A Clinical Lecture

ON

FOUR CASES IN WHICH STONES WERE REMOVED FROM THE URETER.

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I do not propose to lecture on the diagnosis and treatment of stones in the ureter. This has been written about very fully by those who have had a larger experience of such cases. I propose to speak on four cases of the kind which have been under my own care, to discuss the causation of some of the symptoms presented by them, and to refer to some of the difficulties in their diagnosis, and a few points in treatment.

CASE I.

A. J. T., male, aged 33, was sent to me by Mr. Page, and admitted to the General Hospital, November 8th, 1907. He had suffered for six months from occasional pain in the left iliac fossa, and also a slight pain in the penis, as if he wanted to pass urine, but the pain was not associated with micturition. The first severe attack occurred three weeks before admission. The pain was in the left iliac fossa, and extended into the left testis, and was accompanied by retraction of the testis, and then the pain extended up to the left loin. The attack lasted about eight hours, and was accompanied by vomiting. There was some frequency of micturition in the attack, but this was also present at other times. There was no haematuria. There had been two more similar attacks before admission, and one occurred after, but there was no vomiting with the one after admission. The urine passed after this attack was normal. The day after there was slight tenderness on pressure over the left kidney, and sharp pain on jarring the kidney from the loin behind, but it was not tender over the abdominal course of the ureter, nor could any stone be felt in the lower end from the rectum. The urine examined on several occasions was normal. A skiagram taken by Mr. Ellington Jones, the skiagraphist to the hospital, showed a small stone in the course of the pelvic portion of the ureter.

Operation.

On November 15th I first made the usual loin incision to expose the kidney and upper end of the ureter. The kidney appeared normal. I then extended the incision to 1 in. above and internal to the anterior superior spine, but could not feel any stone along the course of the ureter. I then make a minute opening in the ureter, close to the pelvis of the kidney, but when the bougie was introduced through this, it was so high up that it had to curve too much to allow of its passage, and I had to make another opening an inch below. Through this the bougie passed downwards until it met with an obstruction below the pelvic brim, and then, on following down the bougie with my fingers, I could feel the stone, but I could not get at it without carrying my incision in the abdominal wall forwards another two inches, until it reached the outer border of the rectus, making altogether nearly a 12-inch incision. I thought I could work the stone just a little upwards, but this is very doubtful. The part of the ureter containing the stone lay imbedded in fibro-fatty tissue near the bladder, and it was by no means easy to reach it. I cut through the fibro-fatty tissue on to the stone and extracted it. In exposing the ureter I tore a small opening in the peritoneum, but closed it at once with a continuous puckering suture. I endeavoured to suture the ureter, and passed two deep fine catgut sutures, and one outer of very fine silk, through the tissue through which I had cut into the ureter, but whether the sutures actually passed through the ureteral wall I am not certain. They certainly did not diminish its lumen, as I had a bougie in it at the time of suturing. I then sounded the interior of the kidney through the highest ureteral opening, with negative result. Both upper ureteral openings (both minute) were sutured with one deep very fine catgut suture, and one outer one of very fine silk. The end of a rubber drainage tube was placed against the sutured lower end of the ureter, and the other end brought out of the loin wound. The muscles were sutured with No. 2 twenty-day Van Horne's catgut. The stone was irregular in shape, a light colour, and on its surface were some crystals. It only measured $\frac{7}{8}$ by $\frac{3}{8}$ in., or about $\frac{1}{2}$ in. in diameter.

After-History.

The patient had to have two injections of morphine in the first twenty-four hours. During this period there was only a slight brown tinge with the urine passed from the bladder. Urine and blood oozing escaped freely from the drainage tube. In the second period of twenty-four hours the urine passed from the bladder was normal in appearance and greater in quantity, and there was less from the wound. On the third day there was again just a trace of blood in the urine from the bladder. There is unfortunately no note as to when the urine

ceased to flow from the drainage tube and when this was removed, but the notes say that on the twenty-second day after the operation the wound was soundly healed, and he was discharged a few days later. In the following year he had attacks of pain in the right renal or ureteral region, but I never heard of any recurrence of the pain on the left side.

CASE II.

H. P., aged 48, was sent to me by Dr. Boyce of Wotton-under-Edge in September, 1906, with symptoms of renal colic. The first attack, which had occurred two months before, lasted thirty-six hours. The pain had been in the left loin, extending into the left groin and testes, and the testes had been retracted. He vomited frequently during the attack when the pain was severe. Hypodermic injections of morphine were required to relieve the pain. He said his urine had been black "with altered blood." A month later he had a second attack of the same nature, and morphine was again required. In the fortnight following the second attack there were several slight attacks of the same kind. In the two severe attacks there had been frequency of micturition. Dr. Boyce wrote that "he had passed some blood with the urine once or twice." The patient said that before the onset of the pain in the attacks he had a "bearing-down feeling" in the penis and rectum, and that after the second severe attack, during an act of micturition the urine stopped and then went on again but no stone was passed. For the last fortnight he had been free from discomfort of any kind, though he had been riding in a jolting carriage. He never had any pain with micturition. This history was very suggestive of renal calculus; almost every symptom was present, and I did not doubt that he had either a stone lodged in the kidney or ureter, or that he had passed one. But that was the question—had he now passed it? He had been free from all discomfort for a fortnight. There had been only two very severe attacks, and the whole period during which he had had the attacks was within two months. I examined his urine on many occasions and it was always normal. There was no renal or ureteral tenderness or rigidity. A skiagram failed to give any shadow of a stone.

After keeping him under observation in the ward for some time I sent him home, with instructions that if the attacks persisted he was to come in again, for then, I told him, I should feel sure the stone was still there. But because further observation was necessary to confirm my suspicions and I did not then operate on him he seems to have made up his mind that he had no stone; and although the attacks persisted, and some were very severe, I saw nothing of him again until June, 1909—three years later—when the severity of his attacks drove him to seek relief. The history he then gave was that he had had many attacks since his previous admission, but had once gone almost, if not quite, as long as a year without a severe one. He had an almost constant pain in the left loin, and this was increased if he happened to slip or when doing laborious work, and sometimes even rising from the sitting position would bring on a sharp pain there. During the few months before his readmission there had been several severe attacks needing hypodermic injections of morphine and accompanied by vomiting. The pain was always through the left loin, shooting into both testes and into the penis. He said that sometimes after an attack the urine had been of the colour of porter, and he had sometimes passed a little slime with streaks of blood from the urethra after the attack. At the commencement of the attack micturition had been very frequent—every ten or fifteen minutes; but when the pain got severe, although there was a persistent desire to micturate, no urine passed, and then as the attack passed off a little urine began to come at frequent intervals. This was his description of what happened. I presume that when the attack was at its height either the bladder was in a state of persistent contraction or the intervals between the contractions were so short that hardly any urine had time to collect. In the intervals between the attacks there was no frequency of micturition or pain with the act—nothing, in fact, to suggest that any stone had passed into the bladder.

His urine was a pale straw colour, quite clear, 1012, with a slight cloud of albumen. He had a muscular abdominal wall, with a fair thickness of fat in it, so that it was not easy by palpation to reach the contents. There was very slight tenderness on pressure over the left lumbar region in front, but on jarring the loin behind he had a sharp pain for a moment. There was no tenderness over the course of the ureter, but, as I have already stated, the condition of the abdominal wall was not favourable to palpation, and nothing abnormal was felt at the lower end of the ureter per rectum.

On the night of July 1st (a few days after admission) he had a severe attack of pain in the left loin, and when I saw his urine next day there were two minute clots of blood in it. As I should certainly have operated even if the skiagram showed no stone, I did not have one taken.

Operation.

The persistence of the attacks in the one loin made me feel almost sure there was a stone in the kidney or ureter, and I explored the kidney on July 2nd by the usual loin incision, 4 or 5 in. in length. The kidney shelled out of the perinephric fat with unusual ease; it could not be brought out on to the loin, but could be brought fairly well down into the wound. An incision was then made in the outer border of the kidney and a finger passed through it into the interior of the organ. It entered a small smooth cavity, which felt like a slightly enlarged pelvis. A smaller cavity leading out of it in

a downwards direction could also be felt. The interior of the kidney was then sounded with a long probe. No stone was discovered either by the finger or probe. It was not found possible to pass the ureteral bougie from the interior of the kidney down the ureter. The incision in the cortex of the kidney was closed with No. 1 twenty-day Van Horne's catgut sutures. I then explored what seemed to me the whole course of the ureter as it lay behind the peritoneum with my fingers, but felt no stone. I then made a minute opening (about $\frac{1}{2}$ in. long) in the upper end of the ureter, and through this I passed the ureteral bougie in a downward direction. It was obstructed near the lower end, and the point of the bougie could be felt to grate against something at the obstruction. It is interesting that the sensation of rough contact was conveyed to the fingers through such a length of flexible bougie. I then passed my fingers along the course of the bougie, and, now guided by it, I readily felt a small stone in the ureter at the point of obstruction. This seemed to be only an inch or two from the bladder. I tried to work it upwards but could not move it. I therefore carried my original incision as far as the outer border of the rectus, obliquely forwards and downwards, until it was 10 inches long. Even then it was extremely difficult to reach the stone. It seemed to lie under the bladder, and the peritoneum was pressed down on it by the weight of the intestines. I think it might have been a help at this stage to have adopted the Trendelenburg position, but there was the complication of the air cushion under the right loin, which it might have been difficult to reinsert during the later stage of the operation (closure of upper ureteral wound) if removed. I cut through the ureteral wall on to the stone and extracted it with a pair of sinus forceps. It was only $\frac{3}{4}$ by $\frac{1}{2}$ in. in size, but very angular. It came out in one comparatively large and two very small fragments. After its removal I could easily pass the ureteral bougie from the upper opening in the ureter, past the opening through which the stone had been removed, on into the bladder. I could not reach the incision in the ureter through which the stone had been removed sufficiently to suture it, but I closed the upper minute opening with one deep very fine catgut stitch, and another of very fine silk through the outer wall. The divided muscles of the abdominal wall were all sutured together with No. 1 twenty-day Van Horne's catgut. The end of a long rubber drainage tube was placed against the unsutured opening in the ureter, and the other end brought out of the loin wound.

After-History.

During the first twenty-four hours after the operation there was only a slight brown tinge in the urine, but there was a free discharge of deeply blood-stained fluid from the wound; in the second period of twenty-four hours urine practically ceased flowing from the loin drainage tube, and he passed several pints. The drainage tube was removed on the fifth day, as there was then only a slight stain on the dressing and no suppuration. I kept him in bed three weeks, and from the time he got up he wore a strong well-fitting belt. But, in spite of this and careful suturing of the muscles, a hernia has formed in the scar. He has got much stouter, and probably there has been a considerable increase of intra-abdominal fat, and this has helped to cause the bulging in the scar. He has had (January, 1910) no return of his pain.

CASE III.

T. M., male, aged 29, was sent to me by Dr. James Young, and was first seen by me on July 3rd, 1907. Two years before that date he began to suffer from severe attacks of pain in the left loin, and at the period at which I first saw him they had occurred almost every week. The pain started in the left loin behind, and extended round to the outer border of the rectus about the same level, and then down the abdominal wall into the testes, and the testes became retracted. Sometimes the pain ceased in the loin but remained in the other situations. These attacks lasted about twelve hours. Sometimes there was vomiting, if not there was nausea. During these two years he had several times what he considered to be haematuria, but it was not specially associated with these severe attacks of pain. There was frequency of micturition, which was very marked on some days, but it also was not specially associated with the severe attacks of pain. Sometimes with an attack, sometimes without, he had rectal tenesmus, passing little bits of hard motion. After the first attack he had great pain at the end of the penis in passing urine for twenty-four hours, and then, when micturating and defaecating at the same time, the pain and obstruction suddenly ceased. He did not hear anything rattle, as if he had passed a stone, but the conditions were not favourable to any sound being produced if one had fallen. Jolting caused severe pain. He was a tram driver, and he dreaded going over any junction on the tram lines, as the jolting of his car brought on severe pain.

He was an in-patient at another provincial hospital two years before I saw him. A skiagram was then taken but no operation was proposed. This was six months after the first attack. I could not make out any tenderness in the renal region either on pressure or percussion. The urine was normal. A skiagram of the kidney and upper end of the ureter was negative.

Operation.

On July 9th I explored the kidney by the usual loin incision. The kidney appeared healthy, and no stone was found in it, on exploration of the interior by the finger passed through an incision in the cortex. The pelvis did not appear dilated. Later on in the operation the interior of the kidney was explored

by a sound passed up through an incision in the ureter, with negative result. I could easily feel a stone lying in the ureter 2 in. below the kidney. The ureter was much thickened both above and below the stone, especially below it and for the extent of an inch. I cut into the thickened ureter and removed the stone, which was $\frac{1}{2}$ in. long and $\frac{1}{2}$ in. broad. It was very rough and somewhat irregular, so that, although it fitted tightly, yet probably urine could flow by it without any great difficulty. After the removal of the stone I could pass a bougie into the bladder. I united the incision in the ureter with a few fine catgut sutures through the deep wall and a few very fine silk ones through the outer. I passed a rubber drainage tube down to the sutured ureter, and closed the incision through the muscles of the loin with No. 1 twenty-day catgut.

After-History.

There was a slight brown tinge in the urine passed first after the operation. No urine escaped from the wound. The drainage tube was removed on the fourth day after operation, and the wound healed without any discharge. I saw him last year—that is, two years after the operation—and he was then very well and busy at work on the trams.

CASE IV.

W. S., male, aged 24, was sent to me in January, 1904, by Dr. Aubrey, who was then in practice at Bridgwater. He had begun to suffer from attacks of pain in the right loin two years before; at first they occurred every month or so, but during the previous six months they had occurred every week or two. The pain was always in the back in the region of the right kidney, extending through to the front, but not shooting into the groin or thigh, though he sometimes got retraction of both testes during an attack. He often felt sick, and now and then vomited during an attack, and there was moderate frequency of micturition while the attack lasted. He had never noticed anything like haematuria. Dr. Aubrey had seen him in several attacks, and had never found blood in the urine after them.

He had one attack after admission. It lasted about twenty-four hours. The pain was in the right renal region, and it did not extend in any direction. He felt sick, but there was no actual vomiting. The urine passed at the end of the attack only contained a light flocculent precipitate. It showed no red corpuscles under the microscope, but numerous uric acid crystals were present.

At times, when he was free from any attack of pain, there was some tenderness on pressure over the right kidney, and on sharp percussion of the loin, though not on the other side. There was no swelling or tenderness along the course of the ureter, either on palpation through the abdominal wall or per rectum. He was not fat, but was very muscular. No blood was ever detected in the urine.

Several skiagrams of the kidney and the portion of the ureter in which a stone was eventually found were taken, with negative results.

Operation.

On February 5th I explored the kidney by the usual lumbar incision, which, when I found the stone in the ureter, I enlarged forwards as far as the anterior superior spine. I at once felt a stone lying in the ureter several inches below the level of the kidney, about that of the pelvic brim. It could not be pushed up the ureter before I cut down and removed it. It broke up in removal, but I estimated that it was one-third of an inch in diameter. It was soft and irregular, and apparently composed of uric acid. It was so firmly fixed in the ureter that it was surprising that the urine had flowed by the side. The ureter seemed thickened above the stone. After its removal I passed a bougie down into the bladder, and then closed the incision in the ureter with fine catgut sutures through the deep layer and fine silk through the outer layers. I then explored the interior of the pelvis of the kidney through an incision in the renal cortex. I found the pelvis somewhat dilated, but no further stones. This incision through the renal cortex was closed with three catgut sutures. A drainage tube was placed against the sutured ureter and kidney, and the muscles of the loin were sewn together with catgut.

After-History.

The urine had to be drawn off during the first forty-eight hours. This was probably simply due to the patient's inability to pass urine lying on his back. The urine each time contained a considerable quantity of blood, and blood-stained urine was also present in the dressing within the first twenty-four hours. After this the urine remained free from blood until the eighth day, and there was no further discharge from the loin wound, the drainage tube being removed on the eleventh day. On the eighth day he had an attack of pain in the region of the kidney which had been operated on, and haematuria set in. The red colour of the urine lasted for more than a week, but the urine for part of this time was probably simply coloured with blood clot which had been lying in the bladder, as later on such clot was washed out in a partially decolorized condition. The renal pain did not continue after the 13th, but recurred a month later, and was associated with tenderness over the course of the ureter, and with a rise of temperature. There was also some temporary rise of temperature when the haematuria was present. The retention of clots in the bladder was followed by cystitis, but he was well enough to go to the convalescent home at the beginning of April, about two months from the operation. It is difficult to say what was the cause of the renal pain and haematuria which set in on the eighth day. I am inclined to

think that some secondary haemorrhage may have occurred from a vessel in the kidney divided in the incision made for its exploration, but haemorrhage from such a cause is very rare. That the outer part of the wound in the cortex had closed is shown by the absence of discharge of blood from the loin wound, as the drainage tube was still in at the time of the onset of the haematuria. It may possibly have been secondary haemorrhage from some vessel near the pelvis of the kidney. The recurrent pain, and the tenderness along the ureter, may have been due to the passage of old clots retained within the pelvis of the kidney. There may have been some pyelitis also set up by the presence of retained clot, and this would account for the pyrexia which was present.

These four cases seem to me to illustrate some interesting points connected with stone in the ureter. In none of the cases, so far as we were guided by the symptoms, could we have felt at all sure that the stone (if present at all) was in the ureter rather than the kidney. The position of the pain in some suggested the renal seat of the stone rather than the ureteral. Only in one of the four cases was the pain in the iliac region rather than the loin, and in this case, although the pain began in the iliac fossa, it extended up into the loin. Pain, when the stone is in the kidney, may be most marked over the ureter, so that pain in the course of the ureter rather than the renal region does not prove that if a stone is present it is in the ureter rather than the kidney. It may be suggested that a stone was also present in the kidney in these cases, but was not discovered at the operation. But in three of the cases the interior of the kidney was explored with the finger passed through an incision in the cortex, and in the fourth case the interior of the kidney was sounded through an opening in the ureter. Moreover, the symptoms subsided after removal of the ureteral stones.

Why should sharp percussion of the loin cause pain when the stone is firmly fixed in the ureter, well below the kidney? Yet it did so in several of these cases. In trying this test, I always compare the effect of sharp percussion of one side with the other, and in these cases I found it only on the side in which the stone was in the ureter. It is supposed to give rise to pain by causing a sudden movement of the stone in the interior of the sensitive kidney. I do not think that in any of these cases it caused any movement of the stone in the ureter. At the time of operation the stone was so fixed that I could not move it. It is remarkable that in one of the cases jolting in a car should have caused such marked pain, when the stone was so firmly impacted in the ureter. As I have already told you, the patient was a tram driver, and he dreaded crossing a tram junction on account of the jolting of the car, as it gave him so much pain.

Only in one case was dilatation of the renal pelvis at all marked, and even in this case it was not great. Although the stones were so tightly fixed in the ureter, and were of a size to block the lumen, they had not a great tendency to produce hydronephrosis. Although they fitted the ureter so tightly, I think they were not smooth enough to prevent urine passing by the side. If they had been round stones the lumen would have been blocked by them. Of course it is not possible to say how long the stones had been so tightly impacted in the ureter. All I can say is that in these four cases I found at operation a stone tightly fixed in the ureter, that symptoms such as were present at the time of operation had been present for at least several months, and that in only one was there any distinct dilatation of the renal pelvis observed. It is interesting how small a channel may suffice to prevent any marked backward dilatation.

As there was no hydronephrosis, at any rate in three out of the four cases, it is interesting to consider what the severe attacks of pain were due to. In some of the cases they were present up to within a very short time of operation, so that there is reason to believe that whatever was found at the operation was the cause. In all cases it ceased after the removal of the stone from the ureter. I think it was not due to the passage of the stone along the ureter, for in every one of the four cases the stone was absolutely fixed there and could not be moved, even backwards. It may be said that it had been moving downwards during the attack, and had by the time of the operation become fixed in the ureter. But it would be very remarkable if I happened to operate on all four cases just at the time when the stone had become fixed. Of course it is impossible to say when it became fixed; but it is probable that the severe attacks

of pain were associated with it in its fixed condition. And the great thickening of the ureter, associated with the impaction of the stone in one case, was evidence that the stone had been fixed in the ureter for some considerable time, yet at the time I operated the patient was getting severe attacks of pain almost every week. The great thickening of the ureter below the seat of impaction of the stone would, in this case, have prevented its onward passage. It seems to me that almost certainly from time to time the ureter above the stone contracted very firmly, became spasmodically contracted, and tried, though ineffectually, to force it on, and that the pain was due to this spasmodic contraction of the ureter. The pain of colic is probably usually due more to violent contraction of the muscle of the duct than to the passage of the stone over the mucous membrane. Why this contraction should set in at intervals, when the stone is lying impacted in the ureter, we cannot tell, for we do not understand what starts the contraction in any particular case, seeing that the stone is always there, and that it is firmly fixed. In two of the cases there was a history of haematuria, but in one of these, after a severe attack of pain in the renal region, after the patient was admitted to the hospital, I found two small clots in the urine passed just after the attack. Next day I found a stone firmly fixed in the ureter, and none in the kidney. Where did the blood come from? If the stone had moved down the ureter the day before, it ought to have moved up again with the pressure of my finger and thumb, but it was firmly fixed. The minute clots were not due, then, to the passage of the stone along the ureter. Their presence suggests the view that the contraction of the ureter, although it could not move the stone, yet by pressure of the mucous membrane on it had damaged the mucous membrane enough to cause slight haemorrhage.

I have already mentioned that there was nothing in the pain, in at any rate three of these cases, which could have suggested that there was a stone in the ureter rather than in the kidney. Neither was there any tenderness or swelling along the course of the ureter, as felt through the abdominal wall, or at its lower end, as felt per rectum, in any of the cases (the stone was not low enough to be felt per rectum). Even in the case in which the skiagram showed a stone in the ureter we failed to make out any tenderness along its course. This may be because the stone was in the pelvis, but in one of the cases it was about the pelvic brim, and there was no tenderness in this case. The stones were probably not large enough to cause any swelling which could be felt through the abdominal wall.

Some of these cases show that we should be unwise to rely on the negative result of a skiagram. Of course a skiagram may show the kidney region and not take in the whole course of the ureter. Unless the plate is an unusually large one, it is always well to take one of the kidney region and one of the lower part of the ureter. But even when the part of the ureter which contains the stone is included within the skiagram it may not show the stone. In two of these cases a skiagram was taken which did not show the stone, though the portion of the ureter containing the stone was included in the skiagram. If I had acted on the skiagraphic evidence, I should have failed to relieve these patients. I have removed small stones from the kidney also which did not show in a skiagram. At the present time, with uncertainty as to the reliability of a skiagram, we cannot act on its negative evidence alone. Nor can we with certainty if the skiagram appears to show a stone in the course of the ureter. A skiagraphic shadow in the course of the ureter may be produced by calcareous tubercle within the peritoneal cavity, or in some retro-peritoneal lymphatic gland, or even by an atheromatous patch in one of the large arteries. Last summer I removed a stone from the kidney, and at first I thought I could feel an angular stone in the ureter on passing my finger downwards along the course of the ureter. It turned out to be a calcareous mass in the overlying peritoneum, but it certainly would have suggested in the skiagram a stone in the ureter. Mr. Hurry Fenwick has differentiated such extraureteral bodies by passing a ureteral bougie up the ureter from the bladder, when if the body which causes the shadow is outside the ureter there ought to be no obstruction to the passage

of the bougie, and it will probably be found that the shadow is really not exactly in the line of the ureter, as can be shown by taking a skiagram with a fine metal stylet within the bougie.

In one of these cases there was very marked thickening of the ureter for an inch below the point at which the stone was impacted. This is rather remarkable. One would not be surprised at hypertrophy and dilatation of the tube above, together with a certain amount of inflammatory thickening at the seat of impaction; but why the ureter should be so thickened below does not seem clear. It is possible that at first the stone had a range of movement somewhat further down the ureter than was found at the operation, and that chronic inflammatory thickening set up by the irritation eventually narrowed the lumen both above and below, so as to fix the stone in the centre of the markedly indurated area.

I now propose to say a few words about the operative treatment of these cases. In all the cases the kidney was explored at the same time that the stone was removed from the ureter, in three cases by an incision through the cortex, and in one by sounding the interior through an opening in the ureter. It seems to me that this should always be done. If a stone has passed down into the ureter, it is quite likely there may be another in the kidney. So far as the symptoms can guide us, as I have already pointed out, we cannot say that they are due to stone in the kidney or ureter, and therefore it is as necessary to explore the kidney, even if the seat of pain is over the ureter, as it is to explore the ureter if the seat of pain is over the kidney. I think if a skiagram showed a stone in the ureter, and failed to show one in the kidney, it is very unlikely one would be found there, but I should explore.

My four cases seem to me to show that we cannot expect to be able to push the stone into the upper part of the ureter, though we should always try, and we must be prepared to cut down on it near the lower end of the ureter, where it is certainly very difficult to reach it, even though we carry our incision as far forwards as the outer border of the rectus. I think when the stone is very low down, near the bladder, the Trendelenburg position might help us, as it would be easier to draw the peritoneum aside if the pelvis were emptied of small intestine, but it would be difficult to turn a patient from the loin position which we employ for the renal part of the operation, into the Trendelenburg one in the middle of an operation, with aseptic towels covering the area of operation.

In three of the cases—in all in which I could—I sutured the ureter, using very fine catgut (as fine as fine silk, and kept in alcohol) for the mucous membrane, or, when it was not possible to define the mucous membrane, for the inner part of the tube, and very fine (intestinal) silk for the outer layer. It is interesting to note that in the one case in which I did not suture the ureter it healed at once, and urine ceased to flow through the drainage tube at the end of twenty-four hours. This is encouraging when we cannot suture the ureter, but the good result in this case should not make us abstain from suture when we can use it. It is most important not to contract the ureteral lumen when we suture. If there is a considerable risk of this—if we cannot see the interior of the ureter clearly—I think it would be better not to suture at all. We should pass a bougie down the ureter whilst we are inserting the stitches, and withdraw it before tying the upper one or two, so as to make sure we do not take up too much of the ureteral wall in the suture and in this way encroach on the lumen.

I think after these operations for removal of stone from the ureter, in which the stone is low down in the pelvis and a very long incision may be required, it is very necessary to suture the divided muscles very thoroughly, and with some substance which will last for at least a fortnight, and I always supply such patients with a well-fitting belt, which is likely to adequately support the long line of scar. Even with these precautions a hernia may form in the scar, as it did in one of my cases.

I have considered very carefully the best position for drainage in these cases. This is very important, as, even if the ureter is sutured, some urine may escape. I think the best position is on the side of the operation, with the pelvis tilted up on pillows. This will not suffice to drain the pelvic portion of the ureter, the true pelvis is such a deep cup-like space, the drainage tube dips over the pelvic

brim into it, and cannot drain it by gravity. But the pressure of the intraperitoneal contents will probably press any fluid in the true pelvis along the drainage tube, and the moderate tilting of the pelvis will help in its escape.

I do not propose in this lecture to discuss the question as to what route should be employed to reach the ureter. In three out of these four cases the stone, though found in the ureter, might, from the symptoms, have been in the kidney, and therefore the transperitoneal route could not have been considered. In the case in which we found evidence of ureteral stone by the skiagram the stone certainly might have been removed by the intraperitoneal route and with less difficulty; but although it has been shown by the published records of a few cases that the stone may be removed through the peritoneal cavity without any disaster, yet, I must say, without any special difficulty as to reaching the stone by an extraperitoneal method—whether the one I adopted or the sacral operation—I should hesitate to employ it, for it seems to me there must be some risk of infecting the peritoneum either at the time of operation or from leakage after. Because we safely evacuate offensive pus through the peritoneum seems to me no reason why we should deliberately cut into the ureter by this route. The pus is already there, and there is no other way of evacuating it. Even in cases in which we have to implant a ureter divided in some intra-abdominal operation into the bladder, we have no choice in the matter. If we had to plan such an implantation, we should, I think, prefer to do it, if it were possible, by an extraperitoneal route. Because the peritoneum is more tolerant than it was thought to be in the past, we must not be rash in exposing it to infection. We cannot be at all sure the urine which may escape when the ureter is incised, or leaks into the peritoneal cavity afterwards, is aseptic. With a block in the ureter it is very likely not to be so.

I have discussed this question of the advisability of operating by the intraperitoneal route because, although condemned by Sir Henry Morris and other surgeons, it has lately been advocated as the operation of choice.

An Address

ON

SOME IDIOPATHIC DISEASES OF THE SKIN WHICH MAY SIMULATE SYPHILIS.*

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THE early syphilographers of the fifteenth and sixteenth centuries, when the great epidemic of syphilis spread over Europe, seem to have been well acquainted with the fact that the eruptions of that disease often resemble those of other maladies. Special attention was called to the matter by the Italian writers John of Vigo and Massa (1536), and again, two centuries later (1735), by Astruc. This tendency of syphilitic cutaneous manifestations to simulate idiopathic dermatoses has always been, and indeed still is, a source of some confusion—not infrequently, even at the present time, leading to error in diagnosis. Our great authority, Sir Jonathan Hutchinson, has observed that “there is in fact no single skin disease of constitutional origin which may not be imitated very closely by an eruption which is due to syphilis”; but, as he goes on to say, “the imitation is rarely absolutely correct . . . there is very frequently a mixing of the types of two or more in one.”

In point of fact, the practised eye, as Bateman long ago said, can usually recognize a difference between the ordinary diseases of the skin and syphilis; and by carefully noting the form, colour, situation, course, etc., of the eruption, the skilled observer will, in the large majority of instances, very soon feel sure whether he has to do with a case of syphilis or not; and he will often be able to form a definite opinion, even without reference to the other

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