PROSTATECTOMY BY THE TWO-STAGE METHOD

A SURVEY OF 158 CASES

BY

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Fashions change in the field of prostatic surgery with almost, if not quite, the same bewildering frequency as in that of dress, and the object of this paper is to outline briefly the surgical treatment and results obtained in 158 consecutive cases treated by the two-stage "blind" operation during the past ten years. After trying at various times many different techniques I have always gone back to the simplest form of enucleation through a short incision without inspection of the cavity after removal of the adenomatous mass.

During my early years in urological practice I performed the two-stage operation in about 10 per cent. of my cases, using the Thomson-Walker open operation or the one-stage "blind" method in about 90 per cent. But finding my results more satisfactory in the two-stage operation, which I originally only used in the so-called "bad risk" patients, I gradually did more and more by this method until at the present time I employ it in the majority of my prostatectomy cases. In fact, I now very often work on the principle that what is good for "bad risk" cases is also good for "good risk" patients. The more I see of prostatic surgery the more I am convinced that many of the complications which follow prostatectomy, some of which may be fatal, are avoidable by using the two-stage operation. These 158 cases have not been selected for operation with a view to statistical records. On the contrary, the series includes all the most unpromising on which I have operated.

Preliminary Treatment

As soon as possible after admission every patient was subjected to the urea concentration test and the quantitative estimation of the amount of urea in the blood. These two tests were applied in conjunction, and on the whole gave a trustworthy guide to the amount of reserve renal function, but the results were always interpreted strictly in the light of general clinical findings. In the case of patients who did not have much residual urine the preliminary cystotomy was done two days after their admission into hospital or nursing home, provided there was no contraindication. When there was obstruction enough to cause a large quantity of residual urine the bladder was gradually emptied and afterwards drained by an indwelling catheter for two or more days before the first operation.

Once the preliminary cystotomy had been done there was no urgency about the prostatectomy, and the length of the interval between the two was determined by the patient's condition after the first operation, the general clinical findings, the state of the suprapubic wound, and the results of the tests of renal efficiency. The interval between the two operations was seven days in 110 (69 per cent.) of the series; fourteen days in thirty-two (20 per cent.); while in the remaining cases, with a few exceptions, the interval varied from eight to twenty-one days. Between the two operative stages a Hamilton Irving apparatus was fixed to drain away the urine, except in a few long-interval cases in which a large de Pezzer tube was used. The bladder was irrigated with boric or very weak silver nitrate solution two or three times a day.

Anaesthesia

On account of earlier unfavourable experiences, possibly due to errors in dosage or technique, we have as a rule used general anaesthesia in preference to spinal; the latter method, although advocated by some authorities, has only been used where more or less active lung complications were present in a few cases, amounting to about 3 per cent. of the operations performed. Also, in view of the general condition of the patients, and of other factors, a heavy premedication or basal narcosis has not been considered advisable, the routine preparation having been 1/6 or 1/4 grain of morphine with 1/100 grain of atropine. A few patients who were exceptionally apprehensive were given intravenous evipan or pernocton as a preliminary, but these amount only to about 1½ per cent. of the operations.

Originally nearly all the cases were given nitrous oxide, oxygen, and ether, though only small amounts of the latter were found necessary. Later it was often found possible to dispense with ether altogether, and since May, 1934, gas-oxygen alone has been used in a little more than two-thirds of both the first-stage and second-stage operations. During the past year ethylene, which has the advantages of giving slightly better relaxation and more complete oxygenation, has been substituted for nitrous oxide in the majority of cases with satisfactory results.

Dr. Clausen, who gave the anaesthetics, has employed Webber's modification of Boyle's apparatus, and the simplest technique has been adopted throughout, tracheal insufflation or intubation never having been used.

Technique

In doing the operations my aim was speed and simplicity of technique. Therefore the preliminary cystotomy or actual prostatectomy usually took only a few minutes.

The bladder was exposed through a longitudinal incision of about two and a half inches from the symphysis pubis upwards and a rubber tube an inch in diameter introduced into the vesical cavity. This tube was removed after four days and a slightly smaller one used until the subsequent enucleation of the prostatic enlargement. At the second stage the prostate was pushed forward by a finger of the left hand, on which two gloves were worn, while it was enucleated with the index or middle finger of the gloved right hand. The possibility of a partition being left between the vesical and prostatic cavities was always borne in mind, and if present was thoroughly divided. For a number of years I have used a clamp-incisor which I designed for dividing such a shelf. With this instrument the separating wall is not only divided but thoroughly crushed on each side of the incision.

I have never found it necessary to extend the preliminary drainage opening at the actual prostatectomy. After the prostate was removed a rubber tube an inch in diameter was again introduced into the bladder. There was usually very little haemorrhage during or after the prostatectomy when this technique was used; in fact the small amount of blood lost never failed to surprise visiting surgeons. But when there was the slightest anxiety in regard to bleeding I never hesitated to pack the prostatic cavity with gauze.

Post-operative Treatment

When the patient was returned to his room or ward the foot of the bed was raised, but in the absence of haemorrhage it was lowered to the horizontal after about four hours and a Hamilton Irving apparatus again fixed. The suprapubic tube was taken out on the second day.

When the prostatic cavity had been packed owing to haemorrhage during or immediately after the operation the gauze was also removed on the second day. For the first four days the bladder was irrigated by means of a catheter passed through the suprapubic opening; from the fourth to the ninth day it was washed out by Janet's hydrostatic method. After the ninth day a catheter was passed per urethram daily and bladder lavage performed until natural micturition was resumed or, in septic cases, even longer.

Epididymitis occurred in seventeen of the series; in sixteen of these it was of a mild transient type, which reacted well to treatment, while in one patient there was abscess formation.

Deaths

In this series of 158 cases there were six deaths (mortality rate 3.7 per cent.), the causes of which were: pneumonia, two cases, fifth day and eleventh day; uraemia, two cases, fifth day and eleventh day; paralytic ileus and cardiac failure, one case, eighth day; pyelonephritis, one case, seventh day.

Commentary

The surgical treatment of prostatic enlargement is a subject which has given rise to much controversy, and it would be difficult to find another pathological condition for which the operative technique varies so much. The need is for an operation that will cure the largest number of cases with the least risk, and the one which in my opinion does that is the two-stage prostatectomy through a short suprapubic incision. The advantages of this method are:

1. A short suprapubic incision is sufficient. If a long incision is used prolapse of the bladder mucous membrane through the suprapubic fistula or hernia of the suprapubic scar may result, however careful one may be in repairing the abdominal wall after removing the prostate.

2. Shock is reduced to a minimum. It is, in my opinion, less than in any other technique used in prostatectomy.

3. There is much less haemorrhage than in the one-stage "blind" operation.

4. The kidneys are allowed time to resume their normal function before the actual prostatectomy.

5. Sepsis is reduced. When the urine is infected there is much less tendency to septic complications after prostatectomy by this method. This is evidently due to the auto-inoculation which results from the preliminary cystotomy.

6. It is possible to cut down to a minimum the use of the catheter, which to some patients is an instrument of torture and to all a method of treatment conducive to sepsis.

7. With this method there need be no fear of producing vesical neck pockets in which urine stagnates.

8. The patient is left with a large vesical outlet, which is very important in old men who cannot be expected to have the expulsive power present in young patients.

Some of the chief criticisms levelled against the two-stage operation are: the two anaesthetics and two operations; the longer time in nursing home or hospital; the difficulty of enucleation of the prostate owing to fibrosis produced by the use of the suprapubic tube; and delayed healing of the suprapubic opening.

I have yet to meet the patient who objects to two anaesthetics or two operations if he is given to understand that it means less shock and less danger than if the whole procedure were carried out in one stage. As regards length of time in hospital, when one remembers that the period of preparatory treatment before a preliminary cystotomy need not be so long as that necessary before a one-stage prostatectomy, one realizes that the difference

of time usually only amounts to a few days, and again my experience convinces me that patients do not in the least object to this little extra time when they learn that it means a greater degree of safety. In comparing the time required for this technique with that required in prostatectomy with immediate closure of the bladder one must remember, too, the long period of preliminary catheter drainage usually employed in the latter. In connexion with the criticism that enucleation is more difficult than when the operation is done in one stage, this has not been my experience. I have never had any difficulty in removing the adenomatous mass at the second operation. Finally, with reference to delay in healing, I have not found any lengthening of the convalescence period.

Some of the surgeons who advocate plastic procedures on the prostatic cavity after removal of the prostate in referring to the one-stage and two-stage "blind" operations draw rather ghastly pictures of the patients who, in their opinion, have had the misfortune to be subjected to such operative procedures. They describe the patients as being exhausted by haemorrhage and sepsis. In this series of 158 cases I have not had a single patient whose convalescence was even affected by reactionary or secondary haemorrhage, or who, much less, was exhausted by or died from loss of blood. As to sepsis, I should have thought it would be much more to the point to attack the post-operative treatment rather than the technique of the operation. With their so-called re-formation of the prostatic urethra the same surgeons claim that sepsis is much reduced, if not eliminated, and that post-prostatectomy obstruction at the vesical neck rarely, if ever, occurs. Taking into consideration the long preliminary catheter drainage, the pockets which must necessarily be formed in a very large percentage, if not all, of their cases, the mode in which the bladder neck is sutured round the indwelling catheter which is left *in situ* for ten or more days after the operation—to say nothing of other possible or rather probable complications—I cannot think of any other technique which is more conducive to sepsis and post-operative obstruction.

Summary

1. The results of prostatectomy by the two-stage "blind" method are presented in a series of 158 consecutive cases.

2. There were six deaths, the mortality rate being 3.7 per cent.

3. A short outline of pre- and post-prostatectomy treatment is described.

4. It is suggested that many of the complications which follow prostatectomy are avoidable by using this technique.

P. Schmidt (*Med. Welt*, November 28, 1936, p. 1717) maintains that an effective prophylaxis is possible not only of the common cold but also of the true infective influenza. The diagnosis of influenza can be established during the first few days of the illness by the presence of the Pfeiffer bacillus of influenza and the haemolytic streptococcus or pneumococcus (on the Levinthal medium). The affected patients, particularly those who show a high temperature, should be isolated immediately. Spread of infection through cough should be prevented by appropriate measures (coughing in a handkerchief, etc.). It is particularly important to isolate the first cases of illness which appear in the autumn or early winter. The responsibility for carrying out these measures should rest not only on the medical practitioners but also on the lay persons responsible for the welfare of groups of the community.