Original Articles.

NOTES ON THE NON-OPERATIVE TREATMENT OF ENLARGED PROSTATE.¹

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THE operative treatment of obstructive disease of the prostate has excited so much interest of late years, and the operations of prostatotomy and prostatectomy have been so earnestly advocated, that this seems a peculiarly fit time to look at the subject from another point of view, and to review the possibilities of the non-operative treatment of this disorder.

The successes obtained by the operative treatment are made familiar by abundant examples, and this important advance in surgical practice is so firmly grounded on sound mechanical principles that its future high value is sure as long as the cases so treated are properly selected.

There have been, however, mingled with these successes a considerable number of total or partial failures, which show that the obstruction cannot always be cut away, and that in some cases, even when the passage is made free, the bladder does not recover an expulsive power sufficient for the act of micturition.

The exact proportion and conditions of success and failure have not yet been determined; but there is enough uncertainty as to the result of these operations to show us that they should only be resorted to in cases in which milder measures fail to bring comfort and safety to the patient.

Modern methods have also made great improvements in the palliative treatment of hypertrophied prostate, and it is my object to present in this paper some considerations which should not be lost sight of in guiding the care of these patients, and which, though familiar to specialists, are sometimes not sufficiently borne in mind by general practitioners in whose hands the early treatment of these cases usually falls. A case properly directed from the outset will usually run a course which will keep the question of operation entirely in the background; while a failure to understand the condition at the beginning may start the patient on a mistaken course of treatment, which will bring him into a condition from which an operation offers the only hope of escape.

The general and hygienic treatment of these cases is of great importance; for a judicious arrangement of the clothing may save the patient from many surface chills with consequent attacks of congestion of the prostate. Also, in dry inland resorts, he may safely pass a summer that would have been made miserable on a damp seashore, by aggravation of his trouble. The diet and drink, too, have much to do with the irritating or non-irritating quality of the urine, and the symptoms may often be modified by the administration of medicine.

These matters are passed over here, not because they are not of great importance in the conduct of these cases, but because they are more generally understood, and it is desired to call attention now to their mechanical or surgical treatment, the correct appreciation of which is of the first importance, but in regard to which the general practitioner is not so thoroughly informed.

Guyon has divided the clinical history of enlarged

prostate into three periods: (1) That of congestion, affecting mainly the prostate, but also in less degree the bladder and kidneys. (2) That of partial retention of urine. (3) That of serious retention of urine, with distention of the bladder, and usually secondary changes in the kidneys.

This classification divides the cases in accordance with the mechanical condition of the bladder, and is, therefore, useful in helping us to lay out our plan of treatment; for the proper management of the bladder is the key to success in these cases.

The symptoms of the first stage are mainly due to the condition of congestion in the prostate. One of the first things the patient notices is an increased frequency of urination, which is especially marked at night or early in the morning. Guyon ascribes the increase of frequency during recumbency to the passive congestion which becomes more marked when the circulation is quieted by inaction.

Pain is not prominent in the first stage, although there may be some scalding in urination, and a dull aching or dragging sensation in the perineum, the rectum and behind the pubes is sometimes felt.

The force of the stream is diminished by the encroachment of the swollen mucous membrane on the calibre of the urethra, and by the already commencing enlargement of the gland.

The treatment of this first stage is almost wholly hygienic and medical. If the urine is irritating from too great acidity, an alkaline diuretic is indicated. In case of pain anodynes may be required. Counter-irritation to the perineum is sometimes useful, and hot applications around the pelvis will do something to relieve irritation.

In the absence of complications, and before there is any retention of urine, interference with instruments should be avoided, as it only aggravates the congestion and introduces the danger of infection.

It will sometimes not be easy to determine, from the symptoms alone, whether a case is still in the first period of the disease, or whether there is already retained urine. To decide this, it will be necessary to pass a catheter after full urination. When this is done, precautions should be taken to reduce the irritation of the catheterization to a minimum. To this end, it is well to use the catheter at the patient's home and to introduce it at night, when he will have a long rest in the horizontal position afterwards. The instrument selected should be small (No. 6 English), of soft rubber, and the utmost cleanliness should be observed in its use. Even with all care, a little irritation will sometimes be set up, but will usually subside under rest and simple remedies.

It sometimes happens, when a catheter is used carelessly or unadvisedly in the first period, that the congestion is so increased by its use as to give rise to inflammation of the neck of the bladder, with uncomfortable, sometimes serious, symptoms. When this happens, it is the more unfortunate, for it often convinces the patient, and sometimes his physician, that his bladder is unduly sensitive to the use of instruments, and that the catheter must never be used again, for fear of even more serious consequences. If then, afterwards, the disease moves on into the second or third stage of retention or distention, it is extremely hard to persuade the patient to again resort to catheterization.

As the second stage establishes itself, and the blad-

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der begins to contain residual urine, the discomforts of the first stage become more pronounced. Sometimes an unsatisfied feeling is left at the end of urination, as if the bladder had not wholly freed itself. This feeling is, however, often wanting, and its absence should not put one off the track of looking for residual urine.

The frequency of urination, which during the first stage may have been most marked at night, becomes, in the second period, almost equally troublesome in the daytime. As the bladder is always partly full, it takes but a small additional quantity to distend it to its full capacity, and the calls to urinate are frequent and imperative. Sometimes, however, the bladder shows remarkable tolerance of distention, and the amount of retained urine becomes considerable before the patient is made uncomfortable by it.

The only positive means of ascertaining the condition of the bladder is by physical examination; and this should be made in every doubtful case. If the bladder is very full, it may be perceived above the pubes by palpation and percussion, but a moderate degree of retention cannot be detected in this way. During the rectal examination of the configuration of the prostate, the finger can be carried up on to the posterior bladder-wall, and by combined manipulation with the other hand over the abdomen, may determine with some accuracy the degree of distention of the bladder. The passage of the catheter is, however, the most accurate means of settling the amount of retention.

It is wise to use the same amount of care in commencing the use of the instrument in this stage as in the first. We are never certain that the kidneys have not already begun to be affected; and if they have, an undue amount of irritation of the urethra or neck of the bladder may precipitate an attack of renal congestion. Also it is of the first importance not to set up an inflammation in the prostate which may so increase the obstruction of the urethra as to wholly stop the natural passage of the water and so oblige the patient to depend on the catheter to relieve the bladder.

If residual urine is found, we shall be guided in our subsequent treatment by the amount of it. In case there is but three or four ounces of it, the catheter should be passed once a day to draw it off, preferably at night. Not infrequently it will be found that under this systematic use of the catheter the amount of residuum steadily diminishes, until finally the bladder is again capable of entirely expelling its contents. In short, the disease is moved back from the second stage to the first. When this occurs, the catheter may be dispensed with, but should be passed occasionally to make sure that the urine is not again accumulating.

If the residuum does not diminish under the regular use of the catheter once a day, the water should be drawn also in the morning after the patient is dressed; and if a residuum is found at that time too, it is well to empty the bladder in the morning as well as at night.

The time after dressing is selected for this test, because it is a common habit of these patients to pass their water several times while first moving about in the morning, so that the bladder empties itself more completely at that time than at any other part of the day. When the residual urine is in large amount (from eight to sixteen ounces), it indicates an amount of obstruction in the urethra and a loss of power in the bladder that is not likely to grow less, and that will probably require the regular use of the catheter for the rest of

the patient's life. Even in such a case as this, however, the patient should begin gradually, and accustom himself by degrees to its use.

After the catheter life is established, it is usually found sufficient to empty the bladder four times in the twenty-four hours. Three times a day, or once in eight hours will sometimes suffice, but if the least uneasiness is felt, the bladder should be emptied oftener; for a painful, forcible retention of urine after the desire to pass it is felt, occasions more irritation to a sensitive bladder than a somewhat more frequent introduction of the catheter. In order to reduce the necessary irritation of catheterization to a minimum it is important to select the proper instrument for each case, and to see that it is passed in the best manner.

When it will pass, a soft, rubber catheter is the best instrument, as it can do no harm to the urethral walls, and requiring no guidance, it can be entrusted to an unskilful patient. A small size is the best, unless the urine contains thick mucus that will not flow easily.

If the soft rubber catheter will not pass, we must use a stiffer instrument. Sometimes a French bougie-pointed catheter will succeed in such a case, and it, too, has the advantage that its introduction does not require skilled guidance. It is stiff enough, however, to perforate the urethral wall if pushed with force against an obstruction, a danger which the patient should fully understand, and should have the intelligence to avoid. The other instruments that are used for these cases are given particular shapes to avoid the pockets and projections which obstruct the passage.

In the old patients from which these cases are drawn the urethra is a comparatively lax tube as compared with the condition in younger men. The firmness of the urethral walls is largely dependent upon the support of the muscles that surround it, notably of the accelerator urinae muscle. As the muscular fibre relaxes with old age, the walls of the urethra offer less support and guidance to instruments. The first point where the lack of support is felt is in the bulbous portion, in front of the triangular ligament. As the urethra passes through this fibrous sheet, its walls are held up and kept in a constant relation with the arch of the pubes, while just in front of this opening the bulbous urethra, when it lacks the support of the muscle surrounding it, sags down and forms a pocket. This pocket being situated on the lower side, just where the passage turns upward towards the bladder, is almost certain to catch the point of any straight instrument. If a soft catheter catches there, a French bougie catheter is even more likely to, as it is somewhat stiffer, and follows the floor of the passage even more closely in turning the corner below the pubes. Just in front of the prostate the same mechanism is likely to form a similar pocket.

After entering the prostate, the lateral walls of the urethra may be pressed snugly together, and so resist the passage of a soft, pliable instrument; but the only obstruction that is likely to catch the point of the instrument is the third lobe, which, when enlarged, projects from the floor of the canal, either as a prominent tumor or as a bar.

Thus we see that all of the obstructions likely to resist the passage of an instrument are on the floor of the passage; and in order to avoid catching an instrument on them, its point must be made to run along the roof of the canal.

The *coudé* catheter of Mercier is a familiar instru-

ment constructed for this purpose, and when properly managed, and passed so that its point is directed upwards, it rides over the obstructions described above most admirably, and can be successfully used by patients of moderate intelligence.

There is one criticism that I should like to make on these instruments, as at present furnished, and that is that the turned-up end is not long enough to ride over many of the obstructions that exist on the floor of the passage. The end should be, at least, three-fourths of an inch in length; and, as I have often proved, an instrument with such an end will frequently succeed in passing when one with the shorter beak now furnished has failed.

Lastly, we come to speak of stiff instruments, which require especial guidance, and to which various forms have been given.

This subject is so thoroughly treated of in the books that there is little that is new about it; but it is worth while to emphasize the importance of avoiding the pitfalls on the floor of the urethra in their introduction. The pressure of the hand in the perineum as the triangular ligament is being passed, and of the finger in the rectum as the point rides into the prostate, will often make easy what would otherwise be almost impossible. And it is well to know that this pressure must often be very great indeed to accomplish its object.

If the catheter is going right in one of these cases, it slips along with ease, and if it is caught and will not advance, it may be concluded that it is not rightly following the canal.

If false passages already exist in the urethra, it is a good plan when the point is caught to always withdraw for a considerable distance and then to try forward first on one wall of the passage and then on another, always remembering that in the majority of cases the false passage is on the floor.

We must expect in a certain number of cases to see a cystitis develop on commencing catheterization. This may be due either to the too sudden emptying of a distended bladder, or to the introduction of dirt upon the catheter, or to the irritation from the constant use of the instrument. Usually the cystitis due to this cause can be kept within moderate bounds and presently subsides as the bladder and urethra become accustomed to the changed conditions.

It is important that the aggravation of symptoms caused by this inflammatory onset, shall not lead the patient or doctor to infer that the catheter is doing harm and should be given up. It should, however, lead to a careful consideration of the method in which the catheter is being used, and extra care should be taken to see that the instrument is not causing any irritation.

Sometimes in spite of all care, attacks of inflammation of the prostatic urethra and bladder arise, and give much trouble. The urine becomes thick with mucus, and there may be considerable hæmaturia. The frequency of urination under these circumstances becomes very troublesome, and often accompanied by much painful spasm of the bladder.

When this condition of things becomes established, especially in a patient who cannot void his urine, and who therefore is constantly suffering from spasm, something must evidently be done to give the bladder a rest.

It is under these circumstances that an operation for

bladder drainage, and for the removal of obstructing portions of the prostate is often undertaken, and would seem to be proper. There is, however, another means of draining and affording rest to the bladder which is very efficient, and is much less dangerous than any operation. It is by fastening a catheter into the bladder (*sonde à demeure*). It is often surprising to see how quickly and entirely one of these sharp attacks of cystitis with bladder tenesmus is relieved by the continuous drainage through a catheter. The urine often clears with surprising rapidity.

The syphonage which is obtained by carrying the urine through a rubber tube into a bottle on the floor, is a valuable aid to keeping the bladder really empty, and forcibly sucks out clots of mucus and blood, that would certainly stop up a catheter that only dropped into a vessel between the thighs.

It is important, in adjusting the catheter, to so fasten it that the point shall neither press into the posterior wall of the bladder, nor escape into the prostate. Four threads fastened to the catheter, and then attached to a band of adhesive plaster about the penis is a common and tolerably efficient way of fastening it. The disadvantage of this method, however, lies in the fact that the penis is a movable organ, and sometimes allows the catheter to come so far out of the bladder that its point catches in the prostate.

A safer method is to fasten the threads to a ring of rubber tubing that encircles the penis and scrotum, and is held in place by being fastened in front to a waist-band, and behind by two perineal bands carried around in the folds of the nates, and brought up to the waist-band on the sides. This fastening holds the ring of rubber firmly down against the pubes, and if the catheter is then secured to the ring, it is held in constant relations to the pubes and bladder, no matter what changes of position the penis may undergo. It should be fastened as before by four threads, two of which are attached to the ring well towards the back to prevent the catheter riding up.

The catheter usually used for this purpose is the English gum elastic catheter, which soon gets soft and pliable throughout all that part of it that is in the urethra, but of which the outer part retains its stiffness sufficiently to prevent its doubling up, and so coming out.

A soft rubber catheter may be fastened in by attaching to it strips of adhesive plaster, which run back over the penis, and are held there by an encircling band of plaster. These plasters must be attached to the catheter close down to the meatus, as otherwise the catheter will work out of the urethra beside them. In fact, if there is much expulsive power in the urethra, it will often expel the soft, flexible catheter in spite of the most carefully arranged fastening.

When a catheter is properly arranged there should be a steady drip of urine from the tube, and if this ceases for more than a few minutes, the cause of the stoppage should be investigated. It will usually be found due to one of three causes, either the catheter is too far in, or it is too far out, or it is stopped by a plug of blood or mucus.

If moving it in and out does not start the stream, the tube may be stripped with the fingers so as to empty it of air, and it will then act by suction to draw the clot along. If this does not succeed, the catheter may be washed out with a syringe.

The catheter should be taken out and a clean one

introduced every four to six days, as in a longer time it becomes encrusted with the salts of the urine, and acts as an irritant.

Ordinarily, such drainage as this soon relieves the symptoms, and it can be discontinued, and ordinary catheterization resumed in from a week to a fortnight. If relief does not follow, it is probable that there is some undiscovered cause of the continuance of the trouble, perhaps a stone, or pyelitis.

The third stage of the disease always comes on insidiously. The tolerance of the bladder is so great that it becomes greatly distended without the patient being aware of anything more than a frequency of urination which he knows to be common in old men, and therefore neglects. Finally, it is often the incontinence which results from overflow that leads him to consult a surgeon. Long before this, however, the kidneys have usually begun to suffer serious changes. There is almost always an interstitial nephritis, which may or may not be associated with dilated ureters and pelvis. Not infrequently the secondary heart changes of Bright's disease may be discovered. When this condition is found thoroughly established the surgeon has a difficult problem to solve, for he knows that if left to itself the disease must soon prove fatal, and he has also great reason to fear that any interference may only precipitate the fatal result. Guyon has laid down a rule, for deciding whether to interfere in these cases, that is a practical one. He says, that such patients, who are almost always suffering from general debility usually associated with a disturbed digestion should be put upon a tonic course of treatment, and if they respond and improve under this, that it shows a sufficient power of recuperation to make it advisable to use the catheter, and to endeavor to better the condition of the bladder. If they do not improve under general treatment he advises letting the bladder alone.

When it is decided to interfere in such cases, it is even more important than in the second stage to take care that the bladder is not emptied too abruptly.

The patient should be put to bed, and but a portion of the contents of the bladder should be drawn off at a time. It may take a week or more to gradually reduce the amount of residuum to the point where it will be safe to empty the bladder.

If, before the patient is accustomed to the use of the instrument an attack of inflammation sets in, there is great danger that it will extend up along the ureters and set up a pyelo-nephritis.

This backward extension of the inflammation may possibly be prevented by establishing thorough drainage of the bladder, so that the urine shall flow out of it as fast as it comes down from the kidneys. This may be accomplished either by cystotomy, or by a permanent catheter. The patients with partly disabled kidneys do not bear cutting operations well, and the catheter drainage, if it works well would, therefore, be preferable in these cases.

— In a late number of *La Lyon Médicale*, attention is drawn to an article by Dr. Filatoff, of Moscow, showing that heliotrope can be substituted with advantage for quinine. The plant, it is stated, has for some time been in use as a popular remedy against fevers in Russia, in Turkey and in Persia. In each of these countries a tincture is prepared by macerating in alcohol the leaves and stalks of the plant.

TWO CASES OF PREGNANCY COMPLICATED WITH TUMORS.¹

SERVICE OF DR. E. H. BRADFORD, *Boston City Hospital*.

BY JAMES R. CHADWICK, M.D.

ON January 22, 1890, Dr. Bradford invited me to visit the City Hospital and examine two patients whose diagnosis had been the subject of much discussion and varied opinions. I did so; and after careful examination, had to confess with chagrin that in neither instance could I clear up the doubts. I was not contented, however, but returned the next day and succeeded in eliciting data for diagnosis which in both cases subsequently proved correct. As the cases were both grave and peculiarly complicated I have secured Dr. Bradford's permission to report them to this Society, making use of the hospital records.

1. PREGNANCY AT THE EIGHTH WEEK COMPLICATED WITH MULTIPLE FIBROIDS OF THE UTERUS.

Mrs. McK., thirty-four years of age, entered the hospital January 17, 1890, having been married but a few months. Menstruation had always been regular until two months before when it had ceased. Nausea and vomiting had been most marked mornings. The breasts had been growing larger. For two weeks almost nothing had passed the bowels; attempts at defecation had caused pain in the suprapubic region and down the thighs. Micturition had been difficult.

Examination showed the pelvis to be filled with a hard, rounded mass (like the foetal head at full term) rising into the abdomen above the navel, its upper surface being irregularly lobulated; low down to the left was a specially prominent nodule, yet firmly connected with the main mass. Both flanks were tympanitic. Per vaginam the cervix could just be reached by the finger, it was anterior to the pelvic tumor above the pubes and a little to the left of the median line.

The rational signs pointed exclusively to pregnancy; the physical, exclusively to fibroids of the uterus. Were both groups of signs correct, or was one misleading? I elicited the additional facts that she had been conscious of a lump in the lower abdomen for a long time, and had observed a decided increase in its size during the last two to four weeks; also, that constipation, which had been habitual, was so increased of late, as to amount almost to obstruction of the bowels. From these and the previous data I argued that multiple fibroids had existed for a long time, but that the recent growth was too rapid to be explained on any other assumption than that pregnancy had supervened. This reasoning reconciled the diverse signs, and led to a diagnosis of multiple fibroids complicated with pregnancy at the second month. As the fibroid in the pelvis already obstructed the bowels, and could not be dislodged, and presented an insuperable obstacle to the passage of a child later, immediate relief by operation was unmistakably demanded. Laparotomy was accordingly done by Dr. Bradford on January 27th, by a median incision of the abdominal wall. The fibroid mass in the pelvis was only extracted after many efforts at traction from above combined with pressure from the vagina. A clamp was put about the supravaginal cervix, and the mass of uterine body and fibroid tumors removed. The stump was treated extra-peritoneally.

¹ Reported at the meeting of the Obstetrical Society of Boston on June 14, 1890.