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CASE OF A FOREIGN BODY IN THE BLADDER, WITH STRICTURE OF THE URETHRA.

By EDWARD LUND, F.R.C.S.,

LECTURER ON ANATOMY,

AND ONE OF THE SURGEONS TO THE MANCHESTER ROYAL INFIRMARY.

In July, 1871, I was consulted by S. W., an engineer, æt. 33, who had been married twelve years, but without family. He told me he had been subject to stricture of the urethra for about thirteen years, for which he had been under surgical treatment, more or less, until about four years since, when he began to pass bougies and catheters for himself. In this way he had kept the canal sufficiently patulous to avoid any serious inconvenience. He generally used the bougie or catheter of No. 4 size, and occasionally with difficulty he had passed a No. 5; but eleven days before coming to me he had unintentionally, when passing a catheter, taken up a No. 3 instead of No. 4, according to his custom; the bladder was very full at the time, and he was urgently desiring to pass urine, when in some unaccountable manner the catheter passed very suddenly along the urethra, the piece of ivory at the end, which was loose, slipped off, and the instrument was drawn into the bladder and lost to sight and touch; a stream of urine all this time was passing out by the side of the catheter.

He was greatly alarmed at this accident, but no particular pain resulted from it at the time; he took no steps in the matter for a few days, nor did he experience any persistent inconvenience from it. After an interval of about five days, pain commenced on the conclusion of each act of micturition, and this increased so much from time to time that at last he determined to seek advice.

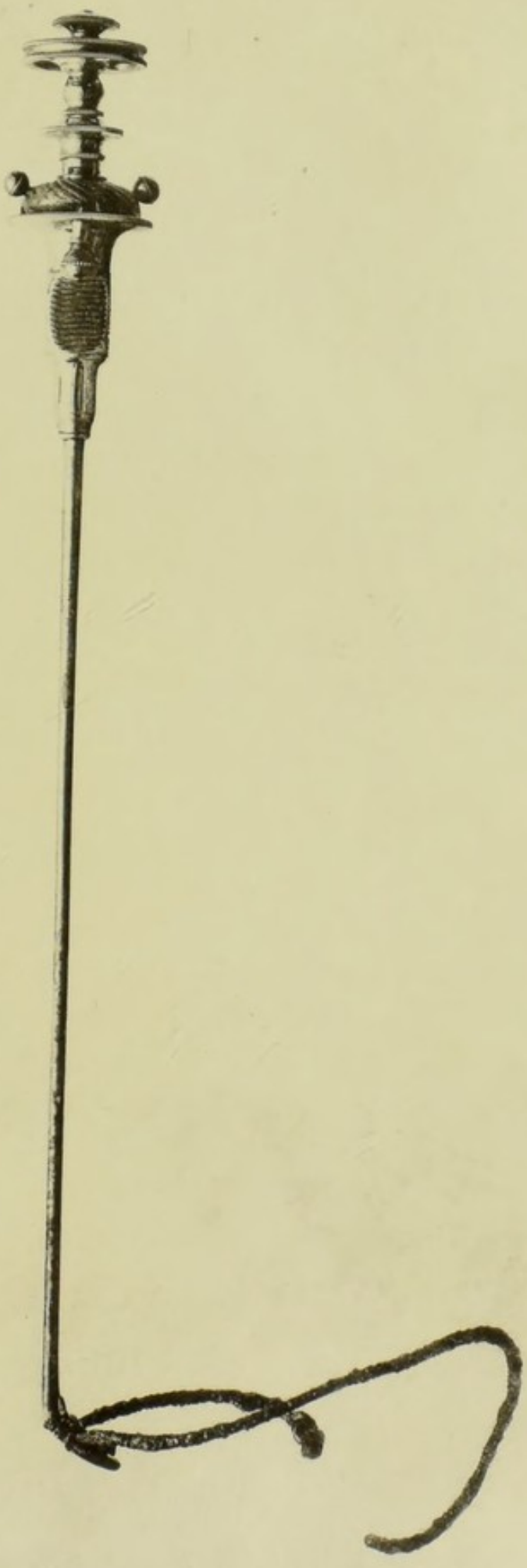
He told me he had passed some blood with his urine on one occasion, but, with this exception, all that he complained of was great pain near to the glans penis each time the contents of the bladder were evacuated.

With a great deal of care I succeeded in passing into the bladder one of the smallest of Thompson's hollow sounds, and through it I injected the bladder. By rotating the beak of the sound in various directions I could make out the presence of something like a resisting body within the cavity of the bladder. Of course, without knowing the history of the case, I could not have been positive that this foreign body was the catheter in question, for it did not seem to impart any sensation of roughness or great resistance, and I might have mistaken it for one of the rugæ of the mucous membrane of the bladder itself. I explained to the patient the extreme seriousness of the accident, and the absolute necessity that some operative proceeding should be at once adopted, ere the case should become more complicated.

As he lived in the country, and was only residing for a time in Manchester, he could not arrange immediately for an operation, and it was not until the 28th of July that I was able to attempt to remove the foreign body. In the meantime I had watched the condition of the urine, and I found it only slightly mixed with albumen, most likely from muco-pus, the result of early cystitis.

The more urgent symptoms were kept at bay by the use of morphia suppositories and diluent drinks, with rest in the horizontal position as far as he would consent.

Having obtained the assistance and advice of my friend Mr. William Smith, senior surgeon to the Infirmary, we proceeded to operate. The main difficulty in the case was the presence of the stricture, and this had first to be dealt with. All our arrangements having been made, the patient was placed under chloroform by Dr. Carruthers, our house-surgeon, and I passed, with some difficulty, a No. 4 silver catheter into the bladder, through which I injected about six ounces of warm water, and, the catheter being withdrawn, I introduced in its place Mr. Holt's dilator, and split the stricture in the usual way. Removing this, I used a small lithotrite (Coxeter's pattern) and began to search for the catheter. Here I met with some difficulty, for, as I afterwards found, the catheter had curled itself round in the bladder in such a way, and it had spread itself out into so large a circle, that the beak of the lithotrite, as it *revolved*, failed to reach it, and, although I moved



it about in all directions, I could not succeed in even touching the foreign body. In these attempts I was assisted by Mr. Smith and Dr. Carruthers; and after trying in the most persevering manner for some time, we almost felt disposed to give it up in despair; when it occurred to me that, as we had only tried with the bladder distended, we ought to draw off the water, so as to explore the bladder when in a less expanded, or even in an empty state. In this we were much more successful, for on the re-application of the lithotrite Dr. Carruthers was enabled to indicate what he thought was the position of the catheter, it being, as he conjectured, on the patient's right side. Following this suggestion, I took hold of the instrument, and very quickly succeeded in catching a portion of it between the blades of the lithotrite; these being fixed by the screw action of the instrument, I drew it out through the urethra, having seized it and held it exactly in the way shown in the accompanying heliotype drawing. The bladder was washed out with warm water, through a No. 10 silver catheter, which entered easily, for the stricture was entirely destroyed. The patient was put to bed; quinine and opium were administered; and the general treatment was conducted according to the instructions laid down by Mr. Holt in his description of the after-management of such cases.

The patient seemed to go on very favourably for three days, but on the fourth day, without my permission, he got up, dressed himself, and went down stairs. In the evening I found he had great difficulty in passing his urine, which up to this time had been voided in a full stream with little pain. The pulse also had been quiet and no febrile symptoms had existed, but now he complained of a sickly feeling; rigors were occasionally experienced to a slight degree, and he felt as if he had no power to empty the bladder. I therefore passed a No. 10 catheter, which gave him some pain, and drew off some urine which was tinged with blood. How far this was caused by the passage of the instrument, or by the hemorrhage resulting from the rent in the urethra, which had bled into the bladder, I cannot say.

During the whole of this night he was extremely feverish, with occasional rigors, and all the symptoms which are associated with

what is called urethral fever. I gave him opium and quinine in large doses, and the next day he seemed considerably relieved. It was evident that he had got chilled, or in some way caught cold, by his indiscretion in getting out of bed too soon after the operation.

About the seventh or eighth day from this date, when the effects of this seizure had nearly subsided, he began to complain of severe pains in various parts of the body. They seemed at first to be simply neuralgic; in fact they had all the characters of ordinary rheumatism, except that the seats of pain were not articular, but in the continuity of the limbs. Thus he had severe pain in each forearm, on the front of each thigh, and a great deal of pain in the heels. These pains increasing in severity were so excessive, that at times he screamed with pain, and no relief could be obtained except by the use of hypodermic injections of morphia, which were applied at first over the seats of pain, and afterwards in the usual way by the arm. In this way only, and by a liberal use of the morphia, could he obtain any ease at all. The tongue was coated, the pulse very quick, and the temperature high,—though, I regret to say, I did not make any accurate thermometric observations,—and he was bathed in profuse perspirations. After about seven days of most intense suffering, some of the spots where the pain had heen most severe became for a time indurated, and then softened, with redness upon the surface, and resolved themselves into partially circumscribed abscesses. Of these, he had seven of considerable size, and a few smaller ones, which might almost be classed as pustules. Two abscesses on one forearm, one above the elbow, one on the other forearm, one on each leg, a very large one on the left thigh, and one near the left heel. They showed some slight tendency to arrange themselves symmetrically; and each one required to be opened with the lancet, for there was no disposition to progressive absorption of the skin, and as soon as the sero-pus which had been secreted in them was evacuated, they quickly healed up, with the exception of the large one on the left thigh. This gave great trouble, and for many weeks was the chief source of inconvenience.

During the whole of this lengthened period, he was occasionally subject to attacks of great depression, both mentally and

bodily, seeming for a few days to have an acceleration of pulse, and febrile symptoms. These subsiding, the stage of depression succeeded, followed by a return of the previous symptoms.

Throughout the whole of his illness there were excessive perspirations, making allowance for the weather, which was very warm at the time. Beyond a general irritability of temper, owing to the excessive pain and inconvenience caused by so many points of inflammation—there were no signs of delirium or disturbance of the intellect. His sleep for many weeks was entirely obtained by artificial means, either by the hypodermic injections of morphia, or opium in various forms. No difficulty whatever was experienced in passing urine after the passage of the silver catheter on the commencement of the attack, when there was a discharge of urine mixed with blood, but not subsequently. After this he made a very slow convalescence, and so late as the 24th of September, nearly eight weeks from the operation, the left thigh was still the subject of deep-seated celulo-membranous inflammation. It was of immense size, almost twice its natural girth, very tender to the touch, and the general œdematous induration was far more extensive than the boundaries of the abscess which existed in it. In fact, it gave quite the impression that the swelling was caused by extensive periostitis of the femur, and I almost despaired that it would ever recover its natural condition. Yet, under the use of mercurial ointment, made somewhat on the plan of Scott's ointment, the limb being encased in it spread on lint, and carefully bandaged from the toes to the groin, the abscess closed, and in less than five weeks, without any constitutional effects of the mercury, the immense enlargement slowly and completely subsided, convincing me that the site of the swelling had been originally in the cellular tissue, and not in the periosteum, as I had feared.

By the end of October he was able to move out of bed and about the room. In another month he came down stairs, and by December 5, nearly five months from the date of the operation, it might be said that he was restored to health.

Since that time I have seen him on one or two occasions; he has been in excellent health, and assured me that the stream of

urine was at all times as large as he had ever known it to be. From this it may be inferred that no trace of the stricture remains in the urethra, although I have not had an opportunity of verifying his statement by the use of the catheter.

This case must be admitted, for several reasons, to have been one of considerable practical interest. In the first place, there was the fact with which we had to deal—the complication of stricture of the urethra, and a foreign body in the bladder. Had we not adopted Mr. Holt's operation, it would have been a matter of considerable difficulty to determine any other plan to follow under the circumstances. To have passed a lithotrite of sufficient size to seize the catheter, and extract it through an indurated and contracted urethra, would have been almost impossible; to have performed urethrotomy by the perinæal section would have been the only course open for adoption; and perhaps now, when we have seen the results which followed the former plan, it might be said that this would have been the less formidable of the two. But the symptoms which occurred in this case, after the rupture of the urethra by Mr. Holt's ready method of treating stricture, are such as deserve our careful attention, for they are consequences which not unfrequently succeed this operation when performed merely for stricture, and without the additional irritation caused by the use of a lithotrite.

True, the pathology of urethral fever is very difficult to arrive at. Is it only an expression of reflex irritation arising somewhere along the mucous membrane of the urethra? Or is it from the absorption of purulent matter, as in this case the consequence of inflammation in a lacerated wound in the urethra, and absorbed by the veins of the prostate or its neighbourhood, and thus affecting the general system to a certain degree with all the poison of true pyæmia?

From the progress of the disordered action in this case, I am much inclined to think that the latter view is the correct one, and that this patient was the subject of pyæmic poisoning, the source of which must be referred to ulceration of the urethra, following its laceration; and that the consecutive abscesses were nature's mode of eliminating in this particular instance the

morbid matter produced in the system by a succession of localised inflammations. It is such cases as this that deter us, in many instances, from adopting Mr. Holt's operation, and yet, where these complications are avoided, it is an operation which fascinates us by its simplicity and its quick results. It is therefore important to consider how best to treat a patient who has submitted to this mode of treatment, so as to avert, if possible, these serious risks. For this purpose the greatest care should be observed, during the first few days after the operation, that there be no undue exposure to cold; attention should be paid to rest and temperance; and the earliest symptoms of distress, such as spasms of the neck of the bladder, or difficulty in passing the urine, should be met by warm baths, fomentations, doses of opium, and, above all, by quinine. This mode of procedure is, I believe, the one which Mr. Holt himself advises. The operation is so readily performed, and it is so generally successful, that we are apt to overlook precautionary measures, until we meet with a case followed by symptoms of severity and intensity such as I have just described.

Where we can select our cases for Holt's operation, the condition of the kidneys, as decided by the constant existence of a good specific gravity in the urine, and the absence of albumen and sugar, should always be looked to beforehand; for, where these signs have been been neglected, rapidly fatal results have followed, through the sudden suppression of the renal secretion and uræmic complications.

Now there is a curious analogy between the condition seen in such cases as this, where irritative fever has been set up by the presence of an ulcerating wound in the urethra as the consequence of an operation, and the train of symptoms known under the generic term of urethral rheumatism, succeeding or accompanying the irritation and inflammation of ordinary specific urethritis, and described collectively as gonorrhœal, or urethral rheumatism. This is a disease entirely ignored by some pathologists; and there have been those who have written upon the subject without acknowledging the possibility of urethral or gonorrhœal rheumatism existing as a direct result of local disease. Yet, there can

be few who have watched cases of gonorrhœal rheumatism from their earliest manifestations to the later stages, when associated with stricture of the urethra, who have not become convinced that there is in some way a connection between the local and constitutional changes. If so, the so-called rheumatic symptoms in these cases may be due to a pyæmic condition of the blood derived from local causes; and the so-called rheumatism attendant upon gonorrhœal discharges, and the rigors and rheumatic-like pains in cases of urethral stricture, may be intimately related in their true nature and origin.

Now, it is one very constant symptom of urethral rheumatism to have pains in the soles of the feet and in the heels, and this symptom was present in the case I have here related. In Mr. Erichsen's description of the symptoms of stone in the bladder, in the last edition of his *Science and Art of Surgery*, it is said that "the pain is not uncommonly experienced even in the soles of the feet." This is also a symptom specially referred to as being almost distinctive of gonorrhœal rheumatism by Dr. Elliotson, in his original paper on this subject in the *Medical Times and Gazette*, 30th June, 1870.

Some years since I had a patient in the Infirmary in whom this symptom was present, and in whose urine there was an unusual quantity of muco-pus. He had calculus in the bladder, and for some weeks before his admission he had constant pains in the soles of the feet and in the heels. These pains slowly subsided after the removal of the calculus by lithotomy, from which he completely recovered; and I think it is highly probable that in this instance the mucous lining of the prostatic portion of the urethra, continuous with that of the neck of the bladder, was in a state of chronic inflammation, secreting a quantity of muco-pus, with abrasions on the surface like aphthous ulcerations, through which purulent matter might be absorbed, and affect the general system, like the condition which exists in urethral rheumatism. In this way I would seek to connect together these two diseases—pyæmia and urethral rheumatism. If the association be correct, the treatment for each affection should be similar. In pyæmia the state of the blood and the condition of the nervous system are two things

chiefly to be attended to ; the poisoned blood, which nature strives in various ways to rectify, and the depression of the nervous system which so greatly exhausts the powers of life. In the treatment of urethral rheumatism, quinine, iron, and such like tonics are of the greatest service, and they protect the system from that continued irritation which the source of the presence of pus must constantly excite.

Lastly, it is a subject of much interest to study how such an accident as this could have occurred, and how a patient suffering from stricture should have allowed a catheter of the ordinary length to slip into the bladder whilst guiding it with his own hand. In other cases which I have known, in which foreign bodies have passed into the bladder, and more particularly in one which I reported in the *British Medical Journal* of 1869, where a piece of india-rubber tube which a boy had been passing along his urethra slipped into the bladder, and which I afterwards removed, the explanation has been difficult. In this case the same apparent difficulty existed. But it will be observed that, in the case we are now considering, at the time the patient attempted to pass a smaller catheter than he had been accustomed to, the bladder was greatly distended with urine ; and it seems to me that as soon as the catheter reached the neck of the bladder and passed the ring of the sphincter, the instrument being too small to fill entirely the urethral canal, along which a larger one could travel, a stream of urine escaped all round it at the moment the point entered the cavity of the bladder. As the urine passed out in a rapid stream, the bladder not very quickly diminishing in capacity, atmospheric pressure would urge on the catheter towards the bladder, and then into its interior, with a force equal to that of the vacuum created. The two forces would almost balance each other, like weights in a pair of scales not fully poised, where the one end descends and the other rises, so the urine would pass freely out, and the foreign body float along unchecked by friction, since it would be invested on all sides by fluid. In no way but this can I understand how foreign bodies, under circumstances like this, slip so readily into the bladder. I had thought, from what I had

known in other cases, that the penis, by a temporary priapism, might compress and hold the foreign body, and, as the congestion subsided, and the penis shortened, it would be drawn down towards the bladder; but I do not now think that this is so; I rather adopt the theory that the out-going stream of urine creates as it were a vacuum or diminished pressure within the bladder, towards which the foreign body is forced by atmospheric pressure.

Again, the fact that this patient retained the foreign body so introduced for five or six days without inconvenience, and that when it was extracted it was only slightly encased with phosphatic deposit, confirms the opinion I expressed in commenting on the case of the boy and the india-rubber tube, that the amount of deposit of phosphates upon a body lying in the bladder, and exposed constantly to contact with the urine, depends greatly upon the physical condition of the substance itself. If it be porous in its structure, or rough upon its surface, it will the more quickly become covered with calcareous deposit; but if it is of such a composition that it will not easily absorb the urine, it will remain smooth and clean for a very long time. In this way we observe that the india-rubber catheters, which are now employed for long retention in the bladder, may remain for many days, or even weeks, within the bladder, and yet not exhibit on their removal any indications of corrosion or deposit.