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ON THE TREATMENT OF STRICTURE

OF THE

URETHRA BY SUBCUTANEOUS DIVISION.

BY

HENRY DICK, B.A., M.D.,

SURGEON TO THE NATIONAL ORTHOPÆDIC HOSPITAL.

READ BEFORE THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY, JUNE THE 14TH, 1864.

ON THE TREATMENT OF STRICTURE

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URETHRA BY SUBCUTANEOUS DIVISION.

In the year 1853 I published, in the Medical Times and Gazette, a critique on Mr. Syme's operation, in which, for the first time, I related a successful case of subcutaneous section of stricture of the urethra. Subsequently, in the year 1855, I sent a memoir to the Academy of Medicine of France (see Séance, du 23 Octobre, 1855), in which I related two successful cases. Since that time, my friend Mr. William Adams, and my friend and late colleague at the National Orthopædic Hospital, Mr. Allingham, have tried the same method with complete success. In Mr. Adams's case, I had the pleasure of assisting him, and witnessing the successful result of the operation. One of my cases I have lately sent to Mr. Adams that he might see the result of an operation in which he had assisted me more than a year ago; and he is quite convinced that there does not exist the least obstacle or retraction at the place where the stricture existed.

For practical purposes, I divide strictures into two classes: first, those which dilate, or slightly dilate, on the introduction of an instrument; and, secondly, those which will not dilate at all. In calling them *dilatable* and *undilatable* I only allude to their anatomical and physical properties, not by any means indicating by those terms the nature of their treatment. In a short paper like this, I cannot describe in detail the pathology of stricture; but, for the object in view, it is sufficient to describe strictures according to their seats: as *single*, when occurring at any spot in the urethra, the most usual part being at the bulb; or as *double*, or *triple*, the parts most usually affected being the bulb, the membranous portion, and fossa navicularis. But, as I have stated, I have found strictures at other parts of the urethra. Some cases came under my observation where a third or fourth part of the entire urethra was contracted.

Stricture is a result of inflammation; the normal tissue undergoes an organic change into a tissue of a fibrous nature. The parts constituting the stricture seem to the naked eye atrophied (the most frequent occurrence), but, in rare cases, hypertrophy may take place. By introducing the metallic bougie, we are much assisted in diagnosis as to the existence of atrophy or hypertrophy at

the seat of the stricture. The form of a stricture is like that of two funnels, the points of which touch each other. It is very important to bear in mind this peculiarity in the form of the stricture when cutting is resorted to; because, if the narrowest point only is divided, the patient will not be cured, but symptoms of stricture will return. Another point which is important to advert to, is the direction of the stricture. In parts, obvious to the eye, when long-standing inflammation has taken place, we observe deviation caused by the post-inflammatory contraction; and, according to the same pathological law, deviation is produced in the urethra.

To cure strictures, several methods have been proposed in ancient and modern times. The oldest, and when applied with judgment I believe the safest, is temporary dilatation, and that *by the graduated metallic bougie;* and, according to the pathological particularities which I have already described, it must be obvious that the urethra ought to be subjected to an orthopædic treatment, which can only be effected by a metallic bougie. There are other methods of dilatation, by pouches distended with air or water, which may in particular cases be serviceable; but the metallic bougie is the instrument which gives the most mathematical certitude of the state and improvement of the

strictured parts, and it is by far the most easily managed instrument.

But there are strictures which will not dilate, and the result will be severe complications, as fistula, disease of the bladder, and ureters, and even of the kidneys. In such cases the surgeon is called upon to interfere more energetically. There are sometimes social exigencies which prompt the patient to ask his surgeon to free him radically from his stricture, as when a young man wants to get married, or to go on active service, &c., &c., which would make it very inconvenient for him continually to undergo dilatation.

To produce a breach in the continuity of the strictured parts of the urethra, three methods have been proposed: first, cauterization; second, splitting; and third, cutting: the latter is again subdivided into three methods, viz., *internal, external,* and *subcutaneous.*

Keeping in view the pathology of stricture, it is difficult to understand what can be effected by cauterization. There is not too much tissue present; the stricture is not produced by an abnormal superabundance of tissue, but, on the contrary, it is by an atrophy of tissue and contraction that strictures are formed. Every one knows that the physiological action of caustics is just the contrary to that which it should be our object to produce.

Caustics contract parts to which they are applied; a well-known fact in surgery. Moreover, there is great obscurity in using the *potassa fusa* (the caustic most generally used), as we do not know where we cauterize or what we cauterize. I admit there are some cases where the application of nitrate of silver is useful, that is, in highly irritable strictures; in them, the application of lunar caustic makes dilatation possible by allaying the irritability. Consequently, it will be seen that in those cases the caustic can be only regarded as adjuvative.

A second method for radical cure of severe stricture, which has lately come into fashion again, is the violent *splitting* or *tearing* of the contracted parts. Splitting of the urethra originated as far back as thirty years ago, and was practised by Monsieur Mayor, of Lausanne; but his method was found so faulty, that very few surgeons adopted it, and a very warm controversy was carried on between him and the late Monsieur Vidal de Cassis on the subject. Afterwards Mayor's method was improved by Messieurs *Montain*, *Charrière*, *Leroy* (d'Etiolles) *Perréve*, *Civiale;* and in this country by Messrs. Holt and Henry Thomson. The late M. Leroy relates a case of death having taken place within a few hours by this treatment in Berard's practice. (See *Operations, qui se pratique*

sur les Organes Genito-Urinaires, par le Docteur Ch. Phillips, page 10). Another case of sudden death through the same operative process is related in the Revue Medico-Chirurgicale, and in the Abeille Medicale (see 3 *Fevrier*, 1852). I do not know whether any similar accident has occurred in this country, and if any accident should happen it would rather be ascribed to chloroform than to the operation. I mainly look upon the point of the pathological anatomy on which the principle of splitting may be based. It is an old, even in modern times, admitted principle in surgery that retracted parts, if they *can be reached by the knife*, should be *cut* and not *torn*. We only tear parts when we do not exactly know what should be cut, or when the knife cannot safely be used. We admit in surgery to tear down anchylosed joints, when we do not know what elements compose the anchylosis, and we cannot make an exact diagnosis of the fibrous parts composing the anchylosis. On the same principle the method of splitting may be admitted in strictures of the urethra. When there is a long portion of the urethra strictured, or when there are a number of strictures following each other, I think it rational in such cases to have recourse to splitting to effect a radical cure. But even then we labour under the *uncertainty* of—Have we really split the pathologically con-

tracted part, or only forcibly dilated it *without dividing it?*

The third method for the radical cure of severe cases of stricture is to produce a breach of the contracted parts by sharp instruments, and the different proceedings employed to accomplish it may be divided into three methods—First, the *internal;* Secondly, the cutting, *external,* through, not only the strictured parts by a large cut, but all the sound parts covering the stricture. The third method of cutting is the subcutaneous, which makes only a *small* puncture in the sound parts, and with that exception, cuts only the pathologically contracted spots of the urethra.

The internal incision is the most logical, considering the pathological anatomy of strictures, but in the performance of the operation myself and others have found great drawbacks. The instruments invented for such cutting are very ingenious contrivances, but when put to the test they are found to be at fault. The concealed knives are generally too slender to make a deep and long cut, and there is even danger of their breaking. But the most difficult thing in the internal incision is to cause the concealed knife to spring out at the right spot, and if the stricture is not *tensely dilated* the knife acts rather as a dilator than as a *cutting instrument.* Those who have some

practice in cutting fibrous-tissue subcutaneously know how difficult it is to divide it, and it is just that difficulty of cutting the contracted tissue which led me to give up the internal incision. The only indication for the internal incision would be strictures in the fossa navicularis, but even in such cases I have lately preferred to use a director, armed with a dilator, and to cut the stricture by means of a tenotome introduced into the director through the orifice of the urethra.

External incision of the urethra is of old date, and is well known by the name of *la boutonnière.* Mr. Syme has the merit of improving this method, by introducing a director first, and then cutting down on the director; and he has further a very great claim of having largely improved and contributed to a better knowledge of the pathology of strictures. But my objection to the external incision is that it is a formidable operation, almost as hazardous as cutting for stone, and the convalescence is long. There is an idea abroad that if the external incision be not large enough urinary infiltration will take place; but this is an erroneous conception, like that which prevails in respect to cutting for stone, and which has been so very ably exposed by Mr. Henry Thomson. The urine, according to the natural law of gravity, does not burrow under tissues when it has a free channel.

When the stricture is divided the urine follows the course of the urethra, and I shall presently illustrate this dictum by relating the circumstances of a case in my own practice. The healing and suppuration of the open wound is long and tedious, and consequently pyæmia is more likely to occur; parts are divided which have no connection with the existence of the stricture; and through the long suppuration which takes place it is probable that retraction of the divided parts will again take place. Some cases, where this last occurrence happened, I have myself witnessed.

The third method for the radical cure of stricture is the subcutaneous incision practised first by me in this country. The method exactly fulfils all the conditions indicated by the pathological anatomy of strictures; it only punctures to a very small extent the sound parts, which heal up in the first twenty-four hours. It possesses all the advantages of the external incision by leaving the surgeon free to make his cut as long and deep as is necessary. It has further the advantage that there is no occasion to employ chloroform, as the pain caused is very trifling;* the hemorrhage is

* Since the above was written, Dr. Richardson's method of local anæsthesia, which I have often used successfully, has come in to aid the surgeon. The operation described in the text may now be conducted with absolute freedom from pain, and without any delay, by this process.

insignificant, as the surgeon has it in his power only to divide those contracted parts which are not rich in blood-vessels, and leaves the sound part of the urethra intact. The subcutaneous incision is not only indicated in severe cases of stricture, but also in those slighter cases where dilatation might be practised, but where the patient, from his social position, insists on being radically cured in order to avoid the necessity of constantly attending to his stricture.

The method of operating is the following:—Dilatation must, to a small extent, first be accomplished some days previously in order to enable the operator to pass the small grooved conductor through the strictured parts; besides, it has the advantage of accustoming the urethra to the presence of foreign bodies. No chloroform is used. I do not change the patient's regimen. In winter, or bad weather, I take the precaution to let the patient remain for eight days after the operation in doors; not so in summer, and fine weather, when he may go in the open air three days after the operation. If the stricture should be in the membranous portion, an injection will be of use to free the rectum.

The mode of operating is the following:—The patient is placed in the position for lithotomy. The instruments used are a grooved con-

ductor, which I here produce, and an ordinary tenotome, which should have rather a long neck for strictures in the membranous portion. In one case, in which the stricture was in the membranous portion, I found a difficulty in introducing the tenotome into the rectum without doing injury to the bowel or to my finger; for this purpose I propose a tenotome *caché*, in such manner that the sheath may be withdrawn after the knife is introduced in position. A good-sized catheter, in proportion to the orifice of the urethra, and of the same proportion of size should be the conductor. A T shaped bandage, an ordinary bandage, sticking-plaister, and lint are also required. In operating on the membranous portion no bandages are required, and in these cases a large metallic bougie should be left in the urethra to act as a compressor for fear of hemorrhage. The patient once placed in position, I introduce my conducting catheter, which, the Fellows will see has, at its vesical end, two protruding buttons, or knobs, and a groove between them. These protruding buttons are very essential to the operation, as they stop where the stricture begins, but never reach the tightest part, and act at once as a stretcher for the introduced knife. Once in that position, the small-grooved conductor, which is concealed in the large conductor, is by skilful management pushed gently out, and passed

through the stricture. The operator then delivers the conducting catheter into the hands of his assistant, telling him to stretch the penis, and keep the instrument gently but steadily against the stricture. The operator now feels carefully outside of the penis for the buttons of the conducting catheter, where the puncture should be made. Once convinced of the exact locality of the buttons, he grasps with his left hand the penis, together with the instrument, and places his thumb just before the buttons, with his index and middle finger at the back of the penis: grasping those parts surely but gently, he takes now in his right hand the tenotome, thrusts the point between the buttons, and pushes the tenotome resolutely through the stricture. A creaking sensation in cutting the abnormal tissue will be perceived by the operator. I would here remark that the operator should be very careful to make rather a long cut, from three-quarters of an inch to an inch long, and by no means to withdraw his knife until he is quite sure that he has cut through the stricture, and feels through the skin that every obstacle is completely divided. He then removes the knife, withdraws the conductor, and inserts, in proportion to the normal size of the urethra, a large catheter, to *ascertain* if every obstacle is removed. Of course, in introducing

the catheter, the operator must keep the point of the catheter in contact with the upper wall of the urethra, so that the end of the catheter may not drop into the fresh wound. The small external wound should be covered with lint and sticking plaister, with a compress placed over all, and kept in position by a T bandage and common roller formed as a figure of 8, fixed on the hips and wound round the pelvis alternately; the whole is then kept neatly in position by a few pins. The patient afterwards gets into bed and is left quiet. Two or three times a day, when he wants to make water, a large catheter should be introduced to draw off the water and prevent it from coming into contact with the wound of the urethra. I strenuously object to leaving a catheter in the urethra after the operation, on the grounds—1st, because it is greatly to the discomfort of the patient; 2ndly, because it acts in an irritating manner on the bladder itself; and 3rdly, because it will just produce the contrary effect from what it was intended; *i.e.*, the urine will run along the introduced catheter if it be left, and will come into contact with the wound.*

* The instruments used for the subcutaneous division of stricture of the urethra have all been made for me by Mr. G. Ernst, of 19, Calthorpe-street, Gray's-inn-road, W.C.

CASES.

I.

My first operation in the practice of subcutaneous section was performed in the beginning of the year 1853. An Italian gentleman came under my care, with a tight stricture in the membranous portion of the urethra. In this operation I made use of a grooved director having an intra-perineal bend. When the director was in position, with a very small scalpel I made an incision into the membranous portion just lying before the rectum, and of course I was obliged to puncture the rectum also. The scalpel I introduced with difficulty on my finger; and, having made the puncture, I withdrew the scalpel, and left my finger in contact with the puncture: then on my finger I introduced a blunt convex tenotome, and pushing it through the puncture into the grooved director, I divided the stricture. I should not now act in the same manner, as I would prefer to use only one knife in the operation for the membranous portion, namely, a *tenotome caché*. The patient had shi-

vering on the two following days. The urine was withdrawn when required, and never let come in contact with the wound. The patient recovered well. I could pass a large-sized catheter after the operation. I lost sight of this patient, as he left this country some time after the operation.

II.

The next case which came under my care, in the summer of 1854, is the following:—The gentleman came to consult me for gleet in February, 1854. In exploring his urethra, I found a stricture just before the scrotum. I tried several kinds of treatment. Graduated temporary dilatation was for some time used. The stricture yielded, but returned as soon as dilatation was discontinued, and slight gleet never ceased. The gentleman, who was on the point of getting married, was anxious to get rid of his gleet, and was willing to undergo any treatment or operation for the sake of being cured. I proposed to him to divide the stricture, as the only *reasonable* means of ensuring his recovery. He consented, and I divided the stricture subcutaneously; and then for the first time I used my conducting director with the two knobs at the vesical end. I operated on him in

my own consulting-room, and he returned to his lodgings in a cab. In the evening he had shivering; but after some doses of quinine, no more shivering took place. There was a slight swelling in the prepuce and the skin of the scrotum, which after a few days subsided. At the end of eight days he passed his water without a catheter; and after a month there was no trace of stricture or gleet. I have seen this gentleman frequently during the last nine years, and never found the least trace of stricture. About five months ago, for my own instruction, I passed a *bougie à boule*, but could not discover even the seat of the operation.

III.

My third operation I practised in July, 1855. I found in this case a very tight stricture in the fossa navicularis, into which only a very small elastic bougie could be passed. No progress could be made by dilatation. I could not pass a higher number than 20 of Dr. Bennique's gauge. I proposed to the patient to divide his stricture, to which he consented, and I divided the stricture with Dr. Reybard's urethrotome; but, after having divided it, I found another very tight stricture at the bulb. I had not the heart to propose to the

patient another operation at the same time. Afterwards I tried to dilate the second stricture, but made very little progress. This stricture was just as tight as the first. I was convinced that it was necessary to divide it, and proposed to do so in the month of September, 1855. It was divided subcutaneously. There was a remarkable feature in this case, which I think right to mention. After the first operation in the fossa navicularis the patient had no shivering, but after the operation at the bulb shivering took place. However, the patient did well, and has never to this day been troubled with stricture. All my patients are treated for six months, at least, by dilatation, and only the metallic bougie is used temporarily. This last proceeding I look upon as a kind of orthopædic treatment.

IV.

In the year 1856 a patient came under my care with stricture just at the commencement of the bulb. It was very tight, and I tried for a long time to overcome it by dilatation. In the latter end of the year 1861 the patient, during his stay at Dublin, was attacked by retention of urine, no instrument having been passed for some time previously. After suffering for several hours he called in

a surgeon, and was relieved by a bath and a catheter. On his return to London he was anxious to avoid another such occurrence, and I proposed to him to divide his stricture subcutaneously, which operation I performed in January, 1862. Directly after the operation I passed a large catheter, No. 50 of Dr. Bennique's gauge, and drew off the water. The patient was treated according to the rules I have already mentioned. On the evening of the day of the operation, in trying to pass a catheter, I found such a spasmodic contraction in the membranous portion that the patient felt great pain when I reached that spot. To this moment I cannot understand that great degree of spasmodic contraction. It could not be ascribed to a second stricture, because, directly after the operation, I passed a very large catheter. As there was then not much sign of there being urine in the bladder, I left the patient quiet for the night. I was rather uneasy about permitting the patient to make water over the cut wound, fearing urinary infiltration. The next afternoon, not being able to pass any-sized catheter whatever, and finding that each time the foreign body touched the membranous portion the spasm strongly increased, I recommended the patient to make water without any instrument, and, after a little while, he made a large quantity of

water naturally, which caused severe scalding at the cut spot. No bad symptoms whatever followed. He had shivering two days consecutively after the operation, but recovered without the least untoward symptoms, and left his room after eight days' confinement. At the present time there is not the slightest symptom of stricture (1864). In this case Mr. W. Adams assisted me, and fifteen months afterwards, having seen the patient, again has been able to attest to the complete success of the operation.

Mr. Allingham had the kindness to send me the history of two cases, which were operated on by him by the subcutaneous method, and which I shall here give succinctly, with his permission. I must here state that Mr. Allingham was not aware that I had previously operated after the same method. He was consulted by a gentleman from Calcutta who had a long gristly stricture in the spongy portion with a fistulous opening. All known treatment as dilatation, cauterization with potassa fusa, and internal incision had been tried and failed, and he came to England to have his stricture cut by external incision. Thinking the subcutaneous incision would be effective in this case, he passed a Brodie's

director through the stricture, and divided it subcutaneously. The patient recovered without any bad symptoms. In eight days the fistulous opening was cured, and he returned to India well, being able to pass a No. 12 catheter easily. This case was operated in June, 1860.

Mr. Allingham's second case was in the year 1862, when a patient came under his care with a long stricture at the beginning of the bulb, and extending higher up into the membranous portion; and in this case also a variety of fruitless treatment preceded the operation. He (Mr. A.) made a puncture into the perineum with a tendon knife, on a grooved staff previously introduced, and divided the first part of the stricture: afterwards he changed his knife for a posterior tibial long-bladed tenotome, and having introduced his finger into the rectum, he felt for the staff; assuring himself, in pushing forwards the knife subcutaneously through the puncture he had previously made, he completely divided the indurated tissue. The case did well, without any untoward symptom but once shivering, and after a month he was discharged cured.

I now draw the following conclusions:—

Firstly. Strictures regarding their physical properties can be divided into dilatable and non-

dilatable, but in both cases a new tissue is formed. In the one it has the property of being dilatable, but will retract again; in the other no dilatation, or very little, can be effected.

Secondly. Division of the pathologically contracted tissue is the only means of cure.

Thirdly. For division the subcutaneous method is the most proper for easy execution, and for safety of the patient's life.

HENRY DICK, B.A., M.D.

59, *Wimpole-street, W.*

20th March, 1864.

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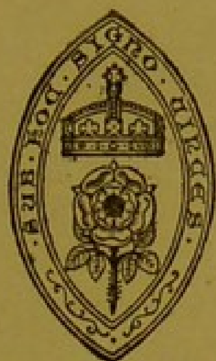

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