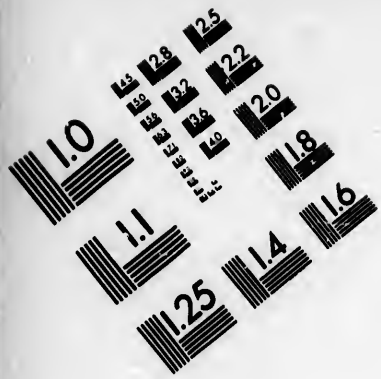

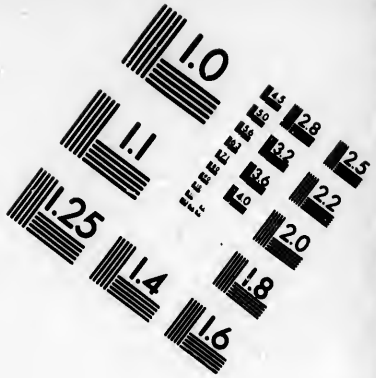

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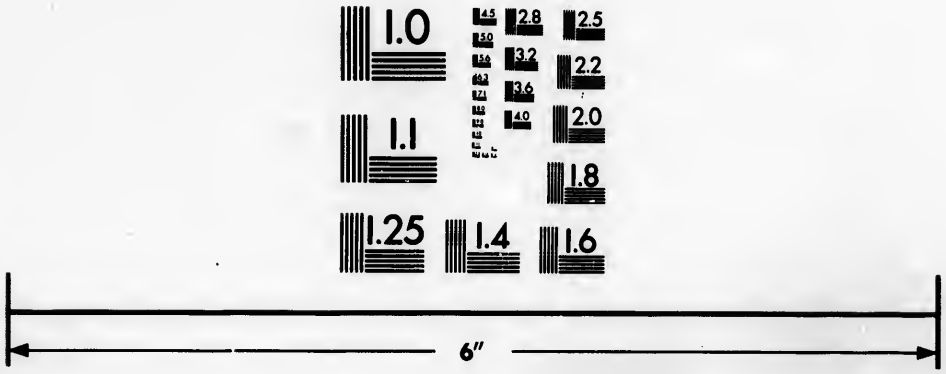

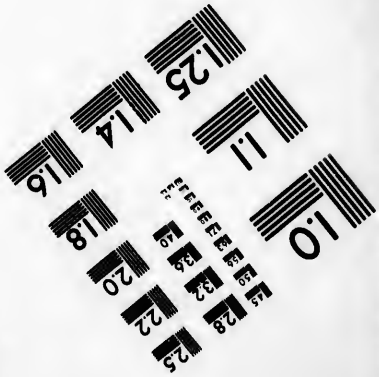

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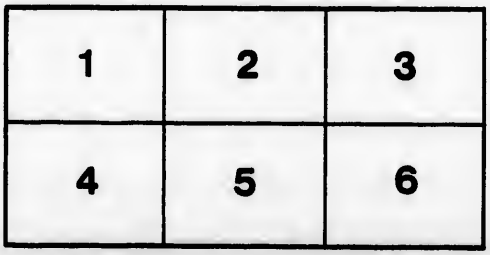

(*Reprinted from the Montreal Medical Journal, November*, 1895.)

THE OPERATIVE TREATMENT OF MOVABLE KIDNEY.*

By JAMES BELL, M.D.

Surgeon to the Royal Victoria Hospital and Consulting Surgeon to the Montreal General Hospital; Professor of Clinical Surgery, McGill University.

A tendency has recently been shown in our profession to sneer at and ridicule the operative treatment of movable kidney—to assert that it is useless, unnecessary, experimental, etc., and, in short, to assume that on account of its simplicity and freedom from danger it is a favourite operation with the unscrupulous and that it is frequently, if not generally, unnecessarily performed.

Now, I would not assert that there is no ground for such belief (although I have no personal knowledge of it), nor would I ask you to believe that every case of movable kidney requires operation; far from it; but in this respect this operation does not differ from many other operative procedures, such, for instance, as those for relief of stone in the kidney, stone or stones in the gall-bladder, bow-legs and many other deformities. It is not necessary to say to the members of this Association that in none of these conditions does the surgeon operate simply because of the existence of such a condition, but because of the symptoms which it produces, and which can, it is thought, with at least a fair degree of probability be remedied by operation. Who has not seen, for example, in the autopsy room, renal and biliary calculi which had not been known to have produced symptoms during life? And again, who is there who is not acquainted with men and women who are living happy and useful lives, in spite of various kinds and degrees of deformity? So, too, a movable kidney which gives rise to no symptoms requires no treatment, and I do not doubt but that the discovery of this condition to the patient's knowledge is often one of the greatest misfortunes to her or to him, and is frequently the cause of a train of subjective symptoms which will probably never be entirely removed by operative or any other treatment. My own personal views upon this subject may be expressed in the following statements:

1. That preternatural mobility of the kidney often produces, *per se*,

* Read by title at the meeting of the Canadian Medical Association in Kingston, August, 1895.

many very troublesome symptoms which are quite frequently sufficient to incapacitate the patient.

2. That such undue mobility often leads to organic changes in the organ.

3. That fixation of the kidney under these circumstances is the only rational treatment.

4. That in the great majority of cases (which require treatment), this can only be done by operative measures. (I cannot conceive that it is possible to fix the kidney by any kind of belt, or truss, or appliance, without producing injurious pressure upon the intra-abdominal organs, and, as a matter of fact, I have been unable to satisfy myself that it is possible to retain a movable kidney in its proper position by any kind of appliance, even at the expense of injurious pressure upon other organs).

5. That a carefully performed nephrorrhaphy should practically always succeed in permanently fixing the organ.

6. That nephrectomy for undue mobility of the kidney can hardly ever be necessary.

In illustration of the above statements I propose to give very brief reports of five cases upon which I have recently operated for this condition.

CASE I. Mary G., æt. 26. Farmer's wife. Had been married seven years and had had four children, the eldest 6 years of age and the youngest 7 months.

This patient came to hospital complaining of painful and frequent micturition and pain in the abdomen on walking. She was a native of Canada, had had the usual diseases of childhood and an attack of acute rheumatism a year and a half before admission. Since the attack of rheumatism, she had suffered from palpitation and other cardiac symptoms, and examination discovered a loud apex systolic murmur (mitral regurgitant). There was no tubercular history. The present illness began 16 months before admission, when the symptoms above detailed were first noticed, and about the same time she discovered a freely movable mass in the right side of the abdomen. From this time she was quite unable to do her ordinary household work. Her symptoms were attributed to uterine disease, and she was sent to a gynæcologist (Dr. Wm. Gardner), whose examination discovered only a thickened tender ureter on the right side. She was transferred to my ward in the Montreal General Hospital on the 20th of October, 1892, when the following conditions were noted: The right kidney was greatly enlarged (two or three times its normal size), very freely movable and tender on manipulation. Movement of the

body from side to side, or rising to the erect posture caused a sudden dragging pain. While lying in bed the pain and frequency of micturition were much diminished. The right ureter could be felt through the anterior vaginal wall as a hard cord, as large as a large lead pencil, and tender on pressure. The urine was normal in quantity, cloudy, contained mucus and a small amount of pus. There was a little albumen (due to the pus), but no sugar. Tuberculosis was suspected, but several careful examinations failed to discover any trace of tubercle bacilli. On the 24th of November, 1892, the patient was etherized, the urethra dilated and the ureters catheterized by Kelly's instrument. The result was most satisfactory. Cloudy, turbid urine flowed from the right ureter and perfectly clear urine from the left. The ureteral orifices could be felt with the finger in the bladder, and catheterization was not in the least difficult. There was no evidence of disease in the bladder itself.

On the 29th of December the kidney was fixed to the loin by three sutures of silk worm gut, through the usual oblique lumbar incision. (These sutures included capsule and kidney tissue). The kidney was found to be uniformly enlarged, with the pelvis considerably dilated, and the ureter enlarged and thickened at the renal as well as at the vesical extremity. This patient made an uneventful recovery, but on account of the inflammatory condition of the kidney and ureter she was kept in bed until the 9th of February, 1893 (40 days), when she was sent home. By this time the symptoms had almost entirely disappeared and the kidney and ureter had greatly diminished in size. She suffered, however, from incontinence of urine from the dilation of the urethra. I have not seen this patient since she left the hospital as she lives in a remote country district, but I have heard from her several times, directly as well as indirectly, through neighbours. She and they assure me that she is perfectly well and has done her own house work ever since her return from the hospital. Her only complaint is that there is still a tendency to incontinence of urine, noticed when coughing, etc. The net result, therefore is, in this case, that a young healthy woman, who had been confined to her bed and unable to do anything about her house for sixteen months previous to operation (although she had borne a child in the meantime), and whose movable kidney and its ureter were well on the way to inflammatory disorganization (pyonephrosis), has been, since the operation (now two years and nine months), in what she describes as perfect health. I am, of course, unable to report upon the condition of the kidney and ureter, but I am assured that the urine is "quite clear." However we may attempt to explain it, I think there can be little doubt but

that the pathological conditions in the kidney and ureter at the time of operation began with and were primarily due to the preternatural mobility of the organ.

CASE II. D. C. F., æt. 40, merchant. A tall, spare man with marked tubercular history, complained of soreness in the right side and back when walking and pain in the right side of the abdomen. He had had right-sided pleurisy twenty years before coming under my observation and had been under treatment for ten years for the above-mentioned symptoms. He had also suffered during this period with an oppressive feeling in the stomach and occasional diarrhœa. He had been treated for dyspepsia, disordered liver function and gall-stones. He had also been severely dieted and had taken much medicine. For a year before admission to the Royal Victoria Hospital (April 29, 1895), where I operated, he had lived entirely on milk and soda biscuits and had lost much weight. He had also been unable during the greater part of the year to do any work. There had been no definite urinary symptoms and the heart and lungs were normal A movable tumour had been discovered in the right side about twelve months before admission, but a definite diagnosis had not been made until six months later. When he came under my care the diagnosis was quite clear. The right kidney, apparently twice its normal size, moved freely into the epigastrium and down into the pelvis. The urine was clear and normal in every respect. Operation was performed in the usual way on the 1st of May, 1895, and an unusual condition of the kidney was discovered. The pelvis of the kidney extended through to the convexity of the organ, so that there were two masses of kidney tissue representing its extremities connected by a fibrous sac containing an ounce or two of urine. The urine was evacuated through a needle puncture on the posterior surface, the ends approximated and each attached by a silk-worm gut suture (passing through fibrous capsule and kidney tissue for about three-quarters of an inch) to the end of the lumbar incision (fascia and muscle). The patient made an uninterrupted recovery and was discharged from hospital on the 23rd of May. I saw him again on the 16th of July, when he was quite well. The kidney could not be moved from its position in the loin and he had gained much in weight His only complaint was of an area of disordered sensation in the skin of the abdomen—doubtless due to section of, or possibly only a traumatic neuritis of, the ilio-hypogastric nerve.

CASE III. Mrs. L., æt. 52, a spare woman, the mother of eleven children, was admitted to the Royal Victoria Hospital on the 4th of May 1895, with right pyonephrosis and great mobility of the kidney. She

had been married thirty years and had had two miscarriages in addition to the eleven children above mentioned. She had suffered with the right side for twenty-three years, especially on quick movement or in lifting, and she attributed this trouble to a fall down stairs, in which she had struck upon a barrel. Four years before admission she first felt a swelling in the right side of the abdomen. Since that time she had suffered a great deal with pain and tenderness in the right side and painful and frequent micturition. During sixteen days of observation in hospital prior to operation the amount of urine secreted varied from 18 to 34 ounces daily and it contained a large and variable amount of pus. On the 25th of May, 1895, the kidney was exposed by the usual oblique lumbar incision and was with some difficulty brought into the wound. Two large abscesses were evacuated on the posterior surface of the organ and a rough, irregular stone about the size of a filbert was removed from the trumpet-shaped orifice of the ureter, where it lay quite free and movable. On account of the disorganized condition of the kidney I was strongly tempted to remove it, but as it contained at least 25 per cent. of apparently normal secreting structure, and as I had no knowledge of the condition of the other kidney, I decided to fix it by suture to the edges of the lumbar wound. A drainage tube was inserted, but it came out in forty-eight hours and was not re-inserted. This patient made excellent progress for eleven days, when she developed a left lobar pneumonia. In the meantime the wound had become quite healed and the kidney seemed to be of almost normal size. On the 23rd of June, thirty-four days after operation, the kidney again became swollen and painful, and on the 25th of June the original incision in the loin was reopened and the kidney was found to be firmly adherent to the parietes. It was reopened and a large quantity of pus escaped. A drainage tube was kept in the wound for three weeks. There was no escape of urine and the wound healed immediately when the tube was removed. This patient is still in hospital and has had at times ever since the original operation sharp attacks of pain about the vesical extremity of the ureter. It is of course open to question whether a nephrectomy would not have been a better operation in this case, but I quote it to show that the kidney can be very safely and certainly fixed by two or three sutures of silk-worm gut passed through the kidney structure as well as the capsule. In this case it is impossible to say whether the symptoms were not all due from first to last to the calculus, but it is at least debatable whether the earlier symptoms were not due to repeated obstructive conditions caused by twisting of the ureter and the stone formation secondary to this condition, or perhaps only a

coincidence. Certainly I do not think that the mobility of the kidney can be attributed to the stone.

CASE IV. Mrs. B., æt. 41, stoutly built and well nourished, the mother of eight children, was admitted to the surgical wards of the Royal Victoria Hospital, from the gynæcological side, on the 24th of May, 1895, complaining of pain in the right side and back, and of attacks of frequent micturition. She had been an invalid for five years on account of the above symptoms, which were always aggravated by exertion, and which had been growing steadily more severe. She was otherwise in perfect health and the urine was quite normal. The right kidney could be felt of normal size and painless on pressure, through the lax abdominal wall, and was freely movable down to the brim of the pelvis and over to, or beyond the middle line of the abdomen. On the 27th May it was fixed to the loin by three silk worm gut sutures, introduced into the kidney tissue, through the ordinary oblique lumbar incision. She made an uneventful recovery and was discharged on the 15th of July, feeling quite well and with the kidney not discoverable by palpation. Her stay in hospital was somewhat prolonged by a little suppuration at the posterior angle of the lumbar wound. On the 15th August, her physician, Dr. Pagé, gave me a most favorable account of her condition.

CASE V. Lucy H., æt. 19, was first seen in consultation in February, 1894. She was a highly neurotic girl, and although the prominent symptoms were pain in the back and pelvis, and attacks of suppression of urine, I declined to operate. In fact, up to the time of my visit, the symptoms had been attributed to a pelvic lesion, and the diagnosis of movable kidney and its possible causative relation to the symptoms (or to part of them), was then first made. Her attention having been directed to the movable condition of the kidney, all the local symptoms became greatly aggravated, and she was sent to me again in March, 1895, for operation. I again advised against operation on the ground, that on account of the neurotic condition of the patient, it was impossible to determine what symptoms, or if any of the symptoms, were due to the excessive mobility of the kidney. Her physicians were greatly disappointed at my decision and strongly urged operation, so that after a good deal of correspondence on the subject, I went to her home in the State of New York and operated in the usual way (using four silk worm gut sutures), on the 22nd of May, 1895. I have not seen this patient since the day I operated, but I have heard repeatedly from her physicians, the substance of the reports being that the lumbar wound suppurated and healed slowly, but that the kidney remained fixed in its normal position.

It is not my intention to discuss the subject of movable kidney in its entirety, nor, considering the recent literature of this subject, would I be justified in doing so, even if time permitted. The whole history of the surgical treatment of this condition (and therefore, practically of its recognition as a condition requiring such treatment), is to be found in the surgical literature of the last fifteen years (since Prof. E. Hahn, of Berlin, described the operation of nephrorrhaphy in 1880). In 1890, two very complete and exhaustive papers were published, independently, by two of the leading American surgeons, one in *The Annals of Surgery* (Vol. 2, 1890, page 81), by Prof. W. W. Keen, of Philadelphia, the other by Dr. A. J. McCosh, of New York, in *The New Medical Journal* (Vol. 1, 1890, page 281). In both of these papers the subject is systematically discussed, and a complete list of all operations which had been reported up to the date of publication, is carefully analyzed. To quote from Dr. Keen's list of 134 operations which he had tabulated to August, 1890, there were 4 deaths, 4 failures, 28 cases improved, 9 unimproved, and 66 cured—besides a few cases described as satisfactory, " possible cures," etc.—not a bad showing for the first decade in the history of a new operation ! Since that date, August, 1890, the operative treatment of movable kidney has continued to grow in favour with surgeons, and has given, from year to year, increasingly good results. C. Neumann, of Berlin, in the *Centralbatt für Chirurgie*, (No. 21, 1894,) has collected 283 cases of nephrorrhapy with the following results : 65.32 per cent. cures, 10·36 per cent. improved, 22.07 per cent. failures and 1.81 per cent. fatal. Amongst the prominent advocates of the operation during the last five years may be mentioned Franks, Küster, Tuffier, Guyon, Guermonprez, Salzer, Zatti, Le Cuziat and many other European and American surgeons.

I shall not attempt to discuss the questions of causation, diagnosis, influence of sex, age or occupation, nor even the selection of cases for operation, except to say, that whenever the symptoms are sufficiently distressing to cause invalidism, operation should be recommended. In this connection, I wish to emphasize the statement already made that excessive mobility of the kidney when of long duration, in at least a certain number of cases (probably much larger than has hitherto been suspected), leads to destructive changes in the organ. (See Cases I., II. and III.) As to the operation itself, the kidney is exposed in the loin, preferably by an oblique incision extending downwards and forwards from the outer border of the erector spinæ muscle parallel to the twelfth rib and a finger's breadth below it (Treves' operative surgery). In the earlier operations the fatty capsule was sutured to the

parietes and there were many relapses. The next step was to separate the fatty capsule from the kidney and pass the sutures through the fibrous capsule, but it was soon discovered that the capsule stripped off very readily. Then advancing a step further the suture was passed into the kidney tissue, including both parenchyma and capsule. Experience soon showed that no apparent injury was done to the kidney and a much more secure approximation was effected which gave better permanent results. Other methods employed have been to abrade the fibrous capsule or to partially remove it in order to approximate a raw surface to the transversalis fascia; to pass the suture around the last rib or through its periosteum, etc. Generally speaking, however, the method employed at the present day is to pass three to four or five sutures through the fibrous capsule and kidney tissue for the space of three-quarters of an inch in length and a quarter of an inch to half an inch in depth and attach them to the cut edges of the transversalis fascia and oblique muscles. There is probably no better arrangement of the sutures possible than that recommended by Mr. Morris—to pass a suture from each edge of the wound near the convex border of the kidney (including muscle, fascia, capsule and kidney tissue) and a third nearer to the hilum, this latter to include both edges of the wound as well as capsule and kidney tissue For suture material catgut has been pretty generally abandoned. Silk is open to the same objection in this as in other operations—that is, that occasionally a sinus forms and persists until the suture is removed. Animal tendon has been employed, and silk-worm gut has of late been used perhaps more frequently than any other material. It seems to be free from objection and answers every purpose. In the *Revue Médicale*, No. 6, June, 1895, is described a new operation for the fixation of floating kidney by Vulliet and Poullet. It is described as fixation by living tendon and consists in suture through the capsule by a detached tendon of the dorsalis longus muscle. (I can only say of this procedure that it seems to me at first sight to be an unnecessarily complicated one.) It is probably better in most cases to allow the wound in the parietes to heal by granulation, both to avoid the risk of cellulitis and to secure a firmer adhesion in the line of the wound. This does not involve any considerable delay in healing, as the wound contracts and closes with amazing rapidity. The anatomical distinction between floating kidney, which is surrounded by peritoneum, has a distinct mesonephron and is congenital; and movable kidney, which is retroperitoneal, has no mesonephron and is generally acquired, is of no practical importance surgically and probably could rarely, if ever, be made out during the performance of an ordinary operation for fixation of the kidney.