Remarks

ON

TEN CASES OF MOVABLE KIDNEY.

Read before the Aberdeen, Banff, and Kincardine Branch of the British Medical Association.

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PATHOLOGY.

UNDUE mobility of the kidney gives rise to symptoms which vary in their intensity in different individuals, being in some cases transient and tolerable, in others permanent and causative of chronic invalidism, while occasionally they become acute and alarming. In a proportion of cases the condition is accompanied by pathological changes in the kidney, to be explained on mechanical principles, for example, hydronephrosis, pyelitis, and haematuria. "Floating kidney" should be distinguished as a separate condition when the peritoneum is so arranged as to form a distinct mesonephron of such length as to allow the kidney considerable play. "Floating kidney" is congenital, and more common on the left side. Movable kidney, on the other hand, is an acquired condition, is usually found on the right side, and is eight to ten times more common in women than in men. All my cases have been in women, and nine of the ten have been right sided. If the male subject be attacked it is usually on the left side. It is most common between the ages of 25 and 50; Ebstein found it in 0.2 per cent. of necropsies. The causation of the condition is obscure. It occurs frequently in neurasthenic women who have borne many children, whose abdominal walls are lax, and in whom, along with general emaciation, the fatty capsule has diminished in thickness, leaving the organ room to move inside it. It must be stated, however, that a fair proportion of the patients are well nourished, and that mere loss of fat does not account adequately for increased mobility. Other alleged causes are pressure of the waist by corset, and enteroptosis where the displaced intestine pulls on the kidney. In the former condition downward pressure of the liver might assist its production and account for the greater frequency on the right side.

The kidney is naturally well fixed in the loin. Its tunica adiposa, which till the tenth year consists of fibrous tissue without fat in its meshes, dividing as it does to enclose the kidney, and firmly attached to peritoneum in front and loin posteriorly, forms a real ligamentum suspensorium renis. The renal vessels limit its outward and the mesocolon its inward movement, while the intra-abdominal pressure and the protection of the ribs all tend to prevent displacement. Granted that a limited displacement takes place by strain, trauma, external pressure or drag, its further extension can readily be understood. The first displacement, causing torsion of the renal veins or of the ureter, produces in the one case an enlargement and congestion of the kidney from strangulation, in the other a hydronephrosis, both of which conditions distend the fatty capsule and leave it loose and ill fitting when the kidney has come back to its normal size after reposition and rest in the recumbent position. Once started the excursion of the kidney rapidly increases, so that in old-standing cases the organ passes as far down as the sacro-iliac synchondrosis, or even partly into the pelvis.

Many theories have been advanced to explain the greater frequency on the right side. It has been attributed to the downward pressure of the liver, the less resistance of the right mesocolon, and the greater length of the renal artery on the right side; but none of the theories are satisfactory, and it would be a waste of time to analyse them. It is equally difficult to explain the intimate relation between movable kidney and menstruation. The symptoms are undoubtedly aggravated during a period, and it is stated that increase in the size of the kidney has been noted at the same time.

SYMPTOMS.

The symptoms range from mere discomfort—dragging pains in the side, with ovarian or testicular tenderness, and occa-

sionally vesical frequency and irritation—to acute pain, febrile disturbance, pseudo-renal colic, vomiting, and collapse. These acute attacks are known as Dietl's crises. They were wrongly described as due to "incarceration of the kidney," whereas they are really caused by twisting of the renal vessels, and particularly of the vein, by rotation of the kidney. This also explains the haematuria often met with, and similar kinking or twisting of the ureter produces hydronephrosis, which, though transient, is sometimes sufficient to cause uraemic symptoms while it lasts.

That it is possible to mistake movable kidney for abdominal tumours—for example, tumours of omentum or mesentery for distended gall bladder or for malignant tumour of the pylorus or colon—is well known. Mistakes are generally due to imperfect examination. Where the gastric symptoms are very noticeable and the patient much emaciated and pulled down by constant pain and vomiting, it so closely resembles pyloric obstruction that allowance must be made for mistaken diagnosis. Where such symptoms exist examination for undue renal mobility should always be made; and it is noteworthy that in these cases rest in bed for two or three weeks produces an entire cessation of the gastric trouble. The gastric disturbance has been explained by Kendal Franks as due to kinking of the duodenum produced by the displaced kidney. I venture to think, however, that it may partly be due to nervous influences, when one remembers the close connexion between the renal and gastric plexuses. This explains also the neuralgic pains in side, back, ovaries, groin, and thigh which are complained of in movable kidney. When acute symptoms attend the displacement it may readily be mistaken for renal colic or for appendicitis, and this is specially the case if the abdominal wall be so rigid as to preclude proper palpation of the loin.

DIAGNOSIS.

For examination the patient is placed on the back with legs drawn up and recti as far as possible relaxed. With one hand in Israel's line in front, and the other in the loin, one can usually displace and replace a movable kidney. Occasionally it is more easily done if the patient be placed on the sound side, with bent spine and thighs flexed on the abdomen. Palpation is the only method that can be trusted to; percussion gives no help. The amount of excursion of the kidney should be noted, also its size, and whether it is unduly tender, as in accompanying pyelitis. A hydronephrotic kidney is easily palpated. Franks's rule with regard to normal and abnormal movement of the kidney is worth quoting.

"With the patient lying on the back, the surgeon, standing on the right side, places the four fingers of his left hand beneath the hollow of the loin below the twelfth rib. The thumb in front encircles the abdomen just below the costal arch, but without exercising any pressure. The patient is then directed to draw a full breath. Immediately before expiration the surgeon begins to grasp the loin, and follows the liver as it recedes up below the ribs. If with the right hand a kidney can be felt lying entirely below the grasp of the left hand, this organ is pathologically movable. If the right hand presses on this tumour, whilst the left hand relaxes its grasp gradually, the tumour can be felt to slip suddenly between the fingers and thumb, and to disappear upward. On the other hand, a kidney which descends so that only its lower half can be felt, but which moves back to its place on expiration, is physiologically movable.

Reference has already been made to the other complications—intermittent hydronephrosis, uraemia from twisting of ureter, and engorgement of the kidney with or without haematuria from torsion of the renal vein.

TREATMENT.

The palliative treatment of movable kidney is only fairly successful. Supporting bandages may yield a certain amount of relief, but the treatment of bad cases by large truss pads with strong springs gives as much pain and discomfort as the renal luxation. Operation should be advised only in those cases, however, where the discomfort is extreme or where complications exist. It is not more than 20 years since the first nephrorrhaphy or nephropexy was done by Hahn. Previous to that, nephrectomy was performed in bad cases. It is difficult to understand why this operation should have taken so long to develop when one finds the clinical symptoms and complications of movable kidney described as long ago as 1649 by Riolan, who writes:

Quamvis renes adipis glutine videantur tenaciter affixi lumbis, interdum tamen luxantur et antrorsum procumbunt, interdum in hypogastrium delabuntur, non sine vitae detrimento, etc.

Operation aims at fixing the kidney firmly in the loin.

This was not always secured by the early plans of suturing the adipose tissue, the fibrous capsule, or the kidney parenchyma to the lumbar muscle or aponeurosis. Many needlessly complicated plans have been advised. Tuffier's, Lane's, and others seem to me to come under this category.

A simple and satisfactory plan is to separate the kidney from its fatty capsule by free dissection with the finger, to irritate the fibrous capsule by scratching with a scalpel, to fix the lower part of the kidney by two sutures of catgut, silk, kangaroo tendon, or silkworm gut to the lumbar muscles and aponeurosis, and, most important of all, to insert alongside the kidney large drainage tubes or packs of gauze, which are left in for a week to produce aseptic inflammation and granulation. Alternatively, instead of sutures, bridges of gauze may be passed over the upper and lower poles of the kidney, and tied over gauze packing running alongside the kidney, the wound healing up by granulation. Excellent results have followed the first method in my hands, but I prefer the second, which I believe was first suggested by Senn. It certainly obviates the alleged risks of suture—namely, urinary infiltration, abscess of the kidney, and cirrhosis of the kidney.

The following ten cases of movable kidney have come under my care during the last three years:

CASE I.—*Right Movable Kidney: Marked Gastric Symptoms: Nephropexy: Cure.*

Mrs. C., aged 50, multipara, was seen some two years ago. Her history was that for four years she had suffered from dragging pain in the side, and that recently she had been much troubled with vomiting. She was wasting rapidly, and had most of the symptoms of pyloric obstruction. She looked cachectic, and I at first suspected malignant disease. Examination showed a very movable kidney, which could be pushed down to the brim of the pelvis, had the characteristic tenderness of the kidney, and on reposition could be palpated bimanually. Operation was advised, and she came into the Northern Nursing Home for that purpose. The day's rest there improved her so much that she asked for a respite from operation. The symptoms returned immediately she began to get about, and she came back for nephropexy, which was absolutely successful in removing all the symptoms. I saw her recently, when she stated that she had been in perfect health ever since operation.

CASE II.—*Right Movable Kidney: Marked Gastric Symptoms: Nephropexy: Cure.*

Mrs. C., aged about 60, was transferred to my ward in the infirmary by Dr. Lister. She had been sent to the infirmary for symptoms which pointed to malignant disease of the stomach. Dr. Lister discovered a movable kidney, and rest in bed removed the more troublesome symptoms, and prepared her for operation, which was done about eight months ago. The kidney, as in the first case, was found to be movable as far as the brim of the pelvis. When the patient left hospital all her symptoms had disappeared. I examined her the other day, and found the kidney immovable. She is still neurasthenic.

CASE III.—*Right Movable Kidney: Severe Haematuria: Disease of Kidney: Nephrectomy: Cure.*

A lady was seen in the country with her medical attendant, who had been treating her for haematuria, which was considerable in amount. He had explored the bladder for villous tumour, but found nothing, and as the haematuria persisted even with rest in bed and haemostatics, he asked me to see her. We found a right movable kidney of about normal size, slightly tender on pressure. The pain which the patient complained of was on the left side, but it is well known that in movable kidney the pain may be referred to the opposite side, as Landau pointed out many years ago; for instance, right movable kidney is sometimes associated with a left pleurodynia. It was decided to fix the kidney if found healthy, and to remove it if there was evidence of disease. A nephrotomy was done, and as the upper part of the kidney was found to be much congested, and on section had the appearance of malignant disease, it was thought desirable to remove it. The patient made a perfect recovery.

CASE IV.—*Right Movable Kidney: Extreme Hydronephrosis: Nephrectomy: Cure.*

A young woman, aged 30, was sent by Dr. Geddie for movable kidney and hydronephrosis. The hydronephrosis was not markedly "intermittent," and on nephrotomy being done it was found that renal tissue was practically absent, there being the merest thin shell of it on the outside of what felt like a large cyst. It was decided to perform nephrectomy. The mobility was not, in my opinion, due to the increased weight of the kidney, but was, I think, the cause of the hydronephrosis. There were no tube casts, nor was there albuminuria in this case, as is sometimes found in the intermittent hydronephrosis of ectopic kidney.

CASE V.—*Movable Right Kidney: Neuralgia and Pleurodynia: Palliative Treatment.*

Miss M., aged about 45, consulted me about pain in the right side, which had been troubling her for some years, and had been ascribed to ovaritis or appendicitis. The right kidney was found to be very movable, and pressure on it caused the pain complained of during exertion. A supporting bandage was tried, but was of little service. The symptoms were not sufficiently aggravated to justify operation. The pleurodynia and pains over the right shoulder I can attribute only to the renal condition, and may be on a line with the pain felt there in hepatic disturbance.

CASE VI.—*Right Movable Kidney: Increased Frequency of Micturition: Pyelitis.*

Mrs. W., aged 60, has for years suffered from pain on the right side,

referred to the kidney region. She had some years ago haematuria, and consulted an Edinburgh surgeon, who was suspicious of renal calculus. With rest and care the condition much improved and the haematuria ceased. I found on examining her a mobile kidney, larger than usual and tender on deep pressure. Slight frequency of micturition is now complained of, there is no haematuria, and there is very little pus in the urine. With care her condition is tolerable, but any undue exertion causes dragging pain. It is possible that she may have a small renal calculus as well, though there is no evidence of it on skiagraphy, which Dr. Galloway carried through for me. Pyelitis does occur as a complication of movable kidney apart from renal calculus, and I am inclined to attribute it to that in her case. It is a case for operation, which is postponed for the present for family reasons.

CASE VII.—*Left Movable Kidney after Uretero-ureterostomy for Fibroma involving Ureter: Fibroma attached to Renal Vein found at Operation: Nephrectomy: Recovery.*

J. D., aged about 50, was operated on four years ago for retroperitoneal fibroma, which involved the left ureter. I had the privilege of assisting Professor Ogston at the operation. He found it necessary to remove over an inch of the ureter, the continuity of which was secured by uretero-ureterostomy, with a most satisfactory result. The case was an early and brilliant example of this operation. About a year ago she consulted me about pain on the left side, but as she was morbidly neurasthenic, and nothing objective could be made out, operation was disadvised. Recently she came back to my ward. She complained of agonising pain on the left side, for which she required opium. After several examinations I made out a distinctly movable kidney on the left side, movement being attended with great pain. A recurrence of the growth in the peritoneal scar or in the ureter was also thought of, and occasionally a hardish tumour could be felt in front of the kidney. The kidney was cut down on, and its pelvis was seen to be much dilated, and attached to it, and still more firmly to the renal vein, was found a fibroma. In attempting to separate the tumour from the vein the latter was wounded. As the patient's condition was not at all satisfactory under the anaesthetic, nephrectomy had to be performed as rapidly as possible. The old uretero-ureterostomy scar was palpated, and, as far as could be found out, there was no recurrence of the growth there. The patient made a good recovery, and the pain on the left side entirely disappeared. I am informed by Dr. Gordon that she died nearly a year after nephrectomy was performed from malignant disease of the pancreas.

CASE VIII.—*Right Movable Kidney: Nephropexy: Cure.*

Mrs. H., aged 56, had renal pain and tenderness for some years. Latterly the pain had become aggravated, attended with frequency of micturition. Some days very little urine was passed. A right movable kidney could be easily made out. A daily examination of the quantity of urine passed showed an "intermittent hydronephrosis." The operation performed was very simple, the kidney being exposed, separated from its fatty capsule, and supported in the wound by bridges of gauze, while gauze packing was inserted on both sides of the organ. The first dressing was done in about a week's time, and at intervals thereafter. The result was an uneventful recovery and a perfect cure.

CASE IX.—*Right Movable Kidney: Nephropexy: Cure.*

Mrs. W., aged 27, complained of similar pain, with occasional hydronephrosis, and was operated on in the same way with a perfect result, the right kidney becoming fixed to the loin by strong fibrous adhesions.

CASE X.—*Right Movable Kidney: Gastric Symptoms: Nephropexy: Cure.*

Mrs. D., aged 25, was sent to me by Dr. Cowie, Turriff, with a diagnosis of right movable kidney. The excursion of the kidney was very considerable, and had caused great pain, attended with vomiting and general abdominal disturbance. A support had been worn for some time, but was found to be worse than useless. She was operated on in the same way as the last two cases, and with an equally good result.

An Address

METHODS OF INCISING, SEARCHING, AND SUTURING THE KIDNEY.

Delivered before the New York State Medical Society.

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My studies for some years past, in operating upon numerous patients who have come to me with renal disease, have demonstrated the extreme importance of a more thorough knowledge of the anatomy of the kidney itself; and, having arrived at some definite conclusions upon this head, I take pleasure in presenting certain facts before you for the first time in a public address. I shall confine my attention to-day to the methods of incising, searching, and suturing the kidney where calculus is believed to be present.

The diagnosis of stone in the kidney has fortunately been so greatly simplified by the use of the *x* rays that with this agent we can now determine the presence or absence of stone in all cases with practical certainty. I recently delivered an address upon this subject before the American Gynecological Society