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VASOSTOMY FOR EARLY ACUTE URETHRITIS

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Vasostomy for lavage of the seminal vesicles has not been widely practised in this country, though the operation was devised as early as 1905 by Belfield and has since been employed by him in more than 1,100 patients. It fell to my lot in 1914 to perform the first operation for vasostomy in England. Up till 1928 I reserved the operation for chronic cases of vesiculitis which had failed to respond to the usual remedies for that condition. For this reason I had only been called upon to carry out the operation in some fifty cases. In a correspondence that took place in the *Lancet*, April 21st, 1928, pp. 883 *et seq.*, I was impressed by a letter written by Mr. J. F. Peart, who stated that he had employed vasostomy in the treatment of early urethritis with satisfactory results. As happens to most pioneers, he was at once brought to book by those who, having had little or no experience at all of the operation, were willing nevertheless to criticise his statements on *à priori* grounds. So remarkable had been my own results from vasostomy in chronic vesiculitis that I was quite prepared to pay attention to Mr. Peart's statements. It seemed to me that these could only be judged by the results of experience and that he might have lighted on a very interesting observation which called for further practical tests.

Now it has been my experience that one meets with quite a number of cases of early urethritis which according to all the usual tests are confined to the anterior urethra. Yet after a week or two of irrigation treatment, when all signs of discharge have disappeared and the urine is clear, and just when one thinks the case is cured, all of a sudden the urine becomes hazy as a result of an acute prostatitis and vesiculitis, which takes several months to cure. These cases have always puzzled me. One has learnt from the experimental work of Mr.

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Kenneth Walker that when bacteria are placed in the anterior urethra of animals they ascend in a very short time to the structures surrounding the deep urethra and even to the testicles. Yet in dealing practically with gonorrhœa in human males this does not at first sight appear to be the rule. But I am beginning to think from my experience of the cases mentioned above that quiet ascent to the tissues surrounding the deep urethra in the first few days of the disease may occur in a few if not all the cases. The bacteria may be presumed to lodge and lie dormant there for some weeks, when they either die out altogether or else manifest their presence by penetrating through the mucous membrane and setting up deep urethral discharge. I am beginning to believe that Mr. Kenneth Walker's experimental results may possibly even hold good in all cases in the male infected with the gonococcus, and in fact that what may happen in every case is as follows, and I put it forward as a working hypothesis to be tested by further observation.

HYPOTHESIS

Within twenty-four to forty-eight hours of the infection of the first inch of the urethra with gonococci a large number of the bacteria have spread up in the submucous tissues or lymphatics to the submucosa of the prostate, vesicles and epididymis. Here they lie dormant for a period of ten days to three weeks. If the case is treated by urethral lavage, in a number of cases the anterior urethritis clears up and the tissue juices and cells deal with the bacteria that have spread to the upper regions of the genital tract and by a process of natural cure the disease disappears. In a certain number of cases, especially if irritated by alcohol, venereal excess, debilitating diseases such as influenza, or too strong treatment, even though the anterior urethritis is cured, suddenly the resistance of the deeper tissues breaks down, the bacteria break through from the lymphatic spaces on to the surface of the mucous membranes, and a violent and sudden deep urethritis, prostatitis and vesiculitis, and even epididymitis may occur. Such a conception would modify profoundly our attempts to treat early urethritis.

If such a conception were admitted as a working hypothesis, then it might be reasonable to expect that to

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cut down on each vas and fill each vesicle with colloid silver might so modify the bacterial balance in the tissues of the deep genital tract as to cause a complete and sudden sterilisation thereof.

On further inquiry I found that Mr. Peart had only carried out vasostomy in two early cases of urethritis, but he seemed undoubtedly to have obtained quick cures. I determined to try the treatment also in some early cases of gonococcal urethritis and to observe exactly what happened. Now it is not always easy to persuade patients with early urethritis to submit to operative treatment, nor have I had the time to devote to a study of more than a few cases. Thanks to the help of Dr. Malcolm Simpson and the Resident Medical Officers of St. Paul's Hospital, I have been able to deal with five picked cases and to observe the final results.

Three were early cases of acute posterior gonococcal urethritis. The first had had his trouble for just over a fortnight, and showed a deep posterior haze and a swollen tender prostate. On June 13th, 1928, I cut down on each vas, washed out each vesicle with 5 c.c. of 5 per cent. colloid silver. The patient remained in bed and received a posterior irrigation with weak permanganate on each of the three following days. After that he left the hospital and had no treatment whatsoever of any kind. I followed him up personally for the ensuing two months and he never had any more signs whatever of his trouble and was undoubtedly cured. This result made a profound impression on me, as I have never before seen any case of acute posterior urethritis cured in three days by any kind of treatment, and it encouraged me to proceed.

The second case had posterior urethritis as a result of contact thirteen days previously, with a deep posterior haze and swollen prostate. I carried out a similar operation on him on July 11th, 1928. He received a daily posterior irrigation for four days and then left the hospital, where he attended as an out-patient. There he received a daily posterior irrigation until July 20th, on which date gonococci could still be detected in his urethra. He received a daily irrigation until August 3rd, on which date the urine was clear and there was no urethral discharge. He continued to receive prostatic massage and a posterior irrigation twice a week until September 7th, 1928, on which date he ceased to attend, as he considered

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himself cured, and it has not been possible to trace him since for a final result. The result here was not quite so dramatic as in the first case, but as far as it is possible to judge the acute infection cleared up completely within ten days of his operation, and the man considered he was cured a few weeks later, and there was no evidence to suggest that he was not cured.

The third case contracted acute gonorrhœa on June 4th, 1928. On June 18th he was admitted to hospital with profuse hæmaturia, strangury and greatly increased frequency. The vesicles and prostate were swollen and tender, and every attempt to irrigate the anterior urethra with even very dilute antiseptics only seemed to increase the bleeding and pain. As he was lying in bed a very sick man and making no progress, on July 11th, 1928, I cut down on each vas and washed out each vesicle with colloid silver. The urine became brown within three hours of the operation and from that moment his pain frequency and hæmorrhage completely vanished as if by magic. The effect was most dramatic and striking. The urethral discharge, which had been profuse, disappeared at once. On July 17th, during the night he had a seminal discharge, deeply stained with colloid silver. On July 18th I exposed each vas again and washed out each vesicle. On July 30th he was discharged to the Out-patients Department. He had no symptoms and no urethral discharge but his urine contained pus and his vesicles still felt thickened. He received prostatic massage and a posterior irrigation, which he now took with ease, twice a week until August 24th. On that date his urine was clear and cultures showed an absence of gonococci and the presence of the staphylococcus albus only. There is little doubt he was then cured. He was, however, kept under regular observation until December 17th, at which time he was discharged as cured.

The fourth case had suffered from acute gonorrhœa for two months. He had had gonorrhœa twice in the past, and on each occasion his joints had been affected. On this occasion he had been lying for a month in bed at home with arthritis and fever. He had a most inquisitive sister always in and out of his bedroom and his doctor could not get any time with him unless she was present, so that no effective treatment could be given. We transferred him to a nursing home to get him away from

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his sister. On July 17th I washed out both his vesicles with colloid silver, and afterwards gave him a posterior irrigation with permanganate once a day for eight days. At this period, though his discharge had disappeared, yet he still had fever. Thereupon I injected 1 c.c. of "S.U.P. 36" intramuscularly on three consecutive days. On the twelfth day the fever had completely disappeared; there was no discharge, the urine was clear, and the joint trouble had cleared up. I kept him under observation until the twentieth day, with no further treatment, and on that day he left the home cured.

The fifth case was that of an old man, aged sixty-eight, who had lost his wife some years previously and had recently contracted very severe gonorrhœa. Gonorrhœa is more difficult to cure in old people than in young people, as there is less tissue resistance. Attempts had been made to carry out posterior irrigation treatment, but the only result had been to produce a secondary infection with the colon bacillus and the discharge had become very profuse. I took him into hospital, where under a local anæsthetic I washed out each vesicle through the vas. He was irrigated daily for a week. His discharge disappeared, but the urine remained hazy. I saw him every week for a long time afterwards, but he never suffered from any more discharge and the gonococci disappeared. The haze in his urine persisted for a time and proved to be a bacilluria. Finally, I put him on to large doses of hexamine, giving up all other treatment. The haze in the urine promptly cleared up and he had no further trouble.

If Mr. Peart's two cases are added to the five reported above it appears that of seven cases of early urethritis treated by vasostomy, five were quickly cured and the other two showed a very favourable reaction to the treatment, and were cured in a few weeks, certainly much more quickly than one could have expected them to have been cured under the ordinary treatment by prostatic massage and irrigation. Though the numbers are few a case is established for further research. That is why I venture to bring forward these cases and would make a particular appeal to venereal specialists in the Services, as they have admirable opportunities for trying out this operation. If they would learn the technique and select for the operation suitable cases, they might find it

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a very successful line of procedure. I want to make it quite clear that I do not advocate the operation for every early case. The majority of cases of anterior urethritis react quickly to irrigation treatment controlled by urethroscopy ; and there are many cases of posterior urethritis which respond in two or three months to prostatic massage and posterior irrigation. But I think there is a definite field in which this operation might be found of use.

First, it should be considered for patients who cannot irrigate, either because every kind of irrigation causes hæmorrhage, pain and increase of discharge, or because of family obstacles.

Secondly, it might prove of service to those married men who come back from the tropics with recently acquired gonorrhœa. I know, for instance, that in Burma the concubines go out of their way to get gonorrhœa and give it to these men before they go on leave, so as to make sure that they do not go with any other women while they are away. Such is female jealousy. For this reason many men on coming from the tropics are in a great difficulty about going back to their wives. I have done this operation on a certain number of such men and got them quickly back to their wives without trouble.

It might also prove helpful for the youths who come to us on the eve of their marriage because they have recently gone astray with some woman and find themselves landed with gonorrhœa. This would be one way of cutting short such difficult cases.

A fourth group in which I would recommend the operation is in cases of intractable arthritis, as it is a quick way of clearing them up. Belfield has used it as a routine treatment in all cases of arthritis. It should be used in cases of gonorrhœal arthritis that do not react in a week or ten days to daily prostatic massage, posterior irrigation and injections of "S.U.P. 36."

Finally, it should prove of great help to medical men in the Services. At one period during the War I was in charge of a ward containing cases of very severe and intractable gonorrhœa. I had under my care a large number of soldiers completely bed-ridden with keratosis blenorragica, multiple arthritis, and epididymitis. The only person I had to help me was an unqualified male nurse who had been a cook a few weeks before. I realise

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now that had I but appreciated the value of vasostomy I might have cured a number of those cases very quickly. It appears to me, then, that venereal specialists in the Services should certainly learn this operation and be able to carry it out. Even if they do not use it very much in peace time, in any future war, if venereal disease is still such a problem as it was in the last, vasostomy would prove a valuable weapon in the hands of trained venereal specialists.

With regard to the operation, there are certain points that need emphasising. It is advisable to put the patients to bed for at least three or four days afterwards, rather than treat them as ambulatory out-patient cases. I have been told of one patient who was allowed to go straight back to work, with the result that he rubbed his wound and developed mutilating sepsis. Such a risk is not worth taking.

During the period spent in bed it is better to give a daily posterior irrigation of weak permanganate. As soon as this is over all local irrigation treatment can be dispensed with for a week or ten days and the results of the treatment tested. The majority of my cases of vasostomy have been cured without the need for any further irrigation treatment.

In exceptional cases the urine may remain hazy with pus or bacteria for some time, although all urethral discharge and all gonococci have disappeared. This haze usually disappears if hexamine is exhibited in full doses. In some cases the prostatic fluid contains pus-cells for a long time, although it does not contain gonococci. This appears to be the result of chemical irritation. If it does not react to prostatic massage it is best left alone and eventually dies out. In the exceptional cases where gonococci do not at once disappear after vasostomy, it will be found that a return to regular prostatic massage and posterior irrigation will quickly put an end to their presence, and that, too, in cases which have failed for many months previously to respond to such treatment. The effect of the vasostomy has been to open up the blocked vesicles and so enable massage to empty them adequately.

The operation can be performed under local anæsthesia, but it is advisable to practise it under general anæsthesia until technical familiarity has been achieved.

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When I first had the honour of addressing this Society in 1923 I advocated an operation by which the vas was left exposed in the wound, with the idea of washing out the vesicle on two or three occasions during the week the patient was in hospital. I have since given that up, because it was not always easy to get the second or third wash through, and it was apt to lead to complications. It is now generally agreed that it is better to expose the vas, wash out the vesicle, drop the vas back and stitch up the wound. If need arises to wash out again, then a second operation can be carried out. Attempts to leave the vas exposed are now regarded as a mistake.

The operation is not always an easy one. You need the right instruments and should practise it until you can do it readily. I find 5 per cent. colloid silver is the most effective material for lavage. We do not know why it acts so well, but it seems to be more potent in getting rid of the gonococci than other antiseptics that have been employed.

It would not be fair to conclude without pointing out certain risks that occasionally attend the operation. There are risks, but they do not often eventuate.

(1) *Sterility*.—If you do not carefully stitch up the opening made in the vas you may get a little leakage of colloid silver which may lead to the formation of stricture at the site of puncture. If you get a stricture on both sides it may mean sterility. I have done the operation more than fifty times, and I have had sterility complained of only in one case, and that patient was sterile before I performed the operation, as both his vesicles were blocked with inflammation and spermatozoa were absent from his secretions. The risk of sterility is very small, if you are careful about stitching up the hole in the vas. Some workers prefer to puncture the vas with a needle and not to cut at all.

(2) *Pyæmic Abscess*.—A case was reported in the *British Journal of Urology* by Fuller, of Cape Town. It was an obstinate case of infection of the vesicles with the colon bacillus. He carried out vasostomy as the infection would not answer to treatment. The local condition cleared up, but the man developed a pyæmic abscess in the ulnar bone. I know of another case, the result of which was personally communicated to me, where one or

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two pyæmic abscesses appeared after the operation had been carried out, though the local condition got well. It shows what a sensitive neighbourhood the vesicles are when you get such abscesses coming on after a successful vasostomy.

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