PROSTATECTOMY

AS PERFORMED BY THE LATE PROFESSOR
ANDREW FULLERTON

BY

W. A. PAGE, M.B.

DEPARTMENT OF PATHOLOGY, QUEEN'S UNIVERSITY, BELFAST

The following is a report of thirty-one consecutive cases of prostatectomy performed by the late Professor Andrew Fullerton, C.B., C.M.G., M.D., M.Ch., F.R.C.S.I., F.A.C.S., at the Royal Victoria Hospital, Belfast, from July, 1931, till August, 1933, when he retired from the honorary staff of the Hospital. During this period he used the technique, especially post-operative, which his previous experience of the operation had convinced him was, from its very simplicity, the best and safest of the numerous methods he had tried. Professor Fullerton intended to publish this series himself. He discussed with me the various points in the technique which he wished to emphasize, and briefly outlined his ideas for the form of this paper. Unfortunately he was not able to carry out his intention personally. I shall try to follow his original ideas as closely as possible, and for the sake of simplicity I shall write in the first person plural.

The cases were not selected for operation with a view to statistical records. The majority were brought into hospital from the waiting list, and the remainder were admitted as emergency cases with acute retention.

Pre-operative Treatment

Prior to operation the blood urea and Calvert's range of urea concentration were ascertained. A blood urea of under 50 mg. per 100 c.cm. was essential. If the figure exceeded 50, operation was postponed until the patient's condition improved. A range in the Calvert test of 1.5 per cent. was desirable, although in one case we operated on a man whose range was not more than 1.2 per cent., since his blood urea was only 36 mg. per 100 c.cm.

When these preliminary investigations were unsatisfactory a catheter was tied in. In this way the bladder was kept empty, and all back-pressure on the kidneys, except that due to possible nipping of the ureters in an extremely hypertrophied bladder wall, was eliminated. With the relief thus offered to the kidneys the blood urea falls remarkably quickly, if it is going to fall at all, and the furred, dry tongue of the man bordering on uraemia cleans in a few days. In one case in the series the response to this treatment was slow. This was a man, aged 69, who on admission in December, 1931, had a blood urea of 96 mg. His general condition was poor, and we had to wait for five weeks before a satisfactory report on the kidney function was obtained. He afterwards did so well that in June, 1933, he determined to go to Canada to live with his son. Before leaving he decided that a hernia which he had nursed for fifteen years was no longer essential to his well-being, and he presented himself for the radical cure. The herniotomy was duly performed, and the last report we heard of him was that he was well enough to contemplate a second marriage. While the catheter was tied in bladder irrigation was performed both alongside the catheter, by Janet's method, and through it. This minimized the risk of the upsetting urethritis which so often accompanies the indwelling catheter, and also cleared up the cystitis with which so many of the patients arrived in hospital. Many of the men had been living a "catheter life" while awaiting admission to hospital, and from their condition it would seem that we are not so far removed as we would like to think we are from the days when men carried their catheters in the brim of their

hats and lubricated them with saliva. The solution used for lavage was 1 in 1,000 silver nitrate, which we found unequalled for this purpose. This pre-operative treatment gave highly satisfactory results. In the most outstanding case the blood urea fell from 165 mg. to 21 mg. per 100 c.cm. within eighteen days.

The Plan of Operation

In only one of the thirty-one cases was a two-stage operation carried out, and this was done in a patient who simply would not tolerate a tied-in catheter. The fibrosis produced by the use of a suprapubic catheter interferes with the speed and simplicity of the major operation and the healing of the second wound.

The anaesthesia used in all these cases was a mixture of chloroform and ether, followed by open ether. It was considered that inhalation anaesthetics were quite safe over such a short period as was necessary for the operation, and any risk attached to their use was no greater than that of the shock which in rare cases attended the employment of spinal anaesthetics in our other operations.

Concerning the actual operation, the great aim was speed. While the patient was being anaesthetized all possible preparations were made so that there should be no waste of time. The result was that the patient was never longer on the table than fifteen minutes, and this particular man weighed 18 stone, although he was only 5 feet 8 inches in height. In addition, he had four large vesical calculi. The average time was about ten minutes, but in many cases the operation was completed in eight minutes.

The prostate was enucleated in the usual way. The haemostatic bag was inserted and distended, and a large rubber drainage tube was slipped over the abdominal end of the haemostatic bag into the bladder. The wound was then closed. No attempt was made to remove tags or secure bleeding points in the prostatic cavity. These methods had been tried in an earlier series of cases but the mortality rose, and after a short time the operation was discarded. We were opposed to the ligation of the vas deferens, maintaining that any infection had better be allowed to travel to the epididymis, where it did no great harm, than be dammed back by a ligature and start up a never-ending vesiculitis.¹ The haemostatic bag used was Professor Fullerton's modification of Pilcher's. It was rounded in shape, to avoid the possibility of incontinence occurring as a result of the apex of the Pilcher bag being pulled down through the sphincter urethrae and stretching that very essential muscle beyond the limits of recovery.

Post-operative Measures

The post-operative treatment was essentially simple. The haemostatic bag and drainage tube were left in position for forty-eight hours. The bottom of the bed was raised on blocks, and pressure was maintained on the prostatic cavity by attaching a weight of 2 lb. to a thread which came from the interior of the bag down the urethral tube. The weight was then hung over the end of the bed. The patient usually had an uncomfortable feeling that the bladder required to be emptied while the bag was *in situ*, but the haemostasis obtained was excellent. At the end of twenty-four hours the fluid was removed from the bag and the bed lowered to the horizontal. Forty-eight hours after operation the bag and the drainage tube were removed. The bladder was then thoroughly washed out via the urethra, so that large portions of blood clot and other debris were pushed out through the abdominal wound. For these forty-eight hours the patient was "wet"; that is to say, the urine leaked through the drainage tube on to the abdomen, and frequent changes of dressing were necessary.

When the drainage tube was removed a modified de Pezzer catheter with a bell mouth was inserted. This was attached by a glass connexion to a rubber tube which led to a bottle suspended from the bed frame, where it was hidden by overhanging bedclothes. After the insertion of the de Pezzer catheter the patient was dry. The simplicity and efficiency of this procedure never failed to surprise visiting surgeons. I remember well that in my own student days one could have walked blindfolded round a ward and picked out the prostate cases without a moment's hesitation, while a ward that contained several cases smelt like a public urinal. The patient no longer gets curious glances on visiting days, because there is no smell to attract attention and the receiving apparatus is not on view. The comfort afforded to the patient by these "fair weather" conditions is inestimable, while the saving in the dressing expenses is considerable.

The success of this simple drainage method depended on the very small opening made into the bladder. The opening was just large enough to admit two fingers, and if more space was required it was obtained by stretching this opening and not by increasing the incision. Although the opening was small a prostate in one case weighing $8\frac{3}{4}$ oz. was successfully delivered in two portions. When the opening is small the bladder contracts around the drainage catheter, so that no leak occurs around the catheter on to the abdomen. For those who require a large opening for their manipulations more elaborate drainage methods are necessary if the patient is to be comfortable, because the bladder will not contract down sufficiently to prevent leakage.

Towards Convalescence

The next step was to get the patient up. The majority were up on the sixth day, and only a few—the tottering, toothless type—lay on as long as the eighth day. There were two exceptions to this. One man had a secondary haemorrhage on the sixth day. The haemorrhage was so sudden and so severe that although a haemostatic bag was inserted and the bleeding stopped in less than fifteen minutes from the onset, a blood transfusion was necessary. The other was our 18-stone patient, already mentioned, whom we left in bed till the eighteenth day, so afraid were we that the wound might open. The moral effect of being allowed up so early was tremendous, because no matter how well a man feels in bed the knowledge that he can get up puts him a step nearer home. The gentle exercise of sauntering round the ward is extremely beneficial in toning up patients of the prostate age. When out of bed the patient carried his receiving apparatus underneath his dressing-gown. In the summer of 1933 we had three convalescing cases in the unit when Mr. Jack Hylton, on tour in Belfast, paid a visit to the hospital with his band, and entertained the patients one fine afternoon in the grounds. Our three men sat in the mixed crowd, their urine dripping steadily into hidden bottles to the time of modern dance music, and nobody in the crowd knew anything about their condition. Two of these men were at the fourteenth day, the other at the seventeenth.

While these catheters were in position daily bladder lavage was performed by inserting the nozzle of a Higginson syringe into the urethra and allowing the fluid to escape by the de Pezzer catheter. In this way sloughs and other debris were driven out of the bladder. The solution used was again 1 in 1,000 silver nitrate. Until the fluid came away quite clear for three or four days the de Pezzer catheter was kept in the bladder. In this way we endeavoured to leave nothing behind which would act as a nucleus for the formation of a stone at some later date. When this catheter was removed a urethral

catheter was again inserted, and the abdominal wound closed in two days at the longest. For this short time the patient was confined to bed. The catheter was then removed for the last time, and the patient passed water with the ease of a schoolboy.

Complications

In the thirty-one cases operated on by this method there was one death. This man developed anuria after operation, and in spite of everything that could be done the kidneys refused to function, and he died on the fourth day after operation.

The following is a summary of the complications in the other thirty cases:

Epididymo-orchitis occurred in five cases. This caused a transient upset, but with suitable treatment cleared up in four to seven days. Peri-urethral abscess was observed in two cases. These developed fistulae, but in both instances the fistula was healed before the patient left hospital. They were treated by suture over a catheter, after cleaning up the edges of the fistula. There is as yet no stricture. There was secondary haemorrhage in two cases. In one case, already mentioned, this took place on the sixth day, and in the other on the thirteenth day. Both were successfully dealt with by reinsertion of the haemostatic bag. This is quite readily done by passing a catheter per urethram. The end of this catheter is caught in the bladder by forceps passed into the bladder via the abdominal wound (Desjardin's forceps are ideal for the purpose). The end of the catheter is withdrawn and attached to the urethral tube of the haemostatic bag by a long suture, and the bag is then pulled into position and distended in the same manner as in the operation. The same weight-pull principle is also used.²

Suprapubic fistula developed in one patient after he had left hospital. This man was readmitted and a catheter was tied in for two days. By this time the fistula had closed, and there was no recurrence. Of the thirty cases two patients have since died, one of carcinoma of the oesophagus and one of pneumonia. Five cases were not traced. The remainder report themselves well as far as their urinary apparatus is concerned, which is no small consideration in men of 70 years of age.

Summary

A series of thirty-one cases of suprapubic prostatectomy with one death is reported, describing (1) pre-operative treatment, consisting of bladder lavage through an indwelling urethral catheter; (2) a method of post-operative drainage; (3) a method for the treatment of primary and secondary haemorrhage.

REFERENCES

- ¹ Fullerton, A.: *British Medical Journal*, 1933, i, 161.
- ² Idem: *Ibid.*, 1931, ii, 1078.

The International Organization of the Campaign against Trachoma will hold a meeting in the House of the Royal Society of Medicine on Wednesday, April 3rd, at 2.30 p.m. After an opening address by the president, Professor E. de Grosz of Budapest, Dr. A. F. MacCallan will outline the general principles of trachoma prophylaxis. Dr. J. Jitta will then indicate how the nations jointly could intensify their work against this disease, and Dr. Tewfik of Egypt will detail the social and legal measures which can be brought into operation. Professor Myashita of Japan will further elaborate this topic, and Dr. Zachert will deal with questions of administration. The secretary is Dr. F. Wibaut, Hoofstraat 146, Amsterdam.