tion, emboli, &c. Still another source of confusion is the co-existence in some cases of several tumours in different situations.

The above notes were brought before the Sheffield Medical Society in November last. The patient's condition from the date of his first introduction to the infirmary continued (as it has done apparently from the commencement of his illness) to become progressively worse; the paralysis deepened, the deafness became absolute, and for several weeks he lay restless and almost motionless, so that it was difficult to say at any time how far consciousness was intact. Death took place January 23rd, and the following day a post-mortem examination was made.

Morbid appearances.—The only part of the brain that presented any morbid appearance was the pons Varolii. This externally was of almost more than ordinary whiteness, was enlarged to fully twice its normal size (the left lobe being much larger than the right), and the consistence of the whole was greatly increased. The transverse fibres stood out with unnatural distinctness. In the left lobe and extending inwards to near the median raphe was a semi-translucent mass about the size of a hazel nut, and presenting to the touch the feeling of firm jelly. It was of a reddish-grey colour, and merged by insensible gradations into the surrounding tissue. In the right lobe of the pons was seen a somewhat similar mass, but smaller, and of a light-grey colour. This was probably a more recent formation.

Our house-surgeon, Mr. C. Atkin, has prepared some admirable microscopical sections of the tumour, which show its minute structure to be such as was expected from its naked-eye characters. The tumour seemed to merge so gradually into the surrounding healthy tissue that it was difficult to mark out its exact limitations.

Sheffield.

THE TREATMENT OF RUPTURED KIDNEY.

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THE following very interesting case presents in its history and post-mortem results a very good text on which to base my views as to the management of similar cases. The comments form part of a clinical lecture recently delivered at the London Hospital.

T. W—, aged nineteen, fell from a cart, and was admitted into the London Hospital on the same day (May 13th). His seventh and eighth right ribs were fractured near the costal cartilages, and there was localised surgical emphysema. He complained of pain on the right side of the abdomen and loin, but there was no external evidence of injury. The same evening his urine contained a little blood, but only just enough to make it smoky. Between the 13th and 22nd the pain in the abdomen and flank diminished, and abdominal discomfort was only complained of occasionally, while the hæmaturia remained the same as on admission. On the morning of the 23rd he became suddenly faint, and passed a pint and a quarter of nearly pure blood, and during the next four days he passed a large quantity during each twenty-four hours. His pulse was rapid and feeble, temperature high, and surface pallid. He complained of pain over his bladder, in which region there were dulness and tenderness, so a catheter was passed, and a good deal of bloody urine and some small clots withdrawn. There was considerable vesical tenesmus, and the lad seemed to ease himself by pressing on the end of the penis. During the second week the urine became ammoniacal. On the 27th hæmaturia entirely ceased for twenty-four hours, when he had another attack which lasted until a terebinth mixture every two hours was prescribed, followed next day by subcutaneous injections of sclerotic acid. These stayed the external hæmorrhage for a few days, or perhaps it would be more correct to say appeared to stay it, for internal bleeding must have been going on, as was shown by the large quantity of blood and clots found post mortem. The abdominal and lumbar tenderness increased; the muscles on the right were very rigid. There was great pain over the region of the right kidney and over the hypogastrium, and in the former situation there was a distinct sloughy fulness. The tongue became dryish and brown at centre, the pulse and temperature indicated inflammatory

mischiefs, and his countenance became anxious. Dr. Langdon Down and Dr. Stephen Mackenzie saw the case, in consultation with me, on the Friday of the third week of his admission, and agreed that if the lad did not improve it would be justifiable to perform nephrectomy next day. On the Saturday he was no worse than on the previous day, though in a low condition. He was seen by a senior surgical colleague, in deference to whose opinion the intended operation was not done. During the remaining week of his life there was little or no hæmaturia, but the lumbar tenderness and pain increased, and the symptoms of peritonitis supervening, he died a month after admission.

Necropsy.—This was made by Dr. Charlewood Turner, and only the important points are here given:—Body exsanguine. Rigor mortis moderately well marked. No external sign of injury. The seventh and eighth ribs were the only ones fractured. No injury to the diaphragm could be made out, and there was no pleurisy. The abdomen contained a moderate quantity of blood-stained serum, and at its right posterior aspect was a fluctuating swelling of considerable size, on cutting into which a very large quantity of blood and broken-down clots was turned out. There was much difficulty at first in recognising the kidney, but on cleansing the parts its remains were made out, and it was found that only a small portion of its upper and lower ends was left, and this was much blanched. The remains of the kidney substance formed a broken-down pulp. It could not be clearly made out if the renal vessels were torn, but the pelvis and upper part of the ureter, though severed in part, still remained attached to the organ. There was a rounded venous-looking tumour in the neighbourhood of what was taken to be the hilum, and Dr. Turner kept this for dissection to ascertain if it were a traumatic aneurysm. He has since informed me that the tumour was a false aneurysm of a branch of the renal artery. The bladder was distended to about the size of two moderate fists. On removal its coats were found much thickened and there was severe cystitis. It contained three large partly decolourised clots, the largest of which resembled a good-sized kidney potato. There was also some broken-down blood and offensive urine. The left kidney was found to be in an early stage of interstitial nephritis.

Remarks.—A noteworthy point is that an accident comparatively so slight should have produced so extensive an injury to the kidney. The lad simply fell on the ground and did not strike his side against anything, neither the cartwheel nor anything lying on the ground, and there was no evidence of a rib being driven into the kidney. The eleventh and twelfth ribs were quite intact. The cessation of hæmaturia was most likely due to hæmorrhage in the loin, and to clots in the ureter, and when either, or both, of these causes of arrest of bleeding into the bladder were removed, hæmaturia recurred. During the latter stage anæmia was, doubtless, the reason for the cessation of bleeding. Hypogastric distension, pain, vesical tenesmus and ammoniacal urine indicated clots in the bladder and cystitis; lumbar fulness and tenderness pointed to blood in the loin and advancing inflammation; and abdominal soreness with rigidity of the right abdominal muscles, indicated incipient peritonitis by contiguity with the broken-down blood-clot and decomposing fluid blood in the loin.

The history of this case seems clearly to point to the following line of treatment in similar cases. Directly it is found that bleeding is not controllable after trial of every known means, and before the patient is too weakened by hæmorrhage, and also before septic phenomena have been allowed time to develop to an uncontrollable extent, a lumbar incision should be made over the kidney, and all clots, effused blood, and débris removed, and the cavity thoroughly cleansed. Then if it be possible to make out the remains of the kidney and to find the renal vessels and ureter, these should be tied and the renal remnants removed; but as in a case like the present, such a proceeding would be tedious and dangerous, the better plan would be to introduce a drainage-tube into the loin and perform anterior nephrectomy by incising the linea semilunaris. This being completed, the abdomen and pelvis can be cleansed if there be need, and the peritoneum on the posterior wall closely stitched up to shut off communication with the external opening into the loin. The abdominal wound is then to be closed and bandaged and external urethrotomy or lateral cystotomy performed, so as to empty the bladder of all clots, to wash it out, and to drain it. Though these three operations at one sitting seem severe, yet, under the circumstances, I do not

see what less would suffice. The lumbar incision and external urethrotomy are not major operations, and of themselves need cause no great anxiety; but when complicated with an intra-abdominal operation the risk would be undoubtedly greater, though not so great as through leaving the patient alone. The urethrotomy seems called for not only on account of the inflamed condition of the bladder, but also because vesical tenesmus might seriously interfere with recovery from an abdominal operation. I believe Mr. Rawdon has recorded a case of nephrectomy in a youth for ruptured kidney, in which the patient recovered from the operation, but died not long after from septicæmia, which the post-mortem showed was due to the condition of the lining of the bladder. This gives another reason for performing urethrotomy or cystotomy; for if the bladder be well washed out and drained the chance of vesical septicæmia is considerably minimised or even annulled, to say nothing of the great prospect of rapid recovery from cystitis, which in such a case it affords.

A few weeks since, assisted by Dr. Carter, and by my friend Dr. Crabb of Holloway, whose patient the lady was, I performed lumbar nephrotomy on the right kidney for pyonephrosis, and before operation we discussed the propriety of making a permanent opening per vaginam into the bladder to relieve the conditions of ulcerated mucous membrane and contraction and hypertrophy of its walls; but after passing a large drainage-tube into the kidney it was hoped that very little pus would pass into the bladder, and this was so. The inflamed lining of the bladder, however, secreted a large quantity of pus, and this condition of the organ gave much trouble after the operation. I mention this case here because it and other similar cases I have operated on teach the necessity of draining and resting the inflamed viscus, and also that most cases of pyonephrosis are complicated with cystitis of a very severe form, and that the treatment of this is as important as that of the kidneys.

Grosvenor-street, W.

ACUTE HYDRONEPHROSIS OR DILATATION OF THE PELVIS OF THE LEFT KIDNEY;

RUPTURE OF SAC AND EXTRAVASATION OF URINE INTO THE PERITONEAL CAVITY; OPERATION; RECOVERY.

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As it is very rarely, if ever, so far as I am aware, that the abdomen has been opened for extravasation of urine into the peritoneal cavity, this case seems worthy of permanent record.

E. H—, a girl, aged fifteen, came under my care at the end of July, 1883. For a week or more she had been suffering from great pain in the left side of the chest and abdomen, with frequent vomiting. On examination I found a fluctuating tumour on the left side of the abdomen, midway between the ribs and pelvis. It was bounded above by the false ribs, below by the crest of the ilium; and a line of resonance about two inches and a half above Poupart's ligament: on the outer side it was lost beneath the muscles of the loin; on the inner side it reached to the middle line. On the morning of Aug. 1st the patient had a rigor, and the temperature rose to 101° F. Vomiting continued at frequent intervals. I diagnosed the case to be one of acute hydronephrosis; and, thinking that operative measures would probably be necessary, asked Dr. Savage to see the case with me. He kindly did so on the next day (Aug 2nd), agreed with me as to the advisability of opening the abdomen, and we fixed on Aug. 4th for the operation. The next morning (Aug. 3rd) about 8 A.M. I received a message that my patient was dying. I saw her at 9 A.M., found her with legs drawn up, pinched and anxious face, crying out with pain, and constantly vomiting. She said that she felt as if something was "running away" from her. No external discharge, however, had taken place. On examination, I found the outline of the cyst had disappeared, but fluctuation was still more evident on the left side than on the right; the abdomen was generally distended and very tender. I saw that the cyst had burst, and that no time was to be lost, as the girl appeared to be rapidly sinking. I hastily arranged for immediate operation, to which Dr. Savage and Dr. Gosling kindly came. The latter gave ether for me. About 11 o'clock

I opened the abdomen in the middle line, sponged out the urine from the peritoneal cavity, emptied what was left in the cyst with a trocar and cannula, as I could not find the point of rupture, and sewed the opening in the cyst to the margins of the incision, placing a piece of gutta-percha drainage-tubing above and another piece below the cyst-opening. The stitching the sac to the margins of the wound was the most difficult part of the operation, as it was exceedingly vascular and was with great difficulty prevented from tearing. At one part the passage of the silk suture caused a rent, and the sewing had to be repeated below this opening. The operation lasted rather more than an hour. The wound was dressed with absorbent wool, and an abdominal bandage applied, the patient being replaced in bed as soon as possible, with hot-water bottles to her feet and sides. On recovering from the anæsthetic the patient expressed herself as much more comfortable for the operation, and continued so during the remainder of the day. By the next morning, however, considerable peritonitis showed itself, and for two or three days there appeared to be but little chance of recovery. Matters, however, gradually improved; by the sixth the vomiting had ceased, the pulse, which had been very weak and thready, felt fuller, and a little flatus passed from the rectum. Some of the urine from the left kidney appeared to find its way into the bladder, as on several occasions it contained blood, and the patient complained of pain on micturition. I had not passed any drainage-tubing into the cyst, but had been content to sew the opening in it to the abdominal wall. As it had to be drawn considerably out of position to fix it in the middle line, I found that I had acted unwisely in not keeping the opening patent by tubing. After a week or ten days hardly any urine came from the opening, and the sac began to refill and enlarge with corresponding aggravation of symptoms. Knowing the thinness and brittleness of the cyst wall, I did not attempt to make any very forcible reopening of the original channel, but on August 18th made a second abdominal section to the outer side of the rectus, opened the cyst again, sewed the opening in the cyst to the margins of the incision, and passed in a glass drainage-tube. From this point the patient steadily improved. She has worn the glass-tube ever since, passing urine freely through it. In this condition she remains at present. As soon as she was thoroughly convalescent I thought that matters might be made more clean and pleasant by corking the tube and allowing the urine to escape at intervals of three or four hours into a vessel instead of allowing it to constantly run away. But I found that this did not answer, slight rigors and pain returned, and the urine from the cyst, which up to this time had appeared occasionally to find its way into the bladder, from this date ceased to do so. This was inferred from the fact that the urine passed by the urethra had previously, at irregular intervals, been offensive—at these times containing a little blood and pus. From this date the urine passed by the urethra has remained perfectly free from any abnormality. I have not attempted any further operative interference since, except probing or sounding the channel to see if I could find any calculus. This was fruitless. For the last eight or nine months the girl has remained in very fair health, although her urinary fistula is of necessity a source of great discomfort to her. Every now and then the interior of the glass drainage-tube becomes encrusted and choked with deposited urine salts, when it has to be removed and cleansed out; otherwise no treatment has been required.

The following points seem worthy of notice in connexion with this case. 1. The advisability of immediate operation in similar cases where urine or other noxious fluid is extravasated into the abdominal cavity. 2. The possibility of success, although the operation may be incomplete. I did not find the point of rupture in the cyst, and therefore for three days mourned over my operation as logically incomplete and useless; nevertheless the emptying of the cyst and cleansing the peritoneal cavity were sufficient to bring about the recovery of the patient. 3. The question of further treatment. This seems to me to be a question of great difficulty. I think there is no doubt that the left ureter is now completely stopped, all the urine from the left kidney passing by the tube. Both kidneys are perfectly healthy and secreting freely. If the obstruction be a calculus, I cannot find it from the cyst, or the channel which is the remains of the cyst. If the obstruction be due to a valvular fold or coil of the ureters, as in several cases collected by Dr. Roberts of Manchester,