Clinical Lecture

ON THE

USE OF POTASSA FUSA IN THE TREATMENT OF STRICTURE OF THE URETHRA.

DELIVERED AT THE MIDDLESEX HOSPITAL.

BY

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GENTLEMEN,—You have recently had an opportunity of seeing the effects of a mode of treatment of stricture of the urethra, which does not appear to me to have had that attention given to it which I believe it merits.

The man, Patrick Archibald, whose case I propose now shortly to read to you, was a tailor, aged 44, who was admitted into Forbes' ward on December 4th last. He had been a hard liver; but until lately had had good health, except that he was subject to occasional attacks of rheumatism. Within the last month, he has had a troublesome harsh cough, and has been losing flesh. It was ascertained, after his admission, that he had tubercles in the lungs. Ten years ago he had gonorrhœa, but he soon got well, and is not aware of ill effects from it.

About two years ago, he found that he could not at all times retain his urine. It passed from him involuntarily and spasmodically immediately on his feeling a call to micturate. At the same time the stream began to diminish; and it continued to do so until about three months ago, when he found that he could pass urine only in drops. From the first, he had severe and forcing pain in passing his urine. The desire to do so was almost constant; and for some weeks his rest has been completely broken by it. In the course of the twenty-four hours, he voided an average quantity, which was of specific gravity 1015; was slightly acid; and contained no albumen; and no more than the usual amount of mucus. There was no hardness nor tenderness in the perinæum. On passing a bougie into the urethra, a stricture was found near the membranous part. Attempts were made to introduce the finest instrument into the stricture, but without success. He did not experience much pain from the contact of the instruments; nor did any bleeding take place. The stricture seemed very hard and resisting.

On the 6th, a piece of potassa fusa, of about the size of a large pin's head, was passed down to the stricture by means of a large bougie hollowed at the extremity to receive it. This gave rise to considerable pain, especially when urine passed. This pain, save when he tried to urinate, ceased by the following morning. For nearly forty-eight hours there was no difference in the way in which the urine flowed; it came in drops; but then he began to pass a small stream, ending in drops, and with still some scalding.

On the 10th, the potassa fusa was again applied in the same manner. He had pain as before; but soon afterwards the stream enlarged, and he began to retain his urine for a longer period.

On the 17th, a No. 2 catheter was passed readily into the bladder; and then catheters were introduced one after another till a No. 8 was passed. The urine now came away always in a stream, without any tendency to its passing in drops, though he still had some pain. He now got rest at night, and said that he was in every way more comfortable, except from his cough, which was more harassing.

On the 27th, a middle sized catheter was again passed,

but it was obstructed at the upper part of the stricture, and it required to be depressed, in order to guide it through. A small piece of the potassa fusa was therefore again applied; the hollow for its reception being made in the upper part of the bougie, so as to touch the upper margin of the stricture. The pain was the same as before and there was some scalding for three or four days after which, he had no pain whatever. From the time of this last application no further interference was called for. The stream became free, and from day to day he had less trouble, so that after about ten days he passed a larger stream than he had done for two years, and could hold his urine for many hours; he was indeed scarcely disturbed at night. Every day he seemed to be gaining ground, so far as the urinary organs were concerned, up to the time of his death, which took place on February 1st, the symptoms of phthisis having made rapid progress during the intensely cold weather.

On examining the urethra after death, there appeared to be but a very small amount of destruction of tissue, considering that the caustic had been applied three times.

Mr. Flower, who made a careful examination of the parts, has kindly furnished me with the following note of the appearances. "On the floor and right wall of the bulbous portion of the urethra, two inches from the neck of the bladder, is a nearly circular patch rather less than half an inch in diameter, covered by a yellowish grey pellicle of sloughy tissue. Upon detaching this, a depression is left, extending in the centre almost through the thickness of the mucous membrane. Around the circumference cicatrisation is advancing; the reproduced tissue having a white, smooth, glistening appearance, and blending insensibly at its edges with the normal membrane.

"Several smooth shining patches on other parts of the lining membrane in the same portion of the urethra seem to indicate that a healing action has taken place, but there is no contraction or puckering; the coats are nowhere abnormally thickened, nor is there any fibrinous deposit beneath them; the surrounding spongy tissue appears to be quite healthy."

This case, you will observe, is one of simple permanent stricture; very narrow, certainly, inasmuch that the patient could not pass a stream, however small. But, at the same time, he was free from any great amount of distress; there was no irritation of the bladder, no tendency to spasmodic retention, and no recognisable disease of the kidneys. There was then no immediate or urgent necessity for any heroic measures; nor should I have adopted the course which I did, had I not been satisfied by experience that, when carefully applied, the caustic potash is as safe as well as a rapid agent in removing a stricture. The stricture was extremely small; I could not get a fine instrument into it; and perhaps lengthened and repeated trials would have been necessary before I could have succeeded in doing so. The attempt would probably have caused irritation, and might thus have complicated the case; for, unless a bougie pass the stricture, it is often productive of irritation. Had a bougie been passed, there is no doubt that dilatation might have been easily effected. The stricture was limited to a small segment of the membranous part, and there was no hardness to be felt in the perinæum. I was satisfied, however, that not only a more rapid, but a more permanent relief, would be obtained by the application of the caustic, than by any mode of using the bougie alone; while any more decisive measures were entirely uncalled for, and would have been improper.

The patient had all the indications of phthisis;

and on that account, again, it was perhaps desirable to free him from his trouble in the urinary organs as promptly and with as little irritation as possible. The case can hardly be regarded as one which shows most strikingly the effects of the treatment; but you have not perhaps seen the caustic applied, and it is worth bringing to your notice in connexion with the general question of the treatment of stricture.

The treatment of stricture by caustics, in one form or another, is of long standing. In this country, the nitrate of silver was brought into general notice as a means of destroying stricture by Sir E. Home, who had seen it advantageously used by Mr. Hunter. There is no doubt that many cases of obstinate stricture were cured by it; but its use has become restricted to those in which there is a very irritable state of the membrane; and in such cases the lunar caustic acts as it does when applied to any other irritable surface; it deadens the sensibility. Its escharotic power is not, however, very decided. You have often seen it applied freely even to the conjunctiva, without its destroying the surface of the membrane. When it does act as an escharotic, it gives rise to swelling and inflammation of the surrounding parts. Its use as a destructive agent on the diseased tissues has been generally abandoned.

Mr. Whately first suggested the application of potassa fusa as a means of removing stricture. He only allowed of its use, however, in those cases where a fine bougie could be passed fairly through the stricture. Where this could not be done, he thought that the application of the caustic might set up inflammation, and so, by diminishing still more the aperture, cause a complete retention. The small quantity of the caustic which he used, and the precautions which he thought it desirable to adopt in order to prevent its too free action, made it in his hands a far less effective agent than it has since proved to be.

It is to Mr. Wade that we are indebted for a more just appreciation of the value of this remedy, and I would strongly recommend you to read his views on the subject. He pointed out the true distinction between the action of lunar caustic and that of the caustic alkali. The lunar caustic, he observes, gives rise to a hard slough, and to the effusion of lymph around it; while the potassa fusa effects a softening and dissolution of the thickened tissue, without producing any surrounding hardness. There is little risk, therefore, of causing that blocking up of the stricture which was feared by Mr. Whately. Mr. Wade also uses the caustic in larger quantity, and does not cover it with lard, as was recommended by that gentleman. He applies it to cases of impermeable stricture, whether those of merely a small cord-like constriction, or where the canal is indurated to a considerable extent; and he expresses his belief that, in cases so treated, there is but small disposition to a return of the disease. The last mentioned point is one of great importance, and, if the opinion be correct, would, *cæteris paribus*, render this mode of treatment preferable to most others.

As a general rule, if an instrument can be passed through a stricture, the cure is half effected. The careful gradual use of the bougie will cause the dilatation of the stricture; and, where no untoward symptom is present, such as great irritability or tendency to spasm, this is undoubtedly the best and safest mode of dealing with the complaint. But, in

the majority of such cases, the bougie must be regularly used from time to time after the stricture has been dilated; for, when once a stricture has formed, there is usually a great disposition to its return. This is, no doubt, often the result of constitutional causes; the gouty constitution, or chronic dyspepsia, will keep it up. So, too, will local causes—a persistent irritable state of the bladder, or hard horse-exercise. Very frequently, however, the patient cannot give up the time required for this gradual dilatation; and frequently also the stricture will not yield to this plan of treatment. In other cases, again, the urethra seems to resent the contact of the instrument; irritation is set up whenever it is used, or the tendency to spasm is increased after it is withdrawn. In all such cases, the surgeon must resort to other modes of dealing with the stricture. Many plans of treatment have been adopted, suitable to the various complications which may exist, or to the necessities of the patient. Forced catheterism; the dilators of M. Perrève, which have been introduced into this country by Mr. Holt, and which I have used in some cases with great benefit; the dilators of Mr. Wakley; perineal section, or intra-urethral section, and other methods,—have been put in practice with more or less success; the constitutional condition of the patient being, of course, attended to. But the disposition to return is perhaps even greater in these cases than in the more simple states of the disease. Does the removal of the stricture by potassa fusa give a better chance of permanent relief? I believe it does; and, irrespective of the cases reported by Mr. Wade, which are entirely satisfactory, my belief is founded partly on theoretical grounds, partly on my own experience.

I have often pointed out to you the peculiar appearance of the cicatrix left after the healing of a deep issue made by the caustic potash. Instead of being puckered and hard, as you generally see in the cicatrices which follow the total or partial destruction of the skin by the application of the actual cautery or by most escharotics, it is soft, and smooth, and glistening, as large as the portion of the skin originally destroyed, and merging almost insensibly into the sound tissue. My friend Mr. Hoffman of Margate some years ago told me of the benefit which may be obtained by destroying the unsightly puckered scars which are left after the suppuration of scrofulous glands of the neck, with this caustic. When the sore produced by the falling of the eschar has healed, you find that you have substituted a smooth even surface for the previous seamed and corded one. In the course of time, the new tissue regains so natural an appearance as to escape notice. This plan I have often put in practice, and with excellent results. The same effect is, I believe, produced in the urethra when the diseased hardened tissue has been thus removed: a smooth surface is left, with little or no disposition to contract; and a more permanent cure is effected than is usually produced by the bougie. The *post mortem* examination allowed us in the present case to see the condition of the parts recently acted on by the caustic; and you will observe how completely, so far as they go, the appearances correspond with those which attend the healing of an issue made with the same caustic; and how very slight is the disposition to the effusion of any plastic materials.

The first case on which I tried the caustic, now some years ago, gave me a very favourable idea of the benefit to be derived from this plan of treatment.

A strong-built middle-aged man, who had been a sailor, and afterwards a cobbler, had injured his perineum while serving in the navy. I presume, from his account, that extravasation of blood to some extent had taken place. Stricture began to form, for which he was treated by bougies, but with only temporary relief. The last time he had been under a surgeon's hands, no instrument could be introduced into the bladder. He progressively got worse, notwithstanding any temporary benefit he may have derived from treatment. When he came to the hospital, he was suffering from constant desire to pass his urine, which only dribbled from him. The urethra could be felt in the perineum hard and corded for at least an inch in length; the attempt to pass a catheter brought on severe spasm, and was followed often by rigors. The necessity for speedily relieving this state of things was evident; and I determined to use the caustic potash, rather, I believe, with the view of removing the extreme irritability, than of destroying the stricture. The caustic was applied in the manner recommended by Mr. Wade, and as you saw in the present case. The bougie was kept pressed against the stricture for about thirty seconds; and the operation gave rise to very little pain—less, certainly, than the unarmed bougie had caused. As in the present case, it was found that, in the course of a day or two, he was far more comfortable; he had less difficulty in passing his urine, and less urgency. No unpleasant symptom followed the use of the caustic. I determined, therefore, to repeat the application; and this was done at the end of a week, with increased benefit. After two more applications, the urine came away in a good stream; and a large bougie was passed without any difficulty into the bladder. I believe that strictures produced by mechanical violence are amongst the most obstinate of those with which we have to deal; but I have seen this man twice since; the last time was four years after the treatment by the caustic. On both occasions he had some spasmodic irritation, after too free living; but a full sized bougie could be passed easily and at once into the bladder. I have no doubt that he would have returned, had he again suffered from his complaint.

My experience of this case led me to use the caustic in others, and, so far as I know, with the same results. In two cases, certainly, the canal has remained for over two years free from contraction; others I have lost sight of. In no instance have I found any bad effect to follow the application.

The same plan has been tried by my colleagues Mr. Moore and Mr. Henry, and they are equally satisfied with the results. Mr. Henry has been so good as to furnish me with the following case, in which great benefit was obtained.

Thomas Leeks, aged 38, a sailor, was admitted into Peppys' Ward on May 10th, 1860, with an impermeable stricture at the membranous part of the urethra. Symptoms of stricture had existed for fifteen years, but latterly had increased so much that the urine was voided only in drops and with much pain. The urethra was found to be very irritable, bleeding on the slightest touch; and shivering followed any prolonged effort to pass the bougie. Quinine was of much service at these times. After about a month, potassa fusa was used twice, the bits each time being small. A little soreness was complained of for some days; and the glairy discharge common in stricture became thicker and pus-like. At the beginning of July, Mr. Holt's dilator could be introduced, and dilatation up to the full extent was at once practised. No ill effect followed; and, after a few

days rest, a No. 12 catheter could be passed with ease. The patient was seen recently, quite well, and has gone to sea.

Nor is it only in obstinate strictures that the caustic acts favourably. Mr. Parker, of the Queen's Hospital, Birmingham (see *BRITISH MEDICAL JOURNAL*, 1859), reports two cases of spasmodic retention of urine, consequent on stricture, which were at once relieved by its application. In these cases, it seemed to act primarily much after the manner of nitrate of silver, by destroying the irritability of the surface.

There is surely no need to insist on the necessity for great care and caution in the use of such a powerful agent; but the same care is required in the use of the bougie, and far greater in the operations with cutting instruments. Probably more damage has been done by the incautious use of the bougie than has even been produced by the caustic. My own impression is, that the caustic acts with greater effect on the hard semi-organised tissue which forms the stricture, than on the healthy vascular parts. I ground this impression on what I have observed of the action of the potassa fusa on cicatrices in other parts.

It is only fair to tell you that the treatment of stricture by caustic has been condemned by many good surgeons, both British and continental; indeed, in France its use is almost unknown. Nélaton, for example, states that cauterisation is now rarely employed, in consequence of the uncertainty of its action; of the swelling of the urethra and retention of urine, which often result from it; and of the deposit of the retractile tissue which is formed afterwards, and which ultimately produces a new impediment. Here I have no doubt he is associating the effects of nitrate of silver with those of caustic potash—effects which, as I have stated, are very opposite. I have certainly seen no such effects, nor any tendency to them; and this is the conclusion at which Mr. Wade, with more extended experience, has arrived. I cannot help thinking, with that gentleman, that the treatment has been condemned rather from want of experience of its effects than from experience of its dangers. For a more complete exposition of these effects, and of the mode of applying the treatment, I must refer you to his works on the subject.

REDUCTION OF PARAPHIMOSIS. M. Massart advises in simple paraphimosis, without strong constriction or danger of strangulation, frictions with mercurial ointment containing a little extract of belladonna. He especially approves of the following method proposed by Professor Pinilla. He takes a narrow band; for instance, the red bandage used by bleeders. It is placed on the centre of the corona glandis, and it is turned round it by the extremities which meet and cross each other at the top of the frænum. The ends are fixed in unrolling by the little finger of each hand. Then turning into the palm of the hand the little and ring fingers, and drawing on the band, we compress the glands. At the same time the other fingers are at liberty to effect the reduction. (*Dublin Medical Press*.) [M. Massart's idea is not very novel. In the *JOURNAL* for September 1st, 1860, we noticed a similar plan recommended by Dr. Van Dommellin; who, however, uses adhesive plaster. A proceeding very analogous in its nature for the removal of rings from swollen fingers was described in the *BRITISH MEDICAL JOURNAL* for July 9th, 1859, by Mr. Garraway, of Faversham; who, however, distinctly disclaimed all pretensions to originality.]