REMARKS

ON PROGRESS IN THE TREATMENT OF
STRICTURE OF THE URETHRA.*

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IN consequence of a suggestion which the Council has done me the honour to make, I venture to introduce for discussion here to-day the subject of Stricture of the Urethra.

Perhaps I may be permitted to state at the outset as, in some sort, a warrant for the course I have assented to take, that it is now nearly thirty years ago that I commenced an essay on Stricture, which, a year later, was awarded the Jacksonian Prize of the Royal College of Surgeons—the Council having selected that subject as the theme for the year. Since that date, my practical acquaintance with the management of urethral stricture has naturally been considerable. At the same time, I have carefully watched the work of others at home and abroad. It is to the history, then, of our subject in relation to treatment, during this period of about the third of a century, and to some practical conclusions to be drawn therefrom, that I propose chiefly to ask your attention. I pursue this course as calculated, perhaps more than some others I might have chosen, to accomplish the object of eliciting discussion on any point which may appear to demand inquiry at the present moment.

It may be in the recollection of some of us, perhaps, that during some years, at or about the time referred to, a long and severe controversy was held on the management of stricture between authorities in London and the late Professor Syme of Edinburgh, in which others also participated both in this country and in France.

The subjects then chiefly at issue were: 1. The value of caustic applications, which had long been used, and were at that time still much employed in the treatment of strictures which had proved rebellious to dilatation; and 2. The safety and efficiency of an operation for dividing the narrowed parts of the urethra by an adequate median incision carried through all the structures of the perinæum, and involving the whole of the narrowed urethra. This operation was then warmly advocated by Professor Syme for obstinate and chronic examples of the disease, although the stricture might be permeable to instruments—indeed, that it should be so, was a condition necessarily essential to Syme's operation. Perineal section had long been an established operation for impermeable stricture, but it was a novelty to perform it when an instrument could be passed through the stricture into the bladder; and a cutting operation was then declared by many surgeons to be unnecessary, if not unjustifiable, in such circumstances. Both modes of treatment have now almost disappeared. Are we to infer that progress in the art of treating stricture has, therefore, been made—that some better substitute for the methods alluded to have been adopted in their place? The answer to this question I propose to consider.

On carefully reviewing the course which surgical inquiry and practice have taken during the period named, and without troubling you in this brief record with names and details which, necessarily familiar to myself, would unduly extend its limits, I think it may be answered that progress has been made. The march of events in this, as in other matters, is not always in a right line, but rather in that of an advancing pendulum. With occasional devious movements, right and left of the *via media*, an undoubted advance is ultimately achieved.

The most important changes in relation to the treatment of stricture of the urethra, during the last thirty years, in this country may, I think, be classified under five heads.

1. A general recognition of the principle, that a delicate and gentle manipulation of any instruments in the urethra is alone trustworthy or permissible, in the place of that which was formerly greatly prevalent—viz., that urethral obstruction might often be overcome mainly by force.

2. The substitution of very pliable and taper instruments for silver and stiff gum-elastic instruments in much of the treatment, both in ordinary and in continuous dilatation.

3. A more general acceptance of the doctrine, that—given time, patience, and gentle handling—very few strictures should be met with which cannot be fairly and successfully traversed by an instrument passed through them into the bladder. At the same time, an undoubted improvement is to be noted in the mode of operating for those exceptional cases in which the surgeon fails to accomplish that object.

4. A more general acceptance of the doctrine, that dilatation of the urethra, whether with or without incision, may be carried with advantage to a somewhat higher degree than had for some time previously been regarded as desirable.

5. The substitution of internal urethrotomy in some form for the application of caustics, and for external urethrotomy on a guide.

All these may, I think, be accepted, and will be generally accepted, as illustrations of advance in the treatment of stricture.

I propose to make a remark or two on each of the topics named, at the same time venturing to indicate anything which may appear to me to be a sign of retrograde movement at any point.

I need say little on the first subject: viz., the substitution of gentleness and more careful modes of manipulation for those which were previously in vogue. Men of the present generation, however, scarcely know how rude, and, in some hands, almost barbarous, was the method of handling formerly employed in the treatment of urethral disease. The term "forcing a stricture" was then, as it had long been, an accepted surgical term both here and abroad, and denoted simply the systematic application of violence to an organic obstruction—the result of which, in nine cases out of ten, was, and could only be, the laceration of the canal and the making of a false passage. I suppose I am right in saying that such a proceeding is no longer a surgical one; and, if ever adopted, is intended to be an exceptional occurrence, and not within the limits of the rules of our art. If there was one thing more than another in the treatment of stricture which, at an early date, appeared to me unwarrantable, not to say shocking, it was the sight of a surgeon, firmly grasping a solid instrument and pressing its point with rigid arm against an urethral obstruction until something gave way, and the point was made to advance—somewhere. From the earliest time to the present, I have invariably taught, not merely that a narrow stricture can only be traversed by gentle means, but that nothing prevents success so much as a deviation from this rule; and I believe that the constant advocacy of it has not been without its influence in suppressing the dangerous practice which formerly was but too common.

The substitution of modern flexible instruments, chiefly of French origin, for the silver catheters almost invariably used thirty years ago, when the old wax or plaster bougies had fallen, somewhat undeservedly perhaps, into disrepute, has been an advance of enormous importance. I first learned the value of flexible instruments many years ago in Paris, and have used them ever since, and still desire to speak in high terms of their practical utility in most of the varied forms and kinds in which they are presented. To a certain, although limited, extent, some of them have aided us to achieve that very considerable advance in the treatment of stricture which was set on foot by the late Professor Syme, and consisted in the doctrine (first distinctly taught and illustrated by him), that impermeable stricture is a condition of extreme rarity. In other words, he proved that almost any stricture, however narrow, if urine passes outwardly through it, is permeable also to instruments in the hands of a careful, patient, and practised surgeon—provided only there is no crisis of actual retention present demanding immediate relief. The gain accruing to the patient through this doctrine has been very great: since, thirty years ago, a dissection through the perinæum for so-called "impermeable stricture" was a comparatively common operation in our hospitals; and one, moreover, which was frequently fatal. Very rarely, indeed, ought such a proceeding to be heard of now, since, with time and patience, a fine instrument can almost invariably be carried safely through any stricture into the bladder.

But these instruments are invaluable also in prosecuting the ordinary treatment known as "dilatation". Notwithstanding the small value set upon this method by some surgeons, who profess to regard it as scarcely worth the name of treatment, and desire to substitute urethrotomy in almost all cases of stricture, whether recent or confirmed, I see no reason whatever for discarding it. If the cutting operation necessarily conferred a cure, in the sense of preventing return of the disease, even in a bare majority of cases, the propriety of employing dilatation might perhaps be called in question. This point will be considered hereafter; meantime, there can be no doubt that such complete relief is afforded, and on terms which are easy, by the use of simple flexible bougies, or by the same supplied with lead cores, and, lastly, by well-polished tapering metal sounds, that I believe it to be in the patient's interest to employ dilatation only so long as it is quite efficient; and then, as soon as it ceases to be so, and mostly not until then, to adopt other methods of a more serious kind.

* Read in the Section of Surgery, in introducing a discussion on the subject, at the annual meeting of the British Medical Association in Cambridge, August 1880. See page 347.

To revert for a moment to the occasional existence of an "impermeable stricture", which has just been referred to, it may be briefly said that when, as sometimes happens, the surgeon fails, after adequate trials, to pass any instrument, however small, through a narrow or tortuous stricture, the method known as "perineal section" sometimes proves a valuable resource. Like other proceedings, it has been rendered more easy and efficient, and is a far safer operation than that which was done fifty years ago. Since that time, various little improvements have been added to the details of the performance, so as to facilitate the finding of the narrowed passage.

The "calibre" or "diameter" of the urethra, or the amount of its dilatability, is a subject which has come again to the front during the last few years: this time, from attention paid to the subject in America. This is one of those points relative to which our figure of the pendulum is in some measure applicable. It has always been a subject affording matter for discussion throughout the history of urethral surgery, relative to which, had we time, I could give you some curious illustrations. The different measurements made by anatomists at different epochs—and their name is legion—are remarkable chiefly for their diversity; and the rules of practice pursued by different surgeons have similarly varied. This is a fact which need not excite surprise, considering the complex nature of the passage, the relations of which have been so largely studied. The question is one of sufficient importance to be worth considering, perhaps, more closely. A good deal of the apparent discrepancy in the measurements, in the use of terms, and consequently in the practice of different surgeons, is due, in my opinion, to a certain failure among many to recognise what are the natural physical conditions of the passage in question. We hear of its size, of its diameter, of its calibre, as if the urethra were a tube of constant capacity—as if it resembled an artery, a bronchial tube, or an intestine. But, in fact, the urethra has no constant quality comparable with that which we call "size" in any sense in which that term applies to the passages just mentioned. Indeed, the urethra has no "size" or "calibre" when it is not used as a canal; and it is only thus used during a few minutes, one might rather say seconds, during the twenty-four hours, and also when artificially opened by the passing of a foreign body into it. It is simply a long chink, the sides of which are maintained in close contact by organic muscles, and traversing a mass of complex structures, which, like itself, are susceptible of great physical changes under different circumstances. Second to its natural contractility, the most distinguishing mechanical quality of this closely shut passage is its dilatability—a still undetermined, and, I may add, an undeterminable, quality; for its dilatability naturally varies greatly in different parts of its course, in consequence of the variety in the nature of the surrounding structures; while its own delicate walls and subjacent tissues are almost indefinitely extensible under the influence of continued pressure.

During the first third of the present century, there was a strong tendency, both here and in France, to regard the urethra as a passage of greater size than the surgeons of the preceding epoch had assigned to it, and to use larger instruments in the dilatation of stricture. Boyer advocated them, and, later, Mayor of Lausanne employed them, sometimes with much force. In this country, Pearson, who had a large experience, made a point of carrying dilatation as a cure for strictures to Nos. 18 and 20, English scale, equivalent to about 28 to 32 of the French scale. One of his instruments has long been in my possession, and is here for your inspection. A good deal of mischief followed what may have been the indiscriminate use of these large bougies; hence a reaction took place, and smaller sizes were adopted, with less beneficial influence, perhaps, upon the stricture itself, but also with less evil on the constitution of the patient. Within the last few years, Dr. Otis of New York has revived the theory of "the large diameter of the urethra", and has advocated larger instruments; besides recognising as examples of organic stricture very slight deviations from what he conceives to be the normal "calibre", or what I should regard as the possible extent of dilatability possessed by the passage. I have no intention of formally examining the views which he has enunciated relative to this matter, having no allotted time or space in this paper for the purpose. But I will venture to say, in connection with this subject, that we, on this side, may perhaps have erred somewhat during the period of reaction referred to, in not sufficiently availing ourselves, especially in the practice of lithotomy, of the large degree of dilatability which the urethra undoubtedly possesses; and that we owe to our American brethren an advantage which the latest assertion of that fact has pointed out to us. And I desire hereby to record my sense of the value of that lesson by assuring them how gratefully I receive and profit by it. But I cannot say thus much without also saying, in the same breath, that it is a very easy thing to damage irreparably some individuals by overdistending the urethra, and that such damage I have of late witnessed in several instances. I must oppose, also, another doc-

trine which is associated with the preceding, viz., that stricture of the urethra is permanently cured by complete division of all the diseased tissues affecting the passage. I have seen too many examples of return of narrowing in cases thus operated on, to admit that at present we possess any certainty of being able so to act on a confirmed organic stricture, as to ensure its non-appearance in after-life. Further, I have carefully followed many of Syme's cases of external division in his and in my own hands, where the diseased structures constituting stricture have been entirely divided, and in a way more certainly complete than any internal urethrotomy can offer; and am compelled to avow that, in very few instances indeed, has the thus divided stricture not reasserted itself after the lapse of time. Nevertheless, it is an important truth that, when any portion of the stricture escapes division, the narrowing speedily returns.

For that operation, I have myself substituted internal urethrotomy in the treatment of obstinate cases, during a period of now considerably more than twenty years, having ceased to perform Syme's operation, as a rule, in 1857. Since that date, I have performed the internal operation at University College Hospital and elsewhere some hundreds of times. My experience leads me to regard it as a far safer proceeding than Syme's in relation to life, and one which is quite as efficient in relation to the general results.

But, at the date named (1857), internal urethrotomy was rarely, if ever, employed in this country; the method best known here, viz., that advocated by Stafford, had lapsed through its inadequacy to render any important service, and dilatation and caustics constituted the treatment for the great majority of cases. Like many of my brethren, therefore, I tested other proposals which appeared soon afterwards, such as by splitting the stricture, which attained a considerable popularity for a time; overdistension, etc. Like others, too, I believe that there are good grounds for the conclusion that, for those examples of the disease which are so confirmed as to defy dilatation, those methods are inferior in permanency of effect to a well performed, that is, to a complete, division by internal urethrotomy.

Nevertheless, regarding the many methods of performing internal urethrotomy which have been proposed and practised, I doubt whether it is possible for anyone to pronounce which is absolutely the best. In every one, the object is, or ought to be, the same, viz., the complete division of the morbid tissue; but varied mechanical means of accomplishing this are originated by different minds, and different modes suit the hands of different surgeons. Each one probably prefers to accomplish the object with the instrument with which he is most familiar, and that method will generally be the most efficient in his hands. At the same time, many of the modes employed to accomplish internal urethrotomy will not ensure the complete division of the strictured portions of the urethra, and such methods must be regarded as defective.

The principles which govern a sound procedure are more essential points for the surgeon to discover and to teach, than a consideration of small details. These principles may be briefly stated, I think, as follows.

1. The necessity for a physical examination before operating, to detect and estimate the narrowed portions of the urethra. This is best accomplished, in my opinion, by means of a series of metal bulbs on slender stems, taking care not to regard as diseased changes those points at which the urethra itself is naturally only slightly dilatable. These bulbous exploring sounds I have invariably used, advocating them as essential to diagnosis in my first work, twenty-six years ago; and I still prefer them to any other, as safer, less irritating, and not less efficient, than more complex instruments which have been devised.

2. The necessity for accomplishing a complete division of all the morbid tissue constituting the stricture, by an incision carried through it; no matter what part of the urethra, or how much of it, is involved in the disease. As a general rule, this is, I think, most efficiently completed by a slender blade, carried behind the stricture, and made to cut from within outwards; this latter proviso being, however, an open question. The important point, however, is, that any alleviation of the patient's condition attained by operation will be transitory if any part of the narrowing be left undivided.

3. I regard it as essential, after such division, to place at once a full-sized catheter for some hours in the bladder, to ensure a free outlet for the urine, and prevent all possibility of extravasation of urine into and through the incisions thus made.

4. The necessity for passing full-sized bougies subsequently, at occasional intervals, in order to effect free distension of the walls of the urethra, which lie in almost constant apposition, and so to prevent reunion of divided surfaces by the first intention.

The foregoing may, I believe, be held to embody those general principles which most experienced surgeons at the present day agree—with

a few dissentients, I am aware—ought to guide us in practice. That there are different modes of carrying them out, is, as I have before intimated, a matter no less of notoriety than of necessity, as inherent in the nature of things. Such a circumstance may be regarded as one fraught with some advantage for us here, in providing scope for discussion, and so eliciting a comparison of ideas and methods among the many experienced observers who honour the Section with their presence this day. I shall, therefore, very briefly offer my own views as to the best mode which a long familiarity with the operation in practice has led me to adopt.

In respect of the instrument to be employed, I unhesitatingly avow a preference for one which, in principle of construction, resembles a slender knife with a long handle, in order that it may act completely in obedience to the impetus given to it by the hand. Concealed within a bulb at the end of the instrument is the blade; so that, before this is unsheathed, the urethrotome itself is an efficient bulbous-ended explorer (like those already employed in the previous exploration), and is used as such to identify the stricture again at the very moment of operating. With such an instrument, the incision is directed solely by intelligence, and is limited or extended according to the sensations experienced by the operator's hand, of resistance or the reverse; just as happens in the analogous instance of division of tissues which are not visible, in the case of contracted tendon in club-foot.

To my mind, having had some little experience of the last-named proceeding many years ago, when surgeon to the Marylebone Infirmary, the two operations much resemble each other, and alike require a skilled and unrestricted hand to accomplish a satisfactory division of the constricting tissues; the right amount, neither too little nor too much.

All urethrotomes in which the blade can only move in a grooved director, and this is undoubtedly the most common mode of constructing them, produce a more or less uniform mechanical result, and are incapable of effecting any variation in depth and extent of incision, often necessary to accomplish adequate division in the varying conditions requiring operation. This is what I am compelled to regard as a serious defect, and explains my preference for the bulbous-ended instrument described. It is right to say, however, that the following objection to the latter is sometimes raised, viz., that very few strictures requiring operation are sufficiently narrow to permit the introduction through them of an urethrotome, the bulb of which is equal to No. 5 or 6 of the English scale. That may be quite true; but I have never seen a case of stricture, however obstinate or narrow, which could not be temporarily brought to the size required by tying in a slender gum-elastic catheter; and I think the advantage of operating in the manner described well worth the delay of a day or two devoted to such preparation of the urethra. Still, I am quite ready to concede that an instrument which cuts by means of a blade advancing from without inwards, on a guide previously passed, may be a safer one in some hands, especially if they be not thoroughly practised in traversing the urethra. My experience of internal urethrotomy, which has been thus conducted throughout, that is, on the same principle and with the same instruments, has been from the first exceedingly satisfactory. The operation itself is fraught with very little risk; the durability of the relief afforded is the chief question to ascertain. The last twenty years have enabled me to watch the history and course of a good many cases; and, speaking in general terms, I may say that the first three or four years after the proceeding, often more, are very comfortable for the patient; after which, at earlier or later dates, say from four to seven years afterwards, he often finds himself reluctantly compelled to retreat a number or two in the size of the bougie, which he has been accustomed to pass once or twice a-month. Instead of 11 to 13, English scale, he must be content with 9 or 10, or less; but he has no symptoms to complain of. At an interval, varying in different cases from seven to twelve years, the condition in some cases becomes troublesome, and the patient finds No. 7, 6, or 5 perhaps, frequently necessary, and also that some of the old symptoms have returned. In such circumstances, I do not hesitate to advise another operation, and have occasionally performed it a second time. It so happens that I did this for one of my medical brethren only last week, having previously employed the same proceeding in 1867, thirteen years ago. I passed a No. 17 English, about 28 French, with ease, immediately after the incisions, and he is now doing admirably. In one case only, I have done the operation three times for the same patient. There is no reason why it should not be repeated, if necessary, just as we crush a second or a third calculus which may be formed after the first. In the case last referred to, the best result followed the third operation, and occasional dilatation has been quite sufficient to maintain a highly satisfactory state of the urethra ever since, although the date of that operation is at least eight years ago. I am very certain that the plan I have followed is one of great value for cases in which dilatation does not afford adequate relief; and I certainly think we are more prone to

err in withholding the operation than by recommending it too generally. Inadequate relief to the stricture involves irretrievable mischief to the ureters and kidneys; and many a life has been sacrificed to persistence in painful and inefficient attempts to dilate, which might have been saved by free division of the stricture or strictures. The formation of a free passage for the urine is the necessary safeguard for the secreting organs, and there should be no loss of time in accomplishing it by internal urethrotomy, so soon as the stricture is no longer readily amenable to the action of dilatation. But when the operation is adopted, nothing less than a free and complete division of all the obstructing tissues should satisfy the operator. It cannot be too often repeated that on this depends the success of the operation.

The great desideratum of the present time unquestionably is the discovery of a mode of treatment which shall permanently restore to the strictured passage its original dilatability. I cannot say that a thoughtful consideration of the pathological condition which constitutes organic stricture, emboldens me to hope that such a result can be insured by the application of any principles of action at present known to us. If this be so, a large and important field for labour and for speculative inquiry is open in this direction. May it fall to the lot of some abler successor to this office of mine to-day, to record the accomplishment of this great achievement before another thirty years have expired.

It remains only now for me to thank you for thus patiently listening to a sketch, which, meagre as it is, will have attained its object, if it elicits practical communications from those present, who are so eminently qualified to make them with advantage to us all.

FORTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Held in CAMBRIDGE, Aug. 10th, 11th, 12th, and 13th, 1880.

PROCEEDINGS OF SECTIONS.

SUBJOINED are abstracts of the papers presented to the several Sections at the annual meeting, and of the discussions thereon.

SECTION A.—MEDICINE.

Wednesday, August 11th.

THE chair was taken at 2 P.M. by G. E. PAGET, M.D., F.R.S., Regius Professor of Physic in the University of Cambridge, President of the Section.

President's Address.—The President, in opening the business of the Section, said: The Local Executive Committee have expressed to me their opinion that, in the Sections of Medicine, Surgery, and Physiology (subjects on which there are special addresses), the addresses of the Presidents of Sections should be confined to a few opening remarks. It is to be regretted that the time allowed for the work of the sections is so short. But, such being the case, the recommendation of the Local Executive Committee seems to me judicious. I willingly adopt it, and I think I should improve upon it by abstaining altogether from any opening address. The communications promised to our section are so numerous, their subjects so interesting and so well fitted for discussion, the authors so deserving of all the time that we can give them, that I feel I ought not to encroach on their time. I will merely express my gratification at the great number and goodly promise of the papers offered, not in this section only, but in all of the eight or nine sections among which the work of the meeting is distributed. Nothing could show more strikingly the large development of the Association since it last met in Cambridge sixteen years ago. Then, as President of the Association, I presided at the reading of all the papers that were offered, whether on medicine, surgery, physiology, or sanitary science. They were all read before the general meetings of the Association, and there was time for them all. There were then no sections. There was no need of them. There had been no need of them at previous meetings, nor was there at the meetings that followed, at Leamington and Chester. The necessity for dividing the work among sections was not felt until the Association met in Dublin. Since then, the number and value of the scientific contributions has been continually increasing from year to year. This is a fact on which we may justly congratulate ourselves. It is the best evidence that our Association is really carrying out the chief purpose of its foundation—the advancement of medical science. And there is not the less satisfaction in perceiving that this marked increase in scientific activity is not confined to our Association, but is manifested in various ways throughout the whole medical profession of the United Kingdom. The number of medical practitioners is not