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ON THE USE OF CATHETERS IN HYPERTROPHY OF THE
PROSTATE.

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THE object of this paper is to draw attention to certain practical points relating to the treatment to be used in cases of enlarged prostate, and particularly to set forth the value, in such cases, of the *vulcanized India-rubber catheter*. This instrument, which has long been in general use in Paris, is comparatively little used or known in Great Britain and in this country, and its many advantages are certainly underrated.

Hypertrophy of the prostate is a disease for which we may expect to be frequently called upon to give advice; Sir H. Thompson estimates that enlargement exists in some degree in one out of three individuals after 60 years of age, and that it produces marked symptoms in one out of seven or eight at that age and upwards. Fortunately, though we are able, as yet, to do nothing to cure, we can do much to relieve the sufferings and to prolong the life of those afflicted with this disease. The main feature of treatment in such cases is the use of *catheterism* to relieve retention of urine, complete or partial, with all the attendant suffering and disturbance to the system due to attacks of absolute retention, to retention with incontinence of urine by overflow, or to partial chronic retention with general poisoning by stagnating and decomposed urine. In many such cases, catheterism is our great resource; not only may it be indicated as an occasional measure when an attack of local congestion, induced by cold or by excess at table, has caused stoppage of micturition, with extremely distended bladder, but in many cases it may become necessary to resort to the constant use of the catheter, repeated several times daily, for months, or even years; with some patients, the normal function of micturition has to be superseded, during the remainder of life, by the artificial evacuation of the urine through a catheter, which the patient has to learn to introduce for himself when required. Then again, in other cases, when catheterism is found extremely difficult, through the existence of false passage or through any other cause, or when irritability of the bladder

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occasions very frequent calls to evacuate its contents, it may be advisable to tie in an instrument, either permanently or only at night, with a view to permitting undisturbed rest.

It is easy to understand how important is the choice of the instrument which is to be used so continuously, or in such unfavorable circumstances as prevail in cases where the catheter has to be introduced several times a day, perhaps by inexperienced hands, or else left permanently in the urethra; and we can comprehend how desirable it is to reduce to a minimum the risks of injury and of irritation.

Before entering upon a description of the instrument to which we wish to call attention, we beg to be allowed to make a few brief remarks upon the necessity which exists in all cases of retention, whatever may appear to be the cause thereof, of making a methodical exploration of the urethra before attempting to pass a catheter. In many cases, such an exploration may be quite superfluous, and the first catheter used goes easily through the urethra into the bladder; on the other hand, cases continually occur where such is not the case, and where the immediate use of a metallic or of a flexible, straight and pointed instrument may be fraught with difficulty and even danger. A preliminary exploration with a flexible bougie, tipped with a good sized olive-shaped bulb (of No. 18 calibre, of the French scale) is a rapidly performed and perfectly harmless operation, which may serve to reveal the existence of difficulties till then unsuspected, such as latent stricture, accompanying the principal disease, false passage, deep lacunæ, &c.; it is certainly a generally accepted rule that diagnosis, as thorough as possible, should precede measures of treatment, and in this particular case we hold that no attempt to relieve retention should be entered upon without our previously investigating the presumable causes of the retention and the condition of the parts through which the catheter is to pass. Dr. Guyon, who has succeeded Civiale in the ward devoted to urinary surgery at the Necker Hospital in Paris, is in the habit of laying great stress upon this point, and he strongly recommends the use of the olive-tipped bougie as the best instrument for such an exploration as is here advised.

When we have determined the condition of the urethra and recognized that its calibre is sufficient, and that it offers no other obstruction than that caused by the enlarged prostate, we may safely apply ourselves to the selection of the most serviceable catheter and to its introduction. For this purpose, we have the choice of several instruments:—1st, the *silver catheter*, of varying length and curve; 2d, the *English gum catheter*; 3d, the *French gum catheter*, cylindrical or conical, with a bulbous tip; and, lastly, the vulcanized *India-rubber catheter*. The first three kinds of catheters are well known and require no description; the last seems to be quite unused, the English gum catheter being generally considered to be the most use-

ful of all in hypertrophy of the prostate. (See Sir H. Thompson on Diseases of the Prostate; and J. W. S. Gouley on Diseases of the Urinary Organs.)

The vulcanized India-rubber instrument, however, seems, if we may judge by the practice now prevalent in the Paris hospitals, and particularly in the Civiale ward of the Necker Hospital, to be of all catheters the most suitable for cases where retention is due to loss of power of the bladder, or to increase of volume of the prostate, and for cases where difficulty of catheterism results from change of direction of the urethra rather than from narrowing of its calibre, or the existence of false passage. For stricture, a slender instrument, either flexible or metallic, is of course necessary; in cases of false passage, though a somewhat voluminous and flexible instrument like the India-rubber catheter will often glide past the orifice of the false passage without entering it, a silver instrument, which can be directed along the sound wall of the urethra, is often indispensable. But, apart from these cases, it is now the general practice in Paris, in cases of retention, to make first a fair trial of catheterism with a small rubber catheter preferably to any other instrument, and in the great majority of cases this first attempt proves successful.

The following, then, are the cases for which the use of this catheter is to be generally recommended:—1st. In retention caused by paralysis of the bladder accompanying paraplegia. 2d. In retention caused by acute prostatitis. 3d. In retention caused by hypertrophy of the prostate. Having thus briefly enumerated the cases for which the rubber catheter is most suitable, we will proceed to describe the instrument, and to state the reasons for which it appears preferable.

The rubber catheter, first manufactured by Galante, of Paris, was brought into use by Maisonneuve and Nélaton, soon followed by the generality of French surgeons. These catheters are of all sizes, from No. 12 of the French scale upwards, but by far the most useful are those comprised between Nos. 16 and 20; they are perfectly cylindrical, with a rounded end and an even, smooth surface. The instrument possesses the following qualities:—1st. It is perfectly supple, so much so that it can be easily wound round the finger. 2d. It is not acted upon by the urine or by the secretions of the mucous membrane; it neither acquires a phosphatic crust, as the gum catheters rapidly do when tied in, nor does its surface in any way become deteriorated, even by a prolonged sojourn in the urethra, whereas the black gum catheter is found, in a very few days, or even hours, to become so rough by disintegration of its coating as to necessitate removal. The perfect flexibility of the instrument is the cause of the facility with which it finds its way, of itself so to speak, into the bladder, requiring no guidance, but only a succession of short quick pushes, which propel it along the urethra; if any obstacle is encountered by the bluntly rounded tip, the pliable shaft, immediate-

ly bending, ceases to transmit the forward impulsion. It is, therefore, absolutely impossible to inflict an injury with this instrument, or to create a false passage, however awkwardly it may be handled. Nor does its use require any skill or practice; it is only necessary that the instrument, well oiled, should be held with the finger tips quite near the meatus, so as to send in only a half-inch or so of the shaft at each push; at the same time, the surgeon should keep the urethra well stretched, with the left hand, by firm traction upon the penis. It is a mistake to use this catheter with a stylet, as some authors recommend; this way of proceeding deprives the instrument of the valuable quality of pliability, which enables it to insinuate itself through a tortuous urethra, as it will often do in cases where catheterism with a silver instrument is so difficult as to baffle the patient efforts of a most skilful surgeon. Another advantage which accrues from the suppleness of this instrument is that it is of all catheters the one whose continued presence is most easily tolerated by the urethra; it causes much less discomfort to the patient than the gum catheter, and it is not so apt by its presence to set up prostatitis or cystitis, much less to occasion sloughing of the floor of the urethra at the sub-pubic bend; it is well known that the more rigid gum catheter sometimes, in this way, causes perforation of the wall of the urethra, thereby producing a very troublesome fistula, which necessitates a plastic operation of difficult performance and uncertain issue. The second quality of retaining an unimpaired surface, however long the instrument may be left in the urethra, is also a reason why it should be preferred for tying in.

The only defects of this catheter are its rather small bore and the difficulty sometimes experienced in fastening it so as to prevent its escaping from the urethra in consequence of its extreme flexibility. The smallness of the bore, due to the necessary thickness of the soft wall of the catheter, renders it apt to get easily clogged up by mucus, pus, clots, &c., but it can always be readily cleared by sending a little water through it with a syringe. To keep it securely tied in, several devices have been used; one consists in introducing into the distal half of the catheter a metallic tube four or five inches long, with a view to rendering this part of the instrument rigid, and so to prevent its escaping by worming itself out between the meatus and the means of attachment. A simpler mode of accomplishing this result was instituted by the author, and has succeeded extremely well. It consists in dipping the distal portion of the catheter, supported by a wire stylet, into collodion, which hardens in a few seconds, and leaves the part so treated quite stiff; two or three successive dips are necessary to give sufficient rigidity. This preparatory treatment gives a coating of glassy smoothness, which perfectly withstands the action of moisture and of bodily heat. We would like to add, in parenthesis, another analogous use of collodion: a fine bougie, of which the tip, bent into an angular or bayonet shape,

is dipped an inch deep into collodion, acquires in a few minutes and after two or three dips, a *rigid extremity* of any curve that may appear desirable; this little expedient is sometimes very useful in dealing with stricture which is difficult to get through on account of the passage through it being tortuous or deviated from the axis of the urethra.

While upon the subject of tying in, we wish to take the opportunity of calling attention to a very ingenious and simple way of fastening catheters to the pubic hairs. The accompanying wood-cut

shows the *modus operandi*; perhaps a few words of explanation may make the thing more easily understood. A string eighteen or twenty inches long is tied by its middle around the catheter at A, near the meatus. The two ends are knotted together at B, and then carried around the penis, one above the other below; they are then again knotted together, so as to form a loop loosely encircling the corona glandis, and carried together to a lock of pubic hair at D, close to the root of the penis. This means of attachment was devised not long ago by Sir Henry Thompson, who now uses it quite exclusively; on trial, it will be found to be a very neat, simple and efficient way of tying in a catheter.

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DRESSING OF STUMPS IN FRANCE.—At the scientific congress lately held in Lyons (medical section), a discussion took place on the subject of the dressing of stumps after amputation. Prof. Verneuil, of Paris, after reviewing the different dressings in use (open dressings, immediate union by sutures, antiseptic dressing of Lister, &c.), expressed a decided preference for the cotton-wool dressing of M. Guérin, as being that which enabled the surgeon most successfully to cope with the detestable sanitary conditions afforded by the Paris hospitals. The only fault he found with this dressing was the slowness with which granulation went on under the cotton wool, but the advantage of greater safety far outweighed this objection.

Dr. Ollier, of Lyons, said that he had also adopted the cotton-wool dressing, over which he is now in the habit of applying a roller steeped in soluble glass (silicate of potassa), to make the dressing less liable to become loose.—*Le Mouvement Médical*, Sept. 27th, 1873.