

BREWER (GEO. E.)

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COMPLICATIONS AND RESULTS

FOLLOWING

INTERNAL URETHROTOMY

UPON

ONE HUNDRED AND TWENTY CASES OF  
STRICTURE.

BY

GEORGE E. BREWER, M. D.,

*Clinical Assistant in Genito-Urinary Diseases, College of  
Physicians and Surgeons, New York.*

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ACCIDENTS, COMPLICATIONS AND RESULTS FOLLOWING INTERNAL URETHROTOMY UPON ONE HUNDRED AND TWENTY CASES OF STRICTURE.\*

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AS PERHAPS the best method of introducing this subject, I will briefly outline the history of one of my earlier cases, which presented an unusual number of alarming complications, and which also affords a most satisfactory example of the successful result of treatment.

J. W. P., aged 40, unmarried, called upon me in December, 1886, suffering from an acute specific urethritis. He stated that he had not been free from a urethral discharge for seven years; that he had been treated by dilatation on several occasions by distinguished surgeons in England and America, and that the duration of the present acute attack was four days. He was treated by hot retrojection for some forty days with but moderate success. After the acuteness of the attack had subsided, an examination revealed the presence of three dense fibrous bands of stricture in the anterior urethra, reducing the calibre at these points from 32 F. to 24.

These strictures were divided under ether, the incision being made upon the floor of urethra. The operation was immediately followed by an alarmingly profuse hæmorrhage, necessitating for its control the introduction of a full sized sound and the employment of external pressure for more than an hour.

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\* Read before the Surgical Section of the New York Academy of Medicine, Dec. 9, 1889.

A retention of urine followed, which was relieved six hours after the operation by the introduction of a silver catheter. Shortly after the catheterization the patient experienced a severe chill, which was followed by high fever. The next morning, as a result of the patient's attempt to pass water, an extensive urinary infiltration occurred into the subcutaneous cellular tissue of the penis. To these complications was added on the second day an unusually acute urethritis. The patient's condition seemed at this time to be extremely critical, the danger apprehended being from suppression of urine, septic nephritis, or from sloughing of the infiltrated tissues.

By the faithful employment, however, of measures, which will be mentioned hereafter in connection with the treatment of these conditions, the patient made a complete though tardy recovery; the only additional inconvenience being the presence of an annoying curvature of the penis on erection which persisted for some ten weeks.

Three months from the date of the operation the patient was perfectly well, without the slightest trace of discharge. During the year which followed he was on two occasions the recipient of an acute specific urethritis,\* which yielded in each instance to the employment of hot retrojection within eight days. Two years from the date of the operation the patient was still well, and the urethra free to 32 from meatus to bladder.

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\* That the two attacks were of acute specific urethritis is evidenced by the fact of his being able, before, between, and after these attacks, to indulge in alcoholic stimulants and promiscuous sexual intercourse, without the slightest reaction on the part of the urethral mucous membrane; and also by the fact that each had a distinct period of incubation and in the secretions of each, gonococci were found.

Subsequent experience leads me to believe that had the operation been deferred for a longer period after the acute attack, had the incision been made upon the roof of the canal, and had no instrument been passed through the deep urethra, all or nearly all of the complications could have been avoided.

It has been my privilege during the past four years to perform the operation of internal urethrotomy upon one hundred and twenty cases of urethral stricture.

In the table which is given below are included all cases, favorable or unfavorable, of which I have any record; together with an account of the normal calibre of the urethra, the number, size and location of the strictures, of the symptoms for which the patient sought relief, of the complications and results, immediate and remote, which followed the operation as far as could be ascertained.

The operation in each instance was undertaken for the relief of certain symptoms which were thought to be directly or indirectly traceable to the stricture.

Of the one hundred and twenty cases reported, in all but three a distinct history of gonorrhœa could be obtained: in the remaining three no cause could be ascertained which would adequately account for their presence, although in one, excessive masturbation had been practiced, and in one other, the occurrence of lithæmia, with the possibility of an impacted urethral calculus, was probable.

In but three instances was the normal calibre of the urethra found to be below 30 mm. in circumference, and these occurred in individuals exhibiting also evidences of arrested development in other portions of the body. In twenty-one cases the normal

calibre was found to be 30 F. ; in 44, 32 F. ; in 29, 34 F. ; in 2, 35 F. ; in 17, 36 F. ; in 1, 38 F. ; in 3, 40 F. ; the average being about 33 F.

The number of strictures in each case varied from one to seven. In 38 there was but a single band ; in 45, two bands ; in 19, three ; in 13, four ; in 4, five ; and in 1, seven : making a total of 264 bands in 120 patients or an average of something over two to each case.

Their location was, in all but one instance, confined to the anterior urethra, or that portion between the meatus and the bulbo-membranous junction, the exception occurring in a patient having a dense fibrous stricture in the membranous portion of the urethra, together with several bands anteriorly which necessitated the combined operation of external and internal urethrotomy.

Regarding the method of operating, it may be stated that in all cases where the stricture occurred at the meatus or within three-quarters of an inch of the orifice, the operation consisted in an incision made with a straight, blunt-pointed bistoury on the *floor* of the canal ; in cases where the stricture occurred at a point deeper than three-quarters of an inch from the external opening, dilating urethrotomy by means of the Otis dilating urethrotome was practiced, the cut being made on the *roof* of the urethra.

Cocaine was employed for anæsthesia in 116 cases ; ether in four. The method of producing cocaine anæsthesia was as follows. By means of an Ultzmann or other long pointed syringe, about 30 minims of a 4 per cent. solution of cocaine was injected into the bulbous portion of the urethra. As the syringe was withdrawn, the lips of the external orifice were



gently compressed with the thumb and forefinger. The solution was in this manner retained for ten minutes, which was found to be sufficient to render the entire anterior urethra insensitve, save that portion compressed by the fingers. As this is always the most sensitive part, the hypodermic injection of two or three minims of the solution just below the meatus, would render the whole absolutely insensitve to pain. In only two instances where this method was fully carried out, did the patients complain of pain during the operation, and in those, it is more than probable that the trouble was due to some mistake in the preparation of the solution.

It was necessary to employ ether for anæsthesia only in cases of great nervous irritability, where the sight of blood and the various necessary manœuvres would be followed by disagreeable mental effects, and where the careful exploration of an abnormally sensitive deep urethra or bladder was necessary.

Regarding the after treatment, it was found that the daily passage of a full-sized sound to the bulbo-membranous junction, during the first four or five days, was by far the most comfortable for the average patient, as the pain attending its passage was always more marked and the hæmorrhage more severe, after the cut surfaces had been allowed to glue together for two or more days. A sound was usually passed also, on the seventh, fourteenth and twenty-first days after the operation. In cases where an acute urethritis followed the operation, or, where the urethra was for any other reason abnormally sensitive, the daily passage of sounds seemed often to increase the severity of the symptoms, and in these instances the intervals were increased to three or four days.

Cocaine was rarely employed for the passage of sounds during the after treatment.

Where dilating urethrotomy had been practised, the patients were kept in bed until the danger from hæmorrhage had passed, from three to five days.

If recontraction of the stricture was to take place, it was usually possible to detect a tendency toward this within fourteen days from the date of the operation. When this was found, further use of the sound was abandoned, both on account of the severe pain caused by forcing a full-sized sound through an imperfectly divided and recontracting stricture, and also on account of the utter uselessness of attempting to prevent recontraction by means of dilatation. The patient was allowed to wait until the cut resulting from the first operation had healed, when a second and deeper incision was made with a view to completely severing the cicatricial band upon which seems to depend the only possibility of a radical cure.

If after three weeks, the urethra was healed and there was no evidence of recontraction of the strictures, the use of the sound was discontinued unless the presence of granular patches, an irritable deep urethra or other similar conditions called for its employment. The use of sounds for an indefinite period after an operation with a view to "keeping the stricture open" is wholly unnecessary. If a stricture is to be cured by urethrotomy, it must be by thorough division, which does away with the necessity of prolonged after-treatment by dilatation.

In reviewing the symptoms complained of by the patients, which were supposed to be occasioned directly or indirectly by the strictures, it was found that gleet was present in 92 cases. In 11 cases there

was frequency of micturition, in 13 some disturbance of the sexual function, of which 11 complained of diminished sexual vigor, while in two it was increased. In six cases spasm of the cut-off muscle was present, giving rise to delayed or difficult micturition or retention. Chronic prostatitis was diagnosticated in six patients, who complained of various abnormalities in the sexual and urinary functions, with pain in the perineum, in the rectum and along the urethra, together with a history of frequent acute attacks when any or all of these symptoms would become exaggerated. Neuralgia was present in four instances; in three of these it was located chiefly in branches of the genito-crural nerve, and in one it was sciatic. The presence of a chronic prostatic discharge was noted in three cases; dribbling of urine, due to incomplete emptying of the urethra, in one. In two cases the operation was undertaken to facilitate the treatment of an acute specific urethritis.

In many instances two or more of these conditions would be present in the same patient. In recording the results of treatment, therefore, it will be necessary to note the result in each symptom, rather than in each patient, as in several instances one or more of the symptoms would be entirely relieved, while others would exhibit no sign of improvement.

It is not claimed, moreover, that the relief, when obtained, was in every case due wholly to the removal of the stricture, as a variety of other measures, such as the passage of sounds, hygienic regulations, urethral irrigation, the use of injections and local applications, were often employed in connection with the treatment addressed to the strictures. It is to be regretted that my records do not show just how many

cases received auxiliary treatment, and in how many reliance was placed wholly on the restoration of the urethra to its normal calibre. It may be stated, however, that not infrequently treatment addressed to a condition before the removal of the strictures would prove ineffectual, whereas the same treatment undertaken after the removal of the strictures would afford prompt relief. An example of this may be found in the case reported at the beginning of this article.

Among the unfavorable complications which are likely to occur as a result of this operation, may be mentioned, first, *severe hæmorrhage*. This occurred in six of the 120 cases. Of these, three were primary, occurring at or near the time of the operation, and three secondary, occurring after a period varying from one to three weeks. Of the latter, two resulted from a too-early indulgence in sexual intercourse; in one it occurred on the ninth day without any ascertainable cause. In but one instance was the hæmorrhage alarming and that was the case mentioned above as being cut on the floor of the urethra.

In the treatment of hæmorrhage it is rarely necessary to institute measures other than rest and gentle pressure applied against the lips of the urethral orifice, as it is only under very exceptional circumstances that the pressure is sufficient to force the blood beyond the compressor urethræ muscle into the bladder. By the use of the perineal crutch properly applied (a procedure first suggested by Dr. F. N. Otis), a more or less constant pressure may be exerted against the deeper portion of the urethra, thereby preventing the backward flow of blood into the bladder, if at any time the action of the muscle seems inadequate. As an effective method of controlling

even the most violent hæmorrhages from the anterior urethra, Dr. Otis has suggested the introduction of a full sized endoscopic tube, upon which any amount of pressure may be brought to bear by means of an external bandage. The prolonged application of heat by means of the retrojection of very hot water, served in one instance to check a persistent and very annoying hæmorrhage.

It may be stated, I think, with a reasonable degree of certainty, that by careful watchfulness and the employment, when necessary, of these methods, in no case where urethrotomy has been performed need the patient be seriously inconvenienced by loss of blood.

*Chills* and *fever* will be mentioned as the second complication likely to follow urethrotomy. This followed the operation in three cases—in one fever without a chill. In every instance the chill followed the passage of a sound through the deep urethra. The fever without the chill was accompanied by a severe lymphangitis and local sloughing due to a division of a very narrow meatus during the progress of an acute urethritis.

*Epididymitis*, as a complication of this operation, occurred in two patients, and in each it followed the passage of a sound through the deep urethra. *Infiltration* of urine into the cellular tissue of the penis occurred in one case, where the cut was made on the floor of the urethra. The treatment of this condition consisted in regular catheterization, hot retrojection, and the external application of heat, the object being to prevent its recurrence, to prevent septic infection of the infiltrated tissues, and to promote absorption.

An *acute urethritis* followed the operation in ten cases. In seven of these the operation was undertaken shortly after an attack of acute gonorrhœa, and was presumably due to the fact that the gonococci had not entirely disappeared from the urethral mucous membrane. In the remaining three cases it could be accounted for only by the use of imperfectly cleaned instruments.

A slight *ecchymosis* appeared in the skin of the penis in the vicinity of a cut in four of the cases, and is of interest only on account of its relation to a more or less lasting *curvature* of the penis on erection. Of the four cases in which ecchymosis was noted, curvature occurred in three, or 75 per cent. In the remaining 116 patients in which no ecchymosis was noted, curvature occurred but twice, or in about  $1\frac{7}{10}$  per cent. of the cases. In but one of the five cases of curvature did the symptoms occasion any marked inconvenience. In this instance, the penis when erect was bent upon itself at an almost right angle, and was at first extremely painful; this condition continued to a greater or less extent for some seven months. In all five cases, however, the organ eventually became straight and the resulting annoyance was usually slight.

In three of the five cases of curvature there had been during the first six or eight days following the operation an almost entire absence of complete erection of the penis, owing, in two instances, to efforts on the part of the patient to avoid the pain usually attending such an erection. In no instance was there any well-marked induration at the angle of curvature.

To account for the presence of an ecchymosis of the skin, the escape of blood must have taken place into the loose connective tissue lying between the fasciæ, in closing the cavernous and spongy bodies of the penis. For this to have taken place the cut must have extended through the urethra, the corpus spongiosum and its fibrous capsule—in other words, the incision was unnecessarily deep. In view of the fact that the large majority of cases of curvature occurred in patients exhibiting an ecchymosis of the skin, it is not irrational to attribute the occurrence of curvature to the same condition, which might easily result in a slight inflammatory thickening of the tissues outside the urethra, or from the presence of an organized clot, either of which would be sufficient to cause a diminution in the elasticity of the tissues which would result in curvature on erection.

If this view be correct, it is easy to understand how an absence of vigorous erections during the first few days following an operation might favor, while their presence might diminish, the tendency toward formation of inflammatory adhesions.

In the treatment of this condition, use has been made of inunctions of oleate of mercury, of the galvanic current, and of massage. Of these, the latter has proved to be by far the most useful. The method of its application was that suggested by Dr. Frank Hartley, who advises the introduction of a full sized steel sound; the massage being confined to the neighborhood of the angle of curvature, against the resistance afforded by the sound.

The prognosis regarding the time necessary to correct this deformity should be extremely guarded; as often, in well-marked cases, a period varying from six

months to a year is necessary before the complete disappearance of the symptom.

Although my records do not furnish an example, suppression of urine may occur as a grave complication in cases of urethrotomy. This may arise either from nervous shock from injury, or violence to the deep urethra or as a result of septic nephritis, and is best avoided by the practice of confining all operative procedure to the anterior urethra, and by the employment of strict antiseptic precautions.

The results which have followed the treatment of these cases will be considered under two heads, clinical and anatomical. The former relating to the symptoms for which the operation was undertaken; the latter to actual measurement of the urethra after a sufficient period of time has elapsed to demonstrate the permanency of the result. As has been stated above, the clinical results in these cases are of little real value in estimating the therapeutic worth of the operation, for in a large number, perhaps one-half of the cases, other methods of treatment have been employed in connection with the urethrotomy. They will be given, however, for what they are worth, and the condition of the patient when last seen will be recorded, excepting in those cases where the patient remained under observation after the operation for a period too short to determine the result; in such cases the result will be entered as unknown. Of the 92 who complained of gleet 53 were relieved, 11 not relieved, and in 28 the result was unknown. Of the 11 who complained of frequent micturition, 9 were relieved, one unrelieved and one unknown. Three complaining of sexual neurasthenia were relieved, three unrelieved, and in six the result was unknown.



Six complained of difficult micturition or retention, four were relieved, and in two the result was unknown. Of the four with neuralgia, three were relieved and one unrelieved. Of the three patients with chronic prostatic discharge, one was relieved, one unrelieved and one unknown. One with dribbling of urine was relieved. Three cases of chronic prostatitis were relieved, one unrelieved, and in two the result was unknown. Of the two who were cut during an acute urethritis to admit of more thorough treatment, both were finally relieved, although in each instance the severity of the attack was greatly exaggerated, necessitating the temporary suspension of all treatment, save absolute rest and soothing applications.

I have purposely avoided the use of the term *cured* in connection with these cases, for in many instances I do not consider that they were sufficiently long under observation to warrant the statement of such a conclusion, and even my very limited experience has led me to distrust the permanency of cures in cases of chronic urethral inflammation, until the patient has demonstrated, after long observation, the absence of recurrence.

Regarding the anatomical results, it may be stated that of the 120 cases reported, 30, or just one-fourth, have been re-examined after a period varying from two months to three years. I may add that in nearly every instance where the meatus had been divided, it was found to have contracted slightly, from 1 to 3 mm. in circumference, offering a slight resistance to the outward passage of the urethrometer. If the recontraction was limited to this portion and did not exceed 3 mm., through which a full sized conical

sound could, without difficulty, be passed, it was not recorded as a recontraction. Of the 30 cases re-examined, 21 or 70 per cent. were found to be free to the normal calibre, and in 9 a recontraction of the divided strictures had taken place

The tendency to underestimate rather than overestimate the normal calibre of the urethra is, I believe, indulged in by most beginners in urethral surgery. It was certainly so in my case, and as a result many of my earlier operations were ineffectual for the reason that the cicatricial bands were not thoroughly divided. In this way I account for my large percentage of recontractions, and also, in a measure, for my failure to afford relief to the symptoms.

As an apology for taking so much time in presenting these rather disconnected and perhaps uninteresting facts gathered from a series of imperfectly recorded cases, I may say that if the results have not been brilliant, they have at least been instructive and that the following brief conclusions may with propriety be drawn.

1st. That internal urethrotomy as a means of treating stricture of the anterior urethra, is a comparatively safe operation, no deaths occurring in my series of cases and but one case of severe illness, and that directly traceable to my own bad judgment regarding the method of operating.

2d. That by the intelligent application of a few well-known measures, alarming hemorrhage can in nearly all cases be avoided.

3d. That the occurrence of a more or less lasting curvature of the penis after operation, is probably due to the extension of the incision beyond the nec-

essary limits, and that a tendency towards this is aggravated by the prevention by any means of complete erection of the organ subsequent to the operation.

4th. That with the exception of the meatus, the practice of dividing anterior strictures on the floor of the urethra, should be condemned as a dangerous procedure.

5th. That the passage of instruments through the deep urethra should, if possible, be avoided immediately after the operation.

6th. That in a majority of cases, by a thorough and complete division of all stricture bands, a radical cure, and complete restoration of the canal to its normal calibre, may be expected.

7th. That all attempts to prevent recontraction in imperfectly divided strictures by means of dilatation, are useless.

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms, Curvature or other unfavorable results.	Re-measurement.
F. B. R.	32	M. 24 3 in. 26	Gleet,	32	Slight,	None,	Well in 1 month. Slight epidid. (Deep sound).	32
J. W. P.	32	M. 27 1½ in. 25 4 24	Gleet 7 years, (Cut on floor),	32	Severe,	Severe chills,	Well in 3 months. Echymosis, curvature. (Urinary in filtration).	1½ yrs. also 2 years. 36
R. M. A. S. S.	32 36	¾ in. 36 21½ in. 30	Gleet, Gleet,	32 36	None, Slight,	Prost'n, None, “	Well in 2 weeks. Well in 1 month.	2 mos.
F. H. L. S.	30 30	M. 25 M. 24	Deep urethral spasm, Subacute gonorrhoeal urethritis,	30 30	“ “	“ Slight fever, None,	Well. Very acute urethritis for weeks. Acute urethritis for 3 weeks.	32 2 mos.
C. K.	32	M. narrow 21½ in. 25	Gleet,	32	“	“	Well in 2 weeks. Well in 3 weeks.	36
H. P. D. F. H. H.	32 35	1½ in. 20 M. 32	Gleet, Gleet,	32 36	“ “	“ “	Well in 2 weeks. Well in 3 weeks.	18 mos. 32
A. M.	32	M. 22 4 in. 27	Gleet,	32	Severe,	“	Well in 2 weeks.	18 mos.

Patient.	Normal Calibre.	Structures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms, Curvature or other Unfavorable after results.	Re-measurement.
C. B.	32	M. 24 3½ in. 16	Subacute discharge, <i>No</i> gonorrhoea, Dribbling of urine,	82	Slight,	None.	Very acute urethritis.	Recon- traction.
I.	32	M. 26		32	"	"	Relief—recontraction symptoms returned, relieved by second operation.	
W.	32	M. narrow ¾ in. 28	Gleet with prostatic urethritis, Frequent micturition	32	"	None,	Well in 2 weeks. (Sil- ver nitrate in deep urethra.)	
P. M.	32	M. narrow 3½ in. 28	Prostatic urethritis, Frequent micturition,	32	"	Chill 4th day, None,	Well in 2 months. (Deep sound.) Marked curvature, nearly a right angle.	32
F. P. W.	32	M. 30 2½ in. 30 3½ " 30 4 " 28		32	"	"	<i>Did not allow erec- tion</i> —Ecchymosis. Well in 6 weeks. (Deep silver injec'n), Unimproved.	9 mos.
E. P. S.	32	M. 28 ½ in. 28	Gleet and prostatic urethritis, Sexual neurasthenia,	32	"	"	Relieved, (silver ni- trate in.	
H. L.	32 34	M. narrow M. narrow		32 34	" "	" "		

Patient.	Normal Calibre.	Structures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms. Unfavorable or otherwise results.	Re-measurement.
A. F. A.	32	27 M. 26 2 in. 26 3 " 25 3½ in. 22 4 "	Gleet, following profuse purulent discharge,	32	Slight.	None.	Very acute urethritis followed. Epididymitis, Ecchymosis, meatus redivided. Well (3 weeks).	32 3 mos.
C. B.	32	28 M.	Gleet,					
G. B.	36	28 3½ n. 29 3 in 30 3½ "	Chronic prostatitis—10 years, frequency every hour, pain in perineum,	36	"	"	Well (7 weeks). Holds urine 7 hours. 8 months well.	
C. D.	34	28 M. 30 2 in.	Gleet,	34	"	"	Well 3 mos., (married) (3 weeks 34). Well 3 weeks. 5 mos. still well. (30, 3 weeks.)	
C. G.	30	27 M. 22 1½ in. 22 2 " 22 3½ "	Chronic purulent discharge for 2 years,	30	"	"		
J. P.	32	26 M.	Sexual neurasthenia,	32	"	"	Not relieved.	34
G. S. R.	34	30 M. 28 3 in. 28 3½ "	Gleet, prostatic discharge,	34	"	"	Well,	3 mos.

Patent.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms. Curvature or other unfavorable after results.	Re-measurement.
W. C. P.	32 M.	29	Gleet (sexual),	32	Slight.	None,	Well in 4 weeks.	36 4½ mos.
	34 M.	28	Deep spasm,	34	"	"	"	
	1 in.	30	Retention,					
	2 in.	20	Sexual weakness,					
J. W.	3½ in.	30						
	4 in.	26						
	36 M.	30	Gleet, chronic prostatitis,	36	"	"	Well in 3 months.	
	2 in.	30					Slight curvature.	
J. H. P.	3 in.	29					Ecchymosis.	
	3½ in.	27					Relief, 2 months.	
	36 M.	28	Gleet, chronic prostatitis. Frequent acute attacks. 3 years,	36	"	"	Other treatment.	
	2 in.	30					Silver nitrate of, deep urethra.	
J. F. C.	3 M.	24	Gleet,	32	"	"		
	3 in.	28						
	3½ "	28						
	30 M.	24	Frequent micturition, Sexual disturbances	30	"	"	Relief 4 weeks. Circumcision also.	
S. L.	2½ in.	28						
	3½ "	28						

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms. Curvature or other Unfavorable after results.	Re-measurement.
W. P. H.	36	M. 22 2 in. 30 3 " 30 4 " 30 3 in. 20 3 in. 24 3 in. 26 3 in. 25	Gleet. Chronic prostatitis. Frequent micturition. Pain,	36	Slight.	None.	Well in 4 weeks. 3½ months still well.	Recon'd 4 mos. 32 2 years.
G. S.	30	M. 20	Gleet,	30	"	"	Unrelieved.	32
P.	32	M. 26	Gleet,	32	Severe,	"	Severe. Specific urethritis followed. Exposure day before operation.	2 years.
J. B.	34	M. narrow	Gleet,	34	Slight,	"	Well 4 weeks.	32
I. G.	34	½ in. 22 3 " 24	Gleet,	34	"	"	Well, Well,	32
F. W.	32	M. 24	Gleet.	32	"	"	Unknown.	2½ mos.
A. C.	34	M. 16	Acute gonorrhoea for treatment,	34	"	"	Very severe urethritis Lymphangitis. Sloughing.	
J. M.	32	M. 25	Gleet,	32	"	"	Well in 4 months.	
D. B.	30	M. 23 3 in. 24	Gleet,	30	"	"	Unknown.	



Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms, Curvature or other Unfavorable after results.	Re-measurement.
J. K.	34 M.	24	Gleet,	34	Slight.	None.	Well in 15 days.	
P. D.	32 M.	32	Gleet,	32	"	"	Unknown.	
P. L.	32 M.	21	Gleet,	32	"	"	Unknown.	
H. L.	34 M.	22	Gleet,	34	"	"	Well 1 month.	
R. S.	32 M.	19	Gleet,	32	"	"		Recon- tracted.
G. F.	29 M.	23						
S. C.	32 M.	21	Gleet,	29	"	"	No discharge, 1 mo.	
J. G.	30 M.	18	Purulent discharge, (slight),*	30	"	"	Unknown.	
C. W.	32 M.	27	Gleet,	32	"	"	Very acute urethritis followed. Bichloride injections. Well 15 days.	
	34	23					2 months, not well.	
	34	24					Recontracted.	



Patent.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms. Unfavorable after results.	Re-measurement.
M. M.	32	24	Gleet,	32	Slight,	None.	2 months well.	32
J. W.	34	25	Gleet,	34	"	"	16 days well.	
T. H.	34	25	Gleet, pain, retained urine,	34	"	"	2 weeks well.	
J. M.	32	33 in.	Gleet,	32	"	"	Unrelieved, 16 days.	
		2 in.						
C. G.	32	24	Gleet, pain along urethra,	32	"	"	1 month well.	
		2 3/4 in.						
		3 3/4 "						
J. G.	32	25	Gleet,	32	"	"	Unknown.	32
C. E.	32	24	Gleet,	32	"	"	Well,	10 mos.
		1 in.						
		3 "						
		3 3/4 "						
		4 "						
J. C.	32	25	Gleet,	32	"	"	Unknown.	
		21						
		31						
O. B.	36	30	Gleet,	36	"	"	"	
		3 in.						
		3 1/4 "						
		3 1/2 "						

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptons, Curvature or other Unfavorable after results.	Re-measurement.
J. H.	34	28	Gleet,	34	Slight.	None.	"	34
J. M.	34	25	Gleet,	34	"	"	Well.	6½ mos.
W. E.	22/3 in.	30	Gleet,				Unknown.	
	2 2¼	23	Gleet,					
W. L.	23¾	23						
	23¾	23						
C. N.	32	25	Gleet,	32	"	"	Well 20 days.	
	3½ in.	27						
J. McC.	30	20	Sexual neurasthenia,	30	"	"	Unknown.	30
	30	18	"	30	"	"	"	3 mos.
A. W.	34	21	Gleet,	35	"	"		35
	2½ in.	32					Well 6 weeks.	16 days.
H. P.	34	28	Gleet,	34	"	"		34
	2½ in.	30						
B. R.	31½	30						
	32	26	Gleet, sexual neurasthenia,	32	"	"	Unknown.	
T. B.	32	28	Gleet, sexual neurasthenia	32	"	"	2 months well.	

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms. Curvature or other Unfavorable after results.	Re-measurement.
D. B.	30	M. 20 3 in.	Gleet,	30	Slight.	None.	Acute urethritis followed. Unknown.	32
J. T.	32	M. very small, 17	Sexual neurasthenia,	32	"	"	Unknown.	
T. W.	32	M. 27	Gleet,	32	"	"	Well 51 days.	
J. R.	36	M. 32	Gleet,	36	"	"	Unknown.	
		2½ in.						
		3½ "						
J. F.	36	M. 28	Retention, spasm of deep urethra,	36	"	"	30 days well.	36
M. W.	40	M. 36	Gleet,	40	"	"	Unknown.	Recon-tracted.
		3 in.						
A. M.	30	M. 24	Gleet, spasm,	30	"	"	"	
L. C.	32	M. 28	Gleet,	32	"	"	3 months, 26, 3¼ in., 29 at 4 in., cut to 36, one month well.	Recon-tracted.
		2½ in.						
		3½ "						
		4						

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symp-toms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symp-toms. Curvature or other Unfavorable after results.	Re-measurement.
M. M.	36	M. 32	Gleet,	36	Slight.	None.	4 months.	Recon-tracted.
	40	2 in. 27						
	4	" 27						
G. D.	32	M. 22	Gleet,	32	"	"	2 months well.	32
		2 deeper	bands,					2 mos.
J. B.	35	M. narrow	Gleet,	35	"	"	2 months same.	
		4 in. band,	Neurasthenia,					
D. C.	36	M. 30	Gleet,	36	"	9th day,	Well 1 month.	
		3 in. 29						
G. O.	32	M. band,	Gleet,	36	"	Slight,	Well 3 mos., 11 days.	32
		2 1/2 in. "						3 mos.
		3 1/2 " "						
A. R.	34	M. 28	Gleet,	34	"	"	Well 45 days.	
J. B.	32	M. 20	Gleet,	32	"	"	Well 3 weeks. (Acute urethritis.)	
		3 in. 26					Well 2 weeks.	
W. M.	34	M. 30	Gleet,	34	"	"	Unknown.	
C. R.	35	M. 24	Gleet,	35	"	"	Acute urethritis followed.	
		4 in. band						

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms, Curvature or other Unfavorable after results.	Re-measurement.
J. B.	36	M.	Gleet. Frequent micturition. Pain in glans penis and perineum.	36	Slight.	None.	Symptoms disappeared immediately after operation. Returned in 2 weeks—recontraction. Cut to 40, again relieved for several weeks. Recontraction followed with a return of symptoms. Cut to 42, 19 days later no pain. Urethra free to 40. No bands felt. Well 4 months. Curvature, Hemorrhage after connection. Well 3 months. Acute urethritis followed.	35 4 mos.
	40	$\frac{1}{2}$ in. 3						
	32 29 35							
E. G.	34	M, narrow, $\frac{1}{2}$ in. 31	Gleet,	35	“	“	Well 4 months. Curvature, Hemorrhage after connection. Well 3 months. Acute urethritis followed.	36
	36	$\frac{1}{2}$ in. 30						
	19 30 30							
C. A.	36	M, 2 “ 30	Gleet,	36	“	“	Well 8 weeks.	36
	34	4 “ 31						
	28 25							
R. C.	34	$\frac{3}{4}$ in. 28	Gleet,	34	“	“	Well 8 weeks.	36
	34	3 “ 25						
	28 25							

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms, Curvature or other unfavorable after results.	Re-measurement.
T. K.	34	M. 25 1 in. 3 " 30 3½ " 33	Chronic follicular prostatitis,	34	Slight.	None.	Unrelieved 3 weeks.	
J. L.	34	M. 24 2 in band, 3 " " 4 " "	Sexual irritation. Frequent micturition. Tender prostatic urethra, Gleet,	34	"	"	4 weeks, no discharge, Curvature. Hemorrhage after connection. One month well.	
J. W.	34	2½ in. 3 " " 4 " "	Gleet,	34	"	"	Later acute gonorrhoea, (3 days treatment). Perineal section and anterior dilating urethrotomy. One month later 36 to bladder. Result unknown.	
J. K.	36	7 bands in anterior urethra, detected by 24 bulb. Hard fibrous stricture in membranous portion	Gleet. Chronic Prostatic urethritis Frequent micturition. Hæmaturia. Pain in glans penis,	36	"	"		



Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms—Curvature or other Unfavorable after results.	Re measurement.
J. T.	34	29 M. 1½ in.	Gleet,	34	Slight.	None.	2 months, gleet still present.	
H. C.	30 32	29 24 25 25 25 25 25 24 24 M. 2½ in.	Chronic prostatic urethritis,	30	"	"	Relief after operation. Recontracted. Cut to 32. Well in 1 month	
W. G.	36	24 24 M. 2½ in.	Gleet,	36	"	"	Unknown. Hemorrhage after connection.	
W. K.	34	26 26 M. ½ in.	Gleet. Prostatic discharge,	34	"	"	One month later gleet gone. Prostatic discharge still present	
H. P.	38	30 20 29 29 M. 3 in. 4 "	Gleet,				One month, no gleet.	
R. B.	34	25 30 30 30 M. 2 in. 3 "	Sexual neurasthenia,	34	"	"	Unknown.	

Patient.	Normal Calibre.	Strictures, Location and Size.	Resulting Symptoms.	Extent of Operation.	Hemorrhage.	Urethral Fever, Chills, &c.	Result—on Symptoms. Unfavorable after results.	Re-measurement.
L. B.	36 M.	25	Sexual neurasthenia. Pains in groin and testicle,	36	Slight.	None.	No better in 2 months,	
P. O.	32 M.	25	Prostatic discharge,	32	"	"	Unknown.	
G. H.	34 M.	25	Dysuria,	34	"	"	2 months well.	
R. N.	32 M. 4 in.	25	Retention of urine. Spasm of "cut-off" muscle,	32	"	"	1 month. Relief of spasm.	
R. C.	36 M. 1 in. 3 " 4 "	25 30 24 23	Gleet and gonorrhoeal rheumatism,	36	"	"	2 months well.	36 2 mos.
J. S.	34 M.	21	Gleet,	34	"	"	12 days, no relief.	
J. M.	34 M. 1 in. 4 " 5 "	19 19 30 30	Gleet,	34	"	"	45th day. Still slight discharge.	



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