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PRACTICAL OBSERVATIONS

ON THE

Treatment of Permanent Stricture

OF THE

URETHRA.

BY ROBERT WADE, F.R.C.S.

SENIOR SURGEON TO THE WESTMINSTER GENERAL DISPENSARY.

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BY ROBERT W. WALKER

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PRACTICAL OBSERVATIONS, &c.

THERE are probably few diseases that require greater skill and judgment in their management than obstructions of the male urethra. There are none, I believe, in which more mischief is done by rough handling, much gentleness and care being essential for their successful treatment. In its diseased state the urethra often becomes highly sensitive, and, should the introduction of instruments be then required, it is evident that lightness of hand and delicacy of touch are very necessary qualifications in the surgeon who has to use them. Although stricture of the urethra, when properly treated, in its early stage, is comparatively of slight importance; in its more advanced state, when, in fact, professional aid is usually required, it is frequently a source of great misery to the unfortunate sufferer, rendering his life truly wretched, and taxing to the utmost the skill, patience, as well as perseverance of the surgeon. As the end and aim of all our attainments should be the relief or cure of disease, I trust that a few practical observations upon the treatment most likely to be successful in many troublesome forms of urethral obstructions may prove of some utility, more especially as such observations are the results of considerable experience in investigating the effects of different curative measures applicable to such affections. Permanent stricture of the urethra is essentially a surgical disease; for, although medicine may do much to mitigate suffering, by improving the general health when impaired, by allaying irritation, and by keeping the urine, which should be frequently tested, in as healthy a state as possible, the cure of the complaint can only be effected by the manipulations of the surgeon. The means adopted by surgeons for the removal of strictures of the urethra are—1st. Dilatation. 2ndly. The application of caustic. 3rdly. Division of the stricture, either from within, by the lancetted catheter, or from without, by perinæal incision. Dilatation is the most simple, and, in my judgment, the best method of proceeding where it is found to answer. It is the one usually adopted, and,

when carefully conducted, causes generally but little pain or irritation. Many surgeons have their favourite instruments for effecting dilatation; some giving a preference to the silver catheter, others to the solid metallic sound, whilst the elastic gum and plaster bougies have also their advocates. When strictures will bear them without much irritation, metallic sounds or catheters, particularly the former, are, I believe, generally the best instruments to employ; indeed, in old hard strictures they are frequently the only efficient dilators. There are, however, many cases where their introduction either causes too much irritation, or cannot be effected, and in which the plaster bougie will be found of great value. The catgut bougie is principally useful in cases of retention of urine. I very rarely use the gum elastic bougie, as its extreme flexibility renders it difficult to know where the point of the instrument is pressing. The conical bougie, which gradually tapers from within an inch or two of its point, has always appeared to me to be objectionable; for, unless of very small size, should it meet with obstruction in passing along the urethra, it will be almost impossible to know whether the point of the bougie, or its increasing diameter, constitute the impediment to its advance. The intervals for the introduction of instruments, as well as the time they should be retained, must be regulated by the degree of irritability of the urethra and bladder in each particular case. Very little attention will be sufficient to instruct the surgeon what length of time it is best to allow an instrument to be retained, as also the proper period for its re-introduction. As a general rule, instruments should not be kept in the urethra less than from five to twenty minutes; and in old hard strictures, I usually let them remain from half an hour to an hour. Mr. Syme tells us that bougies should not be permitted to remain in the urethra more than one or two seconds; as, however, the bougie must be regarded as exerting a mechanical as well as vital action, I do not understand how it will be possible, by its retention for so short a time, to accomplish the dilatation of a stricture of any standing. The mere passing a bougie through the obstruction, I believe, will often increase the irritability of a stricture, when the retention of the instrument for a few minutes would have considerably diminished its morbid sensibility. As the treatment of stricture by dilatation is that which is usually adopted, I shall conclude my remarks upon that method by a few summary observations. As a general rule, the more gently and gradually dilatation is effected the more permanent will be the relief afforded. In the majority of strictures, especially when of long standing, silver catheters, or steel sounds plated, of a proper length and curvature, especially the latter, from their having more solidity than the former, are the best dilating instruments. Dilatation, by retention of catheters,—a treatment which has lately had its advocates,—should, as it appears to me, be

employed only in a few cases of a particular character. My reasons for objecting to the general employment of that method are the following:—1st. That rapid dilatation, even when accomplished under the most favourable circumstances, according to my experience, is seldom so satisfactory in its results as when that process is more slowly effected. 2nd. That the prolonged retention of instruments is likely to cause no slight degree of urethral irritation and inflammation, which, in irritable habits, will very probably not be confined to the urethra, but affect the bladder also. To these inconveniences may be added the occasional occurrence of abscess in the prostate or perinæum; and, perhaps, more or less condensation of some portion of the cellular tissue immediately external to the urethra, as well as constitutional disturbance of a more or less serious character. 3rd. This treatment requires strict confinement of the patient to his room, a low diet, and, frequently, a rather free administration of opiates, which, although they may be regarded as mere trifles by the rich and strong, are of no trivial import to him who must live by head or hand; nor are they to those whose vital powers have become depressed by long suffering. There are, however, some advantages to be gained by this plan of treatment; that, in some cases, notwithstanding the risks and inconveniences of the method, it should be adopted. In cases of retention of urine, where there has been considerable difficulty in the introduction of the catheter, it should be retained, if practicable, for a period of from twenty-four to forty-eight hours. When there are false passages, and some difficulty is experienced in getting an instrument into the bladder, the treatment by retention of the catheter will often prove of great advantage to the patient. In old, hard strictures, especially when long and irregular, the occasional retention of a catheter for a day or two will sometimes much facilitate their subsequent dilatation. In irritable strictures, when the introduction of instruments is usually succeeded by rigors, Sir B. Brodie recommends this method, having found that retention of a gum catheter, by protecting the irritated lining membrane of the stricture from the contact of the urine effectually prevented the occurrence of rigors. In similar cases I have, however, often succeeded in removing the irritability of the strictures by two or three very mild applications of potassa fusa. In concluding these few imperfect remarks upon dilatation, I must acknowledge that it appears to me almost impossible to prescribe such general rules as are applicable to the infinite varieties of strictures, diversified by individual peculiarities of constitution, and, consequently, requiring some modifications in their management. No man can possibly predict precisely what any urethra will bear until he has fairly tried its temper.

With few exceptions, Practitioners of the present day, in their treatment of stricture, depend almost entirely upon dilatation, to the exclusion of all other means, from the sup-

position that it is the only safe method of proceeding. It must surely, however, be admitted, that to be successful in the treatment of any disease the means employed should be adequate to the attainment of the end in view. Although dilatation, in the hands of a good surgeon, may succeed in the generality of instances, yet it will not do so in all; for cases not unfrequently occur in which other measures must be adopted, or many an unfortunate sufferer from urethral obstruction be left to drag on a miserable existence, and perhaps be eventually destroyed by the giving way of the urethra, and subsequent extravasation of urine. For the relief of such cases, caustic has been proposed and successfully employed by many surgeons of high character. I shall endeavour to place fairly before the Profession the result of my experience upon this method of treatment. It is not from any hastily-formed views upon this subject, from the attainment of success in a few instances, but from more than twenty years' observation of the effects of caustic in bad cases of stricture, that my conclusions have been drawn. The caustic potash has, indeed, proved to me of very great value in the cure of stricture in its most aggravated forms. Various escharotics had been used for the destruction of strictures, by Wiseman and others, long before the time of Hunter. In the following remarks, from Mr. Hunter's "Treatise on the Venereal Disease," will be seen the result of his experience of the application of the nitrate of silver to strictures:—"If the obstructions are anywhere between the membranous part of the urethra and glans, where the canal is nearly straight, or can easily be made so, it becomes an easy matter to destroy them by caustic; but if beyond that, it becomes then more difficult; however, at the beginning of the bend of the urethra the obstruction may be so far removed as to admit of the passing of a bougie, or at least to procure a tolerably free passage for the urine. I have seen several cases where it was thought necessary to follow this practice, and it succeeded so well, that, after a few applications of the caustic, the bougie could be passed,—which is all that is wanted. I look upon the caustic as a much safer method than using pressure with a bougie, on account of the danger of making a new passage without destroying in the least any part of the obstruction." In another passage, Mr. Hunter observes:—"I have often tried this practice in strictures where there were also fistulæ in the urethra, and where the water came through different passages. Such cases are not the most favourable; yet I succeeded in the greater part of them: that is, I overcame the stricture, and could pass a bougie freely. I have seen several cases of fistula of these parts, where the natural passage was obliterated by the stricture, in which I have succeeded with the caustic, and the fistulous orifices have nearly healed. Sir Everard Home, in his well-known work on Stricture, has strongly advocated the employment of the

lunar caustic. He not only used it in aggravated forms of that disease, but indiscriminately in all urethral obstructions, with a boldness and to an extent that frequently caused great suffering, such as rigors, retention of urine, and sometimes profuse hæmorrhage. Sir Everard Home's work on Stricture has always appeared to me to be of great value; for, whilst the capabilities of the caustic in removing many bad forms of that disease are proved to be a sufficient number of facts to convince all but the ultra-sceptical, its injurious effects are also stated with a candour well worthy of imitation. That the treatment by caustic was frequently adopted by Sir Everard, in cases where the employment of milder measures would have been more judicious, and that it was pushed by him occasionally to an injurious extent, cannot be denied. That his recommendation of the employment of the nitrate of silver in all cases of permanent stricture, led, in many instances, to a fearful abuse of the remedy in the hands of others, must also be admitted. Mankind generally are apt to entertain extreme views, and because rigors, false passages, and sometimes debilitating hæmorrhages were found to result from the caustic treatment, or rather its abuse, a really valuable means of cure in many intractable cases of stricture was soon abandoned by the generality of surgeons. After the ample evidence of the powers of the nitrate of silver in removing many strictures that had remained impermeable to the bougie, recorded by Hunter, whose truthfulness and accuracy of observation are unquestionable, besides the great number of cases of a similar character mentioned by Sir Everard, one would imagine that the capability of caustic to destroy many obstinate forms of urethral obstruction could scarcely be questioned by any rational being. As if, however, to prove how far professional scepticism can be carried, in a pamphlet on stricture, published by Professor Syme, we have the following observations:—"I do not hesitate to express my persuasion, that a real organic stricture cannot be removed by caustic; since, even admitting that the agent could be accurately applied, the destructive effect of the nitrate of silver is so limited, as to be quite inadequate to the purpose, while that of potass is so diffused, that, in the event of destroying the stricture, it must cause a worse one through the unavoidable loss of substance attending its operation, and the consequent contraction in healing. On the whole, it seems more probable to conclude, that in the alleged cure by caustic, there was no real stricture in existence, than to suppose that so improbable or rather impossible an achievement had been accomplished." (Page 52.) It appears probable, however, that since this passage was written, Mr. Syme has found out that there were surgeons who seemed more inclined to place confidence in the ample experience of Hunter, Home, and others, than in his own recorded "persuasion," that a stricture cannot be removed by caustic;

for of Mr. Syme's personal experience of the caustic treatment, as he has given us no proofs, we may naturally conclude he has none to offer; which conclusion, it appears to me, is much strengthened by some observations in the *Monthly Journal of Medical Science*, for July, 1850, in which, I regret to say, the laws of common courtesy and liberality that should characterise all scientific discussions are so completely forgotten, that it might be imagined some enemy of Mr. Syme's had written them and appended a name so distinguished in the annals of surgery. In those observations even the dead are summoned from their graves to aid the author in his extremity; for we are there favoured with the perusal of some letters addressed to the grandfather of the present Mr. B. Bell. It might reasonably be supposed that these letters, eight in number, thus disturbed from their time-honoured slumbers, contained ample evidence of the inutility of caustic in stricture, from men who had fully and impartially tested its curative powers in that disease. It turns out, however, that these letters were written by Sir E. Home's contemporaries and rivals in practice, who were opposed to his treatment, and consequently urged every possible objection against it. These antique documents have lately been hunted up by the present Mr. Bell, from some quiet depository where they had innocently reposed for nearly half a century, and presented to his friend Mr. Syme. It appears that the late Mr. B. Bell himself was not only strongly opposed to Sir E. Home's treatment, but that he also took some trouble to procure the opinions of surgeons who were favourable to his own views. What remedy, I should like to know, will have a fair chance of success in the hands of him who is strongly prejudiced against it? It surely would have been but even-handed justice in Mr. Syme, if he had at the same time also published a letter of Sir E. Home's to the late Mr. B. Bell, which appears in Sir Everard's second volume on strictures. A gentleman suffering from bad strictures had been for some length of time under the care of Mr. Bell, who, amongst other remedial measures, had also used the nitrate of silver, but without success. This gentleman, finding he got no better, applied to Sir E. Home. Sir Everard's letter is in reply to one from Mr. Bell, which contained an account of the treatment that had been adopted whilst the patient was under the care of the latter, and is as follows:—

“ Sackville-street, Sept. 19, 1799.

“ Dear Sir,—The condemnation of my mode of treating strictures flattered me exceedingly, as it is evidence on record of my having acquired a more extensive knowledge of the disease than had been attained by the surgeons in Edinburgh. After such a decision success was hardly to be expected from the use of caustic in your hands; it will however, gratify a man of your humanity to learn that five

applications of the armed bougie, without the aid of medicines, have enabled the patient to pass a full-sized bougie into his own bladder; and, as all his other complaints have left him, you will agree in believing that they must have been symptomatic of the stricture in the urethra.

“ I am, etc.,

E. HOME.”

I know that many excellent English surgeons are in the habit of occasionally employing the nitrate of silver in bad cases of stricture, and often with successful results. Among others, it will be sufficient to mention the names of Bransby Cooper, Guthrie, Mackilwain, and Phillips. Several cases treated with caustic will be found recorded in Mr. Bransby Cooper's cases of stricture in Guy's Hospital Reports. Mr. Guthrie's observations upon this method of treatment are so much to the point that I shall venture to repeat them here. Mr. Guthrie, after having alluded to the prejudices which have long existed against the caustic treatment of stricture, observes, “ that, like most other prejudices, they have some foundation in truth, but it is the abuse of the *argentum nitratum*, and not the use of it, which has given rise to them. I honestly confess, that I dare not say to a stranger, whatever his case may be, and however successful a few applications of the caustic might be, that I meant to use it. I dare not do so until after a few visits, and we have more confidence in each other; perhaps, only after he sees that he does not make much progress. I should lose my patient if I did, who would go to another, and might be told, that he had narrowly escaped the worst treatment in the world; an opinion he would not fail to repeat. Such is the prejudice against it among the younger men in London, that when a man says he has been cured by it, the remark is, ‘ How lucky you were to escape!’ Nevertheless, the *argentum nitratum* is a valuable remedy, when properly used in appropriate cases, and not abused. At some future time, when the prejudice which has arisen against its use shall have passed away, it will again take its place, with other means, as a very effective remedy in certain forms of stricture.” In the latter part of Sir Everard Home's work, the following passages occur:—“ I have had numerous opportunities of knowing that no return of the symptoms has taken place in fifteen or twenty years, although no bougie had been used since the cure was completed; and when the urethra has been examined after death, the part in which the stricture had been, had the same smooth surface as the rest of the canal. In cases of failures, from the strictured part having become so hard and thick as not to be destroyed by the nitrate of silver, it is to be regretted that we have not a more powerful caustic, capable of being with safety applied to the urethra, since that is all that is required for their removal.” Surely sufficient evidence has now been given to prove that the nitrate of silver

may be used with advantage in some forms of stricture, and that it is not quite so inefficient in the removal of that disease as has lately been so confidently asserted. Although, in my own practice, I very rarely use that caustic in the treatment of stricture, yet many instances have come under my notice where it has been employed with advantage by others. It is, at present, the fashion to decry this remedy, apparently for no other reason than its having often been applied to an injurious extent, and that it will not cure all cases of stricture. But what are the means devised by human skill, and dependent upon human judgment for their administration, that will not sometimes be abused, and fail in affording the desired relief! The most eminent surgeons have, in fact, been of late so prejudiced against the use of caustic in stricture of the urethra, that, when consulted in aggravated cases where it has been used, they have unhesitatingly ascribed every untoward circumstance which may have occurred during their treatment, to the injurious effects of that remedy. Truth compels me, however, to declare that I have witnessed much worse effects from the too forcible introduction of instruments than any caused by the application of caustic. I cannot but think that in so harassing a disease as stricture often proves, we can ill afford to reject any remedy that has been found useful. I shall now proceed to the consideration of the employment of potassa fusa in stricture, the only caustic besides the nitrate of silver at present used in that disease. To Mr. Whately must be ascribed the merit of having been the first to use the potassa fusa in stricture of the urethra, and of having done all in his power to make the public acquainted with its curative powers in that disease. From some cause or other, notwithstanding the strong recommendation of Mr. Whately, this truly valuable caustic has been less generally employed in urethral obstructions than the nitrate of silver. Before giving the result of my own observations regarding the efficacy of the potassa fusa in stricture, it is but right to state those of Mr. Whately. In his work, entitled, "An Improved Method of Treating Strictures in the Urethra," we have the following remarks: — "In every stricture, before we apply the potassa fusa, we ought to be able to pass a bougie into the bladder of at least a size larger than the finest kind. This is necessary, to enable us to apply the caustic to the whole surface of the stricture, and likewise to put it into our power to remove a suppression of urine, should it occur during the use of the caustic. Put a small quantity of kali purum upon a piece of strong paper, and break it with a hammer into pieces, about the size of large and small pins' heads. Thus broken, it should be kept for use in a vial closed with a ground stopper. A small hole, about the sixteenth part of an inch deep, should be made at the extremity of the bougie, which should be just large enough to enter the stricture. A large

blanket pin, $2\frac{1}{2}$ inches in length, with the head struck off, will answer the purpose, the hole being made with the point of the pin. Some of the broken caustic should then be put upon a piece of writing-paper, and a piece less than half the size of the smallest pin's head should be selected: the particle cannot be too small for the first application. Let this be inserted into the hole of the bougie, and pushed down into it with the blunt end of a pin, so as to sink the caustic a very little below the margin of the hole. To prevent the kali from coming out, the hole should be contracted a little with the finger, and the remaining vacancy in it filled up with hog's lard. When the bougie has reached the anterior part of the stricture, it should rest there for a few seconds, that the caustic may begin to dissolve. It should then be pushed very gently about one-eighth of an inch, after which there should be another pause for a second or two. The bougie should then be carried forwards in the same gentle manner till it has got through the stricture. When the caustic bougie has passed through a stricture, it should be withdrawn to the part at which it was first made to rest; after which it should be passed very slowly through the stricture a second time. If the patient complain of pain, the bougie should be immediately withdrawn; but if not, we may repeat the operation by passing and withdrawing the bougie through the stricture once or twice more, which will take up, in the whole, about two minutes. It is essential that the bougie pass through the stricture at each application of the caustic. We ought, therefore, to pass the bougie we intend to use once through the stricture before the kali is inserted into it. At the end of seven days, the application may be repeated; and if the patient felt no degree of pain, a piece of kali a small degree larger than the first may be selected. The operation should be repeated till the contracted part of the urethra is dilated, if possible, to the natural size. We are, however, on no account to increase the quantity of caustic as we increase the size of the bougie. I do not in any case apply more of the kali purum at a time than a piece about the size of a common pin's head. Twelve bits of the largest size weigh one grain. I have in a few cases re-applied the caustic at the end of five days. There are some cases in which the contraction is so irregular, and its aperture so untowardly situate, that a bougie cannot readily, if at all, be passed into it; others have likewise been described, in which it is impossible to pass a bougie through the strictures. If, in the former of these cases, a bougie with the kali cannot be passed into the stricture, or if it get through the stricture and yet do not destroy the irregularity, and it becomes necessary to apply a caustic to the anterior part of the contraction, I should certainly prefer the lunar caustic to the kali purum." From the result of no inconsiderable experience of the use of potassa fusa in many intractable forms of urethral obstructions which had resisted the

ordinary means of treatment, I am convinced that the excellent effects of this caustic in the cure of stricture are but little known to the generality of surgeons. It was in impermeable strictures that I first had recourse to caustic potass, and very soon became convinced of its superiority to nitrate of silver in such cases. I found that to be effective in old, hard strictures, it was necessary to employ it much more freely than was recommended by Whately, and that this might be done with perfect safety. The caustic potash may be advantageously applied to strictures for two purposes: one to allay irritation; the other, to destroy the thickened tissue which forms the obstruction. When used in the minute quantity employed by Mr. Whately, I believe its action to be simply that of allaying irritation, as, when mixed with lard and oil, combined with the mucus of the urethra, it can scarcely have any effect beyond a mild solution of caustic which most probably causes a more healthy state of the lining membrane of the stricture. To insure the action of the potass, instead of being below the level of the hole of the bougie, it should be fairly exposed, having its points slightly projecting. The bougie should be marked as directed by Mr. Whately; and if the points of the caustic be covered with lard, there need be no fear of its acting before it reaches the stricture. When used in small quantity, of the size of a common pin's head (and less is seldom of any use), unless a stricture be very irritable, its application usually causes nothing more than a slight sensation of heat, scarcely amounting to pain. The bougie should be gently pressed against the stricture for a minute or two if impermeable, and then withdrawn. When the caustic is applied to permeable obstructions, the bougie should be passed three or four times over the whole surface of the stricture. To impermeable strictures, the caustic should be applied with greater caution than to such as are permeable! for, should retention of urine occur, it will be more easily relieved in the latter than the former. It usually happens that after one or two applications of the caustic, the bougie will be found to enter the obstruction. Before applying potassa fusa to impermeable strictures, every precaution should be used to guard against irritation. If convenient, the application may be made at bed-time; and should the patient have been subject to rigors or retention of urine, it will be best to administer an opiate injection about an hour before the operation. Contrary to what is generally supposed, potassa fusa, from its forming with oil and mucus a slimy saponaceous compound, admits of being more easily confined to the strictured portion of the urethra than the watery solution caused by the application of the nitrate of silver. This is one advantage in favour of the caustic alkali. Another, arising from this miscibility with oily substances is, that its action can be better regulated than that of the nitrate. It may either be used as a mild stimulant or as a powerful caustic. It appears to

me, however, that the principal superiority of this caustic to the nitrate of silver, in the treatment of stricture, consists in its more powerful effect in removing hard strictures, and that, with perfect safety, and comparatively with but little pain. It has been previously stated that, when used for the destruction of hard, gristly strictures, it must be more freely applied than recommended by Whately; but the quantity should be very gradually increased, and regulated according to its effects. Some of the accidents caused by the nitrate of silver, when used for the destruction of strictures, have arisen either from the slough which it produced having so completely obstructed the previously contracted channel as to cause retention of urine; or, on its separation, hæmorrhage to a considerable amount. From the tendency of the nitrate of silver to produce adhesive inflammation, it is probable that the coagulable lymph, caused by its free application, may form no slight barrier to its destructive effects. This tendency, I think, may in some degree account for the great number of applications of this caustic which were required in some of Sir Everard Home's cases.

Potassa fusa, when used for the destruction of a stricture, instead of causing a solid slough, appears to exert its salutary effects by a process of inflammatory softening and dissolution of the thickened tissue forming the obstruction. A sufficiently free application of this caustic, to be effective in old hard strictures, is usually followed by more or less of a slimy muco-purulent discharge, at first generally with an admixture of blood, but soon becoming of a dirty white colour. The term abrasion, used by Mr. Whately, is not certainly the most appropriate to signify the effects of the caustic potash in the removal of strictures, for its action cannot be regarded as mechanical. The term appears to have been intended by him to express a slight solvent effect upon the surface of the stricture. Probably the best explanation of the action of these two caustics, when applied for the destruction of strictures is, that the nitrate of silver causes a slough often sufficiently solid to obstruct the passage of the urine, whilst the more solvent effect of the potassa fusa is quickly followed by a thick slimy discharge of the tissues which it has destroyed. The good effects of potassa fusa are often strikingly manifested in highly irritable, very vascular strictures, which readily bleed upon slight pressure by the bougie. In many such cases three or four mild applications of the caustic will often be found to remove both their irritability and hæmorrhagic disposition, so as to render them easily dilatible. In strictures strongly predisposed to spasm, if not firm and of long duration, it will be best to apply the potash at first in such small quantities that its action may be merely that of a powerful stimulant, which may remove their morbid irritability sufficiently to permit

of their subsequent dilatation. I believe, however, that in the majority of such cases, where the disposition to spasm is strongly marked, that the caustic must be used in sufficient quantity to destroy the irritable surface of the obstruction. When a stricture has been so far removed by the application of potassa fusa as to admit the introduction of a middle-sized bougie, it will be best to discontinue the use of the caustic unless there should be difficulty in the subsequent dilatation, when an occasional application of the caustic will often be found serviceable. If potassa fusa be used with proper caution it will not cause bleeding of any consequence. Where patients are predisposed to rigors they may occasionally occur after the application of the potash; but the unarmed bougie, it must be recollected, in such constitutions, will often have the same effect. In truth, the application of the caustic alkali has generally a remarkable effect in preventing the occurrence of rigors. Two or three applications have frequently so much relieved the irritability of the bladder attending bad cases of stricture, that patients have very frequently called my attention to this improvement in their condition, which has taken place often some little time before the bougie has passed through the obstruction. Instead of being obliged to rise every hour or two in the night to pass their urine, as was the case previously to the application of the caustic, they have only been disturbed but once or twice for that purpose. In two cases of impermeable strictures lately under my care, in which rigors had frequently occurred from the introduction of the bougie, they happened but once during my treatment, and that was, in each patient, a few hours after, by the use of potassa fusa, I for the first time succeeded in passing an instrument through the obstruction. The administration of an opiate will, however, in general, prevent the occurrence of rigors. The cases in which I have found the potassa fusa advantageous may be generally described as—1st. Strictures having a cartilaginous hardness, and impervious to instruments; 2ndly. Strictures of long standing, which, although admitting the passage of a small bougie, bleed more or less freely on its introduction; 3rdly, irritable strictures. My views with regard to this method of treatment differ materially from those of Mr. Whately. I do not use the potassa fusa in all cases indiscriminately; but only in such as do not yield to simple dilatation. I have found it necessary to employ the caustic alkali, in many cases, in larger quantities than he recommended; the minute portions used by him having produced scarcely any perceptible effect upon strictures, which, however, yielded to its more free application. I have also found that the caustic may be advantageously used at shorter intervals than advised by that gentleman, which is frequently of

no slight importance, especially to patients who have to come to London for treatment. I generally, as before mentioned, discontinue the use of caustic as soon as a stricture will readily yield to ordinary dilatation. As a general rule, it will be best to commence the use of potassa fusa in very small quantities, of the size of a common pin's head, especially in impermeable strictures. Very great care will be required in applying caustic of any kind where there are false passages; and in such cases, if the obstruction be beyond the straight part of the urethra, I use a curved canula for that purpose. Wherever false passages are known to exist, and where instruments have been regularly passed, before commencing the use of potassa fusa, the patient should be kept as quiet as possible for four or five weeks, by which time the false channels may have healed, or become so much closed as to be avoided with tolerable caution. Obstructions in the curved portion of the urethra, although requiring much care in the application of caustic, will usually be found more readily to yield to that remedy; or, indeed, to any other method of treatment than when situated in the straight part of the canal. Except obstructions caused by severe injury of the urethra when it has been forcibly pressed against the pubes, there are none, according to my experience, more difficult of management, whatever means may be employed, than hard, tight strictures of long standing, within the first four or five inches from the external orifice of the canal. In such strictures there is often considerable induration of the corpus spongiosum surrounding the obstruction, forming a firm zone of highly elastic tissue, which, although admitting of being stretched to a certain degree, yet, if further dilatation be attempted, irritation will ensue, and the contraction become worse. Where there is so much condensation of the corpus spongiosum, it cannot be expected that potassa fusa, or any caustic can be safely applied for its entire destruction; but a few mild applications of the potash will often so much lessen the irritability of the stricture as to permit the introduction of a moderate-sized bougie so as to afford relief from all the more troublesome symptoms of the disease. It is fortunate that cases of this description are comparatively of very rare occurrence; but it is as well to know that there are such, which, whether you treat them by dilatation simply, by caustic, or by cutting, have so strong a disposition to recontraction as to defy human skill to cure them. Some pains should be taken to ascertain the precise point to which these strictures will admit of being stretched without irritation, and then, the bougie having done all the good it can, should not be increased in size. Strictures in the straight part of the urethra, which consist principally of thickening of the mucous and submucous tissues of the canal, with but slight induration of the spongy portion, are

in general just as easily removed by potassa fusa as those at the bulb. To prove that the good effects of potassa fusa in stricture have not been exaggerated by me, I shall relate briefly the principal cases in which I have used that remedy during the last year:—

Case 1.—H. B., Esq., about 36 years of age, first applied to me October 8, 1849. He had long suffered from stricture. Two years before his application to me, a very small silver catheter had been passed. The operation caused a little bleeding and severe pain, followed by considerable constitutional disturbance. This gentleman had been under the care of an eminent hospital surgeon, who made several subsequent attempts to pass an instrument through the stricture, but failed in all. The irritation of the bladder in this case was so great as to cause an almost irresistible desire of micturition nearly every hour, day and night. The urine was voided either by drops or in a very minute stream, with much straining. On examination, I found a stricture at six and a quarter inches, impassable to the smallest bougie, and which bled on being gently pressed by the instrument. I applied the potassa fusa, and repeated its application every second day. On the seventh application, made October 20th, the bougie, a No. 6, passed through the obstruction, which was more than half an inch in length, and felt hard and gristly. On my next visit (Oct. 22), an unarmed bougie of the same size was passed through the obstruction, but did not go on into the bladder. As the instrument was firmly grasped, I again used the potassa fusa. On my next attempt to pass a bougie, on the 24th, there was so much spasm, that the same-sized instrument did not go through the stricture. I therefore applied the caustic, and repeated its application on the 26th and 29th. On the 31st, I introduced without difficulty a No. 6 silver catheter into the bladder. I had no occasion to use the caustic again, as the stricture readily yielded to the introduction of the sound; and, on the 3rd of February, 1850, a No. 14, the full size of the urethra, could be passed with facility. The stricture, which, before the use of the potassa fusa, always bled more or less on pressure by the bougie, ceased to do so after the fourth application of the caustic, which also appeared to relieve, in a remarkable degree, the irritability of the bladder. This gentleman, who had occasionally suffered much from rigors, had only one attack during the treatment by potassa fusa. That attack occurred a few hours after the first introduction of an instrument into the bladder. I saw this patient a few days ago, when the No. 14 sound was passed with facility.

Case 2.—E. P—, Esq., 33 years of age, consulted me on the 4th of February, 1850. This gentleman had been annoyed with very troublesome symptoms of stricture for the last eight years, and had been for a long time under the care

of an excellent surgeon, well conversant with the treatment of this disease, but who did not use caustic. This surgeon had occasionally succeeded in passing a small bougie into the bladder, but never could get beyond a No. 5. It usually happened, that for some time after the introduction of a bougie, the stricture remained so extremely irritable as to be impassable to the smallest-sized instrument. The perinæum had been freely leeches at various times; opiates by the mouth, also as suppositories, and in the form of enemata, had been used with but little benefit. The gentleman's health had suffered considerably, and, deriving no advantage from the means employed for his relief, despairing of improvement, he had given up all treatment fifteen months before his application to me, which was in consequence of an attack of retention of urine, from which he occasionally suffered. His urine had been passed for several months either in a very small stream, or by drops. On examination, I found a stricture at four inches, impermeable by the smallest bougie, and which bled on very slight pressure. After three applications of potassa fusa, at intervals of three days, the bougie, a No. 5, passed through the stricture, and stopped at a second obstruction at five and a-half inches. This second stricture was hard and gristly, having required seven applications of the caustic before a bougie could be passed through it. Three days afterwards, I introduced with facility a No. 6 silver catheter into the bladder. No further application of potassa fusa was requisite, as the strictures readily yielded to the introduction of plated steel sounds; and, on the 24th of June, I passed a No. 12, the full size of the urethra, without being able to detect any hardness. This gentleman's principal urinary distress was evidently caused by the stricture nearest the external orifice of the urethra, as, after that had been subdued by the potassa fusa, he suffered no pain, and passed his urine in a better stream than for many months previously. I saw this patient a few weeks ago, and passed for him the No. 12. There does not appear to be the slightest disposition in this case to a return of the strictures; but as a precaution, I have advised him to test his cure by an occasional introduction of the sound.

Case 3.—Captain F., aged 37, an officer of dragoons, who had been several years in India, first consulted me April 16th, 1850. He had been a very great sufferer from stricture for the last twelve years, during which time he had been treated by different surgeons by the introduction of bougies and sounds. The passing of instruments, however, always caused so much irritation, that he derived but little benefit from their use. The gentleman who last attended him had succeeded occasionally in the introduction of a small steel sound, but the operation was always excessively pain-

ful, and followed by considerable hæmorrhage. No instrument had been passed for the last three years. The urine has long been voided with much difficulty, and latterly with very great straining; it usually passes by drops; and the attempts to empty his bladder frequently continue for nearly half an hour at a time. For many years he has seldom been free from gleet discharge, and micturition is attended with a severe scalding pain, affecting chiefly the first inch and a half from the external orifice of the urethra. Has had several attacks of gonorrhœa. The perineum has been freely leeches at times, but without affording him relief. I examined the urethra with a No. 3 plaster bougie, which stopped at two inches; a little pressure, however, caused it to advance another inch, when it was again arrested, but soon passed on to five and a half inches, where it was finally arrested by another obstruction. I applied the potassa fusa to the first stricture at two inches.

April 17.—Applied the potassa fusa to the second stricture.

18th.—The gleet discharge has rather increased, and is coloured with blood. A No. 5 bougie was passed to the third obstruction at five and a half inches, to which I applied the potassa fusa.

19th.—Had a rigor this morning. The patient had formerly suffered greatly from rigors. The urine is passed with but little straining. A warm bath and an opiate was ordered.

20th.—Less irritation; and the urine was voided in my presence in a continued stream. I passed a No. 4 plaster bougie into the bladder, but it was firmly grasped by the last stricture.

21st.—The urine is passed more freely and with less scalding. Captain F. said, he never experienced from any other treatment so much relief in so short a time. Applied the potassa fusa on a No. 6 bougie to the third stricture, which it entered.

22nd.—As there was rather more irritation than usual, the urethra was left undisturbed.

23rd.—The urine is passed better than it has been for several years. A No. 6 bougie passed through all the strictures; I applied the caustic on a No. 8, and repeated its application on the 27th. This gentleman was obliged to leave town unexpectedly the next day. He wrote to me from his residence in the country, not knowing how to proceed. I urged him to persevere in the use of the bougie. Being anxious to learn how he was getting on, I wrote to him in the early part of last August. In his reply he observes, "I can now pass a No. 9; the first stricture is gone, the others are better, as you may suppose, but not by any means well; still they are progressing." He added, that

"he had been under the care of a great many professional men, but never received anything like the relief which he had done from the potassa fusa treatment." This gentleman stated, on his first application to me, that it would be impossible for him to remain in town more than a fortnight, or I should not have applied the caustic at such short intervals. The applications, however, were very gentle ones, and did not cause much irritation.

Case 4.—Mr. C—, about thirty-six years of age, applied to me May 12th, 1850. Has had symptoms of stricture for the last twelve years. The difficulty of micturition has lately very much increased, and he now passes his urine with great straining in a very fine stream, or by drops. Attributes his complaint to a protracted gonorrhœa. Examination disclosed a stricture at $5\frac{1}{2}$ inches, through which I succeeded in passing a No. 1 bougie. 15th. Has voided his urine with rather less straining. I could not pass the No. 1 bougie; and, having been equally unsuccessful on the 19th, I on that day applied the potassa fusa, which caused no pain, but only a slight sensation of heat. 22nd. The urine has been passed better since the application of the caustic, and the irritability of the bladder, which previously caused him much annoyance, is greatly diminished. I first passed a No. 2 bougie easily into the bladder; and shortly afterwards, a No. 5, as readily. I applied the caustic but once more, which was on the 26th, the stricture having become easily dilatable. On the 16th of June I could pass a No. 12 sound, the full size of the urethra, and there was then no sign of stricture. I have no doubt that the two applications of the caustic alkali entirely removed the stricture, which, although but of slight extent, had been attended with great suffering. It may be satisfactory to state, that I passed the No. 12 some time afterwards for this gentleman, when the urethra appeared to be quite healthy.

Case 5.—E. S—, Esq., forty years of age, residing in the north of England, first consulted me July 16, 1850. He had been many years a great sufferer from stricture. The origin of his complaint he attributed to a severe gonorrhœa contracted in 1834, which lasted for several months. In 1836 this gentleman contracted another gonorrhœa, which left a gleet discharge, from which he has scarcely ever since been entirely free. His urine has not been voided in a full stream from the period of the first attack of gonorrhœa; and soon after the second occurrence of that disease micturition became so difficult as to render necessary an occasional introduction of a bougie. Mr. S— has ever since suffered more or less from stricture. Several attempts have been made by different practitioners to cure him by dilatation; but No. 7 is the largest sized instrument that any of them had been able get into his bladder. In

1844 this gentleman had a very severe attack of retention of urine, and then placed himself under the care of an eminent surgeon, under whose treatment he continued for eighteen months. The strictures were then so extremely irritable that for a long time no instrument could be passed through them; and a No. 5 bougie was the largest size that had been introduced at the expiration of the year and a half when he left his surgeon. Mr. S— was, for some time afterwards, able occasionally to pass for himself No. 5 bougie; but, for the last two years, his strictures have continued impervious to the smallest sized instrument. Has had occasional attacks of retention of urine for more than five years; and the last which occurred was unusually severe, but yielded at length to large doses of opium. The surgeon to whom the patient applied for relief for this last attack of retention having tried for six months ineffectually to get an instrument through the stricture, a consultation was held with the gentleman under whose care he had remained for eighteen months, when it was decided that his only chance of relief was the operation by perinæal section. It was under these circumstances that I was consulted. At this time the gentleman's sufferings were extreme, his urine being passed only by drops, and with very great straining, which lasted frequently half an hour at a time. He could not void his urine in the erect position, and was generally obliged to go to the water-closet for that purpose. Every attempt to micturate causes a partial erection of the penis, with severe scalding pain. On examination with a small bougie, a stricture was detected at $5\frac{1}{4}$ inches, to which I applied the potassa fusa.

17th.—There has been no irritation from yesterday's application. I saw him pass his urine, in a thread-like interrupted stream; but he tells me that the straining is less than before the application of the caustic. I applied the potassa fusa on a No. 6 bougie, which soon entered the stricture into which it passed the eighth of an inch.

18th.—Has had a better night than for some months past, the irritability of the bladder being much diminished. He had taken a dose of castor oil, which acted freely at 10 a.m., at which time a considerable quantity of urine had been passed. On my visit, at 3 p.m., Mr. S. was endeavouring, but ineffectually, to void his urine, and the contractions of the bladder were very painful. I passed a No. 3 bougie through the stricture, but could not get it into the bladder, from its being too tightly grasped. The bougie was retained for about three minutes, and when withdrawn the urine followed in a very fine, continued stream.

8 p.m.—No urine had been passed since my visit at 3 o'clock, and the contractions of the bladder had again become urgent. I tried to pass a No. 4 bougie, but did not get it through the stricture; and, although the instrument was

retained a short time, no urine followed on its being withdrawn. I then tried a No. 2, which passed with facility into the bladder. The bougie was retained for five minutes, and when withdrawn the urine followed in a continuous stream, the size of a crow's quill. The patient has been kept well under the influence of opium.

19th, 9 a.m.—Has passed his urine without difficulty. Applied the potassa fusa on a No. 6 bougie, which passed through the stricture, but stopped at another obstruction an inch beyond the first. 20th.—Applied potassa fusa to the second stricture. 21st.—Has had no difficulty in micturition, having been disturbed but once during the night. Applied potassa fusa to the second stricture, and repeated its application on the 22nd. On the 23rd I passed a No. 4 bougie into the bladder, and afterwards used the caustic. 24th.—As there was no irritation, I again applied the armed bougie. 25th.—The urine passes very freely. Applied potassa fusa, and repeated its application on the 26th and 27th. The urethra was left undisturbed until the 30th, when I easily passed a No. 6 bougie into the bladder. As the second stricture still felt very hard, and as the patient could only remain in town for three weeks from the commencement of my treatment, I applied the caustic, and used it four more times. On the 8th of August, I easily passed a No. 8 bougie into the bladder. This gentleman left London the following day, when he voided his urine in a good stream, the irritability of the bladder having entirely subsided. The patient promised to let me hear from him if he had the slightest difficulty in completing the dilatation of his strictures. I have not heard from him, therefore conclude he has suffered no further inconvenience.

Case 6.—W. S. B—, Esq., thirty-two years of age, residing in the country, first consulted me, September 7, 1850, and gave the following account of his complaint:—"Between seven and eight years ago I first suspected myself to be affected with stricture, and applied to a surgeon, who, after passing a small bougie, told me I had two strictures. At first I thought myself benefited by his treatment, and for a time cherished hopes of a cure, but these hopes soon gave way. Although a tolerable sized bougie could be passed, it seemed to have no permanent effect in enlarging the stream of urine; often it was very tightly grasped, especially by the first stricture, and sometimes was with difficulty passed at all. At length I gave up attending the surgeon, and having derived no advantage from the use of the bougie, my strictures have ever since been left undisturbed." This gentleman's urine is passed with difficulty in a small forked stream. On examination with a No. 5 bougie, it was stopped by a stricture at $5\frac{1}{4}$ inches, to which I applied the potassa fusa, and repeated its application on the 9th and

10th. Before applying the caustic on the 11th, I examined the urethra with an unarmed bougie of the same size as had been previously used, when it passed through the stricture, and stopped at another $6\frac{1}{2}$ inches from the orifice. As no irritation of consequence had been caused by the previous operations, I applied the potassa fusa to the second obstruction, which required three more applications before it became permeable. On the 15th I passed a No. 7 sound into the bladder, having the day before failed in getting it through the second obstruction. The urethra, from the last stricture to the bladder, felt hard and rugged; it seemed as if the instrument passed over a ridgy surface at the inferior portion of the canal. The sound was retained for half an hour. I had no further difficulty in dilating the strictures, being able to increase the size of the sounds daily; and on the 21st a No. 12, the full size of the urethra, was readily passed. The instruments were latterly retained for nearly an hour, and caused scarcely any irritation. A little mucous discharge, slightly tinged with blood was caused by the first three applications of the caustic. This gentleman could only remain in town for a fortnight, or I should have preferred proceeding more slowly; but there was fortunately no urethral irritation of importance during the whole treatment. The gentleman was desired to continue the use of the sound regularly for some length of time. The ridgy feeling behind the stricture had entirely disappeared, and the stream of urine was of a full size.

Case 7.—J. L., aged 42, admitted a dispensary patient, May 8, 1850. Has suffered much from stricture for the last twelve years, accompanied with more or less gleet discharge. During the last five years his urine has been voided with great straining, principally by drops, micturition usually occupying from a quarter to half an hour at a time. Has latterly been much annoyed by the urine dribbling away, especially when standing or sitting. Is seldom free for more than half an hour, day or night, from urgent calls to void his urine. This man had been for the last twelve months under the care of an excellent surgeon, who treated him chiefly by the steel sound. Upon only one occasion could any instrument be got through the obstructions, and that was about six months ago, when a very small steel sound appeared to enter the bladder. The operation caused severe pain, and rather free bleeding followed by so much urethral irritation, that his sufferings were increased; and ever since all attempts to pass an instrument through the first stricture have been unsuccessful. On examination, I found an impermeable stricture at three and a half inches, to which I applied the potassa fusa, and repeated the application four times before a No. 5 bougie could be

passed through the obstruction. There was another stricture at five inches, which required five applications of the caustic before the same sized bougie could be passed through it. On the 28th of June I was enabled to pass a No. 8 bougie into the bladder, and on the 6th of July a full-sized steel sound. There was no irritation of consequence from the application of the caustic potass. The man has since occasionally attended at the dispensary, when a No. 12 sound has been readily introduced.

I have purposely stated, that the above-mentioned patients, before their application to me, had all been treated for a long time by surgeons of high character, to prove that dilatation had received a fair trial previous to the use of the caustic alkali, to which remedy must entirely be ascribed my success where others had failed.

Many will, doubtless, be a little surprised at my having ventured, in some of the cases, to apply the caustic alkali daily. It must, however, be borne in mind that such cases were old strictures of a cartilaginous hardness, which are seldom much predisposed to spasm. The principal suffering of patients with such obstructions, is usually caused by the straining efforts of the bladder to force the urine through a highly contracted unyielding channel. The diseased tissue itself has commonly but little sensibility; indeed, the free application of potassa fusa to its interior seldom causes pain worth mentioning. It is in these cases where, from the strong contractions of the bladder, with its muscular power frequently increased to a great extent, and where there must be constant apprehension of the yielding of the urethral canal behind the obstruction, that the caustic alkali will be found truly valuable. In such cases as these, when once the armed bougie has fairly entered the gristly mass, to obtain success, the caustic must be boldly and freely used. In concluding this subject, it may be as well to state that the method of treating strictures by potassa fusa was brought forward by me in a paper read at the Westminster Medical Society on the 15th of February, 1840, having then for several years successfully employed that remedy in the treatment of stricture. My object in that paper was principally to show the great value of potassa fusa in impermeable strictures, and at the same time to define, with some degree of precision, the nature of the cases in which it would prove useful. I can truly say, that subsequent and far more extensive experience has increased my very high estimation of the admirable effects of the caustic alkali in the relief or cure of urethral obstructions. No other remedy I have ever employed has afforded me so much satisfaction; and it has very often surpassed my expectations in the speedy relief it has afforded in cases of the worst description. Another method of treating the more obstinate forms of urethral obstructions

has been revised and improved by Mr. Stafford, who has strongly advocated their division from within, by an instrument well known as the lancetted catheter. When a stricture is beyond the straight portion of the urethra, this method, although it appears to have been frequently successful in Mr. Stafford's hands, must surely be somewhat hazardous; for, where there is much condensation at the seat of disease, the most expert anatomist could scarcely be certain of cutting in the right direction. The instrument has, in fact, sometimes taken a wrong course, and serious accidents have occurred—among others, extravasation of urine. It may be added, that, when this operation has proved so far successful that the bladder has been fairly reached, it has often been found impossible to preserve the advantage thus acquired, the obstruction having returned as bad as ever.

Although in strictures at the curved portion of the urethra I should not venture to adopt Mr. Stafford's plan, yet, when in the straight part of the canal, in case of failure with potassa fusa, I should not hesitate to use the lancetted catheter, as the finger could then ascertain with tolerable precision that the instrument was properly directed. Division of strictures by an opening in the perinæum, called "perinæal section," is the only method of treatment that remains to be considered. I cannot but think that this operation has of late been too frequently performed, having been rather the fashion. It has, however, always appeared to me to be an operation too perilous as well as unsatisfactory in its results to justify its performance except as a last resource. In the most common method of performing this operation, a staff or silver catheter is passed as far as the stricture, and pressed firmly against it; an incision being then made through the perinæum upon the point of the instrument, the knife is carried backwards so as to divide the obstruction and to open the urethra beyond. A gum or silver catheter, commonly the former, is then introduced, and fixed in the bladder. In cases where the urethra, to some extent, at the seat of disease is converted into a gristly mass, it cannot be expected that the passage made by the knife can be exactly in the track of the original channel. It is, at all events, just as likely to be effected through the diseased tissue by the side of the natural passage; and it will often be very difficult to keep the new one sufficiently open for the free evacuation of the urine. This tendency in the new channel to recontraction is not, however, all that is to be feared, for this operation has not unfrequently proved fatal. That hæmorrhage may sometimes occur to a great extent, and even cause death, we have evidence in some cases operated upon by Mr. B. Cooper, which have been recorded in Guy's Hospital Reports. In the first case, the man bore the operation well,

but secondary hæmorrhage occurred to an extent that had nearly proved fatal. In the second case, there was considerable bleeding during the operation and afterwards; but it was eventually stopped by pressure on the pudic artery. In the third case, hæmorrhage proved fatal a day after the operation. In the remaining case, it is stated, that a considerable quantity of blood was lost during the operation; the patient, however, eventually recovered. In some instances in which this operation has been had recourse to, constitutional irritation of a grave character has supervened, the patients having gradually fallen into a low typhoid state, and died a few days after its performance. Valuable information on the results of perinæal section will be found in some excellent observations on that method of treatment, by Mr. Henry Smith, in Nos. 553, 556, and 557, of the *Medical Times*. In eleven of the cases recorded by Mr. Smith, the operation was had recourse to in impermeable strictures, the result having been fatal in four out of that number. In the remaining four cases, the obstructions were permeable, and Mr. Syme's operation was performed, the strictures having been divided on a grooved staff previously passed into the bladder. In one of these cases, the operation proved fatal a fortnight after division of the stricture. In the *Lancet* of June 29th, 1850, are recorded three cases in which Mr. Syme's operation was performed by Mr. Cock, division of the stricture having in one instance been followed by death. Of the fatal case we are informed, that "the patient was taken to bed in a singularly depressed condition. The loss of several ounces of blood increased the prostration, from which he never rallied. The next day, his irritability became extreme, and he could not bear the pressure of the catheter. Symptoms like those of phlebitis soon occurred, he continued to get worse, and died five days after the operation." It was found, on *post-mortem* examination, that the edges of the wound in the perinæum were sloughy, and all the veins forming the left prostatic plexus were more or less filled with coagula, in some parts adherent to the lining membrane of the vessels, but no pus was detected. Some of the veins constituting the right plexus were likewise inflamed. Phlebitis was at that time prevalent in the hospital. A case of perinæal section, by Mr. Gay, which proved fatal on the fifth day, is recorded in the *Medical Times* of Nov. 5th, 1850. That perinæal section, as commonly performed, is somewhat perilous, we have of late had sufficient proof. It must also be admitted, that no surgeon, by the performance of this operation, can ensure a patient against a return of his stricture. We have some valuable information upon this point from Mr. Guthrie, in his work on "Diseases of the Bladder and Urethra." The following statement is instructive:—"In the course of the last thirty years, I have

had many opportunities of dividing, and more of seeing the urethra divided by others, for the relief or cure of persons labouring under strictures. In most of these cases, the disease has returned in the course of a few months, or would have returned if the patients had not made use of the solid sound regularly every five or six days to prevent it. In the year 1816 I saw the late Mr. Pearson divide a stricture at the part where the scrotum begins, for the extent of an inch, or as much as was hard and gristly. The patient got quite well, and could pass a bougie with ease; but he subsequently neglected himself, and one year afterwards I saw him as bad as ever. In some cases, however, the results of this operation have been very satisfactory, there having been but little disposition to a return of the contraction." Surely no surgeon of ordinary judgment would think of resorting to this operation except in cases of emergency, or as a last resource when all other means of relief had been tried and failed. In a late work by Professor Syme, that gentleman, after having strongly condemned the usual method of performing perinæal section, recommends division of urethral obstructions upon a grooved director, which of course facilitates the proceeding. Mr. Syme describes his operation as "a simple and easy mode" of curing permanently the most difficult cases of stricture of the urethra, and unattended with danger to life. This operation is of course only applicable to permeable obstructions; but it appears that Mr. Syme does not believe in the existence of a stricture impermeable to instruments, as is evident in the following passage from his work: "The operation by external incision hitherto employed has been resorted to as the refuge of awkwardness or failure in the introduction of instruments, there being no truly impermeable stricture."—P. 57. That Mr. Syme's operation is not always a safe one has been sufficiently proved by two published cases, attended with fatal results. At one of those cases I was present during the operation, which could not have been more skilfully performed, a No. 6 grooved staff having been previously passed into the bladder. The patient undoubtedly died from the effects of the operation within a fortnight from its performance. In Mr. Cock's fatal case, phlebitis occurred; but it is stated that "the man was taken to bed in a singularly depressed condition," and that "the loss of several ounces of blood a few hours after the operation increased the prostration, from which he never rallied." In one of Mr. Syme's cases, that gentleman acknowledges the result to have been all but fatal from erysipelas. We are informed by Mr. Syme—"1st. That division of a stricture by external incision is sufficient for the complete remedy of the disease in its worst form; 2ndly. That in cases of less obstinacy, but still requiring the frequent use of the bougie, division is

preferable to dilatation, as affording relief more speedily, permanently, and safely."—P. 58. To the best of my belief, I was the first surgeon who ventured publicly to question the soundness of these conclusions, and expressed my doubts as to this operation affording a permanent cure of stricture for the following reasons:—1st. That the thickened tissue is not removed by the knife in Mr. Syme's method any more than in the one which had been commonly adopted in impermeable strictures; 2ndly. That although a grooved director in the new method is passed into the bladder as a guide to the knife, yet the natural urethral membrane can form but a very small portion of the enlarged passage, the greater part of the new channel being necessarily made through the condensed tissue at the seat of disease.(a) It appears that Mr. Syme has hitherto performed this operation without any fatal result; but that his views regarding its curative powers are somewhat changed, is evident from the following passage in the last July number of the *Monthly Journal of Medical Science*: "It was for the relief of those obstinate and contractile strictures that I some time ago recommended external incision upon a grooved director conveyed through the seat of contraction, on the ground of its being absolutely free from danger to the patient's life, certain to afford complete relief to all the symptoms of the disease, and probably sufficient in general, if not always, to protect him from future inconvenience." If a bougie be permitted to remain in these "obstinate, hard, contractile strictures" but for "one or two seconds," then, indeed, the knife must often do the work which the bougie is not permitted to accomplish. I must once again quote Mr. Syme: "It is now universally admitted, that the bougie acts by exciting a degree of absorption of the thickened texture, which occasions the contraction and induration concerned in the formation of stricture. To produce this, the instrument should be employed with the utmost possible gentleness, and should not be allowed to remain in the urethra more than one or two seconds." There is scarcely, I believe, any other surgeon experienced in the treatment of stricture who would not protest against such a frivolous use of the bougie. Has that useful instrument no mechanical powers of action in stricture? Let us hear what were Mr. Hunter's views of this instrument. The following are his words: "The cure by dilatation is, I imagine, principally mechanical when performed by bougies, the powers of which are in general those of a wedge. However, the ultimate effect of them is not always so simple as that of a wedge upon inanimate matter, for pressure produces action of the animal powers either to adapt the parts to their new position, or to recede

(a) *Vide the Lancet*, January 26, 1850.

by ulceration, which last is not so readily effected." It has been shown that all surgeons have not had the same good fortune as Mr. Syme in their operations for division of strictures by perinæal section, when performed according to his method. The mischance which has occurred to others may soon happen to him. However skilfully perinæal section may have been effected, who can insure his patient from the occurrence of erysipelas or phlebitis? What degree of human care or foresight can so brace up the cords of life to the enduring point as always to guard against a fatal prostration? It may be that a patient has to submit to perinæal section, whose vital powers have been so depressed by long suffering, that the loss of a few ounces of blood will be sufficient to turn the scale against him. With the late calamitous terminations of this operation, like beacon-lights, to warn us of its dangers, I cannot but think that we are conscientiously bound by every means in our power to relieve a stricture-patient before having recourse to the knife. There are some remarks of the late Mr. Aston Key regarding operations, that we shall all do well to bear in mind. They occur in Guy's Hospital Reports. When alluding to division of the prepuce in phimosis, Mr. Key observes: "As the knife is at all times but an indifferent substitute for skill, and should ever be avoided if possible, the circumstances rendering it unnecessary are not beneath consideration." Taking these words for our text, let us endeavour to ascertain under what circumstances the surgeon may be justified in submitting a patient to perinæal section; for there are, undoubtedly, cases,—fortunately of rare occurrence,—in which that operation will afford the only chance of relief; and there are others, equally rare, where it may probably be the most judicious proceeding. In some strictures, from mechanical injury of the urethra, followed by more or less sloughing of the injured parts, a hard, gristly cicatrix will often be left, while the greater portion of the urine may be passed through fistulous orifices in the perinæum. In such a case dilatation, as well as caustic, will very probably fail in the best hands, and division of the obstruction, by perinæal section, be the only chance of relief for the patient. Where the urethra has been divided by a wound in the perinæum, a hard cicatrix may be formed at the seat of injury, and the contraction cannot be kept sufficiently open by other means to ensure the patient from danger, division by the knife may become advisable, although that proceeding will not always be successful; for so strong a tendency have cicatrices to contract, that, although great care be taken, by constant introduction of instruments, to preserve the advantage which has been gained, yet the stricture may return nearly, if not quite as bad, as ever. A case of hard, contractile stricture, not the result of mechanical injury, which has long remained imper-

meable to all milder means of treatment, and where the patient's general powers are suffering severely, the operation by perinæal section may, probably, be advisable. I believe, however, that such instances will be of rare occurrence. As a proof of what can be accomplished by dilatation, when properly and perseveringly employed, we have a striking instance mentioned by Sir B. Brodie in his valuable lectures on the Diseases of the Urinary Organs. In that case the patient had a stricture which was surrounded by a mass of hard substance, that could be distinctly felt in the perinæum apparently from an inch to an inch and a half in length. The stream of urine was of the smallest size. For many years before the patient applied to Sir B. Brodie no instrument had been passed into the bladder. The method adopted in this case was firm pressure, made by a solid silver sound, against the stricture. Sir B. Brodie recommends the pressure to be continued from five to fifteen minutes, or even longer, according to circumstances; and the process to be repeated in two or three days. In the instance just described, Sir Benjamin informs us that he succeeded; but not until he had persevered in it for more than a year. When retention of urine occurs in a patient who has long suffered from stricture, and it becomes necessary to relieve the bladder by an operation, all other means having failed, division of the obstruction by perinæal section may sometimes be the best procedure to adopt. If the stricture for some length of time previous to the attack of retention should have been impermeable, and the urethra be thickened to a considerable extent, then division may be the most judicious course to pursue. If, on the contrary, retention should take place where the stricture has previously been permeable, even to the smallest instrument; or, if impermeable, and it be of no great extent, I should generally prefer relieving the patient by puncturing his bladder, and afterwards dilating the obstruction. The bladder can in general be punctured through the rectum, except where the prostate is much enlarged. Several cases of retention from stricture have been recorded by Sir E. Home, in which he punctured the bladder by the rectum, and afterwards readily dilated the obstruction, which had previously been impermeable. In a case of retention from stricture of forty years duration, complicated with an enlarged prostate, I punctured the bladder above the pubes, instead of having recourse to the more formidable operation of perinæal section, which I do not think the man could have borne, as he had long suffered from congestion of the brain, and was partially paralytic. In that case no instrument had been passed through the stricture for many years, although frequent attempts had been made for that purpose by various surgeons. Within a month from the time of the operation I could pass a No. 6 bougie into the bladder.

The *Lancet*, of 13th July last, contains the report of a case of retention of urine from stricture, in which Mr. Gay punctured the bladder through the rectum, in preference to the performance of perinæal section. From all I have seen and read of division of strictures by perinæal incision, from my knowledge of the powers of potassa fusa in the removal of urethral obstructions, there are but few cases of retention of urine from that disease in which I should not prefer puncturing the bladder. Let me add, however, that this operation will very rarely be required in cases of retention, as most of them will yield to the free use of opium. We have, also, a powerful agent in chloroform, which has, in several instances enabled the surgeon to relieve his patient at once by the introduction of the catheter, although, previous to its administration he had failed in every attempt to pass that instrument. It has fallen to my lot to have seen a great many cases of retention of urine, but in two instances only have I been compelled to puncture the bladder. When the effects of the caustic alkali in the cure of strictures become generally known, I venture to predict that their division by the knife, except when the result of mechanical injury, will not often be required. From Mr. Syme's position as a teacher, his strong recommendation of perinæal section in strictures which do not readily yield to dilatation, appeared to me as being so likely to lead to fatal results in the hands of others, that I have considered it a duty to comment freely upon his views relative to the treatment of urethral obstructions. With regard to the somewhat startling assertion, "that there is really no impermeable stricture, except from the awkwardness of the surgeon," I have only to observe, that cases of stricture occasionally occur in this metropolis, in which surgeons of the highest rank not unfrequently fail in their attempts to pass an instrument through the obstruction. In a hard gristly stricture, which has long been impervious to instruments, I can readily conceive it possible for Mr. Syme, with a very small grooved director, or sound, gradually to find his way to the bladder; but it appears to me that such an instrument will be more likely to pass by the side of the obstruction, where there is least resistance, than through it. I have seen but two instances of stricture in the female urethra, each within a quarter of an inch of the external orifice, and which readily yielded to the introduction of steel sounds. Although in these observations I have dwelt more particularly upon the use of caustic than on other means, well knowing that much unjust prejudice exists, both in the Profession as well as the public in general, against that remedy, it has been especially my object to avoid advocating any one method of treatment exclusively. It cannot be expected, that the surgeon who adopts a particular mode of treatment in all forms of urethral obstruction, will meet with

the same degree of success as one who, having a variety of resources at command, is enabled to select such as may be most suitable to each individual case. Dilatation will probably effect a permanent cure of stricture in its early stage, before the occurrence of much induration. That method, when properly conducted, will also prove successful in the relief of a great majority of strictures, notwithstanding the existence of much gristly hardness at the seat of disease. In such cases, however, there will be more or less tendency to recontraction; for, although the bougie may dilate the constricted channel to its healthy calibre, as indurated tissue is not easily removed by the absorbents, the obstruction will commonly return, unless prevented by an occasional introduction of dilating instruments, the use of which may sometimes be necessary during the patient's lifetime. Caustic, when judiciously used, will often prove highly serviceable in facilitating dilatation; and in many cases I know that the application of potassa fusa will be successful in the entire removal of indurated strictures, effecting a permanent cure of the disease. It is, however, in the treatment of obstructions impermeable by instruments that in my estimation consists the indisputable value of the caustic alkali, as it has enabled me to succeed in the relief or cure of many cases in which dilatation had failed after long trial in very skilful hands, and when the only hope held out to the patients was perinæal section, an operation which, I repeat, should never be performed whilst there remains a single chance of a successful result from less hazardous measures. Let not these observations on perinæal section be misunderstood; for, although I have used my best endeavours to dissuade surgeons from having recourse to its performance, except in the very few cases of stricture that cannot otherwise be more safely relieved, it has been far from my intention to say anything in disparagement of operative surgery, which, when ably and judiciously employed, amply merits, and will ever obtain, the admiration of all who can appreciate the untiring industry and high mental qualifications necessary to form the accomplished operator. By gentleness and perseverance, however, in the means which I have ventured to recommend in bad cases of stricture, the surgeon may rest assured he will generally be successful without resorting to the knife. It is true, that in the unostentatious exercise of his art, he cannot hope to obtain that applause which the dexterous performance of an operation is sure to excite, yet his reward will be no less enviable, and far more lasting—an approving conscience!

68, *Dean-street, Soho.*

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