

CHAPTER XIX

THE OPERATIVE TREATMENT OF PROSTATIC HYPERTROPHY—THE CHOICE OF TREATMENT

TWENTY years ago no one operated upon the hypertrophied prostate. To-day every surgeon approaches this organ with a knife or a cautery in his mind if not in his hand. The mass of literature upon the subject is appalling. Every one operates; every one writes; every one defends his own views in his own way, and the result is that the variety of operations almost equals the number of operators. Some would operate always; a few would operate never. On one point only do they all agree implicitly, if not explicitly—viz., the prostatic may not be operated upon with impunity. The mortality of prostatectomy varies from 10% to 25% at the hands of different surgeons, while that of castration is, according to the latest statistics (Wood), 8.18%, and of vasectomy 6.7%. Even Bottini's operation has its 4½% to 5½% mortality (Freudenberg). In face of this single accepted fact I have not until now felt justified in urging early operation for this malady. We have been seeking many false gods. We have been diverted first to this side, then to that, in the hope of finding the safe and sure cure; from this diversity of effort has arisen a more correct understanding of what a hypertrophied prostate is and what must be done to cure it, and at last we are approaching the surgical ideal: an operation that removes the obstruction and does not kill the patient.

The Indication for Operation.—There is but one condition calling for operation, and that is *the failure of palliative treatment*. If the patient is failing in spite of the most minute care, if he cannot be got out of a precarious condition, or even if it is foreseen that palliative measures are about to fail—in any such case an operation should be strongly urged upon him. The presence of stone, unconquerable irritability of the bladder, persistent ammoniacal cystitis, progressive urinary toxemia or septicemia, increasing renal dilatation or suppuration—all these are indications for opera-

tion.¹ On the other hand, an old man with a patient bladder and an acid cystitis, with some pyelo-nephritis, is no candidate for the knife. He endures the catheter well, and, even though he depend entirely upon the instrument, he only has to use it 4 or 5 times in the twenty-four hours. He has no notable pain. His bladder gives him no more trouble than the rest of his organs. He can live out the full term of his life—ten, twenty years—in this condition. It is not fair, indeed it is not often possible, to persuade such a man to submit to considerable discomfort, with a very appreciable risk to his life, for the single purpose of ridding him of the catheter, to which he has become thoroughly accustomed.

But there are many cases in which the operative indications cannot be thus summarily decided. As for the patient, he will usually not acquiesce unless his symptoms force him to it. The agony of an acute retention or of a ceaseless strangury will quickly bring him to terms; yet either of these may often be entirely relieved by palliative means; while the slow progression of the disease, the persistent ammoniuria, the decreasing renal output, the failing appetite, the thinning, weakening limbs, the quickening pulse, the chalky white face, the hectic fever—these signs, so patent to the surgeon, make no impression upon the patient. He accepts them as the discomforts of old age, and will not hear of operation until too late.

As for the surgeon, let him beware of too earnestly advocating operation. Any operation upon an old man has some mortality which cannot be overcome, and though the most desperate case may

¹ The conditions that demand operative treatment for prostatic enlargement are summarized as follows by Alexander:

1st. When there is complete, or almost complete, retention of urine, due to prostatic outgrowths about the internal urethral orifice or projecting into the prostatic urethra, making the patient entirely dependent at all times upon the use of his catheter. The consequences cannot be doubtful in such cases, and operation affords the only means of averting fatal disaster.

2d. When there is marked and continuous vesical irritability, due to intravesical outgrowths, which cannot be allayed by the most careful catheterism and washing of the bladder. These patients usually suffer from frequent attacks of hematuria, and cystitis, when it develops, is usually severe.

3d. When, in spite of careful catheterism, the amount of residual urine is steadily and surely increasing, showing a gradual failure of expulsive force in the bladder.

4th. When catheterism is becoming more and more difficult, in spite of every precaution, and when it is frequently followed by hemorrhages.

5th. When catheterism, in spite of every precaution, is frequently followed by attacks of cystitis.

6th. In cases of long-continued vesical inflammation which do not yield to treatment.

7th. In cases in which the patients cannot or will not use a catheter and take the necessary aseptic precautions to make its use of value.

rally splendidly, no health, strength, or vigour is proof against an embolus or an apoplexy, nor are any old man's kidneys, however apparently sound, to be entirely trusted. One of the healthiest men I ever performed prostatectomy upon died on the fourth day by cardiac embolism. Therefore I urge that the surgeon expend every effort, every artifice at his command, before he says finally to his patient, "You are failing, you are losing ground, you are wasting time. You have now every chance of being saved by operation; the longer you delay the less your chances." Then the responsibility of choice is off the surgeon's shoulders. If the patient refuses operation, so be it. If he accepts, he does so knowing that he has come to his last stand, and his elation at the victory which, in all human probability, awaits him will only be heightened by the appreciation of the dangers he has avoided.

At the other end of the line, when kidneys, heart, head, and stomach all are failing, operation is still indicated. The mortality here is high, but the cures are little short of the miraculous.

PALLIATIVE OPERATIONS

Aspiration of the bladder	{	suprapubic, perineal, rectal.
Cystostomy	{	suprapubic { puncture, incision, perineal incision, prostatic puncture.

ASPIRATION

Aspiration we may dismiss briefly. Rectal and perineal aspiration are never to be employed. Suprapubic aspiration (p. 209) is of the most ephemeral value. By it we gain time—that is all. For acute retention it is an appropriate treatment (p. 277); for anything else it is futile.

CYSTOSTOMY

Cystostomy is the formation of a fistula in the bladder wall. A simple cystostomy does not interfere with the prostatic obstruction, but carries the stream of urine around it, and, although in some few cases the prostate, thus relieved of irritation, may shrink sufficiently to re-establish the urethral right of way, this outcome is not to be expected, and a cystostomy is always performed with the intention of establishing permanent drainage, often for the cure of chronic cystitis. The inconveniences of such treatment are obvious. No surgeon who has had to deal with a permanent vesical

drainage, whether suprapubic or perineal, can delude himself into the belief that it affords the patient any very great comfort. It may well relieve pain and spasm, though sometimes it fails even to do this, but it does not necessarily cure cystitis, and it leaves the patient more or less incontinent, bound to an ungainly and stinking apparatus, chafed and wet in spite of infinite washings and powderings, and by no means a well man. Hence the field for this operation is daily becoming restricted by the extension of radical operations to more and more desperate cases, and when cystostomy is performed in these days, it is often only for the purpose of alleviating the patient's symptoms until he shall have gained sufficient strength to withstand a more radical procedure.

Of the varieties of cystostomy enumerated above the suprapubic operation is the best. Prostatic puncture is not employed because it does not afford satisfactory drainage. Perineal section is sometimes the source of unbearable irritation at the neck of the bladder. Suprapubic puncture is uncertain in its results and may allow urinary infiltration. On the other hand, suprapubic cystostomy allows free inspection of the field, thorough drainage, and the removal of stone, if one is found. The technic of the operation is described in another place (p. 459). I confess that I have not employed cystostomy for hypertrophy of the prostate for fully eight years. I have always felt justified in preferring a radical operation.

RADICAL OPERATIONS

Before discussing the merits of the numerous operations employed for the cure of hypertrophy of the prostate, it is necessary to have a perfectly clear idea on two points, viz.: (1) What constitutes a cure of a hypertrophied prostate, and (2) How much of a cure may be expected in any given case.

1. **What constitutes a Cure?**—We have seen that less than half the hypertrophied prostates produce any symptoms. We have seen that the symptoms of the disease, excepting only true incontinence, are primarily due to obstruction of the urethra. We shall see that even when the prostate is atrophied a urethral obstruction of an entirely different nature may give rise to a similar train of symptoms (p. 319). It needs no great wit to derive from these facts two important conclusions, viz.:

1. *To cure this disease the urethral obstacle must be removed.*
2. *Even if the whole gland be cut away or become atrophied urethral obstruction from another cause may still remain.*

These truths are fundamental. They are not commonly appre-

ciated, yet an appreciation of them seems essential to enable one to test the merits of the various alleged cures of prostatic hypertrophy and to foresee what their ultimate outcome is likely to be. To take a practical example: What of castration? Does it pretend to cure the disease by attacking the urethral obstruction? By no means. It pretends to cure by causing atrophy of the gland. Even allowing that it does cause atrophy, there is no guarantee that such atrophy will free the urethra of its obstruction. Take Dittel's prostatectomy. By this method almost the whole prostate may be extirpated. Yet the urethra is not so much as explored to prove that the obstruction has been relieved. Bottini's operation has the same fault in a less degree. An honest attempt is made to relieve the obstruction, but no possible means is afforded to show that it has been relieved. Let me not deny that each one of these operations has its virtues and can boast its cures. That I grant. But we should advance a step further than these chance procedures. It is but prudent not to promise a patient an entire cure before his operation, but it is pitiful not to know, after it is all over, how radical the cure is to be, or even whether it is to prove a cure at all. For such reasons as these (it is not possible to enter into the infinite detail of the matter here) *the immediate and direct object of every operation should be the removal of the prostatic obstacle, and the technic of the operation should be such as to allow the surgeon to verify the fact that the obstacle is removed.* No one will deny that such an operation approaches very close to the ideal. I hope to show that it has been approached even closer by the practical.

The nature of the prostatic obstacle has been already noted. In every case there is the *bas fond* with an *elevation*, relative, at least, *of the urethral orifice.* The canal may also be distorted by large projecting lateral or median lobes. The elevated orifice and the enlarged lobes are what the surgeon has to deal with. The removal of these constitutes a cure.

2. How much of a Cure may be expected?—Here is the capital practical point. Supposing the obstructions are entirely removed. Supposing there are no post-operative complications. Supposing the operation is an entire success from the surgeon's point of view. Will the patient be satisfied with the result? Not always. When the patient comes to operation both bladder and kidneys have usually felt the effect of the strain. The former is contracted and irritable or dilated and atonied; the latter are dilated or septic. The patient's general health is sure to improve after a successful operation, for however badly off the kidneys, if they are strong enough to stand the strain of operation they are sure to perform

their functions better after the pressure has been removed from them. As for the local conditions, the pollakiuria and dysuria that are the patient's chief distress, they, too, will be relieved. If the bladder is atonied it will gain sufficient strength to empty itself. Urination will not be unduly frequent; but if there is sacculation or long-standing inflammation the patient may be forced to wash the bladder in order to keep this under control. If, on the other hand, the organ is contracted and irritable, it will still have to empty itself frequently, perhaps almost as frequently as before; but the pain and straining will be relieved and the bladder need no longer be washed. Where atony, contraction, or renal involvement is not extreme the result will be perfect, and, in any case, the conditions will improve with time and care, instead of becoming worse, as they had been doing before operation. (The complications to operation will be considered later.) It is evident, therefore, that the ideal time for operation is as soon as the surgeon is convinced that he cannot control the disease by palliative measures. Operation at such a time will give the lowest mortality and the highest proportion of complete cures. Delay beyond this time simply serves to drag the patient down, to unfit him for operation, and to diminish his chances of entire relief by operation.

Bearing in mind these principles, the surgeon is in position to judge fairly between the various so-called radical cures of this disease. These may be grouped into three classes, viz.:

1. Operations designed to cause atrophy of the growth by interfering with its nutrition indirectly.
 - a. Ligation of the internal iliac arteries.
 - b. Castration (including vasectomy, angio-neurectomy, venesection, injections into the testis).
2. Operations upon the prostate other than excision—
 - a. Injections.
 - b. Puncture.
 - c. Prostatotomy.
 - d. Bottini's operation.
3. Chetwood's operation.
4. Prostatectomy—
 - a. Suprapubic.
 - b. Perineal. $\left\{ \begin{array}{l} \alpha \text{ Extra-vesical.} \\ \beta \text{ Intra-vesical.} \end{array} \right.$

INDIRECT OPERATIONS

The object of all indirect operations is not to remove the urethral obstacle, but to cause atrophy of the prostate. Thus their

results are limited to the advantages that may be gained by causing atrophy of the gland, without reference to the main point at issue.

Iliac Ligation.—Ligation of the internal iliac arteries (Bier) may be dismissed with a word. Bier has performed the operation 11 times, with 3 deaths, 1 case unimproved, and 7 improved or cured. Of these 7 cases, 6 were examples of acute retention. They all showed a diminution in the size of the prostate; there were no relapses, yet only 1 case was relieved of his residual urine, and he still suffered from nocturnal frequency. The operation has found favour in the eyes of none but its originator. Willy Meyer alone has taken it up in this country, only to abandon it in favour of Botini's operation.

Castration.—Castration (White¹ and Ramm²) has been so stoutly defended, has championed so many kindred procedures, and is still received with favour by so many of the profession, that it deserves more extended notice. Vasectomy (Harrison³), angio-neurectomy of the spermatic cord (Albarran⁴), injections into the testicle for the purpose of causing it to atrophy, etc., have not proved reliable, and are quite universally condemned, although Harrison⁵ still employs his own operation, and Wood⁶ speaks favourably of it.

According to White's statistics (1895), derived from 111 collected cases of castration, the mortality was 18%, the cures 46.4%, improved 28.3%, and unimproved 7.3%. The recent statistics of Wood show, among 159 cases, a mortality of 8%, improved (more than 90% of the survivors benefited) 83%, and unimproved 9%. Other observers have not been so happy. No one has yet brought forward a single proved example of atrophy of the prostate after castration, while pathologists have reported no atrophy in prostates examined six weeks, twelve months, and, in a personal case,⁷ sixteen months after castration. But if the removal of the testicles does not cause atrophy of the prostate, it does, nevertheless, relieve the symptoms of the disease in some cases. This it does, as Albarran⁸ suggests, by relieving the congestion of the gland. Why castration should relieve prostatic congestion more than vasectomy does (which gives, according to Wood, only 67% improved and 6.7% mortality), and how much of the improvement is due to the loss of

¹ Annals of Surgery, 1893, xviii, 152, and 1895, xxii, 1.

² Centralbl. f. Chir., 1893, xx, 759.

³ Brit. Med. J., 1893, ii, 708.

⁴ Guyon's Annales, 1898, xvi, 262.

⁵ *Ibid.*, 1900, xviii, 836.

⁶ Annals of Surgery, 1900, xxxii, 309.

⁷ Med. Record, 1900, lviii, 81.

⁸ Guyon's Annales, 1898, xvi, 1, 113, 225.

blood, the rest, and the careful local treatment after operation need not concern us here. The practical conclusion to which those who practise this operation have been driven is that it is applicable only to cases of acute retention or congestion, cases which may often be temporarily relieved by palliative measures, and which are not always permanently relieved by castration. The ephemeral effects of castration are beautifully exemplified by Cabot's experience.¹ Excluding 1 case of unilateral castration and 1 case of cancer of the prostate, there remain 8 castrations.

Each of these cases might be said to have been improved by the operation. Yet in only 5 of the 8 cases was the improvement material or lasting, and 3 of these relapsed at the end of six months, while in the other two (II and IV) the result was in no sense a cure; the obstacle was not removed, and neither patient was insured against further accidents. My own experience is even less happy: 1 death, 1 case unimproved. Hence I join those who see little good in the operation. *It may relieve congestion temporarily, but it is not a radical cure for prostatic hypertrophy.*

The technic of castration and vasectomy is described elsewhere (pp. 729, 752).

¹ Annals of Surgery, 1896, xxiv, 265. Boston Med. and Surg. J., 1899, cxi, 393.

Case I. Castration and litholapaxy. Post-operative mania lasting two months. Somewhat improved, but relapsed and died of the disease three months after operation.

Case II. Intense cystitis (contracted bladder). Residuum $\frac{3}{4}$ ij. Eighteen months later frequency and residuum undiminished; irritation much less; very comfortable.

Case III. Acute retention. Rapid improvement. One month after operation residuum was $\frac{3}{4}$ v. At the end of six months it was down to $\frac{3}{4}$ ss. Still urinating every two hours and twice at night. At the end of a year he began to relapse, and six months later retention was again practically complete. This time one week of palliative treatment relieved him.

Case IV. Complete retention. Threatened suppression. Retained catheter. Castration. At the end of three weeks residuum $\frac{3}{4}$ ss. Still urinating once an hour. Dysuria and pollakiuria persist; general condition improved. Wears a soft-rubber catheter for continuous drainage at night.

Case V. Stone and prostate. Castration did not prevent recurrence of stone, and after several litholapaxies a middle lobe ("about the size and shape of the last joint of the thumb") was removed two years later.

Case VI. Litholapaxy and castration relieved him of the catheter (which he had used three years) for six months. Relieved by litholapaxy and again relapsed. Was relieved by suprapubic section of a "band of tissue forming a bar at the neck of the bladder."

Case VII. Chronic complete retention three years. Castration. Relief slight. Six months later suprapubic section. Thirteen stones and a middle lobe removed. The patient died four days later.

Case VIII. Chronic complete retention two years. Much relieved for six months, then relapsed. Projecting masses of prostate removed by suprapubic section.

Prostatotomy.—Prostatotomy, in one form or another, has long been a favourite treatment for hypertrophy of the prostate. Mercier, with his prostatome, was among the first to agitate the question. Later, simple perineal section with incision of the offending lobe had some vogue. Harrison¹ suggested that a puncture be made through the prostate itself, and a tube left in for drainage and to cause atrophy of the gland. Electropuncture and injections of iodine, ergot, etc., have been employed with varying success at the hands of a few surgeons, but none of these procedures has appealed to the profession at large. Such cures as occurred were not permanent. It remained for Bottini to suggest how a prostate might be incised in such a manner that the incision would not heal and leave as much obstruction as ever.

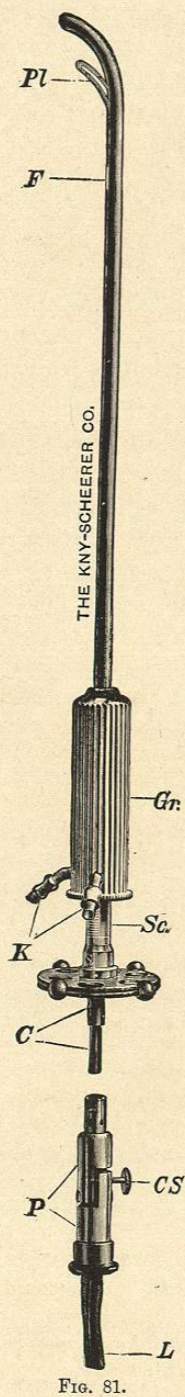
Bottini's Operation.—Bottini's operation consists in burning a groove in the prostatic obstruction with a galvano-cautery introduced through the urethra. The instrument devised by Bottini has been advantageously modified by Freudenberg. This instrument (Fig. 81) resembles a lithotrite. The male blade is a strong, thin galvano-cautery knife. The female blade is provided with a cooling apparatus, a double-current tube through which cold water is allowed to run during the operation. The blades are connected by a screw handle similar to that of the lithotrite. The electrical apparatus attaches to the end of the handle. The electricity may be obtained from a portable battery or from any electric-lighting plant. The former is a heavy apparatus weighing some 80 pounds, and can never be employed unless freshly charged. To use the street current a transformer and motor must be interposed to reduce the strength of the current to about 4 volts.²

¹ Lithotomy, Lithotritry, etc., London, 1883, p. 65.

² Guitéras has given a detailed description of the apparatus. N. Y. Med. J., 1899, lxx, 588.

FIG. 81.—FREUDENBERG'S BOTTINI INCISOR.

Pl, cautery blade; F, shaft; Gr., grip; K, irrigation tube; Sc., screw; C, P, L, electrical connection.



Technic.—The operation is performed as follows: a preliminary cystoscopy determines as closely as possible the nature and shape of the prostatic obstacle. Unless general anesthesia is to be employed this cystoscopy is performed a day or two before the operation. The operation itself is often performed under cocaine or eucaine (see Cystoscopy), but the effects of these drugs is often illusory, and general anesthesia by chloroform or nitrous oxide is preferable. The patient is prepared by the administration of urotropin for forty-eight hours before the operation. Immediately before operation his bladder is washed as clean as possible with a solution of boric acid. One hundred and twenty-five c. c. (4 ounces) of this may be left in the bladder, or the organ may be inflated with air. The instrument is prepared by boiling. The surgeon's hands should be sterilized, the patient's penis scrubbed with soap and water, and the fossa navicularis washed out with bichloride of mercury, 1:10,000.

Before introducing the instrument into the bladder all the connections are made. An irrigator full of cold water is attached, and the water from this is allowed to flow through the instrument for a moment. Then the electrical apparatus is turned on slowly until just sufficient current is obtained to heat the cautery to a bright glow. The ampèreage is noted, the electricity turned off, the male blade allowed a moment to cool, and then screwed home; now if all is well, the operation is begun.

With the patient lying on his back the instrument is introduced slowly and gently into the urethra, over the bar, and thus into the bladder. Its beak is then turned downward and hooked snugly against the prostate by traction on the handle. The position of the point of the instrument should be verified by a finger in the rectum, and throughout the operation the operator should keep the index finger of his left hand in the rectum, while steadying the instrument with his right. The water is then allowed to flow and the electricity turned on to the point previously ascertained (40 to 50 ampères). After a few seconds' interval the handle of the instrument is slowly turned by an assistant until the blade is extruded from $2\frac{1}{2}$ to $3\frac{1}{2}$ cm., as indicated by the scale on the shaft. The knife is then slowly returned and the current turned off. This manoeuvre should take from one to two minutes. Other incisions may then be made (not over $2\frac{1}{2}$ cm. long) in the lateral lobes or the roof of the prostate. The instrument is finally closed and withdrawn. Many surgeons prefer not to keep the finger in the rectum during the operation, but to employ both hands in manipulating the instrument. I believe, however, that the rectal finger is essential,