ECTOPIC KIDNEY CONTAINING MASSIVE
CALCULI.

BY

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An interesting point in the clinical features of the following case was the fact that the pain was not located at the site of the ectopic kidney, but always in the left costo-vertebral angle. Following the nephrectomy there was again a complaint of pain in this locality for a few days.

A man, aged 45, complained of constant pain in the left side of the back. It was of old standing, and on this account he had been discharged from the navy as unfit for further service nine years before. He had been in a number of hospitals during the past ten years, and although radiographic investigations had been carried out in all the cause of the pain had escaped recognition.

When I first saw the patient, although he was a little thin, his general condition was fairly good. The urine contained a considerable amount of pus. The radiographic examination revealed no abnormality in either renal region, but in the pelvis, lying mostly below the brim, occupying the hollow of the sacrum in a medial situation, was to be seen a curious irregular opacity.

On cystoscopy I found the bladder to be free from stone, but the seat of a chronic inflammation which was most marked about the left ureteric orifice. This structure was injected, swollen, and immobile. The right ureteric orifice was normal in appearance and efflux of clear urine could be seen coming from it. A ureteric catheter failed to pass up the left ureter for more than 2 cm., while 30 cm. of catheter readily passed up the right, indicating a normal length of this structure. Following the intravenous injection of 5 c.cm. of 0.4 per cent. indigo-carmin, the dye was excreted in good concentration from the right side in three minutes, whereas it had not appeared at all from the left after ten minutes had elapsed.

Microscopical examination of the urine from the right kidney failed to reveal any pus, but a few Gram-negative bacilli were seen. These, on culture, proved to be of the *B. coli* group. The urine from the bladder contained a considerable amount of pus and numerous coliform bacilli.

It was concluded from these observations that the pelvic opacities were due to a mass of calculi in the left kidney which was occupying the hollow of the sacrum, that the infection of the bladder had its origin in the left kidney, and that the right kidney was present in its normal position and functioning well. Operation was therefore undertaken with the intention of removing the ectopic organ with its stones.

Operation.

With the patient in the Trendelenburg position the abdomen was opened through a left paramedian incision from umbilicus to pubes. The right kidney was felt in its normal position, with no palpable evidence of disease. It was, however, slightly larger than normal, presumably from hypertrophy. There was no kidney in the left renal region. Projecting forward from the promontory and the hollow of the sacrum was a hard, somewhat irregular mass, having the dimensions of a slightly enlarged kidney. The lower part of the pelvic colon and the rectum lay respectively above and to the right of the projection. On dividing the overlying peritoneum the left kidney was identified with its pelvis and hilum directed forward and somewhat to the right. It is a usual feature of a kidney in such a position for the hilum to be directed anteriorly. The whole organ was surrounded by, and adherent to, a considerable fibro-fatty mass and could be felt to be full of stones.

The only difficulty which I experienced with the nephrectomy arose from the fact that I was quite unable to make out where the blood vessels entered or left the kidney, on account of the extensive adhesions. This prevented several of the vessels from being identified and secured before being divided.

The accompanying figure is a drawing of the specimen after removal, and from which the right side of the parenchyma and strips of the same side of the pelvis have been taken to show the full extent of the calculous formation. It is also seen that the vessels are largely aberrant, inasmuch as their connexion with the kidney is through the cortex. Two veins were the only vessels connected with the kidney by way of the hilum. It was not possible to be certain without unnecessary dissection which were the parent trunks of these vessels. It is not unusual in such cases for the vessels to come from several adjacent sources such as any of the iliac vessels, or the aorta.

The retroperitoneal site of the kidney was drained for forty-eight hours and the patient made an uneventful recovery.

The accompanying drawing shows the extensive nature of the calculous formation; all of the dilated calyces and the pelvis were completely filled with stone. The shape of the pelvis is worthy of special attention as this structure is divided into three limbs, all lying outside the actual kidney.

From study of a radiogram it was difficult, owing to the more or less medial position of the stone shadows, to decide whether the right or the left was the misplaced kidney. Such a situation of the ectopic organ is occasionally noted, but more frequently it lies over the corresponding sacro-iliac synchondrosis.

In certain rare instances of pelvic kidney this is the sole renal organ. Such a contingency impresses one with the necessity of establishing the presence or absence of the other organ before the full extent of the operation is decided.

I have noted two cases from the literature in which this precaution was neglected. In one case a solitary tender left kidney lying in the left iliac fossa of a female aged 19 years was removed. The kidney was subsequently found to be perfectly healthy. The patient lived for nine days. At the autopsy the right kidney and ureter were both absent. In the other instance the only kidney, a pelvic one, was removed because it was thought to be a sarcomatous metastasis from an ectopic testis.

In considering the relative incidence of renal abnormalities, Stewart and Lodge quote the following figures from 6,500 consecutive autopsies:

Congenital absence of kidney	16 cases
Horseshoe kidney	14 "
Pelvic kidney	3 "
Unilateral fused kidney	1 case

Many *post-mortem* examples of healthy ectopic kidneys are recorded. The majority of diseased ectopic kidneys which have been reported have been the seat of hydro-nephrosis. Calculous formation is a

far less common complication.

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A SIMPLE METHOD OF DEFIBRINATED-BLOOD
TRANSFUSION.

BY

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THE value of blood transfusion in certain conditions is now beyond dispute, and as a means of combating shock, either before or after operative intervention, has become almost a matter of routine.

Of all available methods, doubtless the transfusion of whole blood is physiologically the best, but the difficulties are such as to preclude its use except by a trained team; for practical purposes the transfusion of non-coagulable blood is almost universally employed.

Blood may be rendered non-coagulable by the addition of some anticoagulant such as sodium citrate or by defibrination. Both methods are simple and require no very special skill, and each has its appropriate indications. I described a very simple method of transfusion of citrated blood in the *BRITISH MEDICAL JOURNAL* of May 5th, 1923: the blood is withdrawn from the donor's arm into a graduated bottle