sidered. If it is movable, and the intestine in which it lies is not too fixed, it is, I think, the safest and therefore the wisest plan to bring the intestine with its infiltrating growth out on to the surface of the abdominal wall, and to perform the excision at a later stage. If there is acute obstruction at the time of the operation, I am quite sure that this is the best method, and to make, in addition, a temporary artificial anus on the proximal side of the growth. A patient who is exhausted by the presence of complete obstruction is not the one to stand the shock of a colectomy, even if anastomosis is not immediately undertaken.

This method of eventration of the bowel with the growth is a sound one in the case of the ascending colon for several reasons. First, the intestine has no complete covering of peritoneum, therefore its suture is not so safe within the abdomen as is the case with other portions of bowel. Secondly, there is but a short length of gut to deal with, which makes the manipulations difficult. Thirdly, that whereas there is probably the likelihood of a greater amount of subsequent contraction at the site of the excision, if this method is followed, yet this does not so gravely matter, since the contents of the ascending colon are for the most part liquid, and therefore find their way fairly easily through the constriction. In the case of the descending colon and the sigmoid flexure, eventration and excision may be said to possibly have this objection.

There is, I am disposed to think, a very considerable danger in attempting to perform the ideal operation, namely that of primary excision and anastomosis, in the case of the ascending colon; in fact, so great is it, that if there is complete obstruction present, it would seem to be hardly justifiable. Further, I think that if acute obstruction is present, it is safer to merely bring the intestine out on the abdominal wall and make an artificial anus, than to excise the growth and suture the open ends to the skin.

There is a distinct degree of shock attached to the removal of a portion of the intestinal tract, and this superadded, as has been said, to that produced by the acute obstruction, often turns the scale unfavourably for the patient.

In cases where the growth has become so fixed that it cannot be brought outside the abdomen, it may be best to perform an anastomosis between the ileum and the transverse colon near the hepatic flexure, and to leave the excision of the growth to a later operation, when the passage of the intestinal contents has been fully re-established. But these instances are unsatisfactory, for the fixity usually implies that the growth has advanced considerably and that the lymph glands have probably become infected; so that there is but little, if any, possibility of entire extirpation of the malignant disease.

A CASE OF RUPTURED URETER OR RENAL PELVIS.

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THE case, the notes of which appear below, seems to me of sufficient general interest to be worth recording.

A dustman, aged 36, was admitted into the Mildmay Hospital, Bethnal Green, under my care on April 5th, 1899, with the history that ten hours before admission he had fallen a short distance, striking the left side of his abdomen on a large tin box. He walked home and went to bed; but being in much pain and retching continually, he came to the hospital, walking into the surgery. He was a little faint on admission, the temperature was 100.2°, and he complained of considerable pain in the abdomen, especially on the left side. On examination a fracture of the left twelfth rib was found, the abdomen was not distended, was generally tender, and there appeared to be a slight increase of dullness in both flanks, but this was not marked. The urine, which he passed naturally, contained a little blood, but was otherwise normal. He was given my of the hypodermic injection of morphine subcutaneously, which relieved his symptoms, but did not make him sleep. I saw him next day, when he remained in much the same condition, with some retching, but he had only vomited twice. The bowels being opened after an enema gave him some relief. The urine now contained no blood. On April 7th the retching and vomiting continued. Pulse 110, temperature under 100°. The abdomen more distended; still some flank dullness, which altered its position on movement of the patient; but so slowly as to suggest coagulated blood. He passed 33½ ounces of urine in the previous 24 hours, which contained a trace of albumen, but no blood. From this date till the 17th he steadily improved, so much so that on the 14th he was allowed up on the couch for a short time. He had no pain or other trouble,

and he was passing an average of about 40 oz. of urine in the twenty-four hours. On the 17th, however, he again complained of pain in the left loin, and on examination a distinct tumour could be made out which was dull to percussion, elastic in consistency, and extended down the loin into the iliac fossa, the pain of which he complained radiated along the course of the ureter. The urine was normal. Next day (18th) the swelling and also the pain had still further increased, so an incision was made into the loin rather below the level of the usual oblique kidney incision, when on opening the perinephric tissue a considerable quantity (probably from 1 to 2 pints) of almost clean urinous fluid escaped from a cavity, which extended down to the brim of the pelvis and upwards to the kidney, the lower end of which, somewhat roughened by lymph, could be felt, forming apparently part of the wall of the cavity. No opening either into kidney, pelvis, or ureter could be found, and indeed the ureter itself was not seen. A tube was inserted and the wound partially sutured. The patient recovered from the operation satisfactorily, the temperature never rising above 100°; but for the first few days much urine came through the dressings. The urine passed naturally continued normal until April 20th, when it was noticed that there was much less urine coming from the wound (which had now contracted to a sinus) and much more passed *per urethram*; the urine, too, for the first time since the operation was noticed to contain pus and albumen. The sinus had healed by May 4th, but there still continued to be some pus and albumen in diminishing quantities in the urine till he went to a convalescent home on May 17th. He was seen again about six weeks later with the wound soundly healed and with the urine normal.

There can be no doubt I think that the injury in this case was either rupture of the ureter or of the renal pelvis. The diagnosis between these two injuries is, except by a discovery of the vertical tear by operation, impossible, but for purposes of treatment this is of slight consequence. In either case no doubt as Morris¹ points out the ideal treatment would be immediate suture, but as in the few recorded cases like my own there has been no ground for the diagnosis until some time has elapsed after the injury (in three cases reported by R. J. Godlee,² Chaput,³ and Stanley⁴ the time was three weeks, six weeks, and twenty days respectively). This method of procedure is obviously not applicable to most cases, hence the treatment adopted in the cases recorded above seems to be the most satisfactory, the opening in the renal pelvis or ureter being dealt with at the time of the lumbar incision if it can be found. That this is preferable to an immediate nephrectomy is, I think, clear from my case, as on the twelfth day after the operation the patient began to pass more urine; and urine which now contained a slight pus, when it had previously been clear, indicating that the kidney on the injured side was functional and was now discharging its secretion along the normal channel. The organ was thus retained to the patient while the severer procedure of nephrectomy could still have been carried out if the sinus in the loin had continued to persist and an attempt to find and close the fistulous opening into the duct had failed. The ultimate history of the case seems to be particularly satisfactory, as when last seen nothing abnormal could be discovered except the healed wound in the loin.

Subcutaneous injuries of the ureter and pelvis of the kidney are very uncommon, and this is hardly surprising when the depth in which they lie is considered. In certain experiments made by Tuffier⁵ on the cadaver he found that the most usual seat of rupture was the junction of the ureter and pelvis, and he thought that the injury was probably due to a crush against the first lumbar transverse process; but as Morris¹ points out this point is too high to come in contact with any part of the ureter, though it may be true of the transverse process of the second or third lumbar vertebra, which indeed were fractured in Poland's⁶ case.

A last point which may be referred to is the small amount of irritation to which normal urine when extravasated into the tissues sometimes gives rise. At no period during the course of my case did the temperature rise above 100.5°. This, of course, as has frequently been noted, is in very distinct contrast to the severity of the disturbance resulting from the extravasation of urine which has in any way become contaminated.

A very complete bibliography of cases of rupture of ureter and renal pelvis will be found in Morris's published Hunterian lectures for 1898 already referred to.¹

REFERENCES.

- ¹ *The Progress of Renal Surgery*, being the Hunterian Lectures for 1898, by Henry Morris. ² *Clinical Society's Transactions*, vol. xx, p. 219. R. J. Godlee, *Some Cysts of the Abdomen*. ³ M. Chaput, *Bull. et Mém. Soc. de Chir. d. Paris*, March 13th, 1899. ⁴ E. Stanley, *Med. Chir. Trans.*, 1843, vol. xxvii, pp. 1-11. ⁵ Tuffier, *Arch. Gén. de Médecine*, Paris, 1889, pp. 335-350. ⁶ A. Poland, *Guy's Hospital Reports*, 1860, 3, xiv, pp. 85 and 98.