Clinical Records.

XIV.

CASES OF RESECTION OF JOINTS: WITH OBSERVATIONS.

BY

HENRY LEE, Esq., F.R.C.S.,

SURGEON TO ST. GEORGE'S HOSPITAL.

THE detailed notes of the following cases were furnished by Mr. Thomas Pick, the Surgical Registrar of St. George's Hospital. A few years ago, all the patients whose cases are here given would probably have suffered amputation of the affected parts; but they have all up to the present time, under the treatment adopted, preserved their limbs.

One of the cases affords an example of primary resection, of which there are very few cases upon record. The patient, in this instance, recovered with wonderfully slight disturbance, either local or general; and the parts around were left so little thickened, that the part was more moveable after his recovery than was desirable.

The director used in the fourth case is an instrument little known in England. It was lent to me by Mr. Samuel Wood of Shrewsbury, who, I believe, obtained it from Paris. It consists of a shaft slightly curved and grooved on its convex side (somewhat like an ordinary grooved staff), with a handle which may be bent towards the concave side of the instrument. It is passed behind the part which is to be sawn through, with its concave side next to the bone. It is then turned half round, so that the groove is brought in contact with the bone; the handle is then bent down out of the way, and the bone is divided upon the groove. Great security is thus afforded against wounding any of the soft structures round the joint by the saw, and the bone may, in consequence, be more rapidly sawn through. In ordinary cases, where the bones are disarticulated before they are divided, no such instrument is required. But, in cases where the bones cannot be easily separated, the operation is very much more easily performed by the aid of an instrument such as is now described.

In the fourth of the following cases, the bones were removed without being detached from each other, and their extremities were found united together by fibrous bands. Had an attempt been made, in this instance, to disarticulate the bones, the operation would have been rendered more tedious and difficult. The use of the instrument described rendered this stage of the operation unnecessary.

CASE I. Resection of Knee. Benjamin Bennett, aged 8, was admitted on April 14th, 1863, into Fitzwilliam Ward.

History. Three years previously, he fell out of a small hand-cart and struck his knee. He did not suffer in consequence for some weeks; but then began to complain of pain, which was after a time accompanied by swelling. He became an out-patient at the hospital; and in the spring of 1862 was sent down to the Convalescent Institution at Margate.

Whilst there, an abscess formed above the knee, which continued discharging ever since. He had suffered lately from starting and jumping of the limb at night. He had had no other scrofulous symptoms, and had no cough.

On admission, the left knee was much swollen, and had assumed a somewhat globular form, so that the various prominences of bone could hardly be distinguished; the ends of the bones appeared, however, to be thickened, more especially the internal condyle of the femur and the inner side of the head of the tibia. The swelling had a soft semi-elastic feel, except just below and to the inner side of the patella, where there was evident fluctuation. The knee was maintained in a semi-flexed position; and could not be straightened. On the outer side of the thigh, some inches above the joint, were the remains of an old sinus, from which thin sero-purulent fluid exuded. The two bones could be moved on each other from side to side, producing partial dislocation.

Operation. April 23rd. The patient having been put under the influence of chloroform, a transverse incision was made just below the patella, extending from one condyle to the other; the knee was then forcibly flexed and the patella dissected out; a section of bone was then removed from both the femur and the tibia, not, however, so much as to remove the whole epiphyses. The bone which was left appeared healthy. There was little hæmorrhage, no vessel requiring a ligature. The wound was brought together with silk sutures, and the leg put up in a Macintyre's splint, with a long side splint, and swung in a Salter's cradle.

On examining the parts removed, the synovial membrane was found to be thickened and the crucial ligaments destroyed; the cartilage covering the external condyle was completely gone; that over the internal condyle was eroded in patches; the cartilages of the patella and tibia were also somewhat ulcerated. There was a small collection of pus in the internal condyle; and the bones throughout were somewhat softened and infiltrated with red pulpy fluid.

Vespere. He was very restless, and complained of considerable pain. Pulse 90. No sickness. There was oozing from the wound. He was ordered to have ten minims of laudanum immediately.

April 24th. He slept well during the night, and did not appear in so much pain this morning. The tongue was covered with white fur. His bowels had not acted. Pulse 100, soft, and easily compressible. The wound looked remarkably quiet; the edges were in nice apposition; a little thin serum exuded from the wound. There was some swelling, but no redness; pain was produced by pressure. He was ordered to have beef-tea, eggs, and arrowroot.

April 25th. He had passed a very quiet night, and this morning seemed free from pain. Pulse 98, quiet; tongue clean. The bowels had not acted. Skin hot; appetite improved. The wound looked remarkably quiet; there was no inflammation, and the edges were in nice apposition.

April 26th. He did not sleep so well, and seemed restless. The tongue was furred white. Pulse 90. The wound looked quiet. There was a little pus escaping from one extremity of the wound. Two of the sutures were removed. He was ordered half a roast slice, and half a pint of porter; and three grains of compound rhubarb pill at night, if necessary.

April 28th. He seemed much better. Tongue clean; pulse quiet; bowels open; wound quiet. Two more of the sutures were removed.

May 1st. The wound was very quiet; a little laudable pus exuding from one or two points. Pulse quiet; tongue white. The digestive functions were rather disturbed; he had slight nausea and sickness.

May 3rd. The last suture was removed to-day. The boy appeared to suffer no pain, and the whole appearance of the part was healthy; there was a little healthy discharge.

May 16th. A large abscess had formed in the upper part of the thigh. This was opened. The original wound looked healthy; there was a little discharge from one or two points.

July 1st. There was a perfect union, and very little shortening. The wound was quite healed. He was discharged.

Dec. 22nd. He came to the hospital to show himself. He could walk and run with facility. The knee was ankylosed and slightly bent; the leg was about one inch shorter than the opposite one.

CASE II. *Resection of Elbow.* Kate Wood, aged 15, a dressmaker's assistant, was admitted May 15th, 1863, into Princes Ward.

History. Three months before admission, without assignable cause, she found she was unable to bend the elbow. At this time, there was little pain, but swelling soon supervened; and for the last fortnight there had been starting and jumping at night.

On admission, there was considerable swelling, the joint being of a conical form, the base directed upwards and corresponding with the joint, so that the swelling was principally connected with the bones of the forearm. There was evident fluctuation just below the internal condyle. It was the right elbow. She was a scrofulous looking girl. A free incision was made.

June 27th. Another abscess formed. There was pain on pressing the articular surfaces together. Her general health was worse. The abscess was opened. Quinine and acid, and wine, were ordered.

July 8th. She appeared weaker. She had considerable cough, was restless at night, and complained much of giddiness.

July 11th. The cough had increased, with frothy expectoration. Sonorous *râles* were heard over both lungs.

July 16th. There was less fever and cough.

July 21st. Almost all the chest-symptoms had disappeared. The arm was quieter. There was less swelling.

August 6th. Her general health was very much better. She complained of great pain in the arm; and there was considerable discharge.

August 27th. The patient having been put under the influence of chloroform, an *H*-incision was made down the back of the arm, and the ends of the bones removed. This was somewhat difficult owing to the immense infiltration and thickening around. The arm was put upon a short angular splint, and the edges brought together. On examining the parts removed, the synovial membrane covering the end of the humerus was found to be thick and pulpy. On the ulna, the cartilage was absorbed, and a small portion of the cancellous tissue exposed, on squeezing which a small quantity of pus exuded. There was a deposit of crude tubercle, of the size of a bean, in the cancellous tissue of the ulna, which had been cut through in the operation. The articular cartilage of the radius was gone, and the joint filled with pulpy semi-organised lymph.

August 28th. She had been very sick and feverish all night. Skin hot; tongue furred. There was no hæmorrhage.

Sept. 1st. The inner flap of skin had sloughed. There was immense purulent discharge.

Sept. 4th. The wound was rapidly filling up, all sloughing having stopped. The granulations were healthy, but pale. An abscess had formed, and burst on the outer side of the arm. Her face was pale;

tongue clean. She felt stronger since the operation. Pulse 132, weak. Red wash was applied.

Sept. 6th. Pulse 112, weak. She felt better, and slept well. She suffered much less pain. The discharge was less than it had been.

Sept. 10th. She seemed weak and thin, but her spirits were much better; she slept well, and enjoyed her food. The wound was filling in rapidly; at its bottom could be seen a portion of the lower end of the humerus, black and necrosed; in all other parts, the wound was covered with healthy granulations. The discharge was thin, but healthy.

Sept. 18th. The arm was now in good position, and the wound was filling in rapidly. There was still, however, a large hole to be filled up. Her general health was good, and she went out daily.

Sept. 28th. The arm continued to improve, and granulated freely. She had no pain.

Oct. 7th. Two or three spiculae of bone had come away.

Oct. 13th. The splint was left off to-day. There appeared to be some amount of union and power in the limb. It could be raised to the mouth.

Oct. 19th. A fresh sinus had formed on the inner side of the arm.

Oct. 24th. The wound had all but filled up; there were two ulcers of about the size of florins, and there was still considerable thickening and two sinuses. She could raise her arm to the mouth, and place it behind the back. There was some loss of sensation in the parts supplied by the ulnar nerve. She was sent into the country.

Oct. 29th, 1864. She had free motion in every direction and very considerable power. There was one little sinus which was still discharging.

Jan. 1865. She can extend her arm to very nearly a right line, and put it to her mouth without difficulty. From its appearance when her elbow is covered, no one would know that any disease had had existed. The discharge from the sinuses around the joint had now ceased.

CASE III. *Primary Resection of Elbow.* Thomas Offer, aged 13, schoolboy, was admitted on September 20th, 1864, into Fitzwilliam Ward.

History. He was standing by a gentleman who was shooting, when the gun burst, and a piece of the barrel struck him on the arm.

On admission, there was a lacerated wound passing transversely across the outer side of the elbow-joint, and leading into it. There was a fracture of the radius just below the tubercle, the fracture communicating with the wound, through which the head of the radius could be seen. There was considerable bruising of the muscles.

Operation. A longitudinal incision was made down the back of the joint, and the ends of the bone were dissected out and removed, as well as some of the bruised muscle. Three vessels required ligature. The wound was brought together with silver sutures, and the arm put at an obtuse angle on a splint. On examining the portion of the radius which was removed, it was found to be comminuted, and the periosteum torn off; the cartilage covering the ends of the bones was bruised and chipped off in places.

Sept. 21st. He slept well. Tongue clean; pulse 104, quiet; skin cool; no bleeding.

Sept. 23rd. There was a good deal of swelling of the arm, which looked red. One of the stitches was removed. He was ordered to have two ounces of port wine.

Sept. 24th. There was less swelling, and more discharge. Tongue clean; bowels open.

Sept. 26th. The swelling was subsiding. He had very little pain. There was a healthy discharge from the wound.

Sept. 28th. The wound looked very quiet. He had no pain.

Oct. 1st. The wound looked rather sloughy in one part; there was no pain. Tongue clean; pulse quiet.

Oct. 5th. The wound was quite clean, except at one sloughing spot.

Oct. 9th. The slough had all separated, and the wound was cicatrising. The granulations were exuberant; there was no pain; and his appetite was good.

Oct. 15th. The wound was very healthy; the granulations were still very high. There was no pain. Heath's splint was applied, and he was ordered to get up.

Oct. 23rd. The wound was closing rapidly. The limb had already considerable motion, without pain in the joint.

Nov. 5th. The wound was all but healed; there was very free motion.

Nov. 9th. The wound was quite healed. He could flex and extend the forearm; there was slight pronation and supination, but this caused pain. He was discharged.

CASE IV. Resection of Elbow. Walter Walder, aged 36, a draper's assistant, was admitted on August 17th, into Fitzwilliam Ward.

History. Two years and a half ago, an abscess formed on the right elbow, in consequence of his having struck it against a piece of wood. He had, however, been able to continue his ordinary occupation till eight months before admission. He was an in-patient in the spring; and after he went out, various abscesses formed, and one small piece of bone came away.

On admission, there was some fullness of the right elbow-joint, especially on the outer side over the head of the radius; on the inner side, there was a swelling, soft and fluctuating, apparently communicating with the joint. The motion of the joint was limited. There were numerous sinuses around the joint, principally on the outer side over the radius. On probing, they appeared to pass through the joint and to lead down to exposed bone. He suffered little pain. There was very great discharge.

Oct. 6th. *Operation.* A longitudinal incision four inches in length was made over the outer side of the arm, and a corresponding one over the inner side. These were joined by a transverse one over the olecranon. The upper flap was dissected back, and a curved director on a handle was passed round the humerus and the saw applied; the bones were then separated from the surrounding parts, and the ulna and radius sawn through. The wound was put up with silk sutures, and the arm placed on a turned splint.

On examination of the portions which were removed, there was found to be much gelatinous thickening of all the tissues around the joint, and the parts were filled with sinuses, one of which passed through the joint. The cartilages of the joint were eroded; that covering the anterior surface of the humerus was entirely gone, and the articular end of the bone was eroded; the cartilage covering the humerus was also gone, and the bone softened. The extremities of the bones were in some parts connected together by newly formed fibrous tissue.

Oct. 7th. He was very restless all night; there was no bleeding. Pulse 104; tongue furred.

Oct. 8th. He was very restless all night, from pain in the back; no pain in the arm. Pulse 100; tongue clean. The wound looked quiet.

Oct. 9th. He slept better. There was less pain in the back; and not much pain in the arm. The wound was gaping; a number of clots were breaking

down, and there was redness and swelling around. Pulse 112; tongue clean. He enjoyed his food.

Oct. 11th. The wound looked very much quieter and cleaner; all the clots had disappeared, and there were less swelling and redness around. He had no pain. Pulse 96.

From this time, he continued to improve. In a month, the wound had completely filled up and all but healed, and there was free motion in the joint.

On Nov. 30th, the wound was healed. He could flex and extend the joint to a certain extent without assistance. There was union between the ends of the bone; and he had a strong grasp. He was now discharged.

CASE V. Resection of Knee. Patrick Rekeel, aged 24, a groom, was admitted November 9th into Fitzwilliam Ward.

History. Four years previously a horse which he rode was constantly in the habit of lying down on his knee, which caused numbness in it for a time. A year afterwards shooting pains set in, and it gradually became weaker and he lost flesh. He had constantly been under medical treatment, and had the knee blistered and otherwise treated. He was an in-patient in July, when there was considerable thickening of all the tissues around the knee, but more especially over the inner tuberosity of the tibia; just above this, and to the lower and inner side of the patella, there was a hard, small, moveable substance to be felt. There appeared to be partial dislocation of the tibia, backwards and slightly outwards. There was pain on moving the joint and starting at night. After he went out, the pain and starting became much worse.

On re-admission, he was very much thinner, and seemed lower and weaker than he was in the summer. He had a slight cough, and there was slight dulness at the apex of the left lung, with tubular breathing. The joint was very much larger, from effusion both within and around it. The head of the tibia was also enlarged. Pain was very much increased; and he suffered very much from starting of the limb at night, which kept him constantly awake.

Operation. November 24th. A transverse incision was made over the front of the patella, and this bone first dissected out. The condyles of the femur were then separated from their attachments and removed. This was not done in the usual manner, but an oblique section was first made, removing the anterior part; a transverse one was then made, removing the under part; and lastly, a second oblique, removing the posterior part. The tibia was then exposed at its upper part, and a section made; this cut through an abscess surrounded by scrofulous matter in the head of the bone. In this abscess was a considerable portion of necrosed bone, detached from any surrounding structure. The sides of the cavity lined by scrofulous matter were carefully gouged out. The knee-joint was full of pus, which communicated with the abscess in the head of the tibia. Several small vessels required ligature. The bones were adapted and the incision brought together with silk sutures. The limb was put up in a MacIntyre's splint, with a long extension splint on the outside, and swung in a Salter's cradle. On examining the extremities of the bones, they were found to be entirely denuded of cartilage, and to be so much softened that they could be cut with a knife.

Nov. 23rd. *Vespere.* There had been slight oozing of blood. Skin hot; pulse 104; tongue white.

Nov. 24th. He had a good night; there was not much pain, but jumping of the limb. Tongue clean; skin cool; pulse 112. The wound was quite quiet; there was no more oozing.

Nov. 27th. He slept well, and had very little pain. Tongue clean; pulse quiet; skin cool. There was not the slightest tinge of redness about the wound. A little pus was oozing from one corner. Two sutures were removed.

Nov. 28th. He was seized with a severe attack of rheumatism, which continued for above a fortnight. There was very considerable discharge from the wound throughout the time that this continued, and for some time afterwards. He still remains under treatment (January 1865).

Original Communications.

FIVE CASES ILLUSTRATING THE ADVANCES OF MR. BARNARD HOLT'S PLAN OF TREATMENT IN STRICTURE OF THE URETHRA.

By WILLIAM NEWMAN, M.D. Lond., St. Martin's, Stamford.

CASE I. F. H., aged 53, had had stricture upwards of thirty years. He had been treated by dilatation up to Nos. 6 and 7 on more than one occasion; but the condition had always returned. For the past four or five years nothing had been done; and the symptoms were daily becoming more urgent. He passed urine in a twisted corkscrew stream, and with a good deal of forcing. He could rarely retain it in the day for more than two hours at a time; and had for years been obliged to rise and pass urine two or three times every night. Always, after micturition, he had the feeling that the bladder was not emptied.

Nov. 16th, 1863, 10 A.M. It was with some difficulty that I passed a No. 2 silver catheter into the bladder. On withdrawing this, I passed Mr. Holt's instrument through one long stricture anterior to the bulb, and then through a second, even more tight, further on in the canal. Urine at once came, *guttatim*, through the hollow guide; and I split both strictures by passing down a No. 9 tube on the guide. This required some very positive force. There was very little bleeding. I introduced a No. 8 silver catheter easily enough, and drew off about six ounces of urine, and then sent the patient to bed.

He was ordered to have every four hours, a draught containing two grains of quinine with ten minims of tincture of opium.

1 P.M. There was a little smarting; no rigor. He had no wish as yet to pass urine.

2 P.M. He passed six ounces of urine with some blood, and two or three small moulded clots; there was some smarting.

8 P.M. He had passed urine twice again, and was quite comfortable.

Nov. 17th. He was very fairly well; was up twice last night. He had no need to pass urine oftener than once in four hours. I passed a No. 8 catheter with some little difficulty; the operation was followed by a little blood.

Nov. 19th. He was very well; had lost the sense of weight and discomfort about the lower part of the abdomen, and felt now that the bladder was emptied by each act of micturition. I passed No. 8 very easily.

Nov. 21st. The patient maintained that the anterior stricture had not been thoroughly split. There was some distinct resistance to the stream of urine about three or four inches from the orifice; so, at his own request, I again passed the dilator and ran down

a No. 10 tube; it was followed by some little bleeding. I drew off six ounces or more of urine at once by No. 8 catheter.

Nov. 23rd. There had been no discomfort or trouble; and the stream of urine was decidedly improved. A No. 10 catheter passed very well. He was told to pass a No. 10 steel sound about twice a week.

Dec. 15th. He was not at all disturbed in the night; passed urine three or four times in the day without straining; and with thorough sensation of relief. He could pass No. 10 without difficulty. There was sometimes a little resistance at the seat of the front stricture.

Four months afterwards, this patient remained quite well.

CASE II. E. W., aged 45, nail-maker, had had stricture for the past ten years, consequent on gonorrhoea. He had been once under surgical care for some months, and a No. 10 catheter was reached after very many introductions; but the condition returned, and he was now as bad as ever. He was obliged to get up three or four times every night, and had much straining to get rid even of a small quantity of urine. He was obliged to make water every two or three hours through the day.

Jan. 5th, 1864. I could not succeed, even after employing the warm bath and giving some opium, in passing No. 2 silver catheter through the stricture. The urethra was riddled with false passages; and into one of these and for some distance, rather on the left side, the point of the catheter constantly slipped.

Jan. 6th. After some little time I managed to pass the dilator through one stricture anterior to the bulb; and by this the instrument was so closely gripped that I could not move it onwards, and had difficulty in even partially withdrawing it. Under these circumstances, and guided by a case recorded in Mr. Holt's book *On Immediate Treatment of Stricture of the Urethra* (2nd Edition, Pp. 108-109), I did not hesitate to split the stricture by passing down on the guide No. 9 tube; but not even then could I carry on the dilator in the bladder through a second very evident and tight stricture. I sent the man to bed, and gave him some quinine and opium.

Jan. 7th. He declared himself to be in some measure relieved by the operation. He was not up once in the night to pass urine; this had not been the case before for years.

Jan. 11th. Yesterday and to-day, I was able to pass a No. 2 solid steel sound fairly over the site of the first, and also through the second stricture, into the bladder. The calls to pass urine were not so frequent; and the stream was rather larger than he had lately found it to be. He had had no rigors, nor local suffering.

Jan. 13th. I passed No. 3 catheter, and on its withdrawal, No. 4 steel sound, fairly into the bladder.

Jan. 14th. I introduced Mr. Holt's instrument, and split both strictures thoroughly by running down between the blades a No. 10 tube. I withdrew the dilator, and then passed No. 8 silver catheter; but the eye was soon blocked with clot, and urine would not flow through it. When the catheter was removed, the patient, unable to restrain the desire, passed *immediately* about three ounces of urine with some quantity of blood; and about twenty minutes later (after I had left the room), he passed eight ounces more. He was ordered to take the quinine and opium as usual.

Jan. 15th. He said he was very well; had not had any rigor, and did not pass urine very frequently. He was not disturbed once in the night.

Jan. 16th. I passed readily into the bladder a No. 8 steel sound.

Jan. 19th. He passed urine about three times a