

the less can they be expected to withstand any additional strain consequent upon operation.

The man who consumes a great deal of food without exercise runs to fat and has little resistive power generally, is a bad subject for infectious fevers, and likewise a poor subject for an operation of the nature of prostatectomy, on account of the resistance required against urinary absorption.

A man who, after a life of ease and comfort and self-indulgence, is visited in his advanced years by some great shock or business care of magnitude, has his resistive power much reduced by the trauma to his nervous system and is a poor surgical risk for prostatectomy.

If we sum up briefly the dangers and difficulties to be contended with in prostatic operations, as urinary suppression, secondary shock, and general toxemia, and in especially congested prostates—profuse hæmorrhage, the mortality rate or hazard should bear a more or less direct relation to the existence of these features in any given case.

No one will, by choice, operate in emergency; and it has been in connection with the emergency cases of prostatic surgery that I have been compelled to operate upon in the past five years that I have been impressed with the special value in these several instances of operating upon the prostate in two stages. So that for some time past it has become my practice, in a certain number of cases suggestive of high operative risk, to perform the work designedly in two separate stages rather than do a complete and radical removal at the first operation.

It has happened that within the past twelve months there have been about eight such cases, so severe in type and so threatening in character that in drawing statistics to determine the average rate of mortality they should be considered by themselves.

Yet the result in each instance has been so strikingly satisfactory that I have seen fit to select this theme for the subject of my communication to this Association, and submit these cases in evidence of the value of that particular kind of conservatism in the class of cases that they represent.

It may be claimed with some truth that several or all of these patients might have survived a radical operation in one step by suitable technique in the hands of a rapid and efficient operator; yet, as I scan the histories of these cases and reflect upon the personal impression gained at the time I analyzed the situation of each, I cannot but feel that had a different course been pursued, most, if not all, of them would have succumbed; and whereas, even if a few of them had not done so, the risk of radical primary operation would certainly have been greatly increased.

CASE 1.



CASE 3.



The following is an abstract of the important features bearing upon the histories of each case:

CASE I.—D. D., aged 80. February, 1905. Usual symptoms of prostatism. *Urination*.—Every one-half to one and one-half hours, day and night. *Pain*.—During and after urination, and burning during exertion both in the glans penis and epipubic region. *Urine*.—Turbid, purulent, foul and ammoniacal.

General Condition.—Feeble and shows evidence of urinary toxemia,—tongue dry, breath fetid, etc.

Previous History.—Patient has never had complete retention, but has on several occasions attempted to relieve himself by the use of a catheter. His doctor states that his urine was perfectly clear up to six months ago.

Examination.—Prostate *per rectum* moderately enlarged. Urethral length, 7 inches. Residuum, 1½ oz. Search for stone, negative. Concentric, intravesical, moderate prostatic growth is felt with searcher.

February 8, first operation. Perineal cystotomy. Digital exploration finds a circular and symmetric prostatic growth. One galvano-cautery incision enlarging the vesical orifice, and a drainage tube inserted.

CASE 4.



February 17, second operation. Two portions of prostatic tissue the size of a large English walnut are removed through the perineal wound and prostatic urethra. Hæmorrhage promptly and effectually controlled with formaldelyd gelatin and packing.

Patient out of bed on third day after removal of prostate. On account of age convalescence is slow, but ultimate progress entirely satisfactory.

Last observation one year after operation. Patient empties bladder completely, retaining urine for from two to four hours, and is in excellent general health.

CASE II.—B. G., aged 53. May, 1905. Usual symptoms of

prostatism. *Urination*.—From one to two hours by day and five or six times at night. *Pain*.—Great smarting during and at the end of urination. *Urine*.—Turbid; purulent. Laboratory examination shows albumin in marked quantity and epithelial casts.

General Condition.—Poor. Patient is flabby and soft; takes no exercise; eats excessively; dyspeptic, constipated, neurotic.

Previous History.—Duration of trouble over ten years, beginning with stone in the bladder, with acute retention; since when symptoms have become gradually worse and kidney implication progressively increased.

Examination.—Prostate *per rectum* bilaterally enlarged; urethral length, 8 inches. Residuum, 3 ounces. Search for stone, negative. Searcher distinguishes moderate, intravesical abutment and a median bar.

May 8, first operation. Preliminary perineal drainage. Intravesical exploration feels a very tight urethral orifice and general circular hypertrophy of prostate.

May 15, second operation. Galvano-prostatotomy. Two cuts, one on each side, one centimeter in length. Hæmorrhage promptly and effectually controlled by formaldehyd gelatin and packing. Drainage renewed for three days. Patient leaves hospital at the end of two weeks. Ultimate progress satisfactory.

November 14, 1905.—Last observation, six months after operation. Patient empties bladder completely. The urine is opalescent but perfectly sweet. Urination every two to four hours. Still some albumin in urine. General condition much improved.

CASE III.—J. A. C., aged 79. November, 1905. Complete retention, which has existed for four years. Catheter has gone with increasing difficulty and size has been reduced until one with stylet has become necessary. Finally, for several days urethra has closed entirely and his attendant physician has been called in to relieve him by aspiration. *Urine*.—Muco-purulent; ammoniacal.

General Condition.—Poor. Pulse irregular; tongue coated.

Previous History.—As above stated, catheter life for four years; prior to which the usual symptoms of prostatism were in force.

Examination.—Prostate *per rectum* rounded, succulent, congested, about the size of a golf ball. Urethral length, 9 inches.

November 10, first operation. Preliminary perineal drainage. Patient stands operation poorly but reacts satisfactorily.

May 17 (one week later), second operation. Two large prostatic lobes removed through the granulating perineal wound, after preliminary galvano-cautery incision of vesical orifice, which is very tight. The obstruction in this case is found to be twofold—a tight vesical orifice and lateral compression of the prostatic urethra by the two lobes, which are removed. Hæmorrhage promptly and effectually controlled with formaldehyd gelatin and packing.

Seventeen hours after operation, patient is reading the daily paper. Four days later, tube removed and urination through perineal wound.

Seven days after operation patient is out of bed. Subsequent condition progressively satisfactory.

Last report, one year after operation. Patient urinates voluntarily without catheter at intervals from three to four hours; bladder empties perfectly without pain; general condition excellent.

CASE IV.—A. J., aged 77. December 8, 1905. Emergency case. Complete retention of urine; copious intravesical hæmorrhage caused by attempt at catheterism outside of hospital.

General Condition.—Great distress and pain, due to bladder distension. Pulse rapid and irregular.

Previous History.—Only previous attack of hæmorrhage one year ago, without apparent reason. Otherwise usual symptoms of prostatism, gradually increasing in intensity for years.

Examination.—Prostate *per rectum* much enlarged, rounded, tense, congested. Bladder felt above the pubis, reaching between it and the umbilicus.

Operation.—Suprapubic cystotomy late at night; bladder full of blood-clots and urine; great bleeding during operation from congested prostate. Bleeding recurs with great activity and, twenty-four hours later, tube inserted through perineal opening. Hæmorrhage is promptly and effectually controlled with formaldehyd gelatin and packing.

For two weeks following, condition very critical; patient is evidently toxemic. Kidneys, however, secrete freely; muttering, and at times violent delirium. The toxic state gradually improves and wounds develop healthy granulations.

December 29, three weeks after preliminary operation, perineal prostatectomy. A large amount of adenomatous tissue removed through perineum; hæmorrhage not great; reaction slight. Bladder drains by perineum and suprapubic wound closed. Packing out in forty-eight hours; patient out of bed at end of week. All urine comes through perineum by voluntary urination ten days after operation. Subsequent progress entirely satisfactory. Last report, five months after operation. Patient walking about the streets; urinates voluntarily without difficulty; empties bladder; general health entirely satisfactory.

CASE V.—J. W. A., aged 67. January, 1906. Usual symptoms of prostatism, with increasing irritability. *Urination*.—Every two hours day and night, with attacks of greatly-increasing frequency. *Pain*.—Smarting and irritability, associated with the urinary act and between times. *Urine*.—Turbid, purulent, sometimes ammoniacal. Bacteriuria, albumin and casts.

General Condition.—Medium. Patient is under a great nervous strain. Flesh soft and flabby; eats freely, and is dyspeptic and constipated.

Previous History.—For ten years there has been increasing evidence of vesical obstruction. The stream has gradually become smaller and urination more halting at the start.

Examination.—Prostate *per rectum* symmetrically and bilaterally large; urethral length $8\frac{1}{2}$ inches; residual urine 3 ounces. Search for stone, negative. Following search there is great increase in the bladder irritability, and decided constitutional disturbance in the shape of chill and fever, etc. The symptoms of vesical irritability and obstruction continue to increase progressively, with a varying degree of intensity. Operation determined upon. On account of the great mental depression and of the poor general physical condition the patient is regarded as a questionable risk, and it is decided to approach the operation in two stages.

February 15, 1906, preliminary perineal cystotomy. Hæmorrhage from the congested prostate is unusually marked. The perineal distance is very long and the patient is kept under operation only long enough to make out a symmetrically enlarged prostate encircling the bladder orifice and compressing the prostatic urethra. Although this preliminary procedure required but a few moments, the shock of anæsthetic and operation is most dis-

proportionately intense. A few hours after operation, the pulse drops suddenly from 100 to 60, becomes very feeble, and there is marked postoperative shock. The patient rallies under morphine and stimulants. Drainage instituted for one week.

CASE 5.



CASE 6.



February 22, second operation. Both lateral lobes and median isthmus are enucleated through prostatic urethra. Hæmorrhage promptly and effectually controlled by formaldehyd gelatin and packing. Perineal tube is reinserted. The shock from this secondary operation is as disproportionately slight as that after the first operation was disproportionately great. Perineal tube out in six days. Return to voluntary urination through urethra pursues the usual course. Bladder empties entirely. Irritability grows progressively less. Progress is delayed by the intervention of a swollen testicle due to catheterism. Some involuntary dribbling continues for a few weeks but later subsides.

Last report, two months after operations. Bladder empties perfectly. Urinary intervals three to four hours. Practically no irritability. General health markedly improved, and patient starts for European trip.

CASE VI.—W., aged 69. February, 1906. Usual symptoms

of prostatism. *Urination*.—Frequency and urgency; difficulty in starting stream; intervals from every one-half to every three hours by day and once or twice at night. *Pain*.—Pain and discomfort in testicles and perineum during urination. *Urine*.—Turbid and purulent; not ammoniacal.

General Condition.—Fairly good.

Previous History.—Retention two years ago, when catheter was used several times daily for two months.

Examination.—Prostate *per rectum* moderately large; urethral length 8 inches. Search for stone, negative; searcher arrested at vesical orifice by contracture or bar.

February 16, preliminary perineal drainage. Prostate uniformly enlarged; small middle lobe and bilateral hypertrophy.

February 23, two lateral lobes and median isthmus enucleated through the perineum. Hæmorrhage promptly and effectually controlled with formaldehyd gelatin and packing.

Patient up at end of week; out of hospital in two weeks. Subsequent progress satisfactory.

Last observation, two months after operation. Bladder empties perfectly. Urination slightly more frequent than normal, but intervals gradually increasing.

CASE VII.—J. G., aged 65. March, 1906. Usual symptoms of prostatism. *Urination*.—Great difficulty, frequency and urgency; every hour day and night, sometimes more frequent. *Pain*.—Not marked. *Urine*.—Turbid and purulent; not decomposed.

General Condition.—Corpulent, flabby, soft, lymphatic.

Previous History.—For four years the urinary difficulty had gradually grown and increased, the stream gradually becoming smaller and the sense of insufficient emptying of the bladder more evident. Latterly there had been nocturnal and diurnal incontinence.

Examination.—Prostate *per rectum* enlarged to triple the normal size; consistence, succulent and compressible. Urethral length 8 inches. Search for stone, negative. Bilateral intravesical encroachment of prostate; residuum 17½ ounces.

March 6, preliminary perineal section. Following this simple procedure the reaction was disproportionately great. There was much febrile disturbance. The patient passed through a critical

period for the first ten days following the perineal drainage, when it was out of the question to consider the second operation. The temperature ranged from 103° to 104° , accompanied at varying intervals by chill. Under bladder lavage and internal antiseptics the toxemic condition gradually subsided, but there continued to exist an evening rise in temperature.

March 20, two weeks after the primary operation, perineal prostatectomy was performed. Two large lateral lobes were removed through the prostatic urethra. Hæmorrhage promptly

CASE 7.

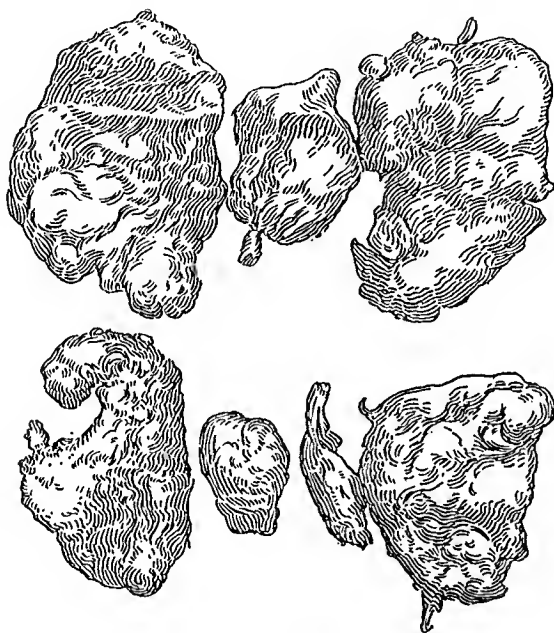


and effectually controlled by formaldehyd gelatin and packing. Immediate reaction very slight after this operation. Subsequently double orchitis occurred, confining the patient to bed for an unusually long period. The subsequent condition has been sluggish; the wound is healing very slowly, and in every phase of the case there is confirmatory evidence of the unsatisfactory material of the patient. Last observation, two months after operation. Patient is out of bed and about, but still in unsatisfactory general physical condition. Perineal wound has not entirely healed, and there remains some leakage between the urinary acts, which are about from one to two hours. Yet there is slow but progressive improvement of the bladder, the general

condition and the dribbling, and it would seem that ultimate recovery is only a question of time.

CASE VIII.—W. B., aged 70. April, 1906. Patient was brought to the hospital as an emergency case, having suffered outside the hospital for several days from retention, which had been relieved by aspiration. At the time of entrance bladder was greatly distended above the pubis and patient was suffering intensely. A catheter introduced by one of the assistant staff far

CASE 8.



enough to draw urine obtaining no return and being clogged with blood, further attempts had been discontinued.

General Condition.—Shows the evidences of urinary absorption. Tongue dry and coated, breath fetid.

Previous History.—Patient has shown the usual symptoms of prostatism for a number of years; the present is the first attack of retention.

Examination.—Urethral length uncertain. Prostate *per rectum* symmetrically enlarged, soft and resilient, giving the feel of the presenting body of waters during pregnancy.

Operation, April 24, 1906. Suprapubic incision, which discloses infiltration of urine in the prevesical region, presumably from the aspirating puncture, as no rent in the vesical wall could be found. The bladder when opened is found full of blood-clots and urine. The bladder is tremendously engorged. Perineal opening is made for drainage.

Patient's subsequent condition is very bad. Toxemia marked. Delirium supervenes, and febrile condition continues for a week or ten days after operation. Blood examination shows secondary anemia.

May 7, two weeks after first operation, secondary operation. Prostate removed through perineal opening by the assistance of finger through the suprapubic wound. This is found very helpful, on account of the unusually long distance of the perineum. Hæmorrhage promptly and effectually controlled by formaldehyd gelatin and packing. On account of the occurrence following the first operation of right epididymo-orchitis, a vasectomy is performed at the same time as the second prostatic operation. Reaction after operation is very slight and the vesicle which, prior to vasectomy, had been tender and enlarged, shows immediate and progressive improvement.

Last observation, two weeks after operation. After-condition of the patient has been sluggish on account of his enfeebled condition. He is, however, daily improving. The suprapubic wound is healing progressively and leaks very little. All of the urine comes through the perineum. There has not as yet been any voluntary urination, but patient sits up out of bed and is daily regaining strength.

A summary of these cases shows that the ages of the patients were, respectively, as follows: 80, 53, 79, 77, 67, 69, 65, 70, the average being threescore years and ten. Two of them, in the neighborhood of 80 years, were exceedingly feeble, and were considered questionable risks on this score. One gave evidence of advanced renal implication. Three others were emergencies, in that they had for several days suffered from acute retention relieved by aspiration. One of these had infil-

tration of urine in the prevesical region and two of them intravesical hæmorrhage. Three other patients were soft, flabby, neurotic, and more or less broken down in health, and would be classified as poor surgical risks on this account. All of them were submitted to complete radical removal of the prostate, after preliminary drainage, with one exception, in which instance, on account of the serious kidney complication, the galvano-cautery technique was employed. All of them up to the present have done remarkably well, the last reports dating from several weeks to twelve months after operation.

In recalling the important features of these cases I would lay particular stress upon the great value of formaldehyd gelatin as a local hæmostatic. It is my custom to employ it after all perineal operations, and since its use I have never had serious hæmorrhage and believe that as a result, the postoperative condition has been more peaceful to the patients and less troublesome. The drainage by tube has been more continuous and unobstructed and, generally speaking, there has been great freedom from that very aggravating and disturbing feature of straining with attendant bleeding and clot-formation which, in my past experience, had made so many perineal cases during their postoperative stage arduous, vexations and even alarming.

Further observation upon the secondary operation is the incontestable fact that the parts, owing to circulatory decongestion and granulation, are much more accessible and the line of cleavage between the prostatic tissue and the capsular surrounding more easily separated; hæmorrhage is unimportant; shock is trifling, the operative period being minimized to a few minutes; and, finally, that much-feared after-condition of postoperative toxemia is almost entirely eliminated, as the patient during the preliminary period of drainage has become inured by his own secretions and his normal resistance fortified by the hand of nature in advance of and in preparation for the concluding operative procedure.