LECTURES ON SOME IMPORTANT POINTS IN CON- NECTION WITH THE SURGERY OF THE URINARY ORGANS.

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LECTURE I.—INTRODUCTORY. THE TREATMENT OF STRICTURE OF THE URETHRA BY INTERNAL URETHROTOMY.

It will be my object, in this course of lectures, to consider certain grave forms of disease which affect the urinary passages, for the purpose of examining the nature of these affections, and to discuss the best method of treating them. I cannot enter upon this important task without expressing my deep sense of the very high honour which the Council of the Royal College of Surgeons confers in assigning to me the position which I occupy to-day. Equally also am I conscious of a profound feeling of responsibility in accepting their invitation to present, in this place, an exposition of opinion relating to some of the most important themes of thought and activity which have occupied the intellects and the energies of surgeons from the earliest time to the present day.

There are two considerations which I am bound to submit to you, since they are those which have influenced my own mind as in some degree a justification for my presence here, and which sustain me in view of the task imposed. The first is, that a period of twenty-five years at least of very active engagement in the practical observation and treatment of the diseases in question has furnished an experience which, I believe, is almost without parallel at the present day. The second consideration is, that it has been my habit from the very first carefully to record at the time, in writing, every case I have seen; and that such notes are systematically arranged and preserved, so that they can be produced and referred to whenever required. It is my sincere desire now to offer to my professional brethren a faithful epitome of these facts, so far as they relate to the subjects treated in this course of lectures.

One word more I venture to utter regarding myself, and I do so only for the purpose of explaining how it is that the experience referred to has been so ample in regard of these particular diseases. I do so with the less difficulty, because the explanation is found almost solely in connection with our Royal College here. I just now spoke of twenty-five years of active surgical practice; but thirty-three years have elapsed since the Council of our College offered for competition, in 1851, as the subject of a Jacksonian Prize, "The Pathology and Treatment of Stricture of the Urethra," many questions concerning which were at that time warmly discussed by the profession both at home and abroad. The time happened to coincide with my entry on professional life, after an active house-surgeoncy at my hospital and elsewhere; and such a proposal offered the very occupation wanted by one whose time was now unoccupied, and who desired nothing so much as a defined object at which to work seriously and laboriously. It was the accident of obtaining that award, and, not long after, another Jacksonian Prize—an essay on the Prostate in 1859—which determined the nature of a career which I had never dreamed of thus shaping for myself. I claim, therefore, the honour of being in an especial sense—and it is a legitimate source of pride, I trust, within these walls, to do so—a son of our noble College; and, after the third of a century continuously devoted to studies thus initiated, I am here to report myself at the paternal hearth to-day, happily finding one of my earliest teachers and college-friends worthily occupying the presidential chair. The seeds were sown, sir, by your predecessors here; and they selected the variety which was distinct. The gathered harvest could only correspond thereto; and, such as it is, I desire, with your permission, to garner it here.

[The lecturer then gave a brief but carefully considered historical sketch of the treatment of stricture of the urethra, in England and abroad, during the present century, with a view of "tracing the formation of opinion respecting it, and of pointing out a growing con-

currence in opinion among practised surgeons that, in dealing with stricture by operation, free incision of all the opposing structures must be adopted, or the result will be temporary only, and disappointing.]

I have just alluded to Professor Syme's early enunciation of this principle, which he decided for himself could only be effectively realised in practice by an operation performed in the perineum, a proceeding which met with great opposition here, and was the occasion of a very acrimonious discussion. A cardinal defect in his method is now, at this distance of time, apparent. Recognising the truth on which I have been insisting, that the division of the stricture, must be complete, he limited himself to the division of one stricture only, rarely being able to reach or deal with two from the perineal wound. If, indeed, he cared to recognise the existence of multiple stricture; or, at all events doing so, he believed in the disappearance of other or minor contractions, after the principal stricture had been freely divided. There is no warrant, however, for any such belief; it will not suffice for the purpose of affording substantial relief to a patient, whose urethra is narrowed by stricture in two or three distinct situations, to divide, however freely, only the chief of these, and leave the rest untouched. So far from a secondary narrowing disappearing after what has sometimes been termed "the master stricture" has been cut, it often happens, at no distant period, that the points formerly slightly affected seem to assert themselves more obstinately than before. I cannot, therefore, insist too strongly on the value of an axiom, which I will venture thus tersely to formulate—"if you cut at all, cut all," that is, all the points in the urethra at which the presence of obstructing deposit is to be demonstrated, and all the obstructing tissue at each point. Such is the unhesitating conviction which a long experience of internal urethrotomy has forced upon me.

In the year 1854, I published the Jacksonian essay referred to; and, after much personal intercourse and study with Professor Syme, I adopted his view in relation to the permeability of stricture—a circumstance which I now regard as one of the most valuable of the many important lessons I learned from that most able, fearless, and honest man. I have, in the course of my life, met with three instances in which, after much careful manipulation, I have been unable to pass an instrument fairly into the bladder; and in these three instances only have I performed perineal section for the relief of stricture without a guide previously passed. Between 1852 and 1855, I operated by Syme's method of external urethrotomy upon a grooved staff nine times only, thenceforth exchanging it for internal urethrotomy, which I have practised systematically ever since; at first, on the very worst forms of the disease only, and gradually, as the result of increased confidence in it and satisfaction with the results, much more frequently than at first. And now and then, but very rarely—for example, when large abscess and perineal fistula affect the perineum—the division on a grooved staff has still been resorted to. These remarks on this important subject lead me now to present briefly an epitome of what my experience has led me to regard as the safest and most efficient mode of treating a confirmed example of organic stricture of the urethra.

I think it will be agreed by most experienced surgeons that, on first verifying the presence of an urethral narrowing, the history of which is recent, as a rule, nothing need be done beyond gradually restoring the calibre of the canal to its normal state, or thereabouts, by means of flexible bougies. The well known form styled "olive" can scarcely be improved; and if it be desired to carry the process of dilatation as far as possible, the well polished tapering silver or silver-plated steel dilators are very efficient, and at the same time unirritating to the passage. Modifications of the flexible bougie are, however, now so numerous, in regard of form, material, and even also of their internal contents, that each surgeon will doubtless employ most advantageously that which best accords with his own views, and with his own manner of manipulating. There are, of course, congenital organic as well as acquired narrowings of the external meatus, and near to it, which will not dilate, and which a simple incision suffices to divide. Strictures also affecting the canal within three or four inches of the orifice do not benefit much, or for any prolonged period, by dilatation. But when, in the ordinary case of recent stricture, the canal has been restored to a full calibre by dilatation, it may be often maintained so by an occasional regular use of the bougie by the patient himself for several, sometimes for many, years. In after life, however, as all the tissues become more rigid, those which form the stricture also dilate less readily, and a smaller instrument than formerly can now only be passed. But sometimes even this sign scarcely shows itself; for which reason I think it unwise, as a rule, to propose an operation in the early stage of stricture, but prefer to afford a patient the chance of its being amenable for many years, if not altogether, to the very simple treatment indicated. But whenever a decided tendency to contract

manifests itself, be it sooner or later, I think it is wise to resort to internal urethrotomy without delay. Were this plan always pursued, we should have no perineal abscesses or fistulae, no consecutive chronic cystitis, with organic changes in the bladder, ureters, and kidneys, as a result. To advise the delay of an operation until symptoms indicate that such complications are appearing, involves complicity in a course which irretrievably damages the patient's life. Hence I have no hesitation now in advising internal urethrotomy whenever organic stricture, single or multiple, near or distant from the meatus, shows signs of not yielding readily to dilatation. No delay is, in these circumstances, of any value as regards the stricture.

When cases are first met with in a more advanced stage; when the use of dilating instruments is liable to be followed by temporary retention of urine, or by rigors, then very little question can arise as to the propriety of operating. It is very rarely too late to incur any risk there may be in doing so; and the persistence of the phenomena mentioned must, if not checked, undermine the constitution of those who are the subjects of them. In relation to those cases in which rigors almost always occur after the passing of a bougie, I know nothing so admirable as the results of urethrotomy; since, if completely performed, the operation itself is, in these very cases, rarely followed by such an occurrence.

I am convinced, therefore, of the necessity of ensuring complete division of all the obstructing tissue; not only in relation to future results, but to the present well-doing of the patient; and thus have an additional support for the value of my maxim: "If you cut at all, cut all."

This brings me to a very important subject. How are we best to ascertain, before undertaking to divide the morbid tissues constituting stricture, what are their extent and situation? In other words, what is necessary, for our purpose, to be done in order to diagnose the physical condition of the urethra?

It may first of all be remarked that, in a simple and recent case of strictured urethra, and therefore for a large proportion of all the cases of stricture, a very simple proceeding suffices to ascertain where and to what extent the canal has been morbidly narrowed. And as all instrumental interference with the urethra, however delicately effected, is apt to provoke irritation, which in a few persons is serious, we are not warranted in introducing large or complicated mechanical contrivances for the purposes of diagnosis, at all events in recent cases.

It suffices for the purpose to introduce a full sized bougie, by which I mean one which will pass in a healthy urethra without stretching it, merely separating its walls, to about the same extent as the flow of a full quantity of urine will do, when it passes naturally. Such a stream, in most persons, equals a volume, perhaps, of ten, eleven, or twelve of the English scale. If such an instrument fail to pass, we diminish the size until one is found which does pass; after which, dilatation may mostly be speedily and effectually made, and nothing more may be necessary. If more specific information be desired, in an exceptional case, a series of solid bulbous-ended instruments, of which the stem is slender, and each bulb follows the sizes of the catheter-scale employed, will supply accurately the data required, and on the easiest terms possible to be obtained. Such a series I have used for thirty years, and no other except for trial; and I have never seen any plan equal to this for simplicity, efficiency, and for effecting the object without inducing irritation. They are better also than flexible instruments of the same form, which are less easily used, and are far less accurate in the indications they afford.

Suppose, then, the case of a patient for whom it is decided to perform internal urethrotomy. The external meatus is first examined, and is often found to be contracted; a bulb, say No. 12 or 13 in size, passes tightly through it, and stops perhaps at an inch or more from the orifice; after the use of three or four smaller sizes, a No. 9 passes, and meets a check at five inches; and here, after other trials, a No. 2 or 3 goes on into the bladder. On withdrawing the bulbous instrument, the situation of the contracted parts is again verified by the check which the bulb receives in passing them in its progress outwards. It is clear, therefore, in such a case, that there are at least two chief points requiring incision, besides the orifice. This is all that need be ascertained before the patient is rendered insensible for operation, when the examination may be repeated, if the surgeon desire to do so with more minuteness before incising.

Now, at this point, it is necessary to consider some preliminary questions of importance—namely: What is the principle on which an intra-urethral incision which is out of sight ought to be made; and what is the best instrument to accomplish the purpose? Is the division of tissue to be complete, and to be made solely according to the judgment of the operator; or, is it to be made by a machine, the action of which is not necessarily to divide all opposing tissue, but

simply to do so sufficiently to permit the introduction of a fair-sized catheter through the urethra, when the cutting-instrument is withdrawn? For example, we may introduce a small grooved staff along the urethra into the bladder, and then slide along the directing groove a blade more or less protected, so as to divide such tissues as lie within range of its point or edge, and no more. But this, I contend, is not an efficient mode of dealing with urethral obstruction, if its complete division is the object to be attained. Complete division, indeed, is rarely thus accomplished; much of the diseased tissue usually escapes the blade; the result is uncertain, and is far less perfect than that which follows a section made by a knife, directed by the will of the surgeon against the resistance encountered at the time, and previously ascertained by exploration. I suppose that a keen blade of appropriate form, and completely under the control of his hand, would be always employed by a surgeon, for use in any other part of the body than the urethra, when he desires to make an incision, the limits of which are to be carefully defined. For my own part, I can see no reason why that spot alone should be excepted from the action of this principle.

Take the fibres which confine a hernia, for example; here, the finger and the blade act in perfect harmony, the section depending entirely on the delicate perceptions of the former, which determine the surgeon's judgment during every moment of the cutting act. The section in tenotomy is, perhaps, a still more apposite illustration of the necessity that exists for an intelligently made division of every fibre, which opposes the return of the limb to its natural position. In both instances the section is made from the sense of touch only, and without the aid of vision: and it appears desirable that a like control should govern the act of dividing those bands which encompass the urethra and form the stricture. No mode of section is half so certain, so safe, and so satisfactory, as that of drawing through them from within outwards a little blade attached firmly to a long slender handle, a proceeding completely under the control of the surgeon's hand. I know that this is not the generally accepted mode of operating either here or elsewhere. It is precisely for that reason, cherishing as I do strong convictions as to the superiority of the method, that I have determined to make its advocacy the main theme for our consideration to-day. I am told, both here and abroad, that the cutting blade sliding in a groove, of which Maisonneuve's instrument is the type, is so simple and safe a proceeding that any man, however unpractised, may perform it. Is that a reason in its favour? The same doctrine was very lately taught in relation to the method of splitting strictures by means of two diverging rods, at one time so much in vogue, now so completely and so properly neglected, but always so easy of performance! Are we to accept an unsatisfactory proceeding because of its universal applicability, and thus be content to establish an imperfect standard for the sake of bringing it within the reach of incompetent operators? Between the two systems now under consideration, there is this difference; one is the product of a machine, and the other is the handicraft of an artist. And the same distinction, which is so obvious in regard to innumerable forms of human activity, between the uniform and commonplace results of machinery and the finished achievements of the intelligent painstaking artist, marks the character of the two modes of operating now in question. And let me remark that the practice of operative surgery becomes a sorry occupation if it be not indeed an art, and a very fine art, too! So far as it becomes a mere matter of mechanical contrivance, it ceases to be worthy the devotion of a man of parts. A cultivated hand is the most cunning and effective source of power; and the simpler the instrument employed the greater is the influence of that hand, and of the intelligence which guides and permeates it.

In operating for stricture, I have, during the last twenty-five years, used only a little blade with a long handle, and have always commenced by placing that blade on the further side of the stricture, and made the incision in a direction towards me, that is, from behind forwards, cutting just so much in length and in depth as the obstruction perceived at the moment appears to demand.

Now, in order to place a small blade beyond or on the bladder-side of a stricture, a certain amount of space in the urethra is required. In the case above supposed, in which the deeper stricture of the two admits only a bougie No. 2 in size, there is not room for a sufficiently strong instrument containing the blade to be so placed; but a little dilatation will enable it to pass. The calibre of No. 5, English, suffices for our purpose. Hence, in such a case, I simply tie in a gum-catheter (No. 1 is ample for the purpose), and retain it there two, or at most four, days. By that time, without changing the catheter for a larger one, or if so only once, the necessary enlargement of calibre is accomplished.

The urethrotome which I employ is made on the principle of the one used many years ago by Civiale, modified in one or two points by

myself. The bulbous end has a mean diameter of No. 5; the stem is about 2½ or 3. The patient being under the influence of an anæsthetic, the little catheter which has been tied in is withdrawn, and the urethrotome is first introduced as far as to the deep-seated stricture, through which the terminal bulb is then insinuated. It must now be passed fully half or three-quarters of an inch further in, that is, beyond the stricture; and the blade being exposed in a direction towards the floor, is pressed firmly thereon and drawn forward, until all resistance, sometimes considerable, is completely overcome. A touch on the button near the handle sheaths the blade, and the outward movement proceeds until the site of the second stricture is reached, when another incision is made in the same manner as before. The urethrotome is then withdrawn, and the meatus freely divided by a scalpel or short urethrotome. I next take a blunt metal bougie or dilator, No. 15 or 16, English size, and ascertain if it will pass without obstruction into the bladder. It generally does so at once; if, however, its progress be arrested at any point, the situation of this is carefully noted, when I withdraw the dilator, reintroduce the original urethrotome, and divide the opposing tissue; but this, as I before said, is seldom necessary. I may add that I am very rarely satisfied with anything less than the free and easy passage after the operation of a metallic sound, No. 16 in size; in some cases, No. 17 or even 18 will pass. A gum-elastic catheter, No. 12 or 13, is then tied in, and should remain always 48 hours; with an extra 24 or 48 hours, if the incisions have been deeper than usual, or if hæmorrhage be free or continuous, the latter being a very exceptional occurrence.

It is sometimes objected that, if a small instrument can be easily passed through the stricture, and if this may be easily dilated so as to admit an urethrotome as large as No. 5, why should any cutting operation be performed? The reply need only be brief; the object of division is to remedy the tendency to recontract, which certain strictures exhibit, and which almost all do when they have continued several years. In other words, it is marked contractility in a stricture, and not mere narrowness, which renders operation by incision desirable.

An important inquiry remains: What are the results of internal urethrotomy in relation to the reappearance of stricture? Does the operation free the subject of it from that liability to return which constitutes the very serious character of the disease when treated only by dilatation?

The reply to this question cannot be a simple and categorical one; it must be made with limitations.

I may remark first, that it may be taken for granted that no mode of urethrotomy which fails to ensure complete division of the obstructing tissues has a chance of affording permanent immunity from the complaint. Whatever be the mode of operating, if incomplete division only be effected, the patient will find his urethra narrowing after a more or less prolonged interval of time. What happens then in those cases in which, as far as the operator can judge, he has effected a complete division? Well, I am free to confess that it is not possible to promise immunity from return. We may render the period of return as remote; we may produce a good calibre, easily maintained by occasional regular dilatation, a procedure which, before the operation, was not only ineffective, but painful and irritating. We may place a patient in a condition of health and comfort for several years, meantime saving his bladder, ureters, and kidney from the slowly but surely occurring grave changes which threaten his existence. Now and then, but rarely, I have met with a case in which the patient's troubles have never re-appeared. I am certain we cannot reckon on this result as a rule, and I mistrust claims to the contrary as due to error of judgment, or want of information, or as prematurely made, *i.e.*, without waiting sufficiently long to observe remote results. In enunciating this opinion, I have no hesitation whatever. But herein I have stated the worst in regard to the patient's prospects, and have shown you the reverse of the medal. Thus, supposing after a few years the patient finds himself unable, through re-appearance of contraction, to pass a bougie of adequate size, division can again be resorted to. It is not a dangerous proceeding, necessarily occasioning hesitation on the part of the patient, when his condition demands relief. Just as in calculus cases, a second, a third, or even a fourth stone can be, and often is, safely removed by lithotripsy when, after the lapse of time, fresh products are formed; thus also may a stricture be dealt with by this operation, a second or a third time if necessary. By the prompt resort to the remedy, should it be again required, the disease may be confined to the canal, and the real gravamen of the malady, the implication of vital organs, certain to result after long continued ineffective dilatation, is altogether avoided.

I have performed this operation now for between three and four hundred patients. Some of my earliest cases were, from want of suffi-

cient confidence and experience, less completely and freely cut than those on whom I have operated of late years, and a few of the early patients have been recut. I have not regretted such advice in a single instance, for the advantage to them has been undoubted.

The risk of the operation is very small. Estimating the number of patients on whom I have performed it as 340, which is within five, more or less, the deaths have been six, or not two per cent. These were due to pyæmia in three, to embolism in one, to extravasation and exhaustion in two; one of the latter was a case in hospital almost thirty years ago, among my earliest, and he was unfit for any operation.

The sum of my experience is the expression of a strong conviction that internal urethrotomy, completely performed, should be resorted to as the best and safest treatment of stricture, as soon as the easy use of the bougie fails to maintain the urethra patent, or to allay signs of irritation in the bladder arising from obstructed urethra. It is the best means not only for relieving urethral obstruction and its painful symptoms, but for ensuring the future sound condition of the organs which lie behind it.

A CLINICAL LECTURE ON TROPICAL LIVER-ABSCESS.

Delivered at Charing Cross Hospital, May, 1884.

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GENTLEMEN,—You will remember that, when recently directing your attention to the case of J. S., who was suffering from tropical diarrhoea, I pointed out to you certain complications which seemed to remove it from the category of ordinary examples of this disease, and to render the prognosis more doubtful than it might otherwise have been. The symptoms referred to were a continuous daily rise of evening temperature to 100° or 101°; a tendency to sweat; a dry, glazed, and fissured tongue; anxious expression of countenance; a sense of fulness, sometimes of pain or uneasiness, on pressure over the liver; some tension of the recti muscles; with defective respiration, signs of consolidation of the base of the right lung, and cough. At the same time, the diarrhoea from which he had been suffering had ceased, and the dejections had become formed though copious, once a day, as is the case when much milk is taken. On the 7th instant, I found that symptoms of hepatic mischief had become more pronounced, and there was an appearance of bulging of the right side, which was not, however, confirmed by measurement.

His condition had become one of grave anxiety. At my request, therefore, Mr. Barwell introduced an aspirating trocar and cannula between the eighth and ninth ribs, in a line between the axilla and nipple; and, as I anticipated, pus escaped through the tube. The opening was at once enlarged by a free incision, and about thirty ounces of thick dark coloured pus, mingled with blood, escaped. A large drainage-tube was placed in the wound, the strictest antiseptic precautions being observed throughout the proceeding. The patient experienced great relief, and there was a rapid fall of temperature, which has remained normal since the operation. The look of anxiety and suffering, and the pain in the hypochondrium, have passed away. The sweats have diminished. He eats and sleeps well.

The case is one of considerable interest, and so instructive in its character that I have thought it well to invite your attention to it, and at the same time make it the text for some remarks on the subject of tropical liver-abscess generally. I speak of this disease as "tropical," because it most frequently occurs in those who live in hot and tropical or subtropical countries, or who have resided there for some time previously, as was the case with our patient, J. S. Of course, the liver may suppurate from certain causes anywhere; but the form of liver-abscess I am now considering is essentially a disease peculiar, if not confined, to hot climates; or rather, I should say, the conditions which give rise to liver-abscess are prone to occur in those countries; the suppuration itself may appear after return to a temperate climate, as in S.'s case.

Hepatic suppuration is not limited to the tropics, it may occur anywhere; but, in this country, it is comparatively rare, and is generally due to septic absorption from some wound, operation, or ulcer of the stomach, gall-bladder, or its duct; or to suppuration in the pelvic cavity or about the hæmorrhoidal region. Such cases are pyæmic, and