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## Original Articles.

### A FURTHER REPORT ON PERMANENT CATHETERIZATION.\*

J. RILUS EASTMAN, M.D.

INDIANAPOLIS, IND.

Permanent catheterization in the male has been practiced by the writer in fifteen cases. In each case the catheter was retained for more than ten days, and in two instances for more than sixty days. These cases embraced a variety of conditions demanding bladder drainage, and in all but one entirely satisfactory results were obtained.

The fifteen cases included six perineal operations for stricture of the posterior urethra—one of which involved resection of nearly all of the pars membranacea—two operations for the closure of the perineal urethral fistulae, two cases of perineal lithotomy, two cases of severe cystitis complicating prostatic hypertrophy, a case in which the catheter was introduced to drain and give physiologic rest to the bladder for the relief of atony and incontinence following stricture of the pars anterior, a plastic operation for the cure of a vesicorectal fistula, and another for the closure of an old unhealed suprapubic cystotomy wound.

An experience of fifteen cases is hardly extensive enough to justify the drawing of general deductions. The writer therefore submits the following points as mere impressions in the hope that a larger experience will establish their accuracy.

The mechanical urethritis occasioned by the presence of the catheter was in all cases insignificant. There was no complaint of urethral pain, and the discharge from the urethral mucosa was never annoying, usually just enough secretion of tough fibrino-muco-purulent character, accumulating during 24 hours, to form a thin ring upon the catheter at the meatus. The decidedly benign urethritis invariably became less active after the catheter had been in position for a few days. In two cases the catheter was retained without changing for two months, and in these, during the latter weeks, the discharge became practically nil. These facts suggest that the urethral mucosa develops a tolerance for the instrument after suffering its presence for a few days. In a few of the cases cited during the first few days permanganate of potassium in hot weak solution was injected between the catheter and the mucosa, but even when this measure was omitted the urethritis was slight. The catheters used were of soft rubber with two eyes. Large sizes were chosen for the reason that such catheters as completely fill the lumen of the ure-

thra occasion less frictional irritation than smaller ones, which readily slide and twist in the canal. If a small instrument is used urine may escape freely from the perineal wound or find its way to the meatus between the catheter and mucosa. Prompt closure of the perineal wound and convalescence may be thus retarded. The penis will often by bending and writhing disgorge a small limber instrument, whereas a large catheter, because of its greater stiffness, is much more easily retained. The presence of the large catheter in the bladder-neck seemed to relieve irritability in this region. Severe muscular spasm or tenesmus never occurred during its use by the writer. Dilatation of the anal sphincters relieves irritability. Why, therefore, should not dilatation of the vesical sphincter produce a somewhat similar result? The catheters used varied in size from 26 to 29—Charrière scale.

The presence of a properly applied retention catheter should not produce cystitis. It has been stated that inflammation of the bladder may occur during permanent catheterization as the result of direct extension of an urethritis or from decomposition of the small quantity of urine which always moistens the intravesical end of the catheter. If cystitis was produced in either manner in the writer's cases it was not severe enough to occasion symptoms. Permanganate of potassium solution or a solution of hydrogen peroxid were occasionally introduced into the bladder, chiefly, however, for the purpose of eliciting assurance that the catheter was freely open. Regular flushing of the bladder was not practiced except in the two cases of cystitis complicating prostatic hypertrophy. Boracic acid in solution proved undesirable for irrigation in these cases, as its crystallization in the long-retained catheters partially obstructed the lumen. In the cases of cystitis pain and strangury were distinctly relieved by permanent catheterization. Guyon and Michon used the retained catheter in a large number of cases of cystitis attending prostatic hypertrophy, and in 77 per cent. a cure is said to have been obtained. It is essential to success in the treatment of cystitis that the catheter be introduced just far enough so that the tip bearing the eyes projects within the bladder and is accurately secured in this position. Pain and strangury suggest that the catheter has been introduced too far. The lumen of the catheter should be large enough to drain the urine from the bladder as fast as it enters from the kidneys.

It was noted that the pressure absorption produced by the continuous presence of the large soft rubber catheter was such as to remove extensive soft and hard infiltrations. After two weeks' retention of the catheter it was often easily possible to pass steel sounds several sizes larger than the catheter itself.

It is reported that occasionally during permanent catheterization with a metallic instrument abscesses develop in the peri-urethral tissues at the scrotal angle.

\* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

These have possibly been due to pressure exercised by the hard catheter. At any rate, no such complication has occurred within the writer's knowledge from the

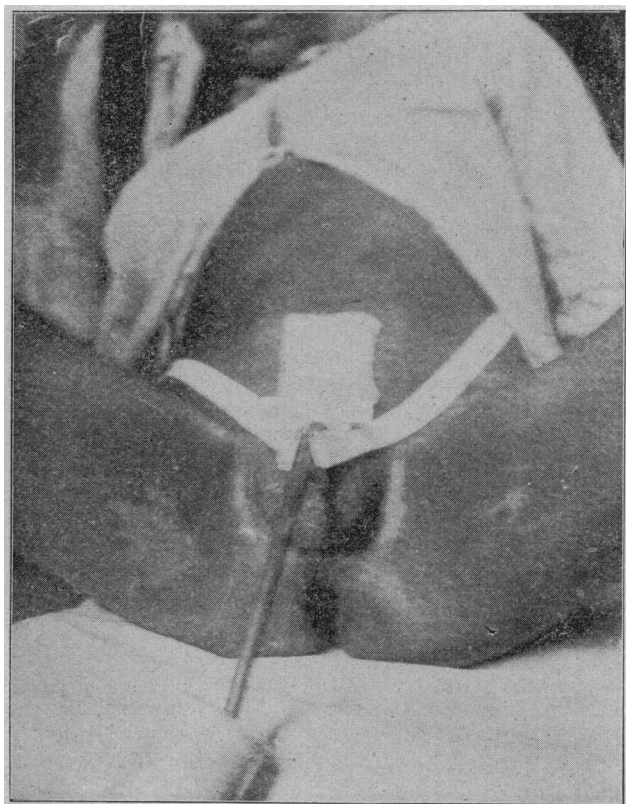


Fig. 1.—Retained catheter, secured by two transfixing safety pins and two adhesive straps.



Fig. 2.—Reinforcing straps.

continued pressure of a soft rubber drainage catheter.

It has been urged that continued use of the retained

catheter will conduce to atony of the bladder. This is certainly not a valid argument against its use in properly selected cases. If it puts at rest the bladder muscularis, perineal and suprapubic openings do likewise. Fuller, with others, has shown that rest in many cases of vesical atony, particularly those cases resulting from stricture, is a sovereign agent in treatment.

There are many good reasons why permanent catheterization should be selected as the method of choice for routine use in selected cases in draining the urinary bladder. Among these the following may be enumerated:

1. By its use the urine is removed by the natural exit.
2. If used after operations involving opening of the posterior urethra until the perineal defect is closed, the period of convalescence is shortened since the perineal wound closes promptly if the urine be drained through the urethra.

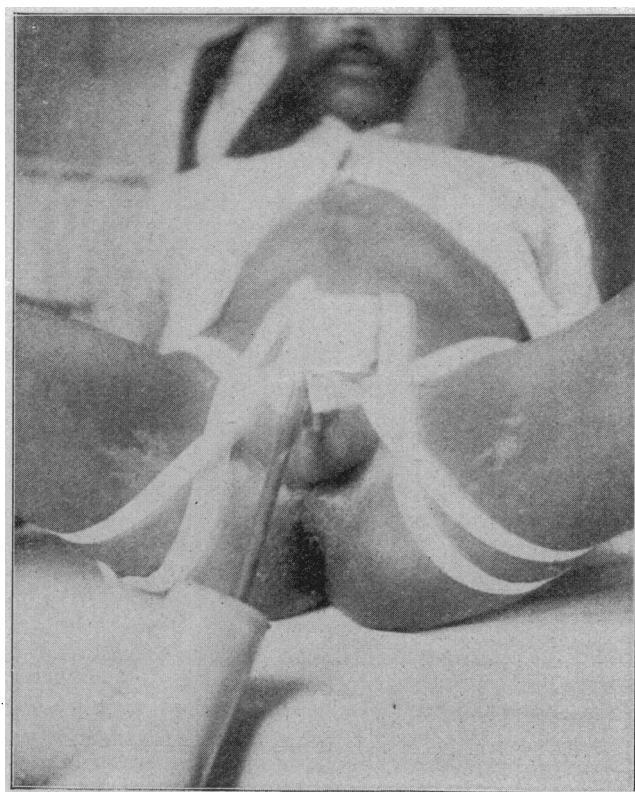


Fig. 3.—Transverse strap to hold the penis down.

3. The caliber of the urethra is maintained or even increased, and the subsequent passage of instruments is rendered easy.

4. Much of the tedious work of after-treatment, as sounding, becomes unnecessary or is decidedly lessened.

5. After perineal section involving removal of a portion of the posterior urethra, intermittent catheterization or sounding is exceedingly harmful and difficult of execution; hence, maintenance of the urethral lumen becomes a serious task. If, however, the retained catheter is used, sounding becomes unnecessary and the new segment of urethra has a guide over which to form itself.

6. The urine may be thus accurately drained into a receptacle, and bedsores, dermatitis and much discomfort are avoided.

7. The danger of uremic poisoning is reduced, since the area of the unprotected tissue with which the urine must come in contact is diminished. For the same

reason the danger of bacterial infection or intoxication is lessened.

8. Pain and fever are notably slight during permanent catheterization, if care be exercised that the instrument does not project too far into the bladder.

9. Soft and hard infiltrations which may narrow the caliber of the urethra are removed by the pressure absorption produced by the presence of the catheter.

10. Drainage of the bladder in cystitis may be accomplished by this method without subjecting the patient to a more or less dangerous surgical operation, as must be done when suprapubic or perineal drainage is employed; here also the possibility of delayed non-closing of the wound enters into the consideration. The catheter may often be introduced in such cases with a little pain and inconvenience as accompanies the introduction of Skene's catheter for permanent catheterization in the female.

A convenient method of retaining the catheter is as follows: After the introduction of the instrument it is transfixed with two safety pins just in front of the external meatus. To each of these pins is fastened a narrow strap of adhesive plaster with the glue side toward the penis. These straps fall naturally along the course of Poupart's ligaments and around the sides. They may, if necessary, be reinforced by two other straps, which should pass downward along the outer edge of each abdominal rectus muscle, crossing the first two near the sides of the root of the penis, and continuing downward between the thighs to the buttocks. If the penis turns upward it may be easily held down by an additional strap passed transversely over its dorsum, the ends of this strap being fastened to the skin of the buttocks or the posterior aspect of the thighs.

### FALLACIES IN THE TREATMENT OF URETHRAL DISEASES.\*

ROBERT HOLMES GREENE, A.M., M.D.

Attending Surgeon to Workhouse Hospital, New York City; Attending Genito-Urinary Surgeon to French Hospital.  
NEW YORK CITY.

Looking backward over the history of the treatment of the diseases of the urethra, if one is impressed with the slight amount of real progress that has been made, there is less cause for surprise if the fact is taken into consideration that our knowledge of the nature itself of these diseases, certainly until the last fifteen years, has been very slight. Known in ancient days to be an entity by itself, urethritis came to be considered as another manifestation of syphilis from early in the sixteenth until the middle of the last century. Neisser's discovery of the gonococcus in 1879, and particularly the discoveries of Pasteur, Metchnikoff and others as to the nature of infecting diseases and the way the body reacts against them, have acted as guideposts, showing the way towards their proper treatment, although the information from this source as regards their treatment through a misrepresentation of the above-mentioned discoveries has sometimes proved misleading. One general law as regards treatment of the urethra that can easily be interpreted from the discoveries made by these later observers is, that measures tending toward the destruction of an invading organism in one portion of the body should be destructive towards organs invading any other portion of the system; the influences of such measures being

modified by the character of the organism and the portion of the body attacked. Apparently some of the recent exploiters of rapid cures of urethritis have not taken this into account. If, however, an overwhelming mass of clinical observation show their measures to be correct, then it must be that our interpretations of Nature's laws are wrong, and upon the pathologists rests the duty of modifying their present explanation of Nature's phenomena. Thus the pus of urethritis is often considered in recent times to be the disease itself instead of a mere symptom of the conflict going on between the forces of the body and the invading microbe, and an effort of Nature to destroy, by means of the bactericidal serum, the invading organism, and to sweep them and the results of the conflict between them and the portions of the body away by its flow. Then again, some fifteen or twenty years ago, the so-called strictures of large caliber of the pendulous urethra were held accountable for many of the inflammatory affections of that membrane, and their incision recommended as a method of treatment. Operations for these running up into the hundreds in number were not infrequently reported. Two factors have probably caused these operations to fall into disuse: Clinical experience not having demonstrated from such measures the good clinical results that might theoretically have been expected, and the posses-

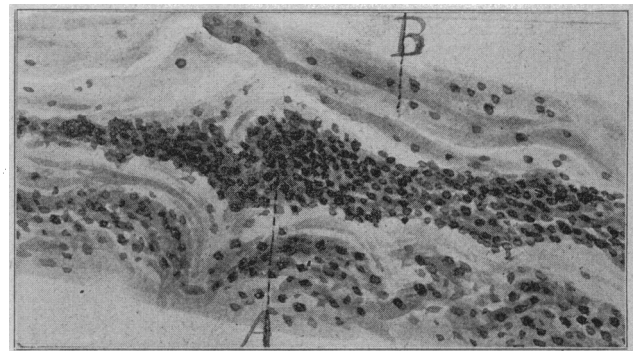


Fig 1.—Case 5, showing connective tissue hyperplasia about an acinus which has become filled with an inflammatory exudate. Section taken from the peripheral portion of an enlarged gland removed by operation. *a*, Inflammatory exudate of small round cells; *b*, hyperplastic connective tissue fibrils. This represents the acute infiltration of the acini, similar to what is seen in prostatitis associated with urethritis.

sion at the present time of a more definite knowledge as to what stricture really is. Roughly speaking, true organic stricture of the urethra is cicatricial tissue formed at the base of a granuloma in the urethra due to a change in the position in the normal cells from a horizontal to a vertical plane and their gradual lengthening. The granuloma is an infiltration of the round-cell type around and under the base of an ulceration or a dipping down of this infiltration in the urethral follicles, which are much more numerous than has been generally considered the case; the dipping down of the ulceration being after-results of acute inflammatory diseases of the urethra. This cicatricial tissue may be, of course, much more quickly formed by external injury or careless instrumentation. If strictures as a routine matter are being incised at the present time less generally than a few years past, it is to be looked upon with commendation; for undoubtedly in the past, many cases of the above-mentioned granuloma which may cause swellings in the urethra have been mistaken for true stricture and unnecessarily incised. It can be stated as a fact that the chronic inflammatory conditions following urethritis in the urethra, both anterior and posterior, and in the

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