STATED MEETING, DECEMBER 5, 1904.

The President, HENRY R. WHARTON, M.D., in the Chair.

CONGENITAL DEFICIENCIES OF BONES OF FOOT AND HAND.

DR. DE FOREST WILLARD presented a girl, eleven years of age, an only child; no hereditary or known cause for deformities. At birth her left foot was noticed to be almost in a straight line with the leg. When she commenced to walk she was uncared for, and locomotion, until she was eleven years of age, was accomplished directly upon the dorsum of the foot, pushing the tarsus and metatarsus farther back until at time of examination she was walking with the foot absolutely reversed, the extremity of the shortened tibia being the anterior point of weight-bearing, and the dorsum of the astragalus and metatarsals being the rear point of support, the toes looking directly backward (Fig. 1). As the leg was six inches shorter than the other, from lack of development, she progressed only by bending the other knee sufficiently to accommodate the short leg. The calcaneum, as will be seen by the skiagraph (Fig. 2), had been gradually pushed up behind the tibia, and was lying horizontally to the axis of the former. Other tarsal bones absent except portion of astragalus; fibula absent. The right foot and leg were normal. The right hand had but three fingers. The left hand was a single mass like a flipper or mitten, without any division, and could not be flexed (Fig. 3). The skiagraph showed, however, that there was a rudimentary carpus and metacarpus; that the phalangeal bones of two fingers were present, with portions of the bones of the middle finger (Fig. 4).

The web was divided and the intermediate portions of bone removed; flaps were turned in and two fingers secured, which already (six weeks later) can be moved laterally sufficiently to permit the picking up of a pin, and will prove very useful.

The problem with the foot was a difficult one. An ampu-

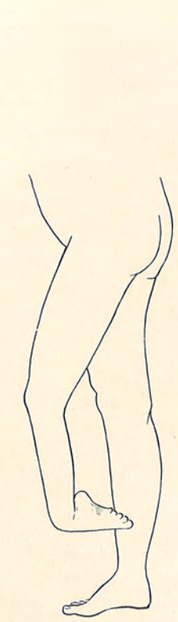

FIG. 1.—Walking on dorsum of foot. Toes distinctly backward.

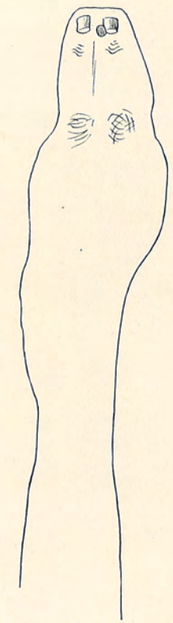

FIG. 3.—Left hand.

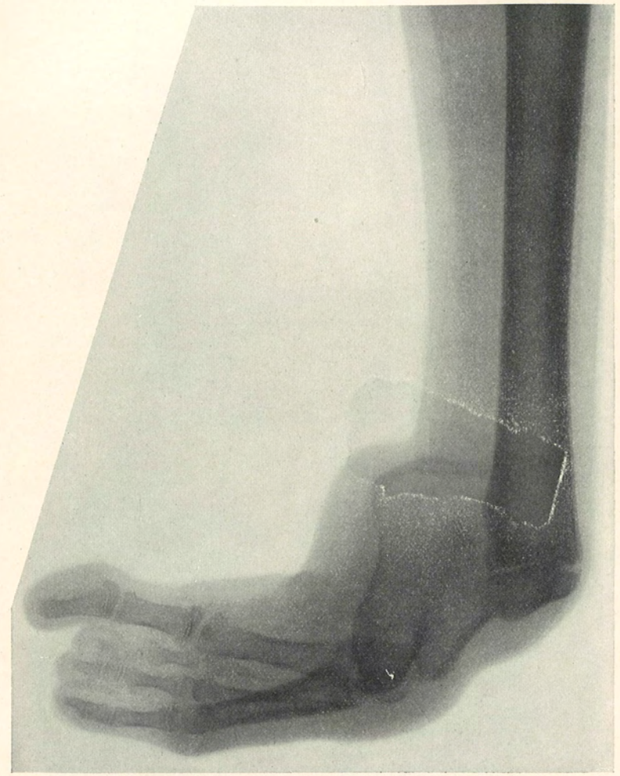

FIG. 2.—Congenital deficiencies of bones of foot.

FIG. 4.—Congenital deficiencies of bones of hand.

tation would have been the simplest solution, but would have left the child with a very short leg. It seemed desirable not to disturb the lower tibial epiphysis, but to stimulate growth to adult life, or at least to puberty. To bring the posteriorly displaced os calcis to a normal right-angled position with the leg would have required resection not only of considerable portions of the tarsus, but also of the end of the tibia, and, as the leg would have still been six inches short, the use of an appliance for locomotion would have put a severe strain upon the ankle. It was therefore decided to bring the foot forward sufficiently only to permit the child to walk upon her phalanges in the equinus position, thus stimulating full growth of the leg as long as possible. An extension cork shoe, four inches thick, with lateral steel supports, will permit in time a good walking apparatus, leaving the question of amputation to be determined when adult life is reached.

The straightening process was accomplished by forcing the foot forward with powerful wrenches until the tarsus and metatarsus were brought into a forward obtuse angle with the tibia, and the phalanges were dorsal hyperextended to put them in the best position for weight-bearing. A gypsum dressing readily held the parts *in situ* for four weeks, after which walking was encouraged. As the operation was performed only six weeks since, the foot is, of course, still sensitive, but the prospects for a walking member are good.

DR. G. G. DAVIS said the important point in these cases is to determine the proper time for interference. He is now caring for a child of two years who has congenital deficiency of the fibula which allows the foot to turn outward and assume a valgus position. In these cases of marked deformity one is inclined to resort to immediate amputation. In Dr. Willard's case, however, the child has kept her foot until the age of eleven, and she now seems able to support the limb upon the toes, which is superior to an artificial leg. How early is it advisable to interfere in these cases? One can either amputate or fix the foot into a longitudinal position. These limbs do not grow so fast as normal ones, and it is advisable to use appliances which do not interfere with the epiphyses to support the child while the limb is growing. When the growth is attained, some operation of turning the foot may allow an increase of several inches in

length of the limb, and avoid the necessity of an artificial leg. In his case, Dr. Davis can keep the foot at a right angle to the leg, and with the addition of a cork shoe four inches thick the child can walk, and even play with other children. Meantime the bones are growing.

EXSTROPHY OF THE BLADDER.

Dr. Richard H. Harte presented a boy, aged nine years, who was referred to him by Dr. T. S. K. Morton in April, 1901. He was fairly well nourished, with a family history absolutely negative. On admission to the Pennsylvania Hospital he presented all the characteristic signs of exstrophy of the bladder, with an absence of the anterior abdominal as well as the bladder wall, causing a bulging forward of its posterior surface, the two presenting an exposed area about the size of an orange. At the bottom of this protrusion could readily be seen the ureters as two well-marked papillæ, from which the urine was discharging. The surrounding tissues were red, inflamed, and excoriated from the constant flow of urine. The penis was rudimentary and with a marked epispadias. A small hernia existed on both sides, with undescended testicles. There was apparently no lack in the bony development about the pelvis. After careful consideration of the existing conditions, it was thought that the anterior defect could be closed by a plastic operation. The method which naturally suggested itself was that recommended by Wood. Before anything could be done, however, it was necessary to get rid of all the inflamed and excoriated condition which presented around the part. The child was placed in bed with a large wet boric acid solution compress over the bladder, which was changed frequently in order to allow as little urine as possible to collect, or come in contact with the irritated surface. This condition responded quickly to treatment, and in a few days the part presented practically a normal condition. Two weeks later the patient was etherized and a bellows-shaped flap reflected from the abdomen and brought down and stitched to the bladder margin after freshening the edges of the bladder defect. The result desired was that the handle portion of the bellows-shaped flap should correspond to and form a roof to the defective urethra. Before this flap was made, the area was outlined carefully with

an aniline pencil. The tissues about the umbilicus were so thin that great difficulty was experienced in securing sufficient thickness of flap. This flap was then turned upon itself and brought out and stitched to the denuded edge of the bladder and upper surface of the penis, thus closing in the defect and leaving a fascial covered surface anterior, the cutaneous surface now forming the anterior wall of the bladder and corresponding to what ordinarily should be its mucous surface. To give a complete double cutaneous covering to the bladder, two flaps were dissected from the region of the groin and swung round upon their bases and stitched together in the median line. The upper wound was approximated as nearly as possible with silkworm-gut sutures and allowed to granulate. The sutures used to fasten the flap to the posterior portion of the bladder were buried catgut, and for the superficial stitches silkworm gut and silk were employed. The uppermost wound resulting from the flap formation was closed with harelip pins and sutures of silkworm gut. There was an incision made in the left side to relieve tension on the lateral flap, but with indifferent success, and this wound was allowed to granulate.

The time consumed by this operation was one hour and twenty minutes. There was no shock, and the child reacted well. A small, soft rubber drainage-tube was placed in the newly formed bladder and the whole surface dressed with a large, wet boric acid compress, which was regularly changed every two hours to keep the part perfectly clean and free from any urinary collection. In two weeks all the stitches were removed and the wounds were in good condition. There was a slight defect remaining at the root of the penis through which the urine escaped. The child left the hospital four months after his admission, with the understanding that a subsequent operation was to be undertaken to further perfect this local condition.

In October of the same year he was again operated upon at the Episcopal Hospital in the hopes of securing a more perfect bladder. To do this Dr. Harte dissected out the rudimentary glans from the penis, thus leaving a loose flap of skin hanging down over the scrotum. Through this flap he made a fistulous opening with the Paquelin cautery and allowed it to cicatrize.

In March, 1902, the boy was again admitted to the Penn-

sylvania Hospital, and the edges of the lower flap freshened and approximated to the still defective lower portion of the bladder, and closed with two rows of stitches, the top row being buried catgut and the superficial row being silk. This flap united fairly well, with the exception of a few fistulous gaps along its margin, through which urine escaped from time to time. The patient left the hospital, but again returned in May, 1903.

At this time the edges of some of the small fistulæ were refreshed and closed with silk sutures, which proved quite satisfactory, except for a few little pin-point openings through which a little urine escaped. Finally, these openings were cauterized with a small electric cautery, and he was fairly successful in closing them. While in the hospital at this time the patient contracted the measles, so that any further operative interference was for the time contraindicated. He left the hospital in August, 1903. He returned again in the spring of 1904, when Dr. Harte succeeded in closing the remainder of these openings. He then had him measured for a urinal, which he found could be worn without any difficulty. To make this even more perfect, he is having a small retaining catheter placed in the orifice of the extemporized bladder to convey the urine down into the urinal without the escape of urine when the patient assumed a sitting posture, thus keeping the surrounding parts absolutely dry and free from urinary contact. He now attends school, and to external appearances is perfectly normal.

Dr. Harte, remarking upon this case, said that exstrophy, or extroversion of the bladder, is by far one of the most common congenital defects to be found in this viscus, and its frequency of occurrence makes it a subject of no little surgical importance. This difficulty is met with much more frequently in the male than in the female. It is attributed to many causes, none of which are fully understood, such as the rupture of the allantois during intra-uterine life, possibly as the result of a fall on the part of the mother. A more recent investigator on the subject, Reichel, bears out the theory of the older surgeons, that the majority of the malformations of the urinary bladder and urethra, and especially clefts of these organs, are simple failures of development. These different forms of abdominal clefts and epispadias occur on account of total or partial failure of fusion on the margins of the primitive embryonic structure. It is possible that the pressure of an amniotic fold may interfere with such fusion.

The deformity, which is more common in the male, consists in the absence of the anterior wall of the bladder with a corresponding deficiency of the lower abdominal parietes, and frequently the pubic symphysis. The penis in the male is epispadic and shortened, and the clitoris in the female is split in two portions, corresponding to the nympha, the anterior commissure of the vulva being wanting, and the bladder and urethra thus opening between the labia and directly into, or immediately above, the vagina. The uterus is usually well formed. The scrotum not infrequently contains a hernia on one or both sides. The rectus muscle is usually separated and passes out to its attachment on the pubic bone. In a certain percentage of cases this separation is continued up to almost their costal attachment, in which cases there is no umbilicus.

The appearance of a case of exstrophy of the bladder is quite characteristic. The posterior wall of the bladder covered with mucous membrane is pushed forward by the abdominal viscera and forms a prominent but reducible tumor in the situation of the pubes. The mucous surface, which is red, papillated, and vascular, is continuous at its periphery with the abdominal walls, the juncture being a thin cicatricial appearing edge. At the lower part of the projecting vesicular surface will be seen the orifice of the ureters giving exit to the urine by drops or sometimes a small stream. The head of the penis consists of two thick swellings, beneath which the skin hangs down in the form of an apron. The seminal vesicles with the openings of the seminal canal are visible in the posterior wall of the divided urethra. The prostate may be normal, although it is usually rudimentary and may be wholly wanting.

Treatment.—In dealing with this condition, three methods have been devised. First, removal of the bladder and suture of the ureters in the urethral gutter. Second, implantation of the ureters in the intestine, thus converting the rectum into a cloaca which will tolerate the presence of urine for long periods. And, third, an attempt to form a new bladder by the various plastic methods.

The first method of deviating the urinary stream possesses certain advantages in its simplicity, as usually one operation will suffice, whereas by the other methods considerable time will be required to accomplish a satisfactory result. The bladder is freed

and removed without opening the peritoneal cavity. The ureters are loosened for a short distance and stitched to the urethral gutter. The defect in the abdominal wall is closed by lateral flaps, which are separated below and brought to the median line. This leaves the orifices of the ureters well exposed, so that possibly they can be conveyed to a urinal, thus collecting all the urine. A simple urinal could then be worn on account of the more favorable situation of the ureters. By this operation the patient is freed from the severe pain caused by the ulceration of the prolapsed mucous membrane and from the risk of the inflammatory process extending to the kidneys. He is also enabled by this apparatus to follow many of the vocations of life, and thus become a useful member of society.

The second method, that of implantation of the ureters into the rectum, was devised by Simon, who bases his theory on the fact that in many animals a cloaca serves as a common receptacle for urine and fæces; and, further, that sometimes at birth the ureters are found opening into the rectum, and that patients, with a fistula between the bladder and rectum, in time learn to control more or less the escape of urine from the anus. In experiments on animals it has been found that the mucous membrane of the rectum was capable of withstanding the constant irritation of the urine, and that the sphincter of the rectum has succeeded in preventing its escape. In a case operated upon by Dr. Dudley Allen, of Cleveland, he was able to make use of the rectum with most satisfactory results, so that the patient was able to follow the vocation of a clerk without any apparent inconvenience on the part of controlling his urine. But, unfortunately, many of these cases thus operated upon terminate in a nephritis, owing to an ascending pyelitis, the result of micro-organisms finding their way up the ureters. When this operation is resorted to, no doubt the risk of ascending ureteritis can be lessened by transplanting into the rectum an elliptical piece of the base of the bladder containing the ureters; if this portion of the bladder is transplanted well up into the sigmoid instead of the rectum, there will possibly be less chance of infection, as this portion of the bowel is usually empty, and consequently would be free from fluid, the escaping urine quickly gravitating to the rectum. It must be remembered, however, that this operation, though very brilliantly conceived, is accompanied with no little risk as simply the result of the rather complicated operative procedure, which must necessarily be within the peritoneal cavity.

The plastic operations, varying more or less in their details, have been employed for the relief of exstrophy of the bladder with most gratifying results in many instances. To Joseph Pancoast, of this city, belongs the honor of having in 1858 performed the first successful plastic operation for exstrophy of the bladder. His method consisted in taking flaps from the groin and inverting them over the protruded organ, attaching them together in the median line, thus forming a broad granulating surface which slowly cicatrized.

Professor John Wood, of England, operated upon a large number of cases, employing the method which is usually known by his name. This was the method employed in the case presented, with a slight modification. It consists in the use of three flaps, one taken from the umbilical region and inverted over the bladder, and the other two taken from each groin and united over the first one, which they cover in. The advantage of the inverted umbilical flap is that it effectually prevents the escape of urine in the upward direction, while the groin flaps cover in the raw surface of the umbilical flap without undue tension, and, having broad bases, are in no danger of sloughing. In the case of a male it may be possible to form a roof for the urethra at a subsequent operation by inverting flaps on the newly formed covering of the bladder and from the sides of the penis. By this operation the patient is placed in a very comfortable condition. Incontinence of urine exists to a certain extent, and necessarily continues, requiring the use of a urinal or some similar contrivance, but the bladder is effectually protected from irritation and excoriation is readily prevented. The principal points which require attention in the after-treatment are to prevent tension on the flap, which encourages the contraction of the granulating surfaces; this can be done by keeping the patient in an almost sitting position, with the knees flexed over a pillow. In an adult, trouble may be experienced by the growth of the pudendal hairs on the inverted flap; and it may be necessary from time to time to practise evulsion with suitable forceps until the inverted surface shall have lost its cutaneous character and becomes assimilated to mucous membrane. This condition, however, is not likely to occur if the patient is operated upon early in life.

To relieve the vesical catarrh and the deposit of phosphates in and about the outlet of the extemporized bladder, injections of dilute acetic or muriatic acid will be found the most satisfactory way of dealing with this sometimes annoying condition.

Dr. J. B. Roberts said he had never succeeded in closing an exstrophy of the bladder as well as the one exhibited. The nearest approach to it was one in which he made an opening for the urine in the perineum, keeping it open by rubber tubes while the bladder was closed in from the top. Several little fistulas gave trouble, as in Dr. Harte's case. A year or two after the operation the bladder was found to be completely filled with small stones; operation for their removal terminated fatally from previous involvement of the kidney by an ascending infection. Of late years Dr. Roberts is inclined not to interfere in cases of exstrophy of the bladder unless they are very large; small ones are probably better let alone. In one patient, a young lady, he had intended to transplant the ureters into the rectum, but, greatly to his satisfaction, she did not return for the operation. Dr. Roberts asked the opinion of the Academy as to the advisability of making an abdominal incision, cutting the ureters high up, and transplanting them into the small intestine.

Dr. De Forest Willard said that, when operating upon boys, the surgeon is apt to forget that hair will grow on the turned-in flap after puberty. Upon these hairs the urinary sediment will deposit and form calculi. He has secured better results by not inverting the umbilical flap. He makes it shallower than is usually recommended, and slides it down with the raw surface inward; two large lateral flaps are then made. He had found long lateral incisions of distinct value in relieving tension. Difficulty is always met in satisfactorily closing the lower part of the bladder. He considers very good the result secured by Dr. Harte. In girls and women the hair does not extend so far towards the umbilicus, and a smoother and better flap can be obtained.

Dr. John H. Gibson said the reported cases of transplantation of the ureters, with the trigone of the bladder, into the rectum seemed to indicate the lines along which future operations would be conducted. In the case exhibited, every one would admit that the plastic art had almost reached its limit, and yet the boy is still in an unfortunate condition. Early attempts at

transplantation of the ureters failed, but later improvements gave better results, and the technique has now been still more improved by carrying the ureters into the sigmoid. This increases the danger of interfering with the blood-supply of the lower end of the ureters, but the operation can be safely done. If this operation continues to give as good results, plastic operations for complete exstrophy will cease to be employed.

Dr. Horwitz said that he would be inclined to regard Dr. Roberts's suggestion as a very dangerous expedient. It is well known that if a colored liquid be injected into the bladder it gradually works its way up the course of the ureter, and is ultimately found in the pelvis of the kidney. Should the ureter be cut off close to the pelvis of the kidney and anastomosed to a loop of the small intestine, the danger of the development of a pyonephrosis would be greatly enhanced.

Dr. Harte, in closing, said all surgeons recognized these cases as particularly difficult and trying. The one reported was exceptionally so, and the boy's condition when first seen was really pitiable. In considering cases of exstrophy, it is difficult to decide upon the operative method to employ. Theoretically, that of Simon seems very simple and satisfactory, but its mortality is high, and, if the patient recovers from the operation, he is almost sure to develop nephritis. Dr. Harte would regard the suggestion of Dr. Roberts to cut and implant the ureters high up as a serious and unscientific operation, as the fluid contents of the small intestine would readily pass up the ureter and produce infection. Dissecting out the trigone and transplanting it into the rectum carries along the valves of the ureters, and this tends to prevent ascending infection. If transplanted into the sigmoid, there is further advantage of the urine dropping away from the ureteral orifices; if placed in the rectum, the outlets are nearly constantly bathed in urines and fæces. In the case exhibited, Dr. Harte believes he tried to do too much at the first operation. His intention was eventually to utilize the penis in closing in the lower part of the opening, and the umbilical flap was fashioned for that purpose, but this step was not a success. The interior of the bladder now remains in an irritated condition, and there is a tendency towards collection of phosphates, but the latter are readily removed by weak acid solutions. If a child be operated on early, the hair follicles in the inverted

flap are destroyed, and there is no difficulty from this source; if done later, the hair will grow and give trouble by becoming encrusted with a deposit of phosphates.

POSTERIOR DISLOCATION OF THE ELBOW, WITH FRACTURE OF THE CONDYLES OF THE HUMERUS; REDUCTION BY OPEN OPERATION SIX WEEKS AFTER THE INJURY.

Dr. Henry R. Wharton detailed the history of a man, aged twenty-one years, who was admitted to the surgical ward of the Presbyterian Hospital, July 19, 1904, with the following history:

About a month before his admission to the hospital, he received a fall, injuring his left elbow. He was under treatment, but the nature of the treatment is not known. When admitted to the hospital, his left arm was extended and rigid at the elbow, and there was marked thickening of the tissues about the joint. There was apparent displacement backward of the bones of the forearm. This diagnosis was confirmed by an X-ray examination, which showed also a united fracture of the lower end of the humerus. Under anæsthesia, an attempt was made to reduce the dislocation which was unsuccessful.

On August 1 the patient was anæsthetized; a longitudinal incision was made over the posterior aspect of the elbow about six inches in length, and the dissection was carried down until the bones were exposed. The tendon of the triceps muscle was divided some distance above its attachment to the ulna; the capsule of the joint and lateral ligaments were freely divided, and by manipulation the bones of the forearm were drawn downward, and the articular surfaces brought into their normal relation with the humeral articulation. It was found, however, that the reduction could only be maintained when the forearm was brought into a position at a right angle with the arm, as in the healing of the fracture there had been a slight anterior projection of the lower fragment of the humerus. After reducing the dislocation, a drainage-tube was introduced into the wound, and the capsular structure and the divided tendon of the triceps muscle were approximated with chromicized catgut suture. As the forearm had to be kept at a right angle to the arm, some difficulty was experienced in approximating these structures. The superficial wound was closed, and a plaster-of-Paris bandage was

applied from the tips of the fingers to the axilla. The patient did well after the operation, and at the end of three weeks the wound was sufficiently healed to allow him to begin the attempt to make motions of the elbow-joint.

When he left the hospital, September 29, he had fair motion at the elbow-joint. Examination at the present time shows that the patient has a very slight disability of the arm, and was doing ordinary laboring work.

FRACTURE OF SECOND CERVICAL VERTEBRA, WITH RECOVERY.

Dr. Orville Horwitz exhibited a man who one year previously had sustained a fracture of the second cervical vertebra. The man had been injured by the fall of a heavy weight striking him on the shoulder and knocking him over backward, striking the back of his neck on a "roll of goods." At first he was stunned. On recovering consciousness he was enabled to get into a trolley-car and ride for a distance of about eight miles. He then walked to his home, which was about a quarter of a mile. He sent for his physician, who found him suffering from great pain and stiffness in the back of the neck. No displacement or irregularity of the spine could be detected. There was no anæsthesia or paralysis. The next morning there was complete paralysis, which lasted for about eight days. The patient was confined to the recumbent posture for about six months. It was found that he was more comfortable propped up in an armchair than he was in bed. At the present time the neck is stiff. A well-marked, hard swelling can be easily felt over the spinous process of the second cervical vertebra. He can do light work and lift about twelve pounds. The case belongs to the class spoken of by Mr. Simon as "latent fracture of the spine." A report of a number of similar cases is to be found in the literature of the subject, notably those of Phillips, Cline, Bayard, Smith, May, Eberman, Ashhurst, Parker, and Debenham. The points of interest in the case are that an individual with so serious an injury as fracture of the second cervical vertebra should be able to ride eight miles in a trolley-car; then walk for a quarter of a mile to his home; the appearance of paralysis on the second day, which disappeared in a week, and, finally, a gradual but almost complete recovery.

Dr. De Forest Willard recalled two cases in his practice of recovery following fracture of a cervical vertebra. One was a boy who complained of severe pain in his neck, and there was slight discoverable movement of the fragments. The patient was kept for four months in a plaster neck dressing, and all the functions except rotation returned. In several other cases fracture was suspected, or at first considered certain, because of pain and rigidity, but rapid recovery indicated that the symptoms were due to hæmorrhage within the spinal canal. In Dr. Horwitz's case, however, recovery was rapid, and yet a fracture was present. A peculiar case also occurring some years ago was that of a man who, by a fall down an elevator shaft, fractured his odontoid process, yet walked fourteen squares, complaining only of severe pain in his neck. The following morning he felt so well that he wished to go back to work, but this was prevented. In less than twenty-four hours he was paralyzed below the level of the fracture, and in another twenty-four hours was dead. The odontoid was found to be broken entirely through; but displacement of the fragment did not take place until the second day, when resultant pressure on the cord caused death.

Dr. Richard H. Harte said the case reported was an illustration of the fact that severe injuries in the neck may give rise to few or no symptoms. He cited the case of a brakeman who was struck by the step of a caboose, sustaining fractures of the jaw and clavicle. This man walked more than a mile to the hospital, where his fractures were dressed and he was put to bed. He did not complain of his neck, but shortly after turned in bed and died instantly. Autopsy revealed a complete fracture of the odontoid process, and also of the bodies and spinous process of some of the cervical vertebræ. Dr. Harte believes that many fractures of the cervical vertebræ go unrecognized; the man just mentioned might have recovered from the other vertebral fractures if the odontoid had not been broken. The X-ray now determines the presence of fractures that formerly would not have been diagnosed.

Dr. Francis T. Stewart, in support of Dr. Harte's statement regarding unrecognized fractures of the spine, mentioned two cases in which such injury was not actually suspected, but was revealed by the X-ray during a routine examination. The first case was that of a boy who had been run over by a cart and

had both clavicles fractured. His neck was stiff, as would be expected in such an injury, but there were no symptoms referable to the spine or spinal cord. The X-ray showed a fracture of the arch of the sixth cervical vertebra. The boy recovered. The second case was seen some months after the receipt of injury; the neck was stiff, and the X-ray revealed a fracture of the sixth cervical vertebra. No symptoms referable to the spine had occurred, and no callus had formed. The patient could rock his head anteroposteriorly, but could not turn it from side to side.

Dr. John B. Roberts mentioned the case of a man who slipped and fell squarely on his buttocks. This was followed by paralysis of all the extremities. The man gave a history of an injury to his neck some six months before, at which time a fracture had occurred, and a finger introduced into the mouth could detect a mass in the region of the fourth or fifth cervical vertebra. The probable explanation of the paralysis after the fall is that the sudden jar tore some of the adhesions around the former injury and caused hæmorrhage. This supposition is supported by the fact that in twenty-four hours one arm had entirely, and the other nearly, regained its power. Motion of the legs then gradually returned, followed by sensation. At the end of six months he had almost perfect use of all four extremities. Dr. Roberts had considered the pressure due to blood, but he notes that Dr. Horwitz believes such palsies are caused by serum.

Dr. G. G. Davis said that, if in these cases of fracture paralysis is absolute at the time of injury, the prognosis is bad. He has seen two cases of recovery from apparent fracture of the cervical vertebræ some years after the injury. One is a man who received the fracture thirty years ago, the other a boy; both have deformity of the neck. The man has no paralysis, the boy has partial paralysis of one arm.

LUXATIO ERECTA AT THE SHOULDER.

Dr. C. N. Montgomery reported the case of a man, about sixty-four years of age, who came to the Polyclinic Hospital on the 5th of September, 1904, giving the history that two days previously he had missed his footing on a loose step in the dark and fallen, his right arm being raised in an effort to save himself. Shortly afterwards he was seen by a physician, who told him he

had had a stroke of apoplexy, the limb presumably being paralyzed at that time. Since his injury he had been unable, on account of the pain, to bring his arm to within but little less than a right angle of his body. As he lay on the bed the arm was at an even higher level, his head resting on his hand, a position that secured him the most comfort. On account of the pain it could not be brought to any extent below the horizontal. The head of the humerus was plainly palpable in the axilla below the glenoid cavity. There was paresis of the limb and numbness, sensation being preserved. Traction and pressure were employed for some time; but reduction did not take place till he had received a small amount of ether, when the head of the bone readily slipped into the glenoid cavity. A Velpeau bandage was applied for several days, and thereafter he received treatment at the massage clinic.

When seen about ten weeks later there was considerable wasting of the deltoid and of the arm and forearm muscles. The fingers were flexed, and there was almost no power to grip. Extension of the fingers was almost *nil*. Active pronation of the forearm was fair, but supination was much restricted. He could flex the elbow well. At the shoulder-joint movements were possible in all directions, though much limited. Forced abduction would raise the arm to an angle of only 45° with the body. There was numbness over the outer side of the biceps and back of the upper part of the arm; over the outer side of the elbow and back of the forearm and wrist, not over the hand. Pricking with a pin-point over this area produced a numb sensation.

The marked elevation of the arm in this case of subglenoid dislocation, and the difficulty experienced in attempts to lower it, together with the findings of the radiograph, established the diagnosis of luxatio erecta. This rare condition was first described by Middledorpf and Scharm in 1859. Stimson had been able to collect only eleven cases up to 1899, and Vaughan reported a case in April of this year. It is of interest to note the primary diagnosis of apoplexy, and the effects on the brachial plexus following the two days' pressure before reduction was performed.

Dr. G. G. Davis believes that nearly all dislocation of the shoulder are subcoracoid instead of subglenoid. In all cases the head of the humerus comes out anteriorly to the long head of the triceps muscle. The width of the head covers the entire distance between the long head of the triceps below and the coracoid process above, and moves forward more than downward. The head of the bone is felt in the axilla, even if the dislocation is subcoracoid.

STRANGULATED GANGRENOUS PERFORATED FEMORAL HERNIA WITHOUT SYMPTOMS, COMPLICATED BY SUPPURATING ADENITIS.

Dr. George G. Ross reported the case of a young woman, aged seventeen years, who had a good family and previous personal history. For one year prior to the trouble under consideration, she had had occasional attacks of pain in the right iliac fossa, never severe enough to confine her to bed.

Three days before admission, she noticed a swelling in the right groin, which was painful and tender. On the following day the pain had increased, and the mass had become red and very tender. On the day of admisison the pain was severe, radiating to the right side of the abdomen and down the right thigh. She had one attack of vomiting during the three days. The bowels had not been opened for two days.

On admission the temperature was 101.2° F.; pulse, 100; respirations, 28. Physical examination proved that the heart and lungs were normal. The face was flushed and anxious. The tongue was coated. There was a painful, tender, red, fluctuating mass in the right groin, the pain of which extended to the abdomen and thigh. The patient gave no venereal history or evidences of a venereal lesion. There were no abrasions or foci of infection of the extremity.

Calomel and salts were given, and acted promptly and thoroughly, without pain or marked discomfort. The patient had not vomited or complained of nausea during her stay in the hospital.

A diagnosis of suppurative inguinal adenitis was made, and excision of the inflamed glands was decided upon. A three-inch incision, parallel to Poupart's ligament, was made. There was exposed a mass of suppurating glands, several of which ruptured during the dissection. As the dissection approached the saphenous opening, it became apparent that there was something more

than a simple adenitis to be dealt with. Further search revealed the sac of a femoral hernia containing gangrenous gut with a perforation. When this sac was opened, a fæcal odor escaped. A ligature was thrown about the strangulated gut and securely tied. A median abdominal incision was made, and the gut with the ligature was drawn into the abdominal cavity. Unfortunately, the femoral canal was too small to transmit the ligated gut, and the ligature pulled off, permitting the escape of a small amount of fæcal matter into the peritoneal cavity. An examination of the involved gut proved it to be a part of the cæcum,—the portion between the ileocæcal valve and the appendix, which was placed well to the outer side. This fact accounts for the lack of symptoms of strangulation, as the fæcal circulation was not in the least interfered with.

The opening in the cæcum was closed with Lembert sutures; the peritoneal cavity was flushed, and the wound was closed without drainage. The femoral ring was closed with a purse-string suture, and the lower, or original, wound was closed with silkworm-gut sutures. A gauze drain was inserted, the end coming out at the lower end of the wound. The patient made an uninterrupted recovery.

GANGRENE AND PERFORATION OF THE SMALL BOWEL FOLLOWING RADICAL OPERATION FOR DOUBLE INGUINAL HERNIA.

Dr. Ross also reported the following case: A man, aged fifty-seven years, had worked hard all his life, and used alcohol and tobacco in moderation. He had enteric fever and influenza some years ago. His general health, appetite, bowels, etc., were in good condition. He had double direct incomplete inguinal hernia of fifteen years' standing; and while he said that this had caused very little pain, it had annoyed him so much that he had not been able to work for six months. The heart and lungs appeared to be normal, and an examination of the urine on several successive days showed nothing abnormal in either quantity or quality. He had an arcus senilis and some demonstrable sclerosis of the radials.

Radical operation was advised and accepted. Accordingly, both sides were repaired. It proved to be a double direct incomplete hernia, presenting no difficulty to correct. The sacs

having a broad base were sewed instead of ligated. Neither the bowel nor the omentum was handled, as there was no necessity for so doing.

The day following the operation the patient complained of severe abdominal pain. He was very restless and had an anxious expression. The bowels moved and he expelled flatus frequently. On the two succeeding days his condition remained much the same. There were pain and restlessness, with intervals of quiet and sleep, the bowels moving and passing flatus. On the fourth day he had a bowel movement. He still complained of pain and was very restless. The abdomen was distended. On the fifth day his condition was about the same, except that the temperature rose to 103.2° F.; pulse, 36; respirations, 32. At 4.30 P.M. he expelled flatus, although the abdomen was still distended. He died of peritonitis at 5.35 P.M.

A partial post-mortem through the incisions was made, and the conditions found were as follows:

The incisions had both healed by first intention. The parietal peritoneum was not adherent to the bowel, either by inflammatory adhesion or by stitches. When the peritoneal cavity was opened, a greenish-yellow fluid, containing flakes of lymph, exuded; and the ileum was covered with irregular patches of greenish-yellow exudate, one metre from the ileocæcal valve. The ileum was gangrenous for about twenty-five centimetres, in the centre of which was a perforation four millimetres in diameter. The surrounding intestine was reddish-black. There was a considerable amount of exudate in the lower pelvis. The left kidney was normal. The right showed pale, cortical and medullary substance diminished in amount.

Owing to haste, the mesenteric vessels were not examined carefully for a thrombus. Nevertheless, the reporter believed that this was a case of clogging of the mesenteric arterial radicle of the involved bowel with thrombus due to arteriosclerosis.

VESICAL CALCULUS WITH NUCLEUS OF CHEWING-GUM.

Dr. William J. Taylor exhibited the fragments of a calculus he had removed from the bladder of a boy of eighteen years. One year ago the boy had gonorrhœa, and, to prevent the discharge, had inserted into the penis several masses of chewing-gum. These passed into the bladder and induced cys-

titis. The boy had drifted about under the care of quacks and homœopaths during the year, and calculi had formed upon the gum, four distinct masses of which were removed. Removal through a perineal incision was attempted, but the masses were too large, and a suprapubic operation was necessary. The masses were crumbled in their removal.

Dr. G. G. Ross cited the case of a man, the father of five children, who claimed the use of a catheter was necessary. He lost the catheter, and to replace it he moulded a piece of chewing-gum around the end of a stick, which he inserted through the urethra. It became dislodged by the body heat, and was located in the bladder by the cystoscope and removed through a suprapubic incision. The gum had been in the bladder three weeks, and was found encrusted with salts.

Dr. Horwitz called attention to a somewhat similar case that he had reported some four years ago, in which 280 grains of white wax had been removed from the urinary bladder by means of a suprapubic cystotomy. On admission to the hospital, the individual stated that the wax was in the bladder, but gave rise to no symptoms. Examination of the urine was negative. The mass was easily seen by means of the cystoscope. The wax had been inserted into the urethra, previous to intercourse, for the purpose of preventing pregnancy, and slipped into the bladder whilst performing the sexual act.

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