

CHAPTER X.

DISCUSSION CONTINUED.

*Explanatory Remarks by Dr. Otis, in Reply to Mr. Hill.**

AMONG the many valued professional courtesies extended to me during a brief stay in Great Britain last summer, none was more esteemed than that which proffered me the opportunity of fairly presenting to the medical profession in England my somewhat peculiar views in relation to some points in urethral surgery. Through the invitation of Mr. Berkeley Hill, Professor in the University College of London, and by the aid of the clinical material kindly placed at my disposal by him, I was enabled to do this, in a lecture at the University College, under circumstances every way favorable and agreeable to me.

The recent vigorous yet friendly analysis of this lecture by Mr. Hill, together with a summary of fifteen cases of urethral Stricture, operated on by him according to my method, and reported in *The Lancet* of April 8th, is just received. I desire the privilege of correcting, through the same influential medium, some important misapprehensions of my views and methods of procedure, and also to answer some objections made on points of special interest to all concerned in the progress of urethral surgery.

Mr. Hill has formulated my innovations upon the usually accepted views, as follows:

"1. The human urethra varies much in its calibre in different persons.

"2. The urethra is much wider than is usually taught.

"3. The meatus urinarius is normally as wide as the rest of the canal.

* Originally published in the London *Lancet* of June 3d, and 10th, 1876.

"4. Gleet is always due to Stricture.

"5. In the term Stricture Dr. Otis includes those early indurations which have not sufficiently advanced to interfere with the passage of urine, or to produce any symptom beyond a discharge. But he maintains them to be really bands of contractile tissue fibres, produced by inflammatory action.

"6. Stricture is most frequent in the first inch from the meatus, and is less frequent as the distance from the entry increases.

"7. Complete division of Stricture and maintenance of the incised part at its natural width until the incision is thoroughly healed and prevents return of the contraction, and, moreover, *causes absorption of the indurated tissue from the affected part.*"

In the first place, let me pay a merited tribute to the ability, fairness, and kindness with which Mr. Hill has considered questions involving so radical a departure from the time-honored teachings of authorities.

In regard to the first proposition, Mr. Hill frankly admits that "the urethra varies in calibre in different individuals. Considering," he fitly remarks, "that the penis also varies, this might be well presumed *à priori.*" He thus rejects the assumption of a fixed standard, which he states is usually set at 12 of the English scale.

This conclusion is arrived at after the careful measurement of ninety-five urethræ, and fully confirms my claim that no intelligent diagnosis of the number, calibre, or extent of Stricture, in any individual, can be made while the assumption of a fixed standard is admitted.

In this connection Sir Henry Thompson is quoted as saying that "the urethra is not a tube at all except when some body is passing along it," and defines it to be a "closed valvular chink."

I am unable to attach any importance to the objection that the urethra is not a *tube* because it is a closed tube when not distended. It might with more reason be objected that the *chink*, being an *aperture* or a *crevice*, when closed, ceases

to exist, and hence, notwithstanding its valvular attachment, would fail to convey any correct idea of the urethra. Mr. Hill, however, in a very masterly paragraph, has presented the practical aspect of the urethra, independently of appellatives, by showing the necessity of ascertaining to what extent a given urethra should be capable of being normally distended. He says: "*If the balance between the natural expulsive force of the bladder and the friction along the urethra is disturbed, the bladder is irritated, the kidneys are affected, and the beginning of the long chain of events, which terminate not unfrequently in death, is made.*" (Page 216.)

How, then, is this most important *balance* usually disturbed? Not by that most patient of all asses, *the bladder*, habitually doing its work more quietly and with less consideration than any other organ of the body, but by *the urethra*—sensitive, easily and frequently irritated, inflamed from various causes, and finally strictured to a greater or less degree. This it is that "increases the friction and disturbs the balance." Hence it becomes a matter of first importance to ascertain, at as early a period as is possible, the normal calibre of every urethra in which symptoms of *undue friction* are present, in order to ascertain the *amount* of constriction which has occurred. Thus, the *least* appreciable encroachments become worthy of attention, and hence we have reason for including, under the term *Stricture*, "those early indurations which have not sufficiently advanced to interfere (markedly) with the passage of urine, or to produce any symptom beyond a discharge" (point 5th), and these are readily and with precision made out by means of the urethra-metre and the bulbous sounds which Mr. Hill has illustrated and described.

The assertion that "gleet is always due to Stricture" (point 4th) finds corroboration in the known facts, that *constriction* always *increases friction*; that increased friction causes irritation; and that continued irritation of mucous membrane, anywhere, often produces and always prolongs a mucous or muco-purulent discharge. This then is my defence for considering the slightest encroachments upon the normal

urethral calibre worthy of consideration and treatment. I have stated it as my opinion that "gleet is always due to Stricture," yet I do not mean to be understood as claiming that division of Stricture always cures gleet. Inflammation of the eye, as a rule, always results upon the presence of a foreign body in it, and yet it is quite conceivable that the diseased action, originally set up by the presence of the foreign body, may not be entirely removed by the removal of the first cause; yet no one will deny that it is wise surgery, in every case (when it is possible), to remove the foreign body. Gleet may continue after the removal of its cause; the inflammatory action long continued, may have spread to the continuous mucous membrane of the urethral lacunæ and sinuses, and persist in spite of the removal of Stricture (or of the use of other means) indefinitely: those are exceptional and sad cases, but do not seem to me to invalidate the claim that "*as a rule gleet depends upon Stricture,*" or that Stricture when present, should be removed as the first and most rational mode of remedying the evil.

Point 3d is an anatomical one. "The meatus urinarius is normally as wide as the rest of the canal."

I would not be understood to mean by this that it is usually so, but that this is the highest normal type of meatus. In a paper published in the *New York Medical Journal*, April, 1874, on "Urethrotomy, External and Internal," I remarked of this correspondence that it "may be considered as the normal condition of these parts, and any variations from such uniformity may be considered aberrations from the normal condition. These (aberrations), however, are, as a rule, of no practical importance unless the tissue composing them has been previously invaded by inflammatory action." "As long as the meatus escapes inflammatory action it does not become a source of trouble on account of its diminutive proportions. Let inflammation be set up in this locality, as may occur from extension of an infantile or an adult balanitis, or from gonorrhœa, or from any other cause, and a plastic exudation results, which, becoming organized, disables

the urethral muscular structure at this point, and it is no longer able to act efficiently in expelling the last drops of urine; they are retained, a dribbling results, and it is the unvarying sign that such an accident has occurred. We may have a meatus from the size of a mere pin-hole to the full size of the urethra behind it, and yet find no difficulty in any case. In a recent public examination of a hundred patients in Charity and Bellevue Hospitals, claimed to be free from inflammatory antecedents, the meatus

In 1	was	13 mm. cir.	In 17	were	25 mm. cir.
3	were	15 "	3	"	25½ "
1	was	16 "	4	"	26 "
2	were	17 "	5	"	27 "
3	"	18 "	3	"	27½ "
3	"	19 "	2	"	28 "
1	was	19½ "	1	was	28½ "
3	were	20 "	5	were	29 "
2	"	20½ "	3	"	30 "
2	"	21 "	3	"	31 "
5	"	22 "	5	"	32 "
3	"	22½ "	4	"	33 "
1	was	23 "	2	"	33½ "
1	"	23½ "	3	"	34 "
7	were	24 "	1	was	37½ "
1	was	24½ "			

Average size in one hundred cases, 24.72.

In no case was the urethra, in the one hundred cases, below a calibre of 26 millimetres—ranging from this to 39—the average being 32–95. In none was any trouble complained of. None, then, can be strictly claimed to be abnormal as long as the functions of the part are well performed, and hence, in the presence of such great variations, it might be difficult to fix upon the *highest normal type* of the meatus urinarius. We do find, however, that various and grave difficulties and diseases are occasionally associated with a genito-urinary apparatus where the meatus is not of the full size of the urethra behind it, and that such difficulties are often promptly relieved by a surgical procedure which permanently enlarges the meatus to that size. The fact that such difficulties do not occur when the meatus is of the full size of the

canal behind it, gives additional weight to the assumption that "the condition of these parts which ensures the most complete functional integrity and is least liable to become the source or seat of disease, and which is also least liable to induce, aggravate, or prolong disease in the contiguous parts, may be safely and appropriately accepted as representing the *highest normal type*. Of the hundred cases above reported, the meatus was found to correspond to the size of the urethra behind it in ten cases, while none exceeded that limit. In his ninety-five cases Mr. Hill found the above-named correspondence in only three cases; his examinations, however, were made in subjects who confessed to previous or present inflammatory urethral trouble. The correspondence in my own hundred cases was more than I had previously claimed, which was about one in twenty. One hundred cases are probably too few to decide this point, and further observations are needed to settle it with exactness.

In regard to the calibre of the spongy portion of the urethra (point 2) Mr. Hill frankly states that his measurements of ninety-five urethræ confirm the truth of the statement that "the urethra is wider than is usually taught." He has, however, misapprehended in inferring that I consider the ante-bulbous urethra of uniform size. My observations completely coincide with Mr. Hill's that at the bulbous part the urethra is the widest (*i. e.*, most distensible). From this I have found a gradual narrowing for from one to two inches, and then a calibre almost uniform to the meatus, except where this is several degrees less in size, when there would be an expansion of from a quarter of an inch to an inch behind it, at the point usually referred to as the fossa navicularis. Measured with the urethra-metre, this difference between the bulbous and spongy urethra was

In 35 cases 1 mm.

21	"	2	"
18	"	3	"
6	"	4	"
2	"	5	"

In 2 cases 6 mm.

2	"	7	"
1	"	11	"
13	"	no difference.	

The average difference in the 100 cases was $2\frac{5}{100}$ millimeters, and the calibre of the ante-bulbous portion averaged 32-95 mm.

Point 6th.—“Stricture is most frequent in the first inch from the meatus, and is less frequent as the distance from the entry increases.” Mr. Hill dissents from this proposition, and says: “In 258 Strictures, Dr. Otis found 115 in the first inch and a quarter, and the remainder in decreasing frequency in each succeeding inch. This, you know,” says Mr. Hill, “is contrary to the received doctrine, which places Strictures most frequently at the bulbo-membranous part. My own view does not support Dr. Otis’s statement. In 1870,” he says, “I recorded 63 Strictures examined with bulbous sounds at the Male Lock Hospital in 1869, when I found them 43 times between four inches and a half and six inches.” I would simply recall the fact, that, at the date of these examinations, the *urethra-metre* had not been devised, and consequently in all cases where the meatus was of less size than the deeper urethra no efficient examination was possible; and all Strictures of larger calibre than the external orifice of necessity escaped detection. Had Mr. Hill’s explorations been conducted from behind forwards, as with the *urethra-metre*, I feel quite confident that a difference of opinion on this point would not have been recorded. In all cases of Stricture of gonorrhœal origin, we might infer, *à priori*, that the Stricture would occur most frequently where the inflammation had been most intense and prolonged—*i. e.*, at the anterior portion of the canal. Strictures from lithiasis, masturbation, excessive venery, traumatism, &c.,* would naturally be expected in the deeper portions of the canal. The fact that no thorough examination of the urethra, with reference to Stricture, can be made without the *urethra-metre* must, I think, make it necessary to throw out all recorded results as to the exact number, size, and locality of Strictures when the explorations have been conducted by means of instruments of uniform size, or even with the bulbous sound or bougie alone.

* Thompson on Causes of Organic Stricture. Eng. Ed. p. 115.

In regard to the seventh point—viz., that “complete division of Stricture and maintenance of the normal urethral calibre, until the incision is thoroughly healed, prevents return of the contraction, and, moreover, causes absorption of the indurated tissue from the affected part,” I am able to add five additional cases to the thirty-one referred to by Mr. Hill, where, out of 100 cases reported, this number was demonstrated to be absolutely free from Stricture upon a thorough re-examination, at periods varying from a few months to three years and a half from the dates of operation. Mr. Hill’s observation of sixteen cases has left him in doubt as to whether or not “permanent absorption” follows *complete division* of Stricture. Previously to citing the results of operation in these sixteen cases (fifteen operated on by himself and one by me), Mr. Hill alludes to my method of operating on Stricture for the cure of gleet. He says: “A patient applies for the cure of gleet. His gleet must be the consequence of Stricture. Find that Stricture; cut it completely through to the erectile tissue, so as to make the urethra a little wider than before, and take care to maintain this artificial patency while the incision is healing. *The cure is then permanent and complete.*” Now if Mr. Hill were speaking of the cure of *Stricture* instead of *gleet*, the description of the method could hardly be improved; but to say that the cure of a gleet is immediate, complete, and permanent, after the operation on the Stricture, is what I do not desire to claim. I would be understood as holding that *Stricture is the cause of gleet*, and that *its removal* is necessary to the permanent cure of gleet. I have already alluded to conditions, implications of deep follicles and sinuses, etc., which may prolong the gleet indefinitely after the cure of the Stricture. The removal of the Stricture or Strictures is the *first* condition of permanent cure of gleet, and in the *majority of cases*, after this is accomplished, the gleet will cease, without other treatment, in from one to four weeks after the healing of the wounds. But in exceptional cases the condition before alluded to—the legitimate results of Stricture in certain individuals—will keep up

the gleet for an indefinite period, and must be treated on general principles, final success depending upon the character of the especial complications, the knowledge, skill, and ingenuity of the surgeon in charge of the case.

Finally, Mr. Hill proceeds to consider the results of operation on his sixteen cases, all of which he fairly states were in individuals "who had long-standing gleet, with contraction in one or more parts of the spongy urethra, and had undergone multifarious treatment." Strictures were examined for, and found. They were operated on in supposed accordance with the method previously described, and five out of the sixteen cases operated on by Mr. Hill were promptly cured of both Stricture and gleet. A sixth, operated on by me, was reported cured, after five months, "by other means." In the remaining ten, recontraction of the Strictures took place, and the gleet persisted. Why? Evidently because of the recontraction of the Strictures. And why did the recontraction take place? Why did the Strictures disappear completely in five cases and reappear in ten? Simply, as I apprehend, because in case of the latter *the Strictures were not completely divided*. This is not remarkable, it seems to me, under the circumstances, although Mr. Hill used his own ingenious modification of my dilating urethrotome, and observed all the principles necessary for the successful performance of the operation in these ten unsuccessful cases. *Complete* division of Stricture, in my experience, cannot be demonstrated at the time of the operation. A certain amount of distension is necessary to fix the Stricture before it can be completely divided; hence a sufficient time must elapse after the operation to test the question as to whether the Strictures are, or not, completely divided, and this is never less than ten days or two weeks. If after this time an examination with the full-sized bulbous sound shows complete freedom from Stricture, there need be (judging from my own experience), no fear of any return of Stricture. If, on the contrary, remains of Stricture are detected, it is the evidence of incomplete division, and the operation must be repeated,

and the remaining fibres severed. Without *complete and absolute sundering of the Stricture* to its ultimate fibre, recontraction sooner or later is *certain*. It is not a question of using my urethrotome or Mr. Hill's, or any other special instrument, but one of principle. It is not a question of whether division of Strictures may be effected by one operation or ten; neither the permanent cure of Stricture nor of gleet can be reasonably expected, while a fibre of the Stricture remains undivided. Let the sundering be complete, and proved by a re-examination at a period sufficiently long after the operation to give security against mistaking *over-distension* for *complete division*, and I will not hesitate to take the responsibility of claiming ultimate *absolute permanent* removal of urethral Strictures.

In describing my urethrotome, Mr. Hill is somewhat in error. He says: "A small cutting edge, previously concealed at the end of the dilating part, is drawn along the tightly stretched tissue to the meatus, . . . making a long furrow in the mesial line in the root of the urethra." He further says: "Disliking this long cut, which divides uncontracted parts, I have employed, except in one case, a Stricture incisor which, while it stretches the urethra to the size previously determined, cuts only where it is strictured." *My object has always been to divide only contracted tissue*. Strictures have been carefully located and measured before operation. The knife which is concealed at the end of my instrument is drawn through the Stricture and at once returned to its concealment. If other Strictures are present, the instrument is especially readjusted for them.

Mr. Hill records against my mode of procedure "persistent bleeding" in four cases; "rigors" in three; "abscess in the buttock" in one; "crook of the penis" in one; "orchitis" in one. This certainly looks like a formidable array of accidents to occur in sixteen cases. 1st. In regard to "persistent bleeding." This accident, (if accident it can be termed in cases where vascular tissues are freely and intentionally incised,) may always be readily and easily controlled.

Simple compression by an ordinary bandage will *always* stop it in the spongy portion of the urethra. The introduction of a flexible tube after the operation will *always* prevent it. The magnitude of the object to be attained will warrant the employment of either or both of these simple measures in every case, and will give security, perfect and complete, against any injury from hæmorrhage. 2d. "Rigors" occurred in three cases. The simple passage of any instrument through the curved or fixed portion of the urethra may alone suffice to produce this accident, and would be still more liable to result upon dilatation of this part. My plan is never to pass beyond the bulbous urethra if it is possible to avoid it, and my own urethrotome has been contrived expressly with the view of dividing Strictures, as far as the bulb, *without entering the fixed portion of the urethra*. Acting on this principle, rigors have not occurred in more than one out of a hundred cases, in my experience. From this I am able to state that all operations confined strictly to the penile urethra are virtually free from danger of this accident, or from any marked constitutional disturbance, except in cases habitually subject to this trouble. 3d. "Abscess of the buttock" is recorded against one operation. This might be accepted as accounting for the rigor which it may be presumed occurred in this case, but cannot be entertained as the result of the operation upon the penile urethra. 4th. "Orchitis" followed the operation in one case. Orchitis is recognized as occurring not unfrequently from the simple passage of any instrument through the curved portion of the urethra. I have never met with it as the result of any interference with the spongy portion of the canal.

In one of Mr. Hill's cases—that operated on by myself—persistent bleeding is noted, and notwithstanding the assiduous passage of sounds, his gleet persisted for five months ("until Christmas"), and was then cured by other means; and, besides, a scar or induration remained in the erectile tissue which gave a crook to the organ on erection. It seems to me not irrelevant to state that this case was operated on

by me in the theatre of the University College Hospital under the impression that he was to receive care immediately after the operation. It turned out, however, that he was an out-patient. He subsequently drove his van for several miles, then walked a couple of miles, and returned at about 10 P. M. to the hospital, was subjected to treatment for his hæmorrhage, and had some constitutional disturbance for several days. I think that the inflammatory complication, which undoubtedly caused the induration in the erectile tissue, would rarely occur in cases where the necessary care and rest are insisted on.

Out of between five and six hundred operations I have seen six cases followed by the crook or curvature to which Mr. Hill alludes, in the worst case persisting about a year; but in all of these inflammatory trouble succeeded the operation. In two a urethritis was present, which had persisted acutely for several months, and in the others, extensive, very dense, and deep Strictures were divided. It is a question whether this rare accident would ever occur if the Strictures were uniformly divided on the floor of the urethra, as Mr. Hill is in the habit of doing. My cases were all cut superiorly and in the median line, as I believed I could more certainly sunder the Strictures in this way, and with less liability to troublesome hæmorrhage. I am at present making observations with the view of ascertaining the best point for division, and I may ultimately coincide with Mr. Hill in incising Strictures on the inferior floor of the canal.*

The final cure of gleet in the last mentioned case is stated to have taken place five months after my operation, "by other means." At the date of operation it was one of the "cases of long standing, with contraction in several portions of the canal, and had resisted multifarious treatment." Is it quite certain that this case was finally cured by other means, and that the cure was not chiefly due to removal of the

* A large subsequent experience has satisfied me that not only in regard to trouble from hæmorrhage, but in regard to completeness of results, the superior incision is greatly preferable. June, 1878.

Strictures? I rather incline to the opinion that the continuation of the gleet was due to the "cicatrical knot" which followed the operation and complicated the case; and its gradual absorption (usual in such cases) removed the remaining source of irritation, and the gleet ceased. In Mr. Hill's own fifteen cases one-third were promptly cured. In the remaining ten *recontraction* took place: this, it appears to me, is a good and sufficient reason why the gleet should persist; and I feel confident that the results of *thorough re-division* of these Strictures would go far to establish the truth of my views.

In closing his lecture, Mr. Hill objects to any examination of the urethra for Stricture until the gonorrhœa and gleet shall have lasted for six months. It is a well-known fact (see Thompson "On Stricture," English edition, p. 115) that Strictures are often present from other causes than a gonorrhœa; that a gouty or rheumatic diathesis, etc., may cause them, and that even a first gonorrhœa is often aggravated and prolonged by them. Is it then wise to ignore for a long period a well-recognized cause of trouble when the alternative is a prolonged and possibly a useless, if not harmful, course of urethral injections and nauseous medicines? However much we may deprecate unnecessary instrumentation, we cannot lose sight of the fact that *unnecessary injections and unnecessary medication* are quite as much to be deprecated. A careful, judicious, and thorough urethral examination immediately after the acute stage of a gonorrhœa has passed, I have never found to result in more than a temporary discomfort, and less than often follows the use of a single injection.

I do not claim perfection for any method or means of mine, but I offer my instruments and my experience to the profession, abroad and at home, with the sincere hope that they may be tested in the fair and generous spirit shown by my friend Mr. Hill, and that ultimately we may arrive at the solution of the most vexed of all surgical problems—viz., the best way of curing Strictures and gleet.

CHAPTER XI.

DISCUSSION CONTINUED.

THE next public discussion of my position on urethral questions appeared in May, 1877, in the Maryland Medical Journal, by Dr. Thomas R. Brown, Professor of Clinical and Operative Surgery, and of Diseases of the Genito-Urinary Organs, in the College of Physicians and Surgeons, Baltimore. This critique is considered worthy of citation because of the practical efforts which Professor Brown has made to solve the questions most in dispute, and especially on account of original observations of the foetal urethra, and that of the newly born (page 243.); important as bearing upon the significance of the dilatation usually found in the anterior part of the adult urethra heretofore described by anatomists as a normal condition, and called the *fossa navicularis*, but which I have claimed to be the result of mechanical dilatation behind a contracted meatus urinarius.

Again at page 242, he raises a point or two in regard to estimates of size of urethra from circumference of penis, which may have a general interest, while on the same page he confirms them in citing a case with a penis $4\frac{3}{4}$ inches in circumference, associated with a urethra 47 mm. circumference, perhaps the largest on record. Again, *ibid.*, his experience as to most frequent locality of Strictures; in 100, 75 per cent. anterior to $4\frac{1}{2}$ inches, confirms the claim made page 97, as against previous authority. Again the emphatic endorsement of my claim as to the importance which may attach to Strictures but slightly invading the urethral lumen, page 192. Professor Brown's opinions have an especial value from the fact that his position heretofore, has been in a measure antagonistic to my own.