LECTURES ON THE OPERATIVE TREATMENT OF ENLARGEMENT OF THE PROSTATE.

[ABSTRACTED.]

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By C. W. MANSELL MOULLIN, M.A., M.D., F.R.C.S.,

Professor of Surgery and Pathology at the Royal College of Surgeons of England; Surgeon to, and Lecturer on Physiology at, the London Hospital.

LECTURE III.

THE earliest record of McGill's operation, or suprapubic prostatectomy, is in the year 1827, when Amussat is stated to have excised a valvular median lobe during the performance of lithotomy. As, however, I have not been able to ascertain any particulars with regard to the result, I have merely retained the case for its interest, and have not included it with the rest. Of these, the two first were performed by Dittel in February, 1885, and February, 1886, respectively. Trendelenburg came next in May, 1886, and Belfield in the following month. Then Benno Schmidt in August of the same year, and Belfield, Trendelenburg, and Benno Schmidt again. McGill's first was in March, 1887. After this, and as a result of his communications to the Clinical Society and to the British Medical Association in August, 1889, the operation was performed much more frequently.

Thanks to the kindness of the many surgeons to whom I have written, and to whom I owe a deep debt of gratitude for the trouble they have taken and the valuable information they have given me, I have been able to collect particulars of ninety-four cases. Of these, nineteen have died, upwards of 20 per cent.; but it is worth noting that while twelve deaths occurred in the first half, there were only seven in the second. One of the fatal cases, it is believed, was due to corrosive sublimate poisoning. In a second the operation was of an unusually extensive character, involving resection of the pubic symphysis. A third, who was 80 years of age, died suddenly on the fourth day from what is called acute irritative urinary fever, the temperature rising rapidly to 106° F., without any apparent reason. Three died from pneumonia or purulent bronchitis, one from hæmorrhage, and the rest from exhaustion or pyelonephritis. With wider experience, it is not unlikely that the mortality will be much further reduced.

The percentage of failure is more difficult to estimate, as many cases in which complete control over the bladder was never regained certainly do not deserve to be included in the list. In one, for example, complete recovery followed the perineal operation, performed a month or two later; the division of the obstruction had not been carried sufficiently far. In another, a man, aged 87, no attempt was made to close the suprapubic wound; but at the present time, four years after the operation, he is, so I am informed by Mr. Buckston Browne, going about still, thoroughly enjoying his life. In a third there was already a fistula consequent on the previous removal of a vesical tumour, and in several others there were reasons for which some allowance must be made; but this is better considered later, with the conditions that render operation advisable.

As regards the *technique* of the operation there is but little variety. Trendelenburg is in favour of a transverse incision through the soft parts, which may be advisable in the case of a pendulous abdomen following the fold over the pubes, but does not really give more room, and certainly predisposes to hernia. Helferich, as already mentioned, resected the pubic symphysis with the same object. According to McGill, enucleation of the growth after the mucous membrane over it has been divided is the most satisfactory method. Others have employed the cautery or an *écraseur*, and Keyes makes use of what he terms a "*rongeur*" to cut a channel through the obstruction. Bleeding rarely appears to be serious, although in one case it was directly fatal, and in another it probably contributed largely to the result.

The amount removed must depend in each case upon what

is revealed by the exploration. In two McGill was only able to remove a fragment the size of a pea; on the other hand, Buckston Browne, in the case already mentioned, excised no less than four ounces by weight. Certainly, if the result is to be successful, the whole vesical portion must be enucleated, a low level channel cut through, and, unless the tissues around the neck of the bladder are perfectly soft and flexible, a smooth and straight route made down the urethra. Belfield lays especial stress upon the thorough exploration of the urethra with the finger. In one of his cases, after removing a tumour the size of a walnut from the left lateral lobe through a suprapubic incision, he found that there was still some obstruction in the prostatic urethra, preventing the entrance of a catheter. Perineal urethrotomy was performed, an incision made along the floor, and a rounded mass shelled out into the bladder. There is no doubt, moreover, that one of the earlier cases (Meinhardt Schmidt's) failed from this not having been done, as the bladder recovered completely after perineal prostatotomy, and the patient was perfectly well two years and a-half afterwards.

Trendelenburg, Helferich, and others have made use of the cautery instead of a separate perineal incision, sinking it deeply into the tissue of the prostate in the middle line behind; but as Belfield points out, the addition of the *bout-onnière* increases but slightly the injury to the tissues and the duration of anæsthesia, while it enables the operator to feel much more accurately what he is doing. It may also be pointed out that it is of great assistance afterwards in draining the bladder. It is true that after suprapubic lithotomy all the urine will come out through a tube inserted in the wound; but this only holds good so long as the operation is confined to the bladder; the prostatic portion of the urethra cannot drain itself in this way, and when the operation has extended into it, unless a perineal opening is made it becomes a conical receptacle at the lowest part of the wound filled with decomposing blood and urine.

The lateral lobes are quite as important as the median, and require to be dealt with as thoroughly. McGill recommended removing the salient portions with scissors and then enucleating the rest until a funnel-shaped passage was established. So long as the bladder is of fair capacity this is not so difficult as it might be thought; the greater the size and the more irregular the enlargement, the easier enucleation becomes; but unless Helferich's resection of the pubic symphysis—which very seriously increases the gravity of the operation—is performed as well, it is almost impossible if the bladder is small and its walls rigid.

Such are the operations proposed for the radical cure of enlargement of the prostate. Provided suitable methods are selected, there is no doubt with regard to the possibility of removing the obstruction. The first question is whether it will return and render the operation useless; the next, whether the bladder can recover; and then, what is the risk to life.

Mercier's operations there is no doubt are failures; if a larger amount is removed is the prospect much better? Definite recurrence has been noted in one instance (Benno Schmidt's first), and that within nine months. It is true it has been suggested that the growth in this case was of a malignant character; but as the symptoms had already lasted seven years at the least this is hardly likely. In another (Guyon's case), a few days after the operation, the introduction of a catheter became as difficult as it was before, but this must have been due to the obstruction not having been properly removed; it could not have grown up again in the time. On the other hand I have notes of four cases in which, on the bladder being opened and examined some time later, the cicatrix was perfectly smooth; and the clinical evidence is very satisfactory, a large proportion of the patients operated upon regaining power over their bladder and retaining it unimpaired for three or four years. Sometimes too the prostate undergoes an actual diminution in size after the operation. Harrison has recorded a remarkable instance of this in his *Lectures on the Surgical Disorders of the Urinary Organs*. Packard mentions another; I have met with a third in which the shrinkage was demonstrated *post mortem*, and there are several others on record. What the change may be caused by is not certain; it is much greater than can be accounted for by the subsidence of congestion and the contraction and ab-

sorption of thrombi. I incline to the opinion myself that it is due to the fibroid consolidation which sets in sooner or later in most of these cases, and not, as Harrison suggests, to simple atrophy. But whether this is the case or not, there is no doubt of its occasional occurrence, and it is certainly encouraging that although many of the cases operated upon are now 4 years old, definite recurrence has only been noted in one.

The question of the recovery of the bladder depends partly upon the condition of the patient as regards general nutrition, partly upon the extent to which the muscular coat has been ruined by overdistension, cystitis, and the repeated use of catheters. Nineteen cases in all failed, but in four of these either the whole obstruction was not removed, or no attempt was made to close the suprapubic opening; in two others there was already a fistula owing to the previous removal of a vesical tumour, and another was a very feeble old man who became insane shortly after. These, at least, must be deducted, and in several others there were mitigating circumstances. It cannot, however, be too plainly stated that the real reason why the bladder failed was that the operation was performed too late. Sir H. Thompson has written that habitual catheterism for retention in cases of enlarged prostate for two years will permanently destroy the power of the bladder to empty itself; and although McGill has shown that this is by no means so invariable or so positive, it is certainly one of the strongest arguments in favour of early operation that the chief palliative measure that replaces it, may within two years—*will*, according to Sir H. Thompson—so ruin the bladder that it can never recover.

The final question is whether the operation does not involve too great a risk to life, and how far it will compare in this and in the degree of comfort it confers with palliative measures, such as suprapubic and perineal drainage. For it has been said that nearly the whole benefit derived from it is due to the temporary relief from cystitis or to the extraction of calculi, and not in more than the remotest degree to the removal of the obstructing mass. In answering this the perineal operation must be considered separately from the suprapubic. It is not a matter of option which of the two should be performed; one may be required, or the other, or both; and fortunately in the majority of instances it is fairly easy to tell beforehand which should be selected. Even, however, if owing to some misleading feature, there does happen to be a mistake in the diagnosis, and the perineal operation is performed in a case better suited to the other, exploration with the finger can do no harm, and the presence of the incision, supposing it is not wanted for drainage, adds little or nothing to the gravity of the operation.

Of the thirty-eight cases of perineal operation undertaken for this purpose and not as an afterthought during lithotomy, only three died, and one of these was 80 years of age already, and in another the method adopted was unsuitable. Simple division, I grant, is not of much value unless followed by prolonged drainage; but undoubtedly in suitable cases perineal prostatectomy, without necessitating an appreciably greater risk, confers upon the patient a degree of relief with which that following mere cystotomy or drainage offers no comparison. The patient in a large proportion of cases recovers complete control over his bladder, and even in the failures, even in those instances in which a fistula is left or in which the sole benefit gained is the easier introduction of a catheter, he is no worse off than if the formation of a permanent fistulous opening and nothing more had been the object in view.

The suprapubic operation stands on different ground. Taking all the cases together, the mortality is approximately 20 per cent.; if the last half only, it is still 15 per cent.; and although this will fall lower, especially in the hands of those who are practised in the performance of the operation, it is probable that it will always remain higher than the other. On the other hand, it must be remembered that the majority of the patients operated upon were practically *in extremis*, and that it is very doubtful whether a very large proportion would have survived much longer, or even so long, had the operation not been done.

The real issue lies between suprapubic prostatectomy and the continuous wearing of a cannula, which, in spite of the enthusiastic comments of those who were suffering tortures

before it was introduced, is scarcely preferable to micturition by the natural route. Each has, I believe, distinctly its own field. Enlargement of the prostate by itself requires neither, and fortunately the majority of patients suffering from this complaint pass through life without its ever becoming necessary to raise the question. In a certain proportion, however, complications set in sooner or later; and to many patients there comes at length a time when their constitutions are still sound, but there are clear indications that the local conditions are surely and rapidly growing worse. The catheter has to be passed more and more often; occasionally there is a little difficulty, and, what is still more important, it no longer gives relief—the desire to pass water is as great after the instrument is withdrawn as it was before; cystitis breaks out every now and then; attacks of congestion causing hæmaturia and retention occur with greater frequency; the urine is becoming offensive; the residuum is growing larger, and the night's rest is seriously broken. For these and such as these prostatectomy, by one route or the other, according to the special conditions present, certainly affords a far better prospect than either cystotomy or drainage, and without sensibly greater risk. Permanent cure is possible, and even the failures are as successful as the successes claimed for the other methods.

On the other hand, if this chance is lost, if, as only too often happens, the patient has allowed himself to drift on, using a catheter more and more frequently without realising what the end must be, until his kidneys are diseased or cystitis has destroyed the muscular power of the bladder and made it small, hard, and rigid, the conditions are absolutely different. When the capacity of the bladder is much reduced, and it cannot be distended; when it has lost its power, whether this arises from prolonged retention, repeated inflammation, or the persistent use of catheters; and when, under careful treatment and watching, it shows no sign of recovery, it is useless attempting to remove the obstruction; cure is impossible, and the risk, if there is the least nephritis, much too great. Palliative measures only can be employed; as much benefit can be derived from drainage as from the most complete enucleation; and no surgeon would undertake a grave operation when one less dangerous to life would answer equally well.

REPORTS TO THE SCIENTIFIC GRANTS COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

REPORT ON THE PHYSIOLOGICAL ACTION OF THE ACTIVE PRINCIPLES OF URECHITES SUBERECTA.

By RALPH STOCKMAN, M.D., F.R.C.P.E.,
Lecturer on Materia Medica and Therapeutics in the School of
Medicine, Edinburgh.
(Research Scholar of the British Medical Association, 1890-91).

My attention was directed to this plant by reading two interesting papers¹ by Mr. J. J. Bowrey, Government Chemist in Jamaica, on its chemical constituents and their poisonous action. Mr. Bowrey's experiments on animals, while proving the extreme toxicity of the active principles which he had isolated, did not in any way indicate their mode of action, nor the pharmacological group to which they belong. For the purpose of carrying out a more detailed investigation, he very kindly prepared for me a supply of the active substances, and it was with these that the following research was made.

The urechites suberecta belongs to the natural order *Apocynaceæ*, and grows abundantly in Jamaica and other West Indian islands, where it is known as the "savannah flower" or "yellow-flowered nightshade." It is usually a climbing

¹ Bowrey, *Proc. Roy. Soc.*, xxvii, 309, 1878, "On the Physiological Action of the Poisonous Principle of Urechites Suberecta"; *Journal of the Chem. Soc.*, xxxiii, 252, 1878, "The Poisonous Principle of Urechites Suberecta."