

LESSON LXIII.

CHRONIC SPASMODIC URETHRAL STRICTURE.

Chronic spasmodic stricture—Views of authorities concerning the muscularity of the urethra—Views of Sir Henry Thompson in 1858 and 1869, in regard to spasmodic stricture—Quite at variance—Mr. Erichsen's views—Dittel's views favoring the occurrence of spasmodic stricture—Dr. Bumstead considers its short duration a diagnostic feature—Drs. VanBuren and Keyes coincide with this view—Dr. Stilling demonstrates the capacity of the urethra for muscular spasm, at any point in its course—The author's claims of a liability to spasmodic closure of the urethra at any point in its course and with such persistence as to simulate true organic stricture—Clinical cases in illustration.

Before the muscularity of the urethra was demonstrated by Hancock and Kölliker, the presence of an organic muscular layer, surrounding the urethra, was inferred by such acute observers as John Hunter, Everard Home, Lisfranc, Dupuytren, Guthrie and others, from the fact, that obstructions to the passage of instruments were met at all points in the course of the urethral canal, which were of a transient character, and that a distinct grasping of urethral instruments was occasionally recognized during their passage. Interference with micturition was, however, referred more particularly to spasm of the inorganic or voluntary muscles (*compressores urethræ*) which surround the urethra, in the membranous portion of the canal, and was attributed to the influence of reflex irritations, from various sources. The lines which naturally separate these two varieties of spasmodic urethral stricture have not usually been made prominent in considering the subject, although the distinct character of each, in regard to effect and locality, would seem to render it a matter of considerable practical importance. In regard to *cause*, we have the division of Sir Henry Thompson,* into those which result from some local

* Thompson on Stricture of the Urethra, London ed., 1858, p. 130.

lesion, which he terms *eccentric* spasmodic contractions, and those in which this is not present or appreciable, and which may be supposed to have a *centric* origin. "Among the *eccentric* causes," he remarks, "none is so common as a partial organic contraction . . . acting especially in concert with such lesions, is the passage of urine over denuded and sensitive surfaces, which becomes a still more fruitful cause, if its character be altered from those of health in any way. All irritations, of whatever nature, within the urethra or in contiguous parts (such as hæmorrhoids or ascarides in the rectum), would be included under the head of *eccentric* causes; while the term *centric* is made to include mental impressions, and all such as cannot be referred to a definite locality." "The grand distinguishing feature," says Sir Henry, "which marks the phenomena (of spasmodic strictures), and by which they are contrasted with organic strictures, is their *transitory character*."

Again, p. 49, *op. cit.*, he says: "Examples of pure spasmodic stricture are, without doubt, rare. Still, the influence of muscular action upon the urethra being considerable, it is important to recognize it in diseased conditions of the organ, since it commonly supervenes upon and complicates most of them. Indeed, neither organic nor inflammatory narrowing of the urethra can well be imagined to occur without the co-existence, at some time or another, of spasmodic action, to some extent, in the muscular tissues around."

The views of Sir Henry Thompson, as above given (in 1858), would seem to have undergone some modification, since, in his latest work ("Thompson on the Urinary Organs," London, 1869), while admitting urethral spasm as a physiological fact, he inclines to ignore it as a matter of importance to the competent surgeon. Thus, page 38, *op. cit.*, he says of spasmodic stricture, "*it is an exceedingly useful excuse for incompetence. Spasm may prevent the urine from going outward, but I do not know that it ever prevents an instrument from going in.*" Mr. Erichsen, who is also deservedly eminent as a surgical authority, says:* "From the fact

* Erichsen's Science and Art of Surgery, London, 1869, p. I. 114.

that a patient will, at one time, pass his urine with the most perfect freedom, while if it be rendered acrid by drinking spirits, etc., almost complete obstruction will ensue, this tends to prove the existence of occasional spasmodic contraction of the canal." In referring to the views of Sir Henry Thompson, he says: "While I would not go so far as that surgeon in declaring that the name (spasmodic stricture) is merely a cloak for want of skill, I confess that I meet with spasmodic strictures less often than when I entered practice, and I believe the same to be the experience of others."

Dittel* says: "Spasmodic strictures are not generally accepted, and yet it cannot be disputed that difficulties which simulate stricture occur in certain morbid conditions and predispositions; *they lack only the constancy.*" Difficult micturition, strangury, and an alteration in the stream, were noted by him as resulting from venereal excess, from the acid urine of patients suffering from pyelitis, and from the urine of diabetic and arthritic patients, and from irritations of the rectum also and colon, by worms, excoriations and fissures, and also from mental anxiety. He cites an interesting case, where retention of urine resulted, apparently, from the latter cause alone, and which, on two occasions, he relieved by the introduction of a 25 Charrière catheter, after pressure against the anterior face of the obstruction (which was at the membranous urethra) for a quarter of an hour. Dr. Bumstead, in his excellent text-book "Venereal Diseases," Phila., 1870, p. 237, accepts the frequent occurrence of spasmodic urethral stricture, and says of it: "A spasmodic stricture is characterized by its *short duration.* It appears suddenly in persons of delicate habit, . . . and as suddenly disappears. Exploration of the canal by means of a sound, after the spasm has passed, and frequently during its continuance, shows that there is no organic obstruction." In the recent work of Drs. Van Buren and Keyes ("Genito-Urinary Diseases with Syphilis," New York, 1874, p. 93),

* Pitha & Billroth's Handbuch der allgemeinen und speciellen Chirurgie. Dritter Band, p. 49, 1872.

accepting it as frequently resulting from above-mentioned causes, and as liable to occur in the attempted introduction of an instrument through the urethra, they remark: "It (the instrument) may be firmly grasped and held at any part of the canal, but this is more liable to occur just as the instrument is entering the *membranous urethra*, when its point may be detained for many minutes by the involuntary contraction of the *cut-off muscles (compressores urethræ)*. If the end of the sound is held quietly for a few moments against the contracting muscle, the spasm will yield and the instrument pass on into the bladder."

In comparing the views of these recent, accepted authorities in regard to the spasmodic urethral stricture, it will be observed that all agree as to its frequency, its transient character, and its easy management.

Dittel met with a case where the pressure of the end of a catheter for fifteen minutes against the face of a spasmodic stricture, at the membranous portion, was required before it yielded. Van Buren and Keyes have evidently had similar experiences, as they note this occasional *persistence* of the spasmodic barrier. Sir Henry Thompson inclines to ignore the existence of the spasmodic stricture, and attributes to ignorance and incapacity the arrest of an instrument in its passage into the bladder, from any cause but an organic one. In this Mr. Erichsen seems quite inclined to agree, although appreciating the possible occurrence of a spasmodic stricture which should be so persistent that it *might* be mistaken for an organic contraction.

It is not my purpose at this time to discuss the general question of spasmodic stricture. The recent investigation of Stilling (coinciding with those of Kölliker) would seem to show conclusively that the muscular capacity of the urethral surroundings is quite sufficient to account for any amount of contraction which might be observed at any point. In his own strong language (supported by several admirable illustrations of the anatomy of the corpus spongiosum urethræ) he says: *

* B. Stilling, Die rationelle Behandlung der Harnrohren Stricturen. Erste Abtheilung, p. 9.

"the corpus spongiosum is a muscle through which the urethra runs." Dr. Stilling so demonstrates the muscular stricture of this body, that it is at once seen to be an easy matter for such a contraction of the muscular stricture of the corpus spongiosum to bring a strong contracting force to bear upon any part of the urethral canal. While thus accepting and claiming the liability of the entire urethra to spasmodic closure, which, under certain reflex influences, might embarrass, if it did not deceive, a well-informed surgeon, I desire to present a series of clinical observations, to illustrate the probable frequent occurrence of spasmodic strictures at the membranous portion of the canal, which present all the diagnostic systems of true organic stricture, and which cannot, with certainty, be differentiated from organic stricture by any of the plans recommended by authorities.

CASE I.—J. W., frontiersman, aged 45, presented November, 1874, with a history of first gonorrhœa 20 years previously, and several subsequent attacks. Five years ago began to have difficulty in passing his urine; stream growing gradually smaller, until, after a debauch, he had complete retention, and was obliged to seek relief at a neighboring military post. After 36 hours' suffering, he was relieved by the passage of a very small, flexible catheter, in the hands of the post surgeon. After this he submitted to treatment, by gradual dilatation, for several months. He then learned to pass No. 12 English soft bougie. From neglect, he has had some half a dozen attacks of retention during the past year. At last only the smallest instrument could be passed by the military surgeon, and he was advised to go East and have a radical operation performed, as there were no instruments at the post suitable to operate upon so small a stricture. His habit for a long time has been to pass his water very frequently during the day, in a very fine, irregular stream, and several times during the night. Examination: Is of large stature, looking like a strong man, who had endured much exposure and hardship. Made has water in my presence, in fine, short jets, chiefly dribbling. Circumfer-

ence of the penis, three and one-half inches; size of meatus, 23 f. steel sound passed very easily through a very sensitive urethra to the bulbo-membranous junction, where it was arrested. Gradually decreasing bougies were introduced, until finally No. 12 f. passed into the bladder, closely hugged in the deep urethra. Allowing it to remain for a few moments, I found it free. I then withdrew it, divided the contracted meatus and stricture, extending for nearly half an inch back, and passed 34 f. solid steel sound slowly down to the bulbo-membranous junction, when it slipped by its own weight into the bladder. After the withdrawal of the sound the patient passed his water in a full, large stream. From this moment he had no further trouble in urination, passing his water at intervals of six to eight hours during the day, and not at all at night, for the week subsequent to the operation, when he left for his home in the far West, apparently well in every respect.

CASE II.—Mr. W., age 27, had first gonorrhœa four years previous, lasting in acute form for one month, and with painless discharge for six months longer. Has had frequent returns of the discharge without fresh exposure; had been under treatment for close, deep stricture for the past year, by several surgeons. Passed his urine in a small irregular stream, once in two or three hours. His last surgical attendant, after two months' treatment, by injections and internal remedies, sent him to me, not being able at any time to pass an instrument into the bladder. Examination showed external organs large, meatus contracted to 24 f., red and pouting, and bathed in a profuse muco-purulent discharge. Twenty-four f. sound is arrested at five inches. Only fine filiform will pass, and that is closely hugged. Three days after, pass filiform with ease and follow with No. 10 f.; then, with some effort, with No. 16 f. After this the filiform was again snugly held in the membranous urethra. I divided the stricture at the meatus freely, and introduced No. 30 f. steel sound, which passed, literally by its own weight, through into the bladder.

CASE III.—W. F., aged 45, had gonorrhœa 25 years ago. After five years, having much trouble in passing

his water, he consulted a distinguished surgeon, and was informed that he had a deep organic stricture. Only a very small instrument would pass. By gradual dilatation, carried up to 14 English, the difficulty of micturition was then relieved, but would promptly return on the discontinuance of its regular use. Had a slight urethral discharge, following connection, but usually disappearing without any other treatment than the introduction of the sound. This introduction was continued with great regularity for a period of 20 years, on an average of once a month. Finally, having some misunderstanding with his surgeon, he took his sound and went to another, to whom he recounted his experience, and requested him to pass the instrument. Meeting with some difficulty near the neck of the bladder, his new attendant took a smaller instrument, then another still smaller; and finally, after causing much irritation and some hæmorrhage, he was requested to desist. On the day following he came to my office. Examination showed a penis four and one-half inches in circumference, and an ample meatus. Thirty-four f. solid steel sound (22 English; introduced by my assistant, Dr. Fox), entered easily and passed, without the least force or halting, through the urethra and into the bladder. The size of the penis being four and one-half inches in circumference, indicated a urethral calibre of at least 40 of the French scale, or 28 of the English. I then introduced my urethra-meter, closed, to the bulbo-membranous junction, turned it up to 40, and drew it easily forward to within one inch of the meatus, where it was arrested, and required to be turned down to 34 before it would pass the obstruction. This showed a constriction at this point, of the value of six millimetres. As the patient objected to any cutting operation, the stricture was gradually dilated to 40 f., when the discharge ceased, together with all difficulty of urination, and after a month the patient passed from my observation.

CASE IV.—Mr. F., aged 32; gonorrhœa six years previous. After three years, had frequent and increasing difficulty in urination, which, after an excess, culminated

in an attack of retention, which, after lasting 24 hours, was relieved with a small catheter. Had subsequently two or three attacks of the same kind, relieved in same way. October 18, 1874, another surgeon, after repeated attempts, failed to pass the catheter. I saw him on the afternoon of the 20th. He had passed, *guttatim*, perhaps a pint of urine in the previous 48 hours. Bladder three inches above pubes; patient suffering and anxious; slight fever; pulse 90; temperature 101°. I put him at once under the influence of ether. Penis three and one-fourth inches in circumference (indicating urethral calibre 32 f.), meatus 23 f. Passed 23 solid steel sound without difficulty to bulbo-membranous junction, where it was arrested. Trying patiently one instrument after another, in decreasing sizes, I at last introduced a small filiform bougie (No. 8 f.—1 English), which was closely grasped as it passed through the membranous portion of the canal. The patient was apparently under the full influence of the ether at this time, but the spasmodic action of the compressores urethræ was distinctly recognized. The filiform was hugged at one instant and loose the next. I withdrew it and introduced a No. 10 f. This went in without difficulty. I concluded to pass down the staff of Voillemier and rupture, but found the screw of the bougie imperfect. I withdrew it and attempted to replace it by another. This was resisted in its passage, and it was only after a patient, prolonged effort that I finally succeeded. I then followed it with the staff, which was closely embraced in the membranous portion. I then cut the meatus freely, which I should have done before. In very carefully passing down the shaft No. 28 f., the largest I had (with the intention of driving it in rapidly as soon as the stricture was reached), without meeting the slightest resistance, it went squarely into the bladder. Ten days after he called at my office, with an account of an attack of chills and fever (to which he had previously been subject) following the operation, and stated that he "had had no urinary trouble since, and could pass a stream as large as his finger." In order to test this case (as the rupture, if it was such, had been done with 28 f.), I

passed a 32 f. solid sound, which slipped without resistance through into the bladder. Up to this time (six months from the date of operation) he has remained perfectly well.

CASE V.—In February, 1874, I received a letter from a surgeon, asking advice as to the propriety of operating with my dilating urethrotome upon a stricture in the membranous urethra. "The stricture," he wrote, "is seven inches from the meatus. By using a small, pointed bougie it can be passed, and then easily dilated to 14 of the English scale. In this condition it has remained for several months. Interference with and frequency of urination are his chief troubles. The stricture is to a great extent spasmodic, as, sometimes, it will hold a small instrument with great firmness. Sometimes I have thought there might be the commencement of a false passage, the difficulty of getting an instrument engaged was so great." I wrote, suggesting the careful examination for an organic stricture in the anterior portion of the canal, which by irritation, either from passage of urine or urethral instruments, might cause the deeper trouble. In an answer, a few weeks after, he stated that he had found some contraction at the meatus and had divided it, but with no effect upon the deeper trouble. May 12 he called with his patient. Examination showed contraction at the meatus not fully divided. Twenty-nine f. only would pass, while the normal urethra was at least 31 f. Two other strictures were detected, at two inches, with 29 bulb. Twenty-nine solid steel sound was readily passed to the bulb, and notwithstanding gentle pressure for several minutes against the face of the stricture, it would not advance. I then divided the stricture at the meatus freely, also the deeper bands, immediately following which a 31 solid sound passed, without the least resistance, through into the bladder.

CASE VI.—W. W., a surgeon of this city, aged 62, came to me in the evening of December 18th, suffering from an attack of retention of urine. He was in a state of great nervous excitement, and was bleeding, somewhat freely, from the urethra, as a result of attempted

passage of instrument. His history was as follows: First gonorrhœa at 19 (1832,) repeated attacks up to 1857, at about which time he began to experience some difficulty in urinating. This, within a short time, became so marked that he sought assistance from a surgeon of great experience and skill. He was found, after a careful examination, to have an organic stricture at the bulbo-membranous junction, size No. 3 of the English scale. During the following three months he was systematically treated by the use of flexible bougies, until No. 12 of the English scale (17 f.) was reached. The solid steel sound was then substituted, and he was directed to use it three or four times a month, *as long as he lived*. He did so for a few months, and then neglected it for a year; when, his urination becoming very slow and troublesome, he attempted to pass his No. 12. He succeeded, by patient effort, in making a false passage, but failed in entering the bladder. He then recommenced with No. 2, and dilated his urethra gradually, in a few weeks, to No. 12 again. The habitual, semi-monthly use of this size was kept up for the next 15 years, and up to three years since. He then increased the interval to one month, until finding, after often waiting half an hour at a time, that he was obliged to use gradually decreasing sizes, down to No. 5, and besides suffering much from frequency and urgency in micturition, he became discouraged with his efforts, and concluded to do no more, until an attack or retention (with which latterly he had often been threatened) should occur. In this event, he proposed to have the canal restored by a cutting operation. For the past five years he had suffered with frequent chills and fevers, which, notwithstanding a full treatment by quinine and arsenic, he failed to cure. He was habitually passing his water in a small irregular stream, every 30 minutes, on the average, during the day, and five or six times during the night. A cursory examination showed that there was no great amount of water in the bladder. In view of the injury that had already been done to the urethra, and the probability that there was a fresh false passage, I prescribed tr.

mur. ferri., in 10 drop doses every hour, a suppository of morphia sulph. $\frac{1}{4}$ gr., and rest in bed, assuring him that there was no serious trouble, and that, in case his retention gave him pain during the night, I would at once come and give him relief.

I neither saw nor heard from the doctor until Christmas Day, just one week from the date of his previous visit. He then presented, in very good general condition, and stated after leaving me with his retention, he went home, passed a good night, and in the morning urinated as usual (except in larger quantity), and since then had been about as before the attack. He had now come to ask an engagement for the radical operation on his stricture.

It was with the greatest reluctance that he consented to an examination, on account of his apprehension of pain. He was certain of the locality and extent of his stricture, and begged that the examination and operation should be done both at once, when under ether. The circumference of the penis was three and a half inches, indicating a normal urethral calibre of at least 34. of the French scale. Size of meatus, 28 f. I then, with assurance of desisting at the least discomfort, began the gentle introduction of 28 f. conical steel sound. As the instrument passed along the pendulous urethra, it was distinctly resisted in its advance and grasped at a number of points, finally reaching the membranous portion. At a moment when his attention was purposely distracted from his urethra, I slipped the sound easily, and without the least force, *through it and well into the bladder*. The blank astonishment of the doctor may be better imagined than described. On the removal of the sound (which in the act of so doing was closely held), he exclaimed: "So this is the organic stricture I have been systematically dilating, and making false passages around, for the last 20 years! It is impossible. Why should my stream be always so small and my urination be so frequent? Doctor" (with alarm), "are you quite sure that the instrument *did not go through a false passage and into the abdominal cavity?*" I then demonstrated, by means of a 28 f. bulbous sound,

the presence of a stricture half an inch in length, commencing at the external opening of the urethra. I explained the occurrence of the frequency and difficulty of micturition, and the resistance to instruments, by attributing it to a *reflection of the irritation from the point of true stricture at the meatus, to the compressores urethra*; this, causing a firm, persistent closure of the urethra, at the membranous portion, as often and as long as urine was brought in contact with it, or instrumental passage attempted. In an examination with the urethra-meter, I found two more bands of stricture, at two and a half inches, of the value of 30 f. It was, however, to the single stricture, at the meatus, that I attributed spasmodic trouble.

January 10.—Dr. ——— presented for an operation on the anterior stricture. Present, by my invitation, Prof. Willard Parker, Dr. Gurdon Buck (to whom the patient was professionally well known), Drs. Stimson and W. Parker, Jr. The history of the case was recounted, and the difficulty claimed to be dependent upon irritation, reflected from the anterior stricture alone. Local anæsthesia by the spray of ether was induced by my assistant, Dr. Fox. I then divided the stricture thoroughly, and introduced 34 f. bulbous sound through it, and down to the first slight contraction at at two inches; size 30 f. Thirty f. solid steel sound was passed easily to the bulbo-membranous junction, when it caught, evidently in a false passage; 28 f., with slightly different curve, was then passed easily into the bladder; 30 f., of same curve, followed it without difficulty.

Up to the hour of the operation, the patient passed his water at least every half hour, on the average. Subsequent to it, he did not pass it for 10 hours, and then in full, steady stream. At the end of a month, when I saw him, his average interval between the acts of urination was eight hours.