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SIX SUCCESSFUL AND SUCCESSIVE CASES OF PROSTATECTOMY.\*

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New York.

AT the present time the management of those suffering from the severer grades of senile prostatic hypertrophy is being much discussed. By the severer grades of this disease are meant such cases as are not amenable to or tolerant of the catheter. In order to relieve them, the urinary outflow must be diverted from its customary channel or the obstruction must be removed. The only way to divert the urinary flow is by the establishment of a permanent hypogastric urinary fistula, an unsatisfactory procedure which has happily found little favor in this country. The methods, however, which have been advocated for the removal of the obstruction are numerous. These methods can best be divided into two classes. Under the first class are grouped those operative procedures which aim to directly remove the obstruction; under the second, those whose aim is to cause an atrophy in the obstructing gland by interfering with its nerve or blood supply. Double castration seems to cause more or less atrophy of the prostate, probably by interfering with the nerve supply to the part, while ligation of both internal iliac arteries apparently to some extent accomplishes the same result by shutting off the blood supply. The only true argument against the first group of procedures, whose aim is the direct removal of the obstruction, is their mortality. This, of course, is a strong argument, since the subjects are elderly and, owing

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to the nature of their disease, prone to renal insufficiency. Everything else is in favor of direct removal, for in all cases the operator should be able to thoroughly remove the obstruction. He should also be able to accomplish this without permanent injury to the vesical neck by reason of lacerating or tearing away the mucous structures. When once such an obstruction is thoroughly removed the patient can be safely assured that he will never suffer from prostatic hypertrophy again.

In almost all cases also the use of the catheter can be entirely dispensed with after convalescence from the operation is wholly established, the apparently atonied bladder gradually regaining its muscular force until finally it throws off a full forcible stream. In many instances previous evidences of renal trouble, due to pyelitis caused by dilatation of the ureters and pelves, gradually disappear as these muscular structures also in like manner as the bladder regain their tone. As a result of all these changes and regenerations, the patient at the end of six months or a year after the operation is apt to report hale and hearty, declaring that he feels ten years younger and that his act of urination is all that he could desire. I am well aware that many surgeons will consider that the foregoing statement in favor of the radical removal of the obstruction is too rose-colored, and will point to the indifferent results obtained in many instances by earlier operators to sustain their opinions. I, however, hold that the argument against prostatectomy on the ground that the results to be expected from it are indefinite and unsatisfactory is a false one, and that it is based on cases where the removal of the hypertrophy at the time of the operation was incomplete. In many of the earlier unsatisfactory cases the object of the operator was simply to chisel out, as it were, a canal through the obstruction at the vesical base connecting the post-prostatic vesical *cul-de-sac* with the membranous urethra, no attempt being made to remove lateral obstructions or the rigid hypertrophies surrounding the prostatic urethra. If, however, all the hypertrophies, median, lateral, and round about the prostatic urethra, are removed as they should be, and as they can be by adopting the method I advocate, then I claim that the results, as far so the bladder is concerned, are, barring mortality, satisfactory.

As regards double castration, the only argument in its favor is that it ought to be accomplished with little or no danger to life, and that it offers a chance for relief.

This argument should be given the greatest weight in such cases as are evidently past making, from a physical standpoint, the struggle attendant on the radical operation.

Against it it can be said that it is not applicable to cases representing an emergency where, owing to the condition of the prostatic obstruction, catheterization is impossible and speedy free drainage is imperative. Three of the cases to be reported by me represent examples of this description.

It emasculates the man submitting to it; and although it may be said that men in their sixties, the age of most of these sufferers, have no further need—or ought to have no further need—of their testicles, still my experience has been that most prostatitics dread the loss of their testicles more than the dangers attendant on a radical operation, and that if they feel that their adviser is competent to remove their prostates they choose the more radical procedure.

Castration is not expected to accomplish the same radical relief that thorough removal does. It is still in its experimental stage, and just how much in the way of real prostatic atrophy it causes in senile hypertrophy is not as yet an established fact. In soft, succulent hypertrophies it probably accomplishes much; while in hard, fibrous ones—and especially if these be also infiltrated with lime salts, as every now and then occurs—it is hard to see how such a procedure as castration could accomplish much.

Nothing can be said in favor of the operation to accomplish atrophy of the prostate by ligating both internal iliac arteries, since the dangers attendant on it are probably fully as great as those attached to the direct removal of the obstruction, while the benefits to be expected from it are indefinite and at best only partial.

Since the final results from prostatectomy are good if only the growth is thoroughly removed, the operation is surely destined to become popular and general if it can be shown that the mortality from it is moderate; for the great majority of these cases at the time when prostatectomy is first suggested to them have, as it were, come to the end of their rope, medically speaking, so that if the operation is not done little remains to occupy the medical attendant aside from administering anodynes and holding the hand until death occurs. Therefore any radical procedure which offers to the patient and his family at such a time fair prospects of relief is apt to be accepted.

The objects of this paper are to show that prostatectomy can be successfully accomplished with comparatively small mortality, and to present to the profession the operative methods by which I have attained my results.

In the earlier operations of this nature not only was the prostatic obstruction in many instances imperfectly removed, thereby giving imperfect and unsatisfactory results, but the death-rate also was large.

The chief causes for death were hæmorrhage, generally primary, sometimes secondary; shock, oftentimes intensified or caused by the removal of vesical tampons, always a difficult matter, which had been tightly packed into the bladder to stop hæmorrhage; sepsis, which was favored and intensified by extensive damage to the vesical walls in the prostatic region, and by the open and exposed state of the suprapubic wound; defective drainage; and kidney insufficiency.

To avoid as far as possible these mishaps I have adopted the following procedure: The patient is placed flat on his back, neither the Trendelenburg position nor the Petersen bag being commonly found necessary. The bladder is carefully washed out, and then left moderately distended to the extent of from eight to twelve ounces. The next step is to open the bladder suprapubically, the general directions which had been laid down by Keyes being followed. The forefinger of the left hand is then introduced into the bladder, the location and extent of the prostatic obstruction determined, and the vesical opening of the urethra located. In the right hand is grasped a pair of rough, serrated-edged scissors with a long handle. These scissors are slipped along the left forefinger to the urethral opening, and are made to cut through the bladder wall in that region. The cut extends from the lower margin of the internal vesical opening of the urethra backward for an inch to an inch and a half. The blades of the scissors being rough and serrated, make an incision which bleeds but little. Then one of the forefingers, whichever the operator may find the more convenient, is slipped through the vesical hole made by the serrated scissors, while at the same time the fist of the other hand makes firm counter-pressure against the perinæum. By means of this counter-pressure the prostatic growth is brought well into the reach of the forefinger of the other hand, which is employed all this time in enucleating the prostatic obstruction *en masse*, or piece by piece, as the case may be. This enucleation can be easily and speedily accomplished in this manner, and should not be desisted in until all the lateral and median hypertrophies, as well as all hypertrophies along the line of the prostatic urethra, have been removed. The vesical walls at the base, as elsewhere, are very elastic and dilatable, so that it will be found that the little cut made through the bottom of the bladder will be large enough to admit of the passage through it of the enucleated prostate.

[Figs. 1 and 2 accompanying this article are natural-sized illustrations of prostatic hypertrophies which I have enucleated in the manner described. In Fig. 1 the whole hypertrophy was removed in one piece, while in Fig. 2 the obstruction came away in three pieces,



FIG. 1.—Dr. Fuller's specimens of prostatic hypertrophy removed by enucleation (natural size.)  
Showing the entire hypertrophy enucleated in one piece.



FIG. 2.—Showing the hypertrophy enucleated in three pieces, two lateral and a median.

representing two lateral and a median hypertrophy. The hypertrophy shown in Fig. 1 was taken from my case shortly to be described as Case E, while those in Fig. 2 were taken from Case F.] A perineal section is then made, and a large size (twenty-six American) soft rubber tube is passed through the perineal cut, and the cut through which the prostate was enucleated, into the bladder. After this, hot-water irrigation is employed for some minutes to wash out blood clot and to stop oozing. Then the suprapubic wound is closed by a deep layer of catgut sutures which include the bladder wall, and by a more superficial layer of silkworm gut (Florentine) sutures. About in the middle of the cut the catgut stitch is omitted and a deep Florentine gut suture is taken, which includes the vesical walls and the whole extent of the lateral abdominal walls. This suture, however, is not tied at the time of operation, thus allowing a rubber suprapubic drainage tube to temporarily remain in position. At the end of four or five days, however, this suprapubic drain may in most instances be removed; then this last Florentine ligature can be tied, thus entirely closing the suprapubic cut. It is best not to remove these Florentine sutures till after the patient is up and about, as without their firm support there is oftentimes a tendency for the soft scar tissue of the wound to give, thus allowing a considerable spreading of the abdominal structures.

My method of enucleating the prostate through a small hole made in the base of the bladder is accomplished by a technique almost the opposite of that advocated by Nicoll, of Glasgow, in the *Lancet*, April 14, 1894, and by Alexander, of New York, independently of Nicoll, at the May (1894) meeting of the American Genito-Urinary Association. These gentlemen enucleate the prostate through a spacious perineal wound, that gland being brought into the reach of the perineal finger by the pressure exerted downward and forward by the finger or fingers of the other hand introduced into the bladder through a suprapubic incision. Then after such enucleation a dependent incision is made into the bladder and perineal drainage established. My first case of enucleation by my method was performed early in May, 1894, before I was aware of Nicoll's publication, and before Alexander had also reported that method. I can say of my method of enucleation that by it the prostatic hypertrophy can be easily and thoroughly removed without damage to the structures composing the vesical neck, and that hæmorrhage resulting from it has always been of little consequence. Owing to the slight amount of bleeding, I have always found it feasible to sew up as I have described the suprapubic cut, and have never experienced trouble from secondary hæmorrhage. The after treatment consists largely in careful and thorough vesical irrigation in conjunc-

tion with the internal administration of a large amount of diuretic water in order to keep the kidney secretion free and active. By the adoption of this method I feel that the customary causes of death after prostatectomy can be in large measure avoided, and in substantiation of my opinion I have to report the following six successful and successive cases. Five of these cases illustrate directly the method of enucleation just described by the suprapubic route. In one of them, however, it was possible to remove the growth through the perinæum without resort to the suprapubic cut.

*Case A.*—Sixty-six years old. First seen early in May, 1894. Having been called in an emergency at midnight, I found the patient straining violently on a full bladder. For eighteen hours he had been unable to urinate, though for the last few hours there had been a dribbling from overflow. He had bled freely from the meatus as the result of vigorous and unsuccessful attempts at catheterization. The perinæum was swollen and indurated, showing evidences of extravasation of blood and urine. I could not pass a catheter even under chloroform. Suprapubic aspiration was resorted to, and about a quart of urine, so mixed with blood and clot that it with difficulty passed through the aspirating needle, was withdrawn. The patient consented to operation, and early in the morning I performed suprapubic prostatectomy, enucleating the gland according to the method I have described. The patient at the time of operation was suffering from shock and suppression, due to the retention of the day before. His pulse was feeble and his tongue dry. I operated as quickly as possible, giving but little anæsthetic. I removed a large right lateral hypertrophy and the median hypertrophy, which last was moderate. Owing to the bad condition of the patient, I did not wait to remove a small left lateral hypertrophy. The patient rallied from the operation, convalesced without any disagreeable complications, and left the hospital during the middle of the fourth week of his confinement. He can now pass his urine naturally at proper intervals, emptying his bladder after each act.

*Case B.*—Sixty years old. When first seen, was in a state of retention of urine, with dribbling, owing to prostatic obstruction. He had been in that condition some time. A catheter was passed under antiseptic precautions, and the attempt made to break him into catheter life. He was shown how to use his catheter, and apparently was able to use it himself at the end of a week. At the end of that time, however, in some unaccountable way he twisted and bent upon itself in his urethra a gum-elastic instrument in a vain attempt to draw his urine, and in his effort to withdraw his bent-up instrument he pro-

duced an extensive rent in the membranous urethra. Much vesical tenesmus followed, associated with chill and fever. Chloroform had to be given in order to pass a catheter, and only then a silver instrument could be passed, and that with great difficulty. The case being then one of emergency, was operated on. I made the suprapubic incision, and enucleated in the way described a large collarlike hypertrophy of the prostate. The case did finely, being confined to bed but three weeks. The result is all that can be desired. He urinates naturally, with good stream, at proper intervals, emptying his bladder after each act.

*Case C.*—Seventy-three years old. When first seen, was in a state of acute retention, with great vesical distention due to prostatic obstruction. The immediate cause of the retention had been exposure to cold under circumstances which did not allow of his making the attempt to urinate when first called upon to do so. I succeeded with some difficulty in passing a gum-elastic catheter. This instrument was left in the urethra and tied securely. The case was then turned over to his regular attending physician, with directions to remove the catheter at the end of thirty-six hours, after which time resort to regular catheterization was prescribed as occasion required. I was called again at the end of four days in a hurry. He was again in a state of retention. He had some fever, and had bled freely from the urethra. I found he had discharged his original doctor, and that he had had several others besides since I had seen him. All had found great difficulty in drawing his urine. I made an attempt and found that nothing would pass except a silver instrument with an extreme prostatic curve. This instrument could only be passed with the greatest difficulty. The urine drawn off was bloody and somewhat decomposed. There were evidences of urethral lacerations in the region of the prostatic sinus. On the next attempt even this instrument would not pass, and I found it necessary to aspirate. Up to this time the patient had been very obstinate, and would not listen to any proposition recommending a cutting operation. I now told him, however, that unless he left me free to act as I saw fit I would give up his case. He then consented to operation. At this time he was suffering from renal suppression and evidences of commencing sepsis. His pulse was also feeble. Taking into consideration his advanced age, with all these bad symptoms, the outlook for a favorable result from a radical operation was certainly poor. I, however, determined upon and did a suprapubic prostatectomy according to the method herein advocated. I found two very large lateral hypertrophies. The median lobe was not marked. These hypertrophies were all thoroughly enucleated without

difficulty. One of the lateral ones was found to have been pierced to its center by a punctate wound of recent date, evidently made by a catheter. After the operation the patient convalesced slowly but steadily, and left the hospital in his fifth week. Five months after the operation he reported hale and hearty, stating that he felt ten years younger. His urinations were normal, natural, and complete, each act emptying the bladder. He stated that he had not urinated since boyhood with such force and satisfaction as at the present time.

*Case D.*—Forty-eight years old. About a year and a half before consulting me he had noticed that at times he urinated with difficulty. This difficulty had gradually increased until he was seized with complete retention, which accident had occurred six months before his first consultation with me. Since that time he had been obliged to depend entirely on his catheter. Sometimes he had experienced great difficulty in introducing his instrument. This difficulty was becoming more marked, so that he felt that other and more radical measures should be employed for his relief. The urine was slightly purulent, but of good quality. Rectal examination showed but slight enlargement of the prostate. A good-sized steel instrument could be passed into the bladder provided its end was kept well up against the roof of the prostatic urethra during its passage, otherwise the instrument would be arrested by a firm obstruction in connection with the floor of the prostatic urethra. Owing to the age of the patient and to the small size of the prostate as felt per rectum, it was not thought necessary to make a suprapubic incision, the perineal route being employed. As the result of this operation a very hard fibrous mass, similar in shape to but somewhat smaller than a hen's egg, was found lying transversely across the floor of the bladder just at the vesical neck. This mass was cut through by the knife in making the perineal incision. It was, however, so fibrous and so firmly attached to the capsule of the prostate that it was found impossible to enucleate it, and it consequently had to be cut away by the use both of the serrated scissors and of prostatectomy cutting forceps. This was the only case out of the six where it was found impossible to accomplish enucleation, and I am inclined to suspect that the growth may prove to be more of the nature of a fibroma originating in the capsule of the prostate than of a senile prostatic hypertrophy. The patient recovered from the operation without trouble, and at the end of his third week was passing a full, forcible stream along the urethra. He went home shortly after with a perfect result, his urine being clear and his urinations being normal and complete.

*Case E.*—Fifty-eight years old, a charity case. He gave a history of a sudden retention of urine four years before consulting me. At that time he lay in bed a week or ten days, suffering intensely without surgical relief, the urine dribbling passively away after the vesical distention had become extreme. Finally, the bladder unaided regained a little of its expulsive force. Since that time he had continually suffered from urgent, frequent, and difficult urination day and night, with at times attacks of complete retention. For relief from his latter attacks of retention he had visited dispensaries and hospitals and been catheterized. After leaving these institutions, however, the use of the catheter had always been discontinued, on the ground that he could not use the instrument himself, and that it made him very sore locally as well as feverish. On examining him I found a distended bladder, the summit of which was halfway between the pubes and umbilicus. Rectal feel showed the prostate to be very large and hard. The urine was of low specific gravity, abnormally abundant in amount, slightly acid, and loaded with albumin together with granular and hyaline casts. It was also bacterial and moderately purulent. The tongue was dry at times, and there were stomach and bowel disturbances which I took to be of a uræmic nature. The patient was feeble and altogether an extremely bad surgical risk. Vesical drainage was, however, called for in order to give him relief. I decided to enucleate the prostate by the suprapubic operation and to establish as usual perineal drainage. I enucleated two large lateral hypertrophies together with a smaller median one, the whole mass coming away in one piece (see Fig. 1). The operation was easy of performance and there were no attendant complications. There was considerable suppression after the operation, and on the third day the patient, being delirious tore off his dressings and pulled out the perineal and suprapubic drainage tubes. These were never replaced. By careful attention and abundant diuresis this severe uræmic attack was finally weathered. Owing to his wretched condition, and partly also to his premature removal of the drainage tubes, a slough occurred in the space of Retzius. All the vesical suffering was removed by the operation, and the urine improved in quality. Four weeks after the operation the patient sat up, and now, six weeks after, he walks about the ward with the aid of an attendant. The urine, now clean, still comes through the granulating suprapubic wound, which the slough made quite extensive. There is good expansive force to the bladder, and with the suprapubic wound closed I feel that urination will be accomplished without difficulty. The uræmic symptoms have not all disappeared, and at times he is drowsy or excitable. It is

probable that after a time he will succumb to his nephritis, and such is to be expected, especially since, owing to his poverty, comparatively little can be done for him. In this case double castration was suggested, but refused by the patient.

*Case F.*—Sixty-three years old. When first seen by me he was using a catheter, being unable to void any urine naturally, owing to prostatic hypertrophy. He was dissatisfied with catheter life and wanted something radical done. He was not willing to lose his testicles. His urine was of good quality and his prostate large. I performed the suprapubic operation and enucleated two large lateral hypertrophies together with a collarlike median hypertrophy partially surrounding the prostatic urethra (see Fig. 2). He did not tolerate well the perineal drainage tube, since it caused much tenesmus. Consequently I removed it on the third day, letting him drain through the suprapubic tube. On the twentieth day after the operation the suprapubic wound had so closed that he began to pass urine through the urethra. Now, at the end of his fourth week, he is able to leave the hospital, passing his urine freely, easily, and completely by the urethra.





