

gradually, that he disregards it. He finds, however, when he is jolted through the streets in a carriage or car, that his calls to urinate are even more frequent than usual.

At this juncture he dines out, and drinks a glass or two of wine more than usual, or he neglects a call to urinate, or gets a wetting, or his feet and legs get chilled (the latter a very common cause of trouble), and suddenly he finds that he cannot pass water at all. After vainly trying at intervals for a number of hours, if he does not seek surgical relief, at last the urine will begin to dribble away from him. The bladder has been distended to its utmost, the mouth of the urethra has been dragged open slightly, and the excess of urine trickles involuntarily away. This is overflow and not incontinence. Meantime the patient has been suffering the torments known only to those who have had retention, and he hails the overflow with delight, believing that his sufferings are about to cease. The hope is vain. The congestion of the bladder neck, brought on by the use of liquor, or by the chilling, and which, added to the already large prostate, has swollen it sufficiently to shut up the urethra entirely, subsides shortly. Gravity, and the contractions of the abdominal muscles, and of the diaphragm, are together able to dispose of a certain excess of urine, which the overstretched bladder, now in a condition of atony, is unable to void. The patient, perhaps, recovers from his overflow, but his residuum is greatly in excess of what it was before his attack of retention, his calls to urinate are more frequent, he is disturbed more often at night. All his former feelings of uneasiness and pain about the hypogastrium and perinæum are increased; digestion is impaired; the appetite fails; and, worn out by loss of sleep, inability to eat, and constant uneasiness amounting to actual pain, the sufferer runs down, aging rapidly, and becoming fretful and irritable, losing all interest in business, and nearly all pleasure in life.

A second and third retention come on, and aggravate the situation. Perhaps a stone is forming, as is always apt to be the case. The bladder may ulcerate, and peri-cystitis ensue, and death finally close the scene, the most common mode of death being by uræmia, induced by a little extra congestion of the secreting portion of the kidneys.

The foregoing clinical history is that of a type case. It may be variously modified, according to the pathological condition of the bladder and prostate; there may never be any retention; on the contrary, there may be constant true incontinence, or the bladder may take on acute inflammation, after an over-distention, with retention, and carry off the patient with acute febrile symptoms. Pyelitis or peri-nephritis may come in as complications, and quickly close the scene, or certainly precipitate the catastrophe.

CHAPTER X.

DISEASES OF THE PROSTATE.

*Hypertrophy (continued).—*Diagnosis; Description of Instruments and Manceuvres employed in their Use.—Examination of Patient.—Methods of retaining Catheters in the Bladder.—Methods of deciding upon the Character and Extent of Prostatic Deformity as affecting the Course of the Urethra.—Treatment.—Treatment of Complications.—Internal Remedies in Prostatic Disease.—Natural Mode of Death due to Hypertrophied Prostate.

Diagnosis.—When a patient of over fifty comes to seek relief for frequent micturition, suspicion falls at once upon the prostate. It is rare that stricture causes trouble for the first time so late in life; moreover, with enlarged prostate, the inconvenience will, as a rule, have been first noticed at night—the reverse of what is observed in stricture. As the first step in the examination, the patient should be placed upon his back, with the knees elevated and abdomen relaxed, and a digital examination made through the rectum. By this means alone general prostatic hypertrophy can always be demonstrated. In place of the soft, chestnut-like body, hardly recognizable except by the skilled touch, the finger will encounter a rounded, dense mass, smooth and symmetrical, or variously distorted and nodulated. The median fissure between the lobes may be more than usually perceptible, or may be wholly obliterated; while the finger passed up on either side, between the prostate and the walls of the pelvis, recognizes a deepening of the sulcus, and any undue prominence in size of one or the other lobe. Forcing the finger well up the rectum, it may be impossible to hook the last phalanx above the posterior margin of the enlarged prostate, while the seminal vesicles can usually be made out on either side, partly embedded in the general hypertrophy.

Perhaps rectal examination may reveal none of these positive evidences of enlargement, median hypertrophy existing none the less. In such a case the finger readily detects the bladder, if it be distended, beyond the prostate; the latter apparently not at all or but little larger than normal. Pressure through the rectum upon an enlarged prostate does not cause pain, unless there be some inflammation about the neck of the bladder. It often, however, provokes a desire to urinate.

The next step in the examination is to make out the condition of the bladder by palpating and percussing the hypogastrium. Usually this method does not throw any light upon the condition of the prostate, unless it is exceedingly large, when pressure upon it through the rectum may be recognized by the hand upon the hypogastrium. The same

occurs in those rare cases of excessive hypertrophy of the bladder-walls with contraction of its cavity (concentric hypertrophy). As a rule, hypogastric palpation only reveals the fact that pressure above the pubes excites a desire to urinate—from transmission of the force to the sensitive neck of the bladder. Sometimes, however, an oval tumor is found, as large as a child's head, filling up the lower part of the belly, perhaps as high as the umbilicus, flat on percussion, and causing a desire to urinate when pressure is made upon it. This tumor, formed by the over-distended bladder, can often be plainly seen, but the patient is usually unconscious of its existence. If the finger in the rectum can reach beyond the posterior border of the prostate, fluctuation can be felt between it and the other hand pressed upon the hypogastrium.

The patient is now asked to stand up and to pass water into a glass vessel. A little gleet discharge may be often found at the meatus, originating from the congested surface of the prostatic urethra. Occasionally, if questioned, the patient will confess that he is troubled with frequent erections, the cause of which lies in this same congestion. Sometimes, on the other hand, erections are absent.

As the urine is flowing off, it will be noticed that it commences tardily, and in a small stream, which gradually enlarges. There is very little force to the flow. There may be two streams, the one projected, and the other dribbling perpendicularly from the meatus, indicating an obstacle at the outlet of the bladder to the escape of urine. If there is retention, the urine will not flow at all, or comes away only by drops. While the stream is flowing, if the patient be requested to strain, instead of becoming larger or flowing with greater force, the stream may be diminished in size and power. Under these circumstances a ball-and-socket arrangement, or some valvular condition of the overgrowth, may be predicated, which, when acted upon by the pressure of the abdominal muscles through the mass of accumulated urine, tends still further to occlude the internal urethral orifice, so that the stream flows fastest when the least effort is made. If the bladder be inflamed, there may be severe tenesmus and pain during the attempt to urinate, and the rectum may protrude or feces be passed during the act. Hernia may be occasioned by the violent straining. At the end of urination the stream gradually dribbles away into drops, and often the final jet or "coup de piston" is wanting, although the latter may be perfect or even exaggerated.

If the urine which has been voided be now held up to the light, it will be found to be cloudy, troubled, perhaps bloody, badly smelling, and to contain white flocculi of pus, or perhaps gouts of stringy mucus, or again it may be perfectly clear. The condition of the urine indicates the amount of cystitis present, while its quantity (in residuum) and the force of its flow, after the catheter has been introduced, allow an estimate of the degree of atony. There may be considerable irrita-

bility, with little or no cystitis, and in such cases the urine is nearly or quite clear, generally strongly acid, and of high specific gravity. Usually there is more or less pus present, indicating cystitis, and, when the latter is of a high grade, the fluid is often ammoniacal, or has a fetid odor of decomposition, is filled with pus, more or less blood, fluid or in clots, and stringy muco-pus, which is often gritty from containing large quantities of triple-phosphate crystals.

When the patient has voided all the water he can, he is again placed upon his back, and a full-sized silver catheter of short curve passed gently down toward the bladder. The instrument will usually go smoothly along (perhaps halting for a little coaxing at the triangular ligament) until it has reached a depth of from six to eight or more inches, when it will stop. On no account should the least force be employed. A finger is now again introduced into the rectum to feel whether the instrument is in a false passage, which may have been made in some previous attempt at catheterization. If it is found to be in the canal and in the median line, the finger can readily appreciate the approximate increase in thickness of that segment of the prostate lying between the instrument and the rectum; and a diagnosis of obstruction in the floor of the urethra at the neck of the bladder is established.

In examining a patient for the first time, it should never be lost sight of that we are dealing with an old man whose urinary passages are in a more or less irritable condition, and probably unused to local disturbance. Any examination which is at all rough or too prolonged is pretty sure to be followed by some aggravation of the symptoms, and, unless the condition be urgent (retention), it is often

advisable to make only a partial exploration at the first sitting, leaving the rest for another day. If made worse by his first examination, the old man becomes far less docile for future management. If, however, there is retention with or without overflow, it becomes the surgeon's duty to make judicious use of all available means to enter the bladder with a catheter.

The next step in the examination is, to determine the nature of the obstruction in the urethra, and some instrument must be found which

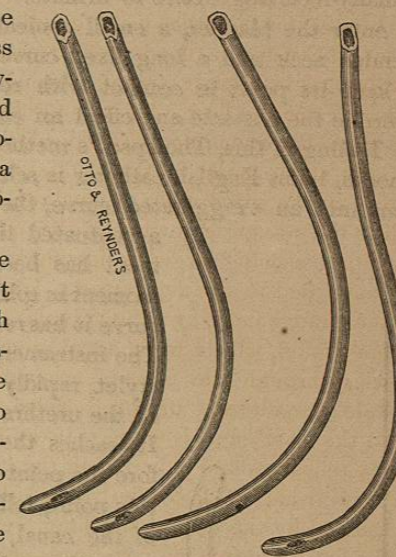


FIG. 62.—(Thompson.)

will enter the bladder. Unless the "third lobe" rise very abruptly from the floor of the urethra, the bladder may be entered by a silver catheter with an extra long curve. Such an instrument should be of large size. The surgeon should be provided with several of them of different sizes (from No. 10 to 16), and with varying curves (Fig. 62). One of these instruments will usually slip into the bladder, a flow of urine announcing the success of the operation.

Generally the amount of residual urine is small. The degree of irritability is not proportionate to the amount of urine which cannot be voluntarily passed, indeed it may be greatest where the residuum is at a minimum. It is always a favorable sign for prognosis, as far as the future comfort of the patient is concerned, to find a copious residuum upon the introduction of the catheter. Such cases are always more easily managed than others, provided only the patient can be taught to introduce a catheter for himself, since, by keeping his bladder from overfilling, he can avoid his most disagreeable symptom—continually-recurring desire to urinate. Should the silver instrument fail to enter the bladder, a small conical olivary French catheter, with a slender neck and a long fixed curve in its woven structure, designed to keep its point in contact with roof of the urethra, will sometimes override the obstacle and effect an easy entrance.

Failing in this, Thompson's method may be employed. A medium, smooth, blunt English catheter is selected, its stylet removed, and itself bent into an exaggerated curve, the last inch of the curve being more accentuated than the rest. When the instrument has been shaped (Fig. 63), it is held for a moment in cold water, which causes it to retain the curve it has received until it again becomes warm. The instrument so curved is oiled, and, without a stylet, rapidly introduced, so as to allow the heat of the urethra to act upon it as little as possible. It reaches the floor of the prostatic urethra before the point has lost its exaggerated curve, and this point, following the roof instead of the floor of the canal, readily surmounts any median hypertrophy and passes over the "third lobe" into the bladder. Another excellent method of overriding median hypertrophy with an English catheter is, to introduce the latter armed with a stylet of exaggerated curve. When an obstacle is

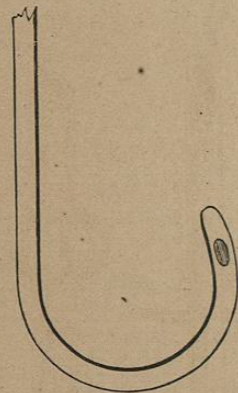


FIG. 63.—(Thompson.)

encountered, the stylet is slightly withdrawn. This manoeuvre causes the beak of the catheter to tilt upward sufficiently to surmount the obstruction.

Another instrument devised by French ingenuity, and capable of rendering valuable service, where perhaps no other catheter will pass,

is a catheter known by the name of its inventor, Mercier. It is an elbowed instrument, having a fixed angle (Fig. 64, A), or two angles (Fig. 64, B), in the woven material of which it is constructed. The English now make similar instruments, usually colored brown, sometimes black. They are generally too stiff and their angle is too obtuse; consequently, though more durable, they are not so useful in difficult cases as the black French instrument. This catheter (similar instru-



FIG. 64—A.



FIG. 64—B.

ments, with one or two angles, are also made of metal) is avowedly constructed to override obstructions in the floor of the urethra, such as posterior median hypertrophy. The point follows the roof of the canal or strikes any obstacle upon its inclined surface, and at an angle which allows the instrument to ride over the obstruction. For difficult cases these catheters are invaluable.

The instruments already described suffice for general enlargement and for cases of "third lobe," but occasionally the canal may be so

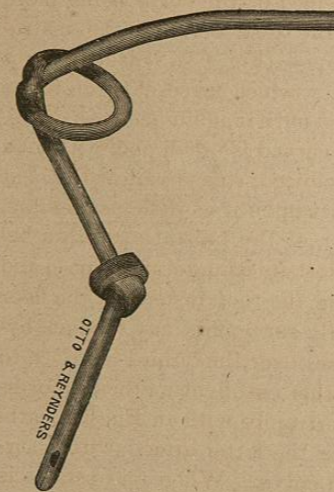


FIG. 65.

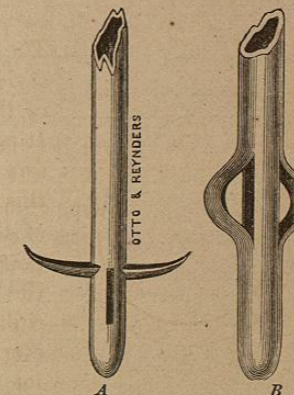


FIG. 66.

deviated, by irregular lateral overgrowths, that even these instruments fail to effect an entrance. For such cases there are several instruments left. Phillips's catheter, open at both ends, introduced over a two-foot

guide (p. 104), must not be forgotten. It is capable of rendering important service. Another instrument is a simple soft-rubber catheter, looking like a piece of ordinary rubber tubing, shut at one end, with holes in the side (Fig. 65). This is oiled and introduced without a stylet, like a ramrod into a gun, and will sometimes find out and pass through the sinuous windings of a prostatic urethra where all other instruments fail. Similar instruments are now made in England, colored a dirty pink, known by Thompson's name. They are smoother than the French, more durable, of larger calibre, and easier of introduction. Holt's self-retaining catheter is similar to these instruments, but is provided with two wings (Fig. 66, *A*) of soft rubber near the eye, which do not materially interfere with introduction (in any case where a metallic instrument of long curve will enter), and which wings, once in the bladder, fly out and retain the catheter. Holt's catheter is introduced by the aid of a long stylet. The instrument has been modified as shown in Fig. 66, *B*. All of these instruments of soft rubber may be worn in the bladder for a considerable length of time without (in many cases) producing much uneasiness or becoming incrustated by urinary salts, if the bladder is washed out with warm water pretty regularly. Holt's catheter is sometimes objectionable on account of its wings—which indeed often fail to hold the instrument in—hence, in retaining in the bladder a soft-rubber catheter, one

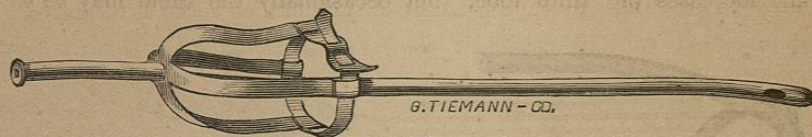


FIG. 67.

of two other devices may be employed. A tube of any hard material, an inch long, may be pushed over the outside of the catheter or a small one within its calibre, at that point of the shaft which will lie just outside the meatus after the instrument has entered the bladder. Around this a thread may be tightly tied, knotted again, and tied beneath the corona, or fastened one thread on either side under a small piece of adhesive plaster. This method originated with Thompson. The catheter-holder,¹ however, is the most convenient apparatus for retaining any instrument in the urethra. It is simply a sort of muzzle for the penis, made of flat bands of soft rubber. Where the bands cross over the meatus they are perforated by a minute hole. This being very elastic, admits and firmly holds any instrument passed through it, while the strap of the muzzle surrounds the body of the penis (Fig. 67).

American ingenuity has supplied a metallic instrument to follow the sinuous curves of a distorted prostatic urethra. It was devised by Squire, of Elmira, and consists of a straight silver tube, terminated by

¹ It is of French origin.

silver segments of small size, not united together, but held in contact by a little flexible chain, running through the hollow of the catheter, and attached firmly to the last segment, which contains the eye (Fig. 68). The central chain terminates in a wire which appears at the mouth of the catheter in the shape of a screw, furnished with a circular nut. By loosening

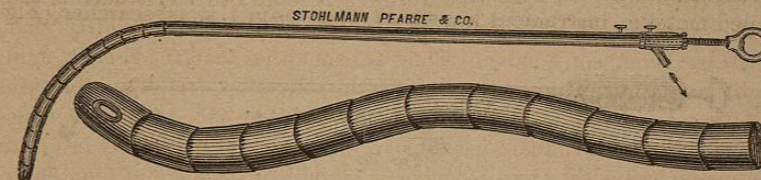


FIG. 68.

the nut and pushing down the wire, all the segments making up the end of the instrument fall apart; by tightening it they are stiffened up and brought into place, being left in a condition more or less flexible, according to the tension of the central chain. This instrument, pushed down into a tortuous canal, is capable of assuming any curve, and following the windings of the passage. It has proved serviceable in some cases. The objection to it is, the temptation to employ force in its manipulation.

Another ingenious instrument of Mercier's may be useful. It is designed to avoid false passages. A silver tube, of long curve, is furnished

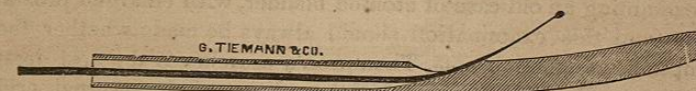


FIG. 69.

with a central woven catheter, which may be protruded and pushed on through an aperture in the concavity of the instrument near its point (Fig. 69). The solid beak of the instrument enters the false passage, the soft catheter is protruded, and passes onward in the urethra into the bladder.

METHODS OF ESTIMATING THE SIZE AND CHARACTER OF PROSTATIC OVERGROWTH.—It is sometimes desirable, for accuracy of diagnosis, or other object, to get an approximate idea of the exact situation and size of the overgrowth, together with the direction and amount of the deviation of the prostatic urethra, perhaps for purposes of rough comparison from time to time, to decide what advance is being made by the disease. A good deal of information, in a general way, may be gained on these points. In introducing the silver catheter of long curve, if the prostatic urethra be deviated to the right or left by the undue development of either lobe, the point of the instrument will be correspondingly deviated, and the degree may be roughly estimated by noticing the movements communicated to the handle. The increase in the antero-posterior diameter of

the prostate may be rudely calculated with the same instrument, by noticing the depth to which the eye has to penetrate before it finds water—instead of seven or eight inches, perhaps ten, eleven, or more. In studying out the form of overgrowth at the neck of the bladder, all the information necessary may be obtained with a short-beaked, solid sound of the curve known as Leroy d'Étiolles's, or Mercier's, or with the similarly shaped metallic instrument known as Thompson's stone-searcher (Fig.



Fig. 70.

70), the advantage of the latter being that it is a catheter as well as a searcher, and that, after the introduction, the bladder may be emptied, injected full or distended to any desired extent, so as to facilitate examination, all of this without removing the instrument. The bladder should always contain a few ounces of fluid when this instrument is used. There is rarely any difficulty in introducing it through an enlarged prostate. Like Mercier's catheter, it is peculiarly adapted to glide over obstructions in the floor of the urethra, and this is the variety of obstruction which exists most frequently, and which most often opposes an obstacle to the entrance of rigid instruments, or those of ordinary curve.

In examining an old case of atonied bladder, with enlarged prostate, for stone (and this examination should always be made whether there are symptoms of stone or not), Thompson's searcher is the best instrument to use, and during the search the condition of the internal orifice of the urethra should be examined. In introducing the instrument, if it

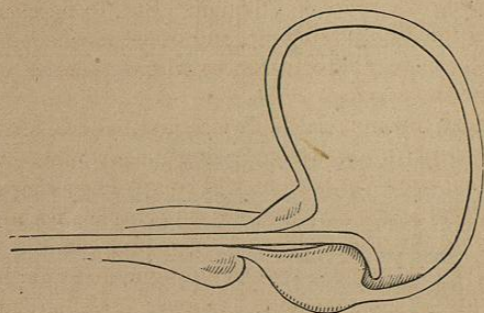


Fig. 71.—(Thompson.)

is necessary to depress the handle greatly, in order to get through the last part of the prostatic urethra, it is because the beak of the searcher must rise gradually over a posterior median enlargement. If the beak seems to strike abruptly against a bulkhead, and on a little manipulation, perhaps, to slip, with a start, suddenly into the bladder, the obstruction is probably a bar. When the beak is in the bladder, it is retracted until it hooks the upper margin of the urethral orifice. The shaft is now held nearly horizontally and the instrument rotated. (The bladder

must contain a few ounces of fluid.) If the prostate be healthy, or the obstruction a bar, this rotation can be performed without sensibly altering the direction of the shaft of the instrument. If there be a tumor jutting out anywhere from the prostate (posterior, median, or other enlargement), the beak becomes arrested, and the direction of the handle has to be changed in order to make it override the obstacle. Such deviation will give the approximate position and size of the outgrowth. Finally, in withdrawing the instrument, if the prostate be healthy, it may be retracted easily with the beak downward, while it will hook against any posterior median enlargement (Fig. 71). With the searcher the hypertrophied trabeculae of muscular tissue of the bladder may be also recognized, and their size and number roughly estimated.

Treatment.—In the present state of our knowledge, hypertrophy of the prostate is not curable by any means that have yet been used—by iodine, bromine, electricity, or pressure. The advocates of these and other methods have failed to establish their claims. Inflammatory increase in size may be successfully combated, hypertrophic apparently not. But still a vast deal of comfort may be afforded to patients; they can always be greatly relieved, sometimes cured, that is, freed from every subjective symptom. It is only necessary to remember that hypertrophy of the prostate is a mechanical malady obstructive in its character, in order to appreciate at once the great object and end of treatment, namely, to overcome by art the obstruction erected by Nature to the free outflow of urine. The catheter is the natural specific for enlarged prostate, just as the steel sound is for stricture of the urethra. The catheter is no novelty in surgery. A need for its use has been recognized for ages, probably in just these cases of old men with enlarged prostate. Very good specimens of lead, copper, and bronze catheters (of long curve) have been found among the ruins of Pompeii. But, to be effective, the use of the catheter must be intelligent, and other means must assist its employment, while, in very rare instances where there is no residual urine, it is of little or no service.

To take up one of the most common class of cases first, where, after a few months or perhaps years of gradually increasing inconvenience, a surgeon is finally applied to. Here the patient will complain, perhaps, that he passes too much water, that he is disturbed at night, has certain obscure pains or uneasy feelings in the perinaeum or rectum, and is a little feverish, with a warm, dry skin and a very dry tongue and mouth, which, he says, depends upon the fact that he is "bilious." He is confident that he empties his bladder at every act of urination, and says that the difficulty is, that his bladder has become too small, that it will only contain a little urine, and then calls for relief. Here the amount of residuum is probably large, and the bladder often perceptible in the hypogastrium, to the eye as well as the hand. The patient may have

suffered from one or more attacks of retention, which possibly came to a spontaneous end.

In such a case, after due examination, and when the patient has passed all the urine he can, voluntarily, he may be placed with his back against the wall, a small (No. 7-9) French olivary catheter, with a slight curve woven in its texture, oiled and given to him, without a stylet, and he may be directed to insert it into his urethra, and to push it slowly down the canal. In a majority of instances, this somewhat theatrical procedure is brilliantly successful, and the patient is unable to refrain from expressions of extravagant surprise to see a pint or more of urine flow out of a bladder which he supposes he has just emptied.

This point gained, the patient becomes at once docile and manageable. There is no feature about the treatment of so much importance, or any more difficult to accomplish, in many cases, than this one of overcoming the natural repugnance of an old man to pass an instrument into his bladder. If he is made to do it for the first time, and the operation is made light of, if he succeeds he is so charmed by the result, and his pleasant feelings afterward, that the victory over his symptoms is half gained. If he fails, and his failure is laughed at, he is all the more eager to try again, with another instrument. There is little or no danger in passing a catheter upon an old man in the erect position, for the first time. They do not faint when the instrument is traversing the prostatic urethra. This accident is to be feared only in young men, whose sexual tracts are always liable to be in a more or less hyperæsthetic condition.

In drawing off residual urine, for the first time, whether the patient is suffering from retention or not, if the quantity is large (over a quart), it should never be all drawn off at once. At any time during its escape, if there is complaint of the least faintness, the catheter should be at once withdrawn, and the patient placed upon his back, with the head low. Cases are on record where death has followed at once upon the sudden withdrawal of all the urine from an habitually over-distended bladder, and, where this result does not ensue, the patient is exposed to the danger of a subacute grade of cystitis, attacking the mucous lining of the body of the bladder, from the sudden and complete removal of tension upon its walls, which had been kept up pretty constantly for months, perhaps years, by an habitual over-distention with urine. The first and main step in the treatment of any bladder disease affecting an old man is, to get his entire confidence and cooperation, otherwise he will often frustrate the best-directed efforts, by errors of omission, if not of commission. Another essential point is, that the patient should be able to empty his own bladder at will. He has lost the power of doing this in the natural way, and, unless he learns to do it by art, he is never safe. The repugnance which old men have to commencing the use of a catheter is extreme, and the main difficulty is often to get them started.

If they make the start in the manner above narrated, not knowing what they are doing, or what they are doing it for, the surprise at their success, the ease with which it was accomplished, together with the feeling of relief experienced afterward, will be the strongest arguments which can be presented of the efficacy of continuing the use of the instrument. If the patient fail to introduce the instrument, the surgeon must find one that will enter, but the patient must sooner or later learn to pass an instrument for himself. A metallic catheter should not be used by the patient, if any of the soft varieties can be made to pass. With a soft instrument, without a stylet, it is difficult for an old man to do himself any considerable injury—with a silver instrument it is very easy. There are cases, however, where a silver instrument, with a special curve, may be absolutely necessary.

The patient having acquired the ability to introduce an instrument for himself, is now instructed in urethral hygiene and given some gentle laxative, if necessary—a little infusion of pulvis sennæ co., or some confection of sennæ at night, together with a mild alkali, such as the citrate of potash (gr. x-xxx) three times daily. He is directed to cover himself with merino in summer and flannel in winter. His feet and ankles must be especially well protected with suitable woolen stockings. The feet lie farthest from the heart, the source of heat. From their pendent position, the venous blood has great natural difficulties in getting out of them. They are that part of the body most easily chilled, yet habitually they are the least well protected, especially by old men. A knowledge of these facts indicates the natural means of remedying the evil. An ordinary case requires no change in diet. Exercise should be taken at will, but not on horseback, or of a kind attended by much jolting, as this tends mechanically to increase the congestion about the base and neck of the bladder, and leads to an aggravation of the symptoms (irritability). The catheter should be used by the patient more or less often, according to the quantity of residuum, normal intervals of urination being observed as nearly as possible.

In ordinarily mild cases, where the frequency of urination comes on mainly at night, emptying the bladder once thoroughly just before retiring may be all that is required. After this, the patient will sleep quietly until toward morning, when the residuum will have re-collected, and then the desire to pass water will again return. Where the residuum is large, a pint or more, it is far better for the patient to rely entirely upon the use of the catheter, introducing it three or four times daily, perhaps five or six, and never attempting to pass a drop of urine without its aid. This becomes necessary where there is a valvular condition of the vesical orifice, or such other deformity as makes it impossible for the patient to pass any water. Here, if the catheter enters easily, the patient is perfectly safe. He goes around carrying his instrument with him. He becomes proud of his ability to introduce it, and does it better