A CASE
OF
LITHOTOMY,
WITH
REMARKS ON THE EFFECT OF THAT OPERATION,
AND ON
SOME CASES OF FISTULÆ IN PERINEO.

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I AM induced to lay an account of the following case before the Society, not more from the particular circumstances which the history of it is intended to record, than from the confirmation it affords of the late Dr. Austin's theory, respecting the formation and growth of stones in the urinary bladder.

Nathaniel Martin, aged 59, a stout and rather corpulent man, consulted me at the end of November, 1807, on account of extreme pain in passing his urine, with frequent provocation to void it, attended with the discharge of large quantities of mucus from the bladder. He informed me that he had several years before been attacked with dysury, and inflammation in the perineum,

which had been followed by an abscess. The abscess healed, but the symptoms of irritation in the bladder remained, and had continued to increase.

I introduced a sound, and feeling a stone very distinctly, I did not hesitate to propose the operation, as there were no circumstances existing which appeared to me to render it unadvisable.

I performed it on the 9th of December, and extracted two stones of moderate size. He slept better that night than he had done for many months, and every thing appeared to go on favourably till the end of the second week, when I of course expected the urine would begin to pass through the urethra. The wound had constantly looked well, and was gradually closing. He was at this time attacked with a violent diarrhoea, and in a few days began to complain of pains resembling those he had experienced before the operation, and they soon became equally severe. The urine did not now continue to flow away constantly, but when a small quantity was collected in the bladder, he felt a desire to pass it, and after a severe pang, which extended along the urethra, it was discharged through the wound, and when it could be collected in a vessel, the same mucus, though much less in quantity, was found at the bottom as formerly. I had been very particular in my examination of the bladder after the operation, and

had injected two large syringe-fulls of water to clear it perfectly, and therefore I was convinced no particle of stone had been left there. But as he complained of some pains in his back as well as in his bladder, I at first thought it not improbable that some small calculus had descended from one of the kidneys, and had blocked up the wound. I therefore introduced a long probe curved, through the wound, and examined it and the bladder with the utmost care. At the superior part of the incision, the probe seemed to touch particles of a gritty matter, but nothing whatever could be discovered within the bladder itself. These embarrassing circumstances were however soon explained; for in two or three days there began to be discharged through the wound, a soft kind of paste, made up of a white sabulous substance, and mucus, of which a considerable quantity was, from time to time, collected upon the dressings. He then complained of much pain in the penis, and on examining this, the urethra was found completely choked up with the same substance*, but harder, of which some was taken out from time to time by a convenient instrument, as it appeared to be forced forward by every effort to make

* Dr. Wollaston has been so good as to analyse the matter voided by the patient, and finds it to be principally a remnant of a coagulum of blood, surrounded, as might be expected, by a medley of those concretions which usually form on any substance retained in the bladder; viz. Triple phosphat of magnesia, phosphat of lime, and uric acid.

water. At length, after several weeks spent in this manner, it ceased to be discharged, the urine then came freely through the urethra, the wound in the perineum completely healed, all symptoms of irritation went off, and he has had no return of them to the time I am now writing this paper, (January, 1811.)

Prior to the discharge of this sandy substance, I endeavoured to relieve his pain by opiates chiefly; but when that appeared, and the diarrhoea had subsided, I ordered him the muriatic acid, with tincture of opium, first in water, and afterwards in an infusion of the uva ursi. He continued the use of the acid to the end of January. How far it might contribute to his relief I cannot say, but he thought it gave him ease, and it seemed to have a beneficial effect upon his general health.

It will be recollected to have been the opinion of Dr. Austin, deduced from a variety of experiments, that the matter composing calculi, is a deposit, furnished chiefly from the mucus secreted by the internal coat of those organs through which the urine passes; and that, therefore, this fluid contributes much less to their formation and growth in the bladder, than had been generally supposed.

The quantity of mucus, which is frequently discharged with the urine of calculous patients, is, therefore, to be considered both as a cause, and an

effect, of increase in the size of a stone. The stone, by its asperity, irritating the internal coat of the bladder, and exciting an excessive secretion of mucus; the mucus, on the other hand, affording an increased supply of calculous matter to crystallize upon the stone, and augment its bulk.

It is therefore probable, that a considerable quantity of calculous or sabulous matter may sometimes be supplied in a short time, when from any cause, after the extraction of a calculus, as well as under any other circumstances, the bladder is thrown into a state of irritation.

In the case I have related, this appears most evidently to have been the case. The secretion of mucus, to which the bladder had been accustomed, ceased soon after the operation; but was again renewed, in consequence of the irritation produced upon the wounded bladder by an almost incessant diarrhoea. At first it was carried off with the urine as fast as it was secreted, and therefore no time was allowed for the sandy matter to crystallize from it; but when the wound became so nearly closed, that the bladder began to retain the urine, and of course the mucus, it was separated in considerable quantity, but was still carried off, with the mucus, in this paste-like substance, partly through the wound, and partly through the urethra. At length the secretion of this depraved mucus ceased, and all the symptoms accompanying it

consequently disappeared. But, had it continued much longer, there can be little doubt that a new calculus would have formed, and a repetition of the operation would have become necessary.

It is a curious fact, which, before Dr. Austin's publication, was never explained, that a great majority of those persons who have undergone the operation of lithotomy, and have recovered, have remained free from the disease during the remainder of their lives. Some change must, therefore, have been produced in the organs secreting the fluid, whatever it be, from which the materials composing calculi are supplied. That such a change should be induced on the kidneys, seems much less probable than that it should take place in the bladder itself, on which the operation is immediately performed.

The *kidneys* continue their office after the operation, as well as before; and their experiencing little or no interruption in so doing, is always considered as a favourable omen with regard to the event. It is evident, however, that the functions of the *bladder* entirely *cease* for a time; and that it enjoys, if I may so express myself, a state of absolute rest from its duties, during the whole interval which elapses between the period of the operation, and that in which the union of the wound is so far completed, as to allow the urine to accumulate in it. It then resumes its offices, both as a re-

reservoir, and an evacuator of that fluid; but it resumes them only gradually, for the quantity it retains is at first but small, and of this a part is usually for some days discharged through the wound, and a part only through the urethra; at first with short, and afterward with longer intervals between each evacuation.

To this state of rest, and suspension of every former source of irritation, more than to any other of the causes hinted at by Dr. Austin, I am disposed to ascribe that favourable change in the secreting surface of the internal coat of the bladder; in consequence of which, supplying afterward only healthy mucus, and this but in due proportion, the future formation of calculi, so far, at least, as it arises from superabundant, or depraved mucus, will of course be prevented.

That some cases should occur in which the bladder retains a considerable degree of the irritability it had acquired before the operation, so that the secretion of this mucus should continue, and calculous matter be again deposited; and that, in other cases, this irritability should be revived by the descent of new stony concretions from the kidney, which speedily become too large to be transmitted along the urethra, and thus re-produce the disease, cannot appear wonderful. It is rather surprising, that the proportion of such cases is not much greater than we really find it. It may also

justly appear surprising, that the irritability of the bladder should not, in some cases, be *augmented* by the wound it receives in the operation. This is extremely rare in those cases where the patient recovers: when, as is sometimes unfortunately the case, the bladder, instead of feeling more relieved by the removal of the stone, than injured by the wound made in the operation, takes on a high degree of increased irritation: this usually commences almost from the moment of the operation, and the case is likely to terminate fatally. But if the alarming symptoms subside, and the patient afterward recovers, the bladder returns to as tranquil a state as if they had not occurred; which they are most apt to do when the patient, at the time of the operation, is in other respects in a state of high health and vigour, and the constitution has been but little affected by the disease.

The state of the bladder, however, which these symptoms denote, is not a state of mere inflammation of that organ, and is also to be distinguished from an attack of peritonitis. It appears much to depend on the shock given to the nervous system in the operation, and communicated to every part of the body; but of which the bladder, from its wounded, and previously morbid state, partakes more than any other. On the dissection of such cases, the local inflammation has sometimes been found to be slight; but it is well known, that the influence of any important, and, sometimes, even

of a comparatively unimportant accident, or operation, is such, as frequently to derange the whole nervous system in a similar manner, and, for a time, to disturb every function, and deprave every secretion, in the animal economy.

That, however, an attack of common inflammation of the bladder may sometimes prove ultimately beneficial, by destroying a state of previous morbid action, the following case renders highly probable.

George Hunter, a boy about ten years of age, had frequent obstructions to the passage of his urine, by small cysts, or rather concave films, of an opaque membranous appearance, which were afterwards voided. As his fits of pain were sometimes severe, it was thought highly probable there might be a stone in the bladder; and, under this impression, he had been repeatedly sounded by my judicious friend, the late Mr. Ford, but without any calculus having been discovered. When I succeeded that gentleman, as Surgeon to the Westminster General Dispensary, where the boy had been received as a patient, he came of course under my care. Shortly afterwards he was attacked with a severe fit of dysury, which was followed by violent inflammation of the bladder. It was necessary to draw off his urine from time to time, which contained a considerable quantity of purulent matter. On one occasion, when I had introduced an elastic

gum catheter, I felt distinctly what appeared to me to be a stone: it was also felt by one of my pupils, who was with me, and by the boy's father, who, on hearing me say I had found a stone, wished to satisfy himself of the fact, and was much pleased that the cause of his child's sufferings appeared at last to be detected, and a prospect afforded of their being terminated at a fit time by an operation. I was never, after, however, able to distinguish it again, either with the flexible catheter, or a metallic instrument. But, when he was recovering from the attack above-mentioned, he one day voided a piece of coagulable lymph, of the same form as the films which had used to come away, but of much more solidity, and containing calculous matter on both its surfaces, which was easily rubbed off. After this he felt much relieved. He once or twice brought away some small films resembling the former, but he had no return of the symptoms which before distressed him. After some time he went to Antigua, where he now is. I have heard of him twice since his residence there; and, in his letters, he has stated himself to remain perfectly free from his complaint.

In this instance it appears most probable, that the little cysts or films, which he had been used to void, were portions of coagulable lymph, thrown out and detached, from time to time, from some small part of the bladder, or of the pelvis of the kidney, in contact with which some calculous

matter had been deposited. When violent increase of action, by inflammation, took place, the calculous matter was dislodged, and the cause of the disease removed. However, as it did not return, a salutary change must also have been produced on the part primarily affected.

But in the most favourable cases of lithotomy, no particular inflammation of the internal coat of the bladder appears to follow the operation. The change which takes place in it must, therefore, depend on some other cause ; and seems chiefly owing to the quiescent state in which the bladder remains for many days after the operation, and by which it is enabled to recover a healthy condition. In this it will probably continue, if no fresh cause of irritation be applied to it. I am the more disposed to believe, I have not ascribed too much to this circumstance, from the benefits so often derived in other parts, which have been long in a state of morbid action, when their functions can be a while suspended, and from the facility that suspension affords to the successful prosecution of the treatment of their diseases.

In many diseases of the extremities, the necessity of this repose is obvious, and, fortunately, so is often the possibility of attaining it. But what shall we say to diseases of the stomach, of the urethra, and of other parts, to the functions of which it does not at first seem probable that any material suspension can be admitted ?

Yet in several very obstinate cases of fistulæ in perineo, particularly in one which had arisen from a violent contusion, and was accompanied with great induration in the perineum and scrotum, from repeated inflammations and abscesses which had formed, and where from the consequent obliquity and irregularity of the canal of the urethra, added to its extreme irritability, little or no progress was made by the bougie ; I was led to recur to the principle I have mentioned, and to consider whether some advantage might not be gained, if the treatment were *commenced*, by making such an opening into the urethra, behind the seat of the obstruction, as would allow the whole of the urine to pass through, without getting to the diseased portion of the canal, and insinuating itself into the sinuses that communicated with it. By thus keeping the parts without their accustomed stimulus, and allowing them to remain in a state of comparative rest for some days, I hoped so to diminish their irritability, swelling, and hardness, as to attain greater facility in carrying on the requisite treatment by the bougie and catheter. I was the more strongly inclined to expect success from this measure, from having observed the beneficial change which had almost immediately taken place in the state of the urethra, in two cases where I had found it necessary to puncture the bladder through the rectum. The result of such an opening into the urethra, as a preliminary step in the treatment, fully equalled my expectations. The

parts having their chief source of irritation for a time withdrawn, in a few days became more yielding; the sinuses which were produced were consequently more easily traced through all their irregularities; way was more readily made for the passage of an instrument; and sufficient access to the bladder was soon obtained for the passage of a full-sized catheter. The old sinuses were then readily traced and laid open, so as to make them granulate from the bottom and heal.

It has not been unusual to make such an opening into the urethra, when, in consequence of its being torn, or ulcerated, either from external violence, or in cases of stricture, the urine has escaped into the cellular membrane; in which instance it becomes immediately necessary to prevent, or stop, the mortification, which arises from the diffusion of this pernicious fluid. But the propriety of it, in those cases to which I have before alluded, has not been, I think, sufficiently considered; at least, I do not know that it has been proposed by any writer on these diseases. But the arguments in its favour, and the success I have experienced from it, make it appear to me deserving the attention of surgeons.

It must, however, be observed, that the indurated and thickened state of the perineum, and the contraction of the urethra, render it often rather a difficult matter to find the canal; and therefore

a free division of the integuments, in the first instance, will be prudent. And, indeed, by a free incision through the hardened integuments, considerable advantage may be gained. For, in some cases, the urethra itself is not primarily diseased to any great extent, but its canal is made irregular, and its internal surface crumpled, as it were, in consequence of the mischief around it, so that, in several instances, where I have removed the penis and bladder after death, although the smallest instrument could not be passed without great difficulty before, yet, when they were detached, a large catheter has readily gone on into the bladder.

As a remarkable example of this fact, I may mention a servant of the late Mr. Wathen, who had laboured under fistulæ in perineo for twenty years, during which time, he informed me, a bougie had been once only passed into the bladder, and that was by the late Mr. Hunter. On the last occasion in which I was sent for to visit him, he not only suffered from disease of the perineum and bladder, but was evidently consumptive, and fast approaching to dissolution. I made various attempts to introduce an instrument into the bladder, and succeeded once in passing a very small bougie. No particular relief followed; indeed, the parts seemed rather irritated than benefited by it. On his death, I fully expected to find the urethra almost closed up for some considerable extent; but when I had taken away the penis and bladder, and the urethra

was thus disengaged from the hardened cellular membrane and skin, a sound readily passed on to the bladder; and, on laying open the canal, I found no regular stricture had been formed, but that it was a little bent aside at that part; and for near two inches, from the commencement of the bulb to the prostate gland, its surface had the appearance of being crumpled or puckered into folds; which, with the indurated state of all the surrounding parts, accounted both for the difficulty of passing a bougie, and also for his being able to get the urine away with more ease than could have been expected, under so much apparent obstruction.

I have, therefore, no doubt that such a state of the urethra, accompanying fistulæ in perineo, is more common than is generally supposed, especially where the disease has originated from external violence, and that it is often confounded with common stricture. In such cases a free division of the diseased integuments down to the urethra, in performing the operation I have recommended, must tend materially to relieve that portion of it, by setting it at some degree at liberty; and by this, connected with the opening into the canal behind the diseased part, which will prevent the urine from forcing itself into the sinuses, a material advantage will be early gained, and a great hindrance to the treatment removed. The constitution, also, will sooner feel relief, in consequence of that which is afforded to the diseased parts; those medicines,

which may be required to restore the general health of the patient, may therefore be exhibited with less interruption ; and the cure will thus be more speedy, and probably more complete.