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# The Intermittent Rapid Dilatation of Urethral Stricture

BY

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## THE INTERMITTENT RAPID DILATATION OF URETHRAL STRICTURE.

WITH the multiplicity of modern medical communications it is essential to be as brief as possible in the presentation of any matter which we may deem worthy of professional attention. I shall, therefore, as concisely as possible, describe what I consider to be an improved method of treating such urethral strictures as come within a class to be later described.

However much or little interest one may take in the treatment of urethral stricture, it is certainly a serious disease if allowed to progress neglected to its harmful late effects, and one which every surgeon meets in large numbers and to which in polyclinic, hospital, and private practice, he must devote much valuable time. It would be well, therefore, if possible, to have a uniform method of treatment. Under the present exact conditions of surgery, where all sorts of instruments can be sterilized and bladders and urethræ so successfully disinfected, I imagine that a fairer and more scientific comparison of methods will soon bring this desired result about.

First, I think it is fair to claim, and I certainly do so as far as my knowledge and experience go, that true organic urethral stricture, like œsophageal and rectal, is an incurable condition, except possibly by plastic operation, and one which if neglected will sooner or later return to its original or even a worse condition. It is at the same time more easily controlled under proper management than any of the others.

Now, as to the treatment of stricture, I think most surgeons will to-day agree that the best is gradual dilatation through the introduction of metallic sounds wherever progress can so be made. I have never seen a case



where sufficient stretching could not be always thus accomplished, wheresoever the stricture might be situated, provided a beginning could be made with a metallic instrument of sufficient calibre to admit of safe manipulation. In following this practice I feel safe in the precedents established by Syme, Liston, Phillips, and others and a personal observation, during twelve years, of cases so treated at the Massachusetts General Hospital by Drs. Bigelow, Hodges, and Beach, during my connection at the hospital as an interne and surgeon to outpatients. But it should not be for a moment in any way overlooked that in the very tough fibrous penile strictures progress in this way is and should be very slow. They have usually been of slow formation, or if not have become very rapidly organized and intensely cicatricial. To stretch and cause them to absorb as much as possible, therefore, the process should be a slow one. I never consider the treatment completed until the patient possesses a steel sound and can pass it readily, and is taught that he must, as long as he lives, do so at varying intervals according to the tendency to recontraction. Of course a vast number of what we call strictures belong to the little organized class, dilate readily and rapidly, perhaps even in one or two sittings, and do not recur during the remainder of life as far as any symptoms calling attention to them give evidence. Now in the very fibrous penile strictures, I have simply found it necessary in a few instances to prescribe for the patient, somewhat early in the treatment, a smaller sound than you wish him eventually to use. With this passed twice a week, or even every other day, by himself, some absorption and the stretching are readily brought about, and he soon finds himself able to pass a larger size and reach eventually the desired degree of stretching. Thus if the surgeon cannot, from lack of time on his part, or want of either means or time on that of the patient, dilate further than 18 to 24 F., the patient may continue as indicated above to the desired calibre.



All other strictures than the above class are either impermeable, or those where from smallness of calibre practically no progress can be made by gradual dilatation. As to the impermeable ones I think all surgeons agree that the best treatment for them is external urethrotomy. In fact there is practically no other choice left to us if the stricture really is impermeable.

For the remaining class I wish to offer a method which I have found very successful and satisfactory both to the patient and surgeon, but particularly to the patient, as it generally does not necessitate his interruption of work by any period spent in bed. The exceptions being cases where from very poor physique or condition of urine it is wiser to have some rest in bed. I have as yet met with only one such case, and that was where I recommended the patient to the hospital, because he was without proper home attendance, and suffering at the first visit from pain, hæmaturia, and partial retention. I relieved the partial retention, however, one week before his entrance to the hospital, by passing the then first size, No. 14 F., of my improved dilator. This dilator is similar in construction to that described by me in this journal of June 6, 1891; but has the important addition, for this method, of other dilatating or stretching staffs descending in size to 10 F., the latter being not much larger in calibre than the original metallic guide of 8 F. which is of course introduced first, or follows when necessary the small capillary bougie guide to which it may be screwed.

To illustrate what I have called intermittent rapid dilatation let us take an extreme case and describe the method. We will suppose a patient comes passing his urine in the finest possible stream or even by drops; that after a week or more of trial we fail to introduce the finest capillary guide. Our patient finally sends for us, with retention, and we are called upon to do the best possible thing for him. Under ether or local anæsthesia, and preferably local anæsthesia, we finally introduce the capillary bou-



gie guide and eliminate his case from the impermeable class. Now, however, why should we, just because this man has retention, commit him, as has been previously done, to a violent and serious operation by a full divulsion or a perineal section? From no necessity, I believe.

The able review of the operation of divulsion by Dr. Scudder, of Boston,<sup>1</sup> in a study of four hundred and four cases so operated upon at the Massachusetts General Hospital, shows the operation in uncomplicated cases to have practically no mortality. This low mortality, one and nine-tenths per cent., in such a large series of unselected cases treated by six different surgeons and including in the fatal ones complications of serious organic disease, as Dr. Scudder so clearly shows by his careful analysis, is one of the strongest arguments that can be offered in support of divulsion. But again the striking fact is shown that these cases spent anywhere from six to thirty days in bed, with an average of twelve days of confinement to the bed, some with and some without permanent catheter drainage.

The reason why full divulsion has been done in the past, I think, is because, unlike œsophageal or rectal stricture, where small quantities of what must pass through the stricture to maintain life might be several days in so doing, the urethral stricture, when developed to the point of retention, controls the outlet of an organ, the contents of which must as a rule be voided in each twenty-four hours, or else give rise to a dangerous emergency. With the guide to our dilator introduced, it is only necessary to pass down upon it the first few sizes of our dilating staffs, say up to 14 and 16 F. or even 18 F. The retention is at once relieved, a small stream is readily passed, and in two or three days, sometimes even on the next, the patient is able to have one or more larger sizes passed, and so on without any trouble up to the point where the further gradual dilatation with larger sounds is readily accomplished. Of course, where there is no

<sup>1</sup> Journal of Cutaneous and Genito-Urinary Diseases, October, 1893.



retention and the small flexible or stiff guide can be at once introduced, this method is still more easily adopted.

Another great advantage which I find in my dilator is that, by passing the dilating staff always through the stricture on the guide which is first introduced, the operation is made a mechanically certain one, and such accidents as making a false passage, forcing in a sound when it is

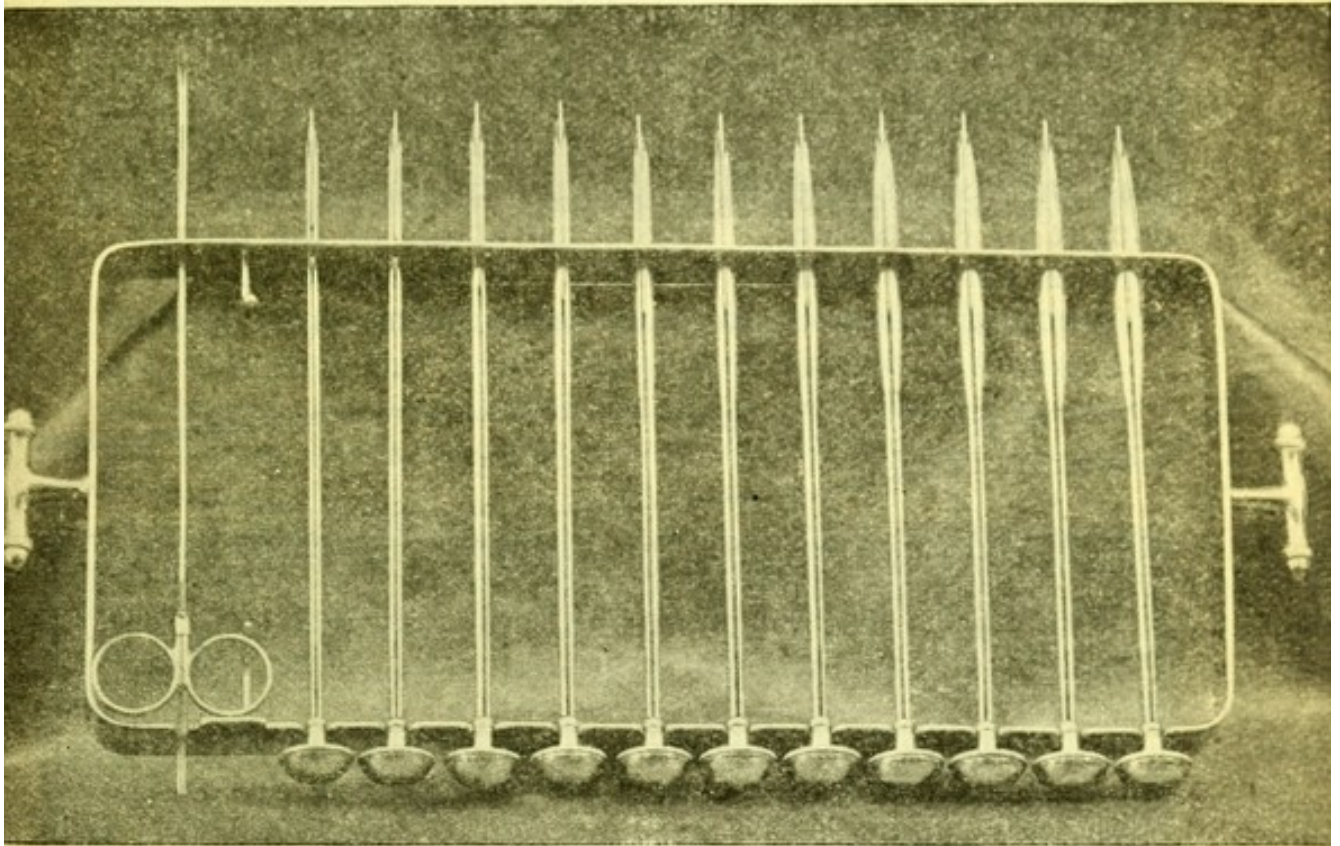


FIG. 1.—Dilating Staffs.

engaged in one instead of the urethra, or carrying in and invaginating a portion of the passage, are made impossible. This is especially true when working with instruments below 24 F. in calibre. Doing whatever stretching we deem wise at any particular stage of the treatment with the guiding staff always first passed into the bladder, we eliminate at once all trouble or doubt as to where a free and unguided sound may be going, or what it may be



going to do, and thus limit our responsibility to the amount of stretching which is at each sitting deemed judicious. Does this not seem reasonable? Would anything but dire necessity induce us to violently tear open an oesophageal or rectal stricture which had gradually contracted to a lumen of minute size?

This method I have previously suggested in the article above referred to, by what I then called preparatory divulsion. Thus further developed it has proved still more satisfactory, and I therefore earnestly recommend it to professional attention and trial. I claim it to be a rational and mechanically certain procedure, in the greatest degree possible devoid of serious interruptions, pain, and danger to the patient. The construction of the instrument is already familiar to many. It has stood the test of practical operation in many cases during three years,

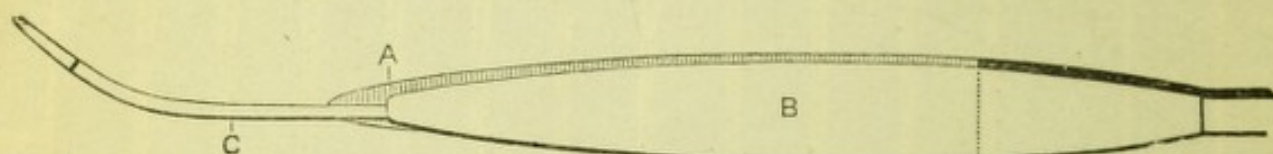


FIG. 2.—Split Guiding Staff. *C*, split guide; *A*, central blade; *B*, dilating staff.

at the clinic of Dr. Beach, at the Massachusetts General Hospital, and in my own out-patient and private practice.

The dilator consists of a split guiding staff (Fig. 2) which is best first introduced after being screwed to a flexible capillary bougie guide. Over this guide the dilating staffs (Fig. 1) are passed. These are grooved anteriorly to their centre for passage over the guide, after the invention of Bigelow, but contain a central fin or plate, which is so placed that it slides between the two blades of the guide (Fig. 3). Therefore if the guide is first introduced the dilator must pass within the stricture. This is what, as before stated, insures the entrance of the dilating staff within the stricture and makes the operation of the instrument mechanically certain. When using the dilator in working on strictures of larger calibre,



a bulb of 16 F. calibre is furnished, which may be screwed to the end of the guiding staff for its readier introduction past small folds and pockets, in which the small point used in the primary operation is so readily engaged and obstructed.

The handle of the guide is so arranged that with the

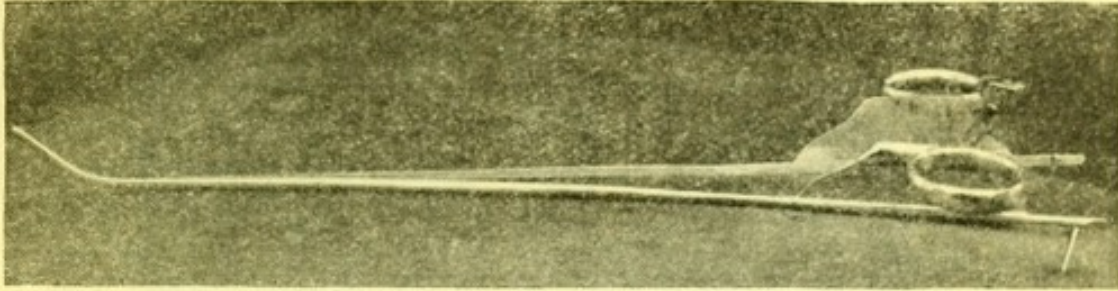


FIG. 3.—~~Central Fin or Plate~~

forefinger passed through the ring farthest from the operator, and the other ring placed against the base of the thumb, the hand with its ulnar side resting against the pubes, holds the instrument firmly in position and

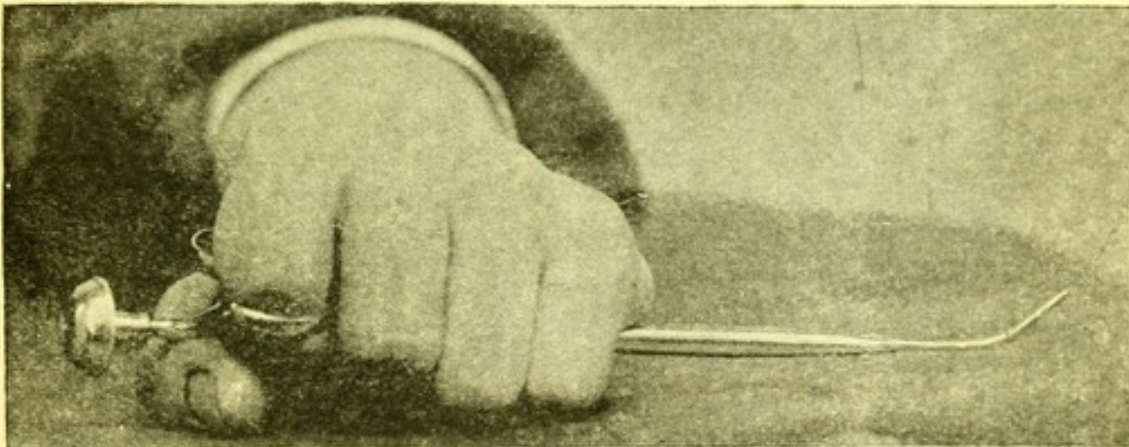


FIG. 4.—~~Showing Use of Guide~~

- precludes all possible accident of perforation or other injury to the bladder, such as may occur with an instrument not thus fixed in position (Fig. 4).

The instrument is made with a simple, metallic holding frame (Fig. 1), gauged by the French scale, and suited



to boiling or steam sterilization. Codman & Shurtleff, Boston, makers.

In relation to internal urethrotomy with any of the ingenious modern urethrotomes, I would simply say that this operation has the one apparent advantage of a more

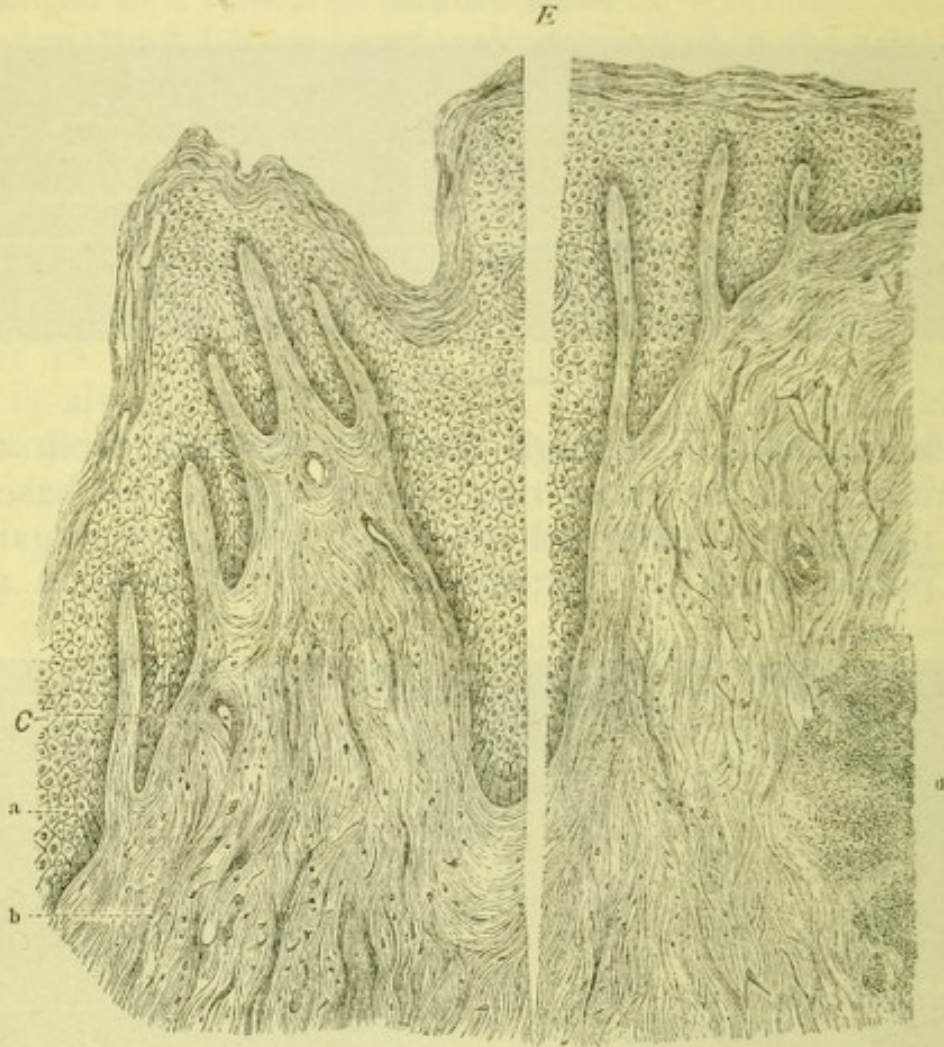


FIG. 5.—Cross Section through a Urethral Callous. a, Epithelial layer ; b, new growth of connective tissue ; c, blood-vessel ; d, cellular infiltration ; E, urethrotome incision. Hartnack Oc. 3, Obj. 4.

rapid result, but is, after all, nothing but one method of making a rapid dilatation of the stricture, by assuring that the cut or rupture of the callus takes place in one direction, as indicated in Fig. 5, a modified plate after Dittel.

Now, this is just what should not occur, as the divisions of the callous tissue should be as evenly as possible



disseminated in the circumference of the mass surrounding the canal. This occurs to a certainty through the process of intermittent stretching, as those fibres which are carried beyond their point of resistance must yield and break away. Now this yielding does not, as one might casually think, take place in the shape of any rough tear when properly done, but in fine lines, which look like a scarification beneath the mucous membrane, the latter often failing to be broken in any way, even in cases where a full and rapid divulsion has been done.

Internal urethrotomy would be useless unless immediately followed by the passage of as full-sized sounds as the individual case would admit, as the part would close and heal together, just as a cut meatus, when left undisturbed, closes together and unites by first intention in a short time.

My colleague, Dr. F. S. Watson, who has been ever ready with fair and helpful criticisms of my work, suggests that, according to Sir Henry Thompson's experience, his own, and that of others, slight interference with these tight strictures often gives rise to more serious disturbances than the most radical measures, and that this fact might offer a serious objection to the method of rapid intermittent dilatation. This, I agree, would be a valid reason against the operation, were we not able to explain it away. The fact is, we do not interfere slightly, but to a considerable degree, so that, whatever amount of congestion and swelling may result from the stretching, we always proceed far enough to leave our patient with a urethra of sufficiently improved calibre to allow him to evacuate his bladder with comparative freedom—this, as before stated, being generally accomplished at the first sitting by a dilatation of from 16 to 18 or 20 F., according to the amount of resistance and normal calibre of the individual case.

In conclusion, if the foregoing has established anything, it is that the full and immediate divulsion of urethral stricture is no longer a necessary or warrantable operation.



