interrupted sutures of silkworm gut were buried. The rest of the operation was as usual, except that the fascia above the internal ring had been opened for half an inch and required two sutures to close it. No drainage was used. The wound was dressed with sterile gauze, sealed around the edges with collodion, and a spica applied. The bladder was not recognized during any part of the operation.

Time of operation one and a half hours. The patient took ether very badly and resisted constantly. Reaction took place slowly, vomiting was excessive, and tympany soon began to appear. Twelve hours after operation no urine had been voided, the catheter was passed and eight ounces of thick bloody fluid, with a urinous odor, was drawn. This clotted very shortly on standing. The pain in the abdomen was very severe and morphine had to be given. Bloody

urine was again drawn, but this time it did not clot. Symptoms of obstruction rapidly became more prominent, excessive tympany, constant vomiting, greater weakness, and no flatus. Forty hours after operation he was again etherized and the wound reopened. About a pint and a half of bloody urinous fluid immediately escaped. The patient's condition was so alarming that it was deemed advisable not to make any examination of the abdominal cavity, and a glass drain was inserted and he was removed from the table. The shock following was profound; temperature 95⅘° F.; pulse 160 and over. Reaction took place very slowly. He was fed with nutritive enemata, and freely stimulated by hypodermics. The pain was allayed, the vomiting decreased, and the tympany also was not so great. His bowels were freely moved the next day, he was catheterized every two hours and some urine was drawn each time, although he continued to pass it through the abdominal wound. At the end of a week all the urine was being voided through the catheter, and none from the wound. Drainage was good and had decreased to a drachm or two every three or four hours. The tube was removed and a gauze drain substituted. The wound looked well, and his improvement was continuous. Four days later the wound became infected, the abdominal sinus enlarged, and pus began to flow. The wound of the bladder reopened and discharged urine.

The glass drain was reinserted and the cavity frequently washed out. The wound took on an ugly appearance with sloughs and necrosis of the surrounding fascia. His temperature became hectic and his condition was again serious. The sloughs separated, granulations again became healthy, but pus continued to flow from the abdominal sinus, although in lessened amount.

His condition became variable, improving for two or three days and then declining again, but on the whole there was a slight tendency for the better. Some days all the urine was voided through the catheter and the next it would be equally divided with the wound. However, on the whole he was improving until the thirty-seventh day after operation when a change occurred for the worse. It was during the first very hot weather this spring. He declined rapidly, symptoms of septic absorption appeared, and death ensued forty days after operation.

The post-mortem examination, made by the resident, showed that the sinus ran downward and inward into the loose connective tissue surrounding the bladder below its peritoneal covering. This

communicated directly with the bladder and contained several drachms of pus. Another sinus, broad enough to admit three fingers, extended to the brim of the pelvis, beneath the pelvic peritoneum. Over this the appendix was adherent. The peritoneum apparently was not open and did not communicate with the sinus.

The etiology of hernia of the bladder is not yet well understood or explained. Macready, in his "Treatise on Rupture," conjectures that there are at least three conditions which must concur to produce a vesical hernia,—a sufficient opening in the abdominal parietes; a bladder so much distended or displaced that a part of its wall comes in contact with the opening; and a bladder whose wall is so distensible that it yields readily to the intra-abdominal pressure or to the hydrostatic pressure within itself. Garangeot observed that when the portion of the bladder covered by peritoneum is drawn through the inguinal canal, there will be two hernias, one of the intestine in front and one of the bladder behind. This combination has been noticed in a large proportion of these ruptures, so that it is supposed an inguinal hernia may drag the peritoneum between the mouth of the sac and the bladder till that organ is sufficiently displaced to enter the ring. According to Despres an ordinary hernial sac may be reduced into the abdomen after its contents, may there become adherent to the bladder, and be again protruded carrying the bladder with it. Verdier was of the opinion that the bladder usually came out first, and that the intestinal hernia was secondary. Whatever the cause, Macready observes that in a large majority of cases this hernia is found in the scrotum of elderly males, and though they may have suffered for years, and even since childhood, from inguinal hernia, the symptoms which indicate the presence of the bladder come on only late in life. Of the thirty or more cases reported, in but few was the bladder recognized before operation, as no symptoms pointing to it were present. Of those diagnosed during operation, the diagnosis was frequently made by incising the herniated portion of the bladder, when the true state of the case became apparent. Again, in another group, and their number is probably not so small, the first knowledge of involvement of the bladder was not manifested until several hours after operation, when the symptoms pointing to injury of that viscus developed. The difficulty of recognition in some of these cases is undoubtedly due to the fact that the portion of bladder descended is uncovered by peritoneum, and as this is pushed or pulled towards the scrotum, it becomes so intimately con-

nected with the posterior wall of the sac as not to be differentiated from it except by its greater thickness.

In this age of radical cure of hernia, it is well that we should bear in mind the possibility of this complication, especially when operating on elderly males.

DR. GEORGE E. SHOEMAKER said that possibly the buried sutures had been accidentally introduced through the bladder wall; which may be very thin and closely adherent to an inflamed and thickened sac. When the bladder is thus brought close to the internal ring and is not recognized at the time of the operation, one may very readily put a suture into it, and it occurred to him that possibly this was the cause of the trouble, and that it had never been a case of hernia of the bladder at all.

SPONTANEOUS DISAPPEARANCE OF A LARGE RETROPERITONEAL TUMOR AFTER ABDOMINAL SECTION AND EXAMINATION.

DR. JAMES M. BARTON presented the following case: A man, aged twenty-six years, a teacher, from Southern Virginia, was brought, to him in June, 1895, by Dr. Mason McCollin of this city. He had a tumor about the size of a cocoanut in the upper and left side of the abdomen; it extended from the apex of the ninth rib to two inches below the level of the umbilicus, it filled the left side of the upper portion of the abdomen and extended one inch to the right of the umbilicus. The abdominal wall over it was elevated about one inch. The tumor was about the density of a rather hard sarcoma, fairly regular in its outline, but slightly movable and, apparently, firmly attached at its base.

It pulsated strongly, but there was no expansile pulsation and no "bruit." Strong pressure on the tumor affected both femorals, showing that much of the pulsation came from the aorta. There were no gastric and no intestinal symptoms, no evidences of obstruction. There was no blood in the urine or other symptom of disease of the kidney. There was no fever.

His family history was negative. He first noticed the tumor about six months before, when it was about two-thirds its present size. He suffered considerable pain and distress, he could not straighten himself, and walked with difficulty. He could not sleep more than two hours at a time at night owing to pain, and while con-

tinuing his occupation as a teacher he was continually interrupted by attacks of pain; he had lost twenty-five pounds in weight.

On June 27, at Jefferson College Hospital, Dr. Barton opened the abdomen by a seven-inch incision, partly in the median line and partly to the left of the median line to avoid an adhesion of the tumor to the abdominal wall. There was considerable bleeding from several greatly dilated vessels. The tumor was found to be about seven inches in its longer diameter, and laid between the two leaflets of the descending mesocolon, it had distended and filled this space quite fully, so that the colon was in contact with the tumor. It had, through the inner leaflet of the mesocolon, attached itself to the anterior abdominal wall by an adhesion about two and a half inches long by one wide, the descending colon lay to the left of this adhesion and closely in contact with the tumor. Through the outer leaflet of the descending mesocolon the tumor had formed numerous adhesions to the small intestines.

All of the vessels, both of the tumor and of the mesentery were greatly enlarged and increased in number, several of them being of the size of the femoral artery. The mass itself, though solid and no aneurism, was evidently full of large blood-vessels. At its base it spread out widely and was strongly attached to the posterior abdominal wall. It was regarded as an inoperable sarcoma and the abdomen closed. The wound healed without incident and he was discharged August 6. Before removing the stitches Dr. Barton noticed the absence of the superficial portion of the tumor, but was unwilling to risk the safety of the wound by any deep investigations. Before discharging the patient both Dr. McCollin and Dr. Barton examined his abdomen fully and deeply and failed to find any evidences of the growth whatever; this was less than forty days after the operation. On examination of the patient, ten months after the operation, he is still unable to find any trace of the growth. The man is in perfect health and has gained thirty-five pounds in weight. The patient was seen and examined both before and after the operation by quite a number of physicians, among whom were Dr. W. S. Taylor and Drs. John and Edward Hollingsworth, of Mt. Airy, N. C., Drs. Morris J. Lewis, W. Joseph Hearn, S. Mason McCollin, Thomas G. Ashton, J. T. Rugh, of Philadelphia. The three latter were among those present at the operation. Among the few cases of spontaneous disappearance of solid abdominal tumors reported are the following:

At a meeting of the Royal Medical and Surgical Society of Eng-

land, held in January, 1894, Mr. Greig Smith reported three cases, the leading features in which were, "The presence of a solid tumor in the abdomen, absence of pyrexia, clinical evidence of malignancy on abdominal section, and ultimate disappearance of the tumor with complete restoration to health." The first case was a young man, aged twenty-five years. Intestinal obstruction existed due to a solid tumor as large as a cocoanut situated in the lower abdomen. The tumor being on inspection diagnosed as malignant and being adherent to intestines was not disturbed. Enterostomy was performed for the obstruction. The tumor slowly diminished in size, and six months later, when the abdomen was opened for the performance of enterorrhaphy, it was found to have disappeared. The patient, after four years and a half, continued in good health."

"In the second case, a woman of fifty-five years, the tumor lay in the umbilical region and was adherent at and around the umbilicus. It was globular in shape and as large as a child's head at birth. On abdominal section the intestines were found adherent on one side. Malignancy was diagnosed and no attempt at removal was made. A small collection of muco-pus at the umbilicus was evacuated and the slight discharge from a fistula which formed there continued for two years. The tumor disappeared, the sinus closed, and the patient is now quite well."

A girl, aged nineteen years, was the subject of the third case. Here the tumor was as large as an eight-months pregnant uterus, filling and distending the upper and right side of the abdomen, but not dipping into the pelvis. On abdominal section the tumor was diagnosed as malignant and unremovable. A fæcal fistula formed; the tumor gradually diminished in size and ultimately disappeared. The intestinal opening was closed by operation and at present the patient is in good health.

Mr. Bland Sutton states that since 1891 he has had four of these disappearing tumors under his care, but in none of them had he to open the intestine.

"One in a boy of eleven years with symptoms of intestinal obstruction." "The signs were like those of an inflamed vermiform appendix, but were referred to the left iliac fossa. A drachm of pus was met with on cutting down, and on opening the peritoneum a large, irregular tumor was found between the layers of the sigmoid flexure, looking like a lympho-sarcoma." "The wound was closed and a gloomy prognosis given, but the tumor disappeared."

His second case was in a woman, aged fifty years, with symptoms of intestinal obstruction. "He opened the abdomen in the middle line and found what looked like cancer of the sigmoid flexure adherent to the uterus. The wound was closed without further interference." "This occurred about the middle of 1891, and since then she has led an active and industrious life and been free from bowel trouble of any kind."

A number of theories have been advanced to account for the formation of these growths and to explain their character. Chronic peritonitis, accompanied by adhesion of intestine and by the accumulation of scybala; tubercular peritonitis; myomatous tumors; tubercular tumors; actinomycosis.

The favorite theory, that held by Mr. Greig Smith, is that the origin of the tumors in question depends upon the process of phagocytosis and the heaping up of embryonic protective cells around a minute fistulous opening communicating with intestine." Mr. Greig Smith further states, "The suggestion as to the possible influence of Meckel's diverticulum is important, and in all three situations where the tumors were found, such a diverticulum, if leaking, would account for the condition exactly."

The theory of a leaking fistula seems to be scarcely as satisfactory as an explanation in the case exhibited by Dr. Barton as in the others. In most of the other cases an operation was performed on the growth or on the surrounding intestines which might have had something to do with the cessation of the supposed leakage and the disappearance of the growth. In this case, however, nothing was done to the growth or the surrounding intestines, and yet it began to disappear even more quickly than in the cases quoted.

The situation of the tumor was such that no leakage from Meckel's diverticulum could have had anything to do with its production. If due to a fistula in the intestine it could only have been in the posterior surface of the descending colon or in a false diverticulum at this point, and this is a favorite position for them to develop in, though nothing was seen to indicate the presence of one.

From the strongly-marked enlargement of the arteries in the neighborhood of the growth, it is probable that it began its career near to and probably slightly compressing the aorta. And if the growth was a mass of embryonic tissue thrown out as a protective against an irritant leaking through a fistula, that fistula was quite as likely to have been in the ureter as in the intestine.