SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

ACUTE RETENTION OF URINE

BY

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Acute complete retention of urine is a condition so obvious to the patient that there is no delay in seeking medical attention. The commonest causes in the male are urethral stricture and enlarged prostate, but there are others, and a diagnosis must be made before the appropriate treatment can be undertaken. In many instances little can be learnt from the history, because the patient is in too much distress to give a clear account of previous symptoms.

A man aged 76 had acute retention of urine. He could not remember ever to have suffered from trouble in micturition, except during a urethral infection fifty years previously. The prostate was nodular, hard, and fixed, due probably to carcinoma, and this seemed the obvious cause of the retention. But a catheter of usual size failed to enter the bladder, and so did other instruments until a bougie, size 6 Charrière (2 English), was passed through a tight stricture in the bulb, being arrested in the posterior urethra. A size 7 (Charrière) coudé catheter was then successfully introduced and tied in, thus relieving the retention. Subsequent dilatation of the stricture gave the necessary relief, and no treatment of the prostate was undertaken.

In acute cases it is often necessary to do without medical history and to depend upon the results of clinical examination. These are usually quite characteristic. Frequently the bladder is to be seen as a prominent tumour in the lower abdomen, but if it is not visible its presence is best detected by careful palpation with the whole palm of the hand, and for this purpose the patient should lie on his back with the knees slightly drawn up to give abdominal relaxation. Percussion, though useful, is a less certain means of determining the extent of the tumour. A rectal examination should next be made, and if the prostate is a large one, or if a prostatic abscess should be present, the cause of the obstruction is usually obvious. In many cases, however, the distension of the bladder makes it difficult to ascertain the size of the gland, and bimanual examination, the most accurate means of estimating this, is of course impossible. It follows that a diagnosis of the cause of the retention of urine, and therefore also the treatment required, is still in doubt, and meanwhile the patient anxiously demands relief. It is necessary to attempt the *passage of a catheter*, a procedure which in such instances should always be regarded as an exploration of the urethra, since unexpected difficulties may be encountered. Instrumentation may be most usefully begun with an 18 Charrière (10 English) silk web coudé catheter, since this is rarely too big for the normal adult urethra and will usually pass in cases of enlarged prostate. If the passage is arrested the point at which this occurs must be noted, since it gives clear evidence of the position of the obstruction and therefore of its probable nature.

A man aged 70 had acute retention of urine. There had been slightly increasing trouble with micturition for the previous month. Catheterization was difficult, but eventually was successful, and the bladder was emptied. There was no stricture and no enlargement of the prostate. Further attacks of retention supervened. On the third occasion of passing an instrument the point of it was felt momentarily to be held up in the prostatic urethra in an unusual manner, and a firm

push was necessary to get it into the bladder. A calculus impacted in this portion of the urethra was suspected, proved by posterior urethroscopy, and treated by litholapaxy.

Retention due to Stricture

When the urethra is thus explored in cases of retention of urine, if the instrument is arrested in the bulbous part of the urethra the most likely cause is stricture. When a stricture has been diagnosed it is of course futile to make further attempts with a catheter of ordinary dimensions. Silk web bougies of various sizes should be tried, using in the first instance a small one of, say, 10 Charrière (5 English) size, then trying a No. 6 Charrière (2 English). If these will not pass a very small or filiform bougie must be employed. A minute instrument of this sort is more likely to pass if the point of it is twisted into a corkscrew form. If this is the only instrument that can be introduced it should not be withdrawn, but be tied in position by means of strong threads around it at the external meatus, the threads being brought back along the penis and held by elastoplast. It can safely be left in the urethra, as urine will trickle away continuously alongside it. In forty-eight hours it may be withdrawn, when it will be found that the patient is able to pass urine. Intermittent dilatation with bougies can then be undertaken, or, if preferred, a small catheter is inserted to provide drainage and larger sizes are substituted later. The silver catheters of very small size such as Nos. 2 and 3 English, which are always included in the sets of these instruments, are rarely required. While occasionally useful in cases of stricture, they must always be handled with the greatest care lest a false passage be made, an accident which is not only dangerous but which inevitably renders subsequent instrumentation more difficult.

If the exploring instrument of moderate size passes easily through the bulb of the urethra stricture is excluded as the cause of the retention of urine. A little further along the urethra the point of the catheter is, however, often held up by spasm of the compressor urethrae. A pause should always be made at this point, and in the majority of cases the muscle will relax after a moment and allow the instrument to pass into the prostatic urethra. Sometimes the placing of two fingers in the perineum will help by supporting the bulb and ensuring that the tip of the catheter is in good apposition to the entrance to the membranous urethra.

Retention due to Prostatic Obstruction

Instances of foreign bodies in the posterior urethra, such as the case of calculus quoted, are rare. Far the commonest cause of obstruction in this portion of the urinary tract is, of course, an enlargement of the prostate, of either a benign or a malignant type. If a silk web coudé catheter is habitually employed in such cases when retention of urine is present it will usually pass the obstructing prostate and successfully enter the bladder. Rubber catheters, particularly those of the modern type with thin walls and a terminal opening, known as "flute-tipped," are also useful in dealing with cases of prostatic enlargement, and so are those which have an olivary point (Tiemann's); but, being flexible, they are not so well suited when acute retention exists, in which, as

has been said, the first instrumentation must always be regarded as an exploration of the urethra. Moreover, spasm of the compressor urethrae not infrequently makes the passage of any rubber catheter a matter of difficulty. In a certain proportion of cases of acute or of chronic retention of urine due to benign enlargement of the prostate the coudé catheter will fail. The bi-coudé catheter may then be tried, but because it has a double bend it is not always an easy instrument to introduce. A better plan is to employ a stylet. For this purpose a silk web coudé catheter should be softened in warm lotion and then threaded over the stylet, making sure that the point of the latter does not project through the terminal eye. With the opposite end of the catheter and the stylet firmly held between the fingers and thumb of the right hand, the instrument is passed along the urethra just as if it were a silver catheter, past the compressor muscle, and into the prostatic urethra until the point of it is arrested there. At this moment the stylet is slightly withdrawn and synchronously the catheter is pushed forward with the left hand. The effect of this manoeuvre, as anyone can easily demonstrate for himself with the instruments alone, is to bend the end of the catheter sharply upwards towards the symphysis pubis, thus enabling it to slide past the overhanging intravesical projection of the prostate into the bladder. The stylet is then withdrawn and the urine promptly flows out. If this method is used failure to relieve retention of urine by catheterization will rarely occur when the cause is enlargement of the prostate of either a benign or a malignant nature. When a coudé catheter, but no stylet, is available and difficulty is met with, another measure of great value is, after the catheter has entered the posterior urethra, to introduce a finger of the right hand into the rectum as far as it will go. The rectal surface of the prostate and catheter should then be pressed firmly towards the symphysis pubis, while the instrument is pushed gently inwards with the left hand.

Unsuccessful attempts at instrumentation not infrequently produce haemorrhage, and blood clot may obstruct the catheter when ultimately this has been successfully introduced; for this reason a powerful syringe and some lotion should always be available to clear it. A silver catheter (No. 12 English) of unusual length may sometimes be used, but it has no advantages over the methods already described, except that the lumen of such an instrument is larger than the silk web catheters commonly employed. But however much care is employed, and even if every type of instrument is available, there will always be a few instances of retention of urine in which immediate instrumentation fails. This may be due to the intolerance of the patient. It is more likely to occur in cases of very tight strictures than in prostatic disease. In such conditions an anaesthetic is desirable, and it will often be found that when the patient is fully relaxed an instrument passes into the bladder, though it should be remembered that this is more easily effected on an operating table than on a bed. If the cause of retention is a benign prostatic enlargement catheterization should always be successful under an anaesthetic, and also in most cases of carcinoma. When dealing with stricture persistent endeavours with instruments of various sizes will also usually meet with success if the patient is anaesthetized.

Cystotomy

If the case is of such difficulty that anaesthesia is necessary the surgeon should always be prepared to perform cystotomy.

For this operation the patient should be slightly tilted into the Trendelenburg position. An incision beginning immediately above the symphysis pubis and extending upwards for about two inches is sufficient, unless the patient is unusually fat. Retractors are inserted and the rectus sheath incised in, or close to, the middle line for the same length as the skin incision. This exposes the rectus muscle of one side and often the pyramidalis. The rectus can be retracted outwards or the incision can be continued through its fibres. In this part of the abdominal wall there is no posterior rectus sheath, and the next layer exposed is the transversalis fascia. This varies considerably in density, and is sometimes so thin that it may escape recognition; or it may be very dense and require considerable dissection to free it from the bladder beneath. After it is opened vertically and has been drawn away by the retractor on either side the bladder often becomes visible, but sometimes a dissection must be made through the layer of fat which covers it. This is best done by snipping transversely with scissors, the assistant using a piece of gauze to retract the peritoneum upwards and thus protect it from injury. The bladder wall is recognized by its pale yellow colour, its characteristic musculature, and the presence of veins upon its surface; these should be seen, and be avoided. The bladder wall should be picked up at two points with tissue forceps or with sutures before it is incised. A tube, preferably one of the self-retaining types such as a de Pezzer, and of about size 26 Charrière (15 English), must be at hand so that it can be introduced immediately the urine begins to escape, and before the bladder tends to retract.

If one of these special bladder tubes is not available a piece of rubber drainage tube must be used. It should be about half an inch in diameter, the length varying from three to five inches according to the thickness of the abdominal wall. Two eyes should be cut in it close to one end. The tube should project into the bladder cavity for about one and a half inches, but should not reach down to the internal urinary meatus or press upon the bladder base. It may be necessary to suture the bladder wall around it if a large opening has been made—plain catgut, not chromicized, being used for that purpose. The bladder is then allowed to drop back into the pelvis. The incision in the abdominal wall is closed by interrupted sutures which pick up the recti muscles as well as their sheaths. If the urine is septic a small piece of corrugated rubber should be inserted between the muscles to drain the prevesical space; indeed, this is a useful precaution against leakage in every case. In closing the skin wound one suture should always transfix the tube, even if it is of the self-retaining type. Before the patient leaves the table the tube should be syringed, to ensure that it is clear of blood clot and provides free drainage. The urine is led away into a urinal in the bed, or to a bottle beside it, by means of a further length of tubing and a glass connexion. This is better than employing a Hamilton Irving box.

COMPLICATIONS

Such is the standard method of performing cystotomy, and the difficulties of the operation are few provided the operator proceeds deliberately. Possible complications are bleeding from some big vessel on the surface of the bladder; this should be picked up and ligatured before proceeding further. Another is the risk that the opening made into the bladder, though large enough to allow the urine to escape, is not adequate to admit the cystotomy tube. This is particularly likely to happen when the wall is much hypertrophied and the exposure imperfect. In these conditions, if the bladder is not held by forceps or by sutures it may rapidly empty and drop down into the bottom of the pelvis, where it is difficult to find. Should this happen the abdominal incision must be enlarged, the patient being tilted still further and a deliberate search made for the bladder. The peritoneum is unlikely to be opened if the operation is performed in the manner described. If, however, this should occur no harm is done so long as the damage is recognized and the tear carefully repaired.

Special instruments such as Morson's and Kidd's trocars are sometimes used for cystotomy, the object being to introduce a tube with the minimum loss of fluid, this being particularly desirable in cystotomy in chronic retention. A Malécot tube held on an introducer is passed through the trocar into the bladder cavity and the latter is withdrawn over it. These are useful instruments, but should not be employed without carefully exposing the bladder, the wall of which should also be secured by forceps. In the absence of these precautions there is a real risk that the bladder will only be punctured, or that if the thrust is particularly forceful the point may enter an intravesical enlargement of the prostate, if this be of considerable size, and severe bleeding result.

After-treatment.—Diuresis should be established as soon as possible; the tube should be syringed out at least twice in the twenty-four hours, and urinary antiseptics prescribed.

RUPTURE OF URETHRA

Retention of urine due to rupture of the urethra unfortunately is often not recognized until extravasation of urine has occurred. If the urethra is only partially torn a catheter may pass, but usually this is impossible. Cystotomy should therefore be performed at the earliest possible moment.

CLOT RETENTION

Acute retention of urine and blood, or clot retention, may result from a bladder growth, either innocent or malignant, or bleeding from an enlarged prostate. It also complicates prostatic operations. Sometimes the bladder may be emptied by syringing and aspirating through a large catheter or the cannula of a Bigelow's evacuator. This is best done in an operating theatre, for often cystotomy or the reopening of the bladder wound is necessary, a procedure which should not be too long postponed. Usually the drainage thus provided is all that is required, but special treatment of the source of haemorrhage may be called for, and all arrangements for this should be made beforehand.

THE MENTAL HEALTH SERVICES

THREE-DAY NATIONAL CONFERENCE

A Conference on Mental Health, arranged by the National Council for Mental Hygiene, was held at Westminster from January 12 to 14. It was described as the fifth biennial conference, but in fact the previous conference was held in January, 1936. Delegates from local education authorities and from authorities under the Lunacy and Mental Treatment Acts and the Mental Deficiency Acts attended from many parts of Great Britain and Northern Ireland. The proceedings were opened by the DUKE OF KENT, president of the National Council, who said that that body was trying to awaken a "mental health conscience" in the nation. The question of whether the national intelligence was declining—the subject of discussion at one of the sessions—was, said His Royal Highness, not prompted by sensational headlines in irresponsible newspapers, but a subject on which a number of highly important individual points had to be considered in their true perspective. Mr. ROBERT BERNAYS, M.P., brought the good wishes of the Ministry of Health, and, referring to another subject down for discussion, said that he regarded the organization and staffing of out-patient mental clinics as a vital part of the machinery for early mental treatment. Another subject to which two sessions were allotted, that of the psychological factor in sexual delinquency and the problems of adolescent instability, had

a special interest at the moment, said Mr. Bernays, in view of the Criminal Justice Bill, which sought to ensure that all delinquents suffering from mental abnormality which required treatment could obtain it.

Mental Defectives and Sterilization

The first session was devoted to the question of the possibility of a declining national intelligence. It was opened by Dr. LIONEL PENROSE (Royal Eastern Counties' Institution, Colchester), who said that the consequence of persistent differential fertility favouring a lower intelligence level would appear to be a steady decline in average intelligence of the community. This consequence was inevitable just in so far as intelligence was inherited. The assumption was that the genetic factors which produced mental ability of a high standard would become rarer. The present rate of decline due to genetic changes had been estimated as of the order of one point in the intelligence quotient (or 1 per cent.) every ten years. But, for reasons which he gave, Dr. Penrose thought the arguments in favour of a precipitate decline were fallacious. In his view, if conditions continued as they were at present the end-result of the differential fertility would be to produce a population with an average intelligence quotient scarcely below that which now exists in rural districts. (In rural districts the average intelligence quotient is reckoned at about 95 on the Binet scale, as compared with 100, or slightly over, in towns.) Direct proof of the lowering of average intelligence in this country was lacking, but there was a large amount of indirect evidence which pointed to an unfavourable genetic position from the point of view of national intelligence in the future.

Turning to the possibility of exterminating the mental defective by sterilization, he said that the hope of doing so was damped by the knowledge that nine-tenths of the parents of defectives possessed a degree of intelligence within the limits of normal. If borderline cases were counted as defectives the prospects, in theory, were more hopeful, but the difficulty was that borderline cases were numerous, and it was not possible to draw a sharp line with normals on the one side and borderline cases on the other. "Mental ability is a graded character, but sterilization is not a graded process." Mr. ALEC RODGER (National Institute of Industrial Psychology) declared that sterilization would be not only an inefficient but socially a most undesirable instrument for dealing on a large scale with the problem. "Is it idle to suggest that part of its attraction lies in the fact that it has an odour of scientific sanctity, and at the same time offers us, in sinister fashion, relief from certain of our own social responsibilities?" Before ambitious eugenic programmes were embarked upon, supported by a defeatism which was out of place in a genuine democracy, we should see what could be done to improve the lot of the less intelligent members of the community. The compilation of the national register, if it were carried out scientifically, might be an audit of national ability. The subject was tackled from the educational point of view by Principal J. H. NICHOLSON (University College, Hull), who suggested that we had by no means as yet devised the perfect system of selecting those whose intelligence warrants higher education.

Should Mental Treatment be Practised Solely by Medical Practitioners?

A sharper issue was presented at the second session, when the question was debated as to whether or no mental treatment should be given only by members of the medical profession. The Rev. F. E. ENGLAND (Extension Lecturer in Philosophy and Psychology, University of London) paid tribute to the work done by psychiatrists and medical psychologists, but thought there were two reasons why it was undesirable to leave psychological treatment entirely to them. The first was the practical consideration that