A Clinical Lecture

ON A FURTHER SERIES OF CASES OF

TOTAL EXTIRPATION OF THE PROSTATE FOR RADICAL CURE OF ENLARGEMENT OF THAT ORGAN.

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In a lecture delivered by me in this College in June last, and published in the *BRITISH MEDICAL JOURNAL* of July 20th, 1901, I described a new and seemingly very formidable operation for radical cure of enlargement of the prostate, namely, total enucleation of the organ in its capsule, the urethra being left behind intact. I further gave full details of four cases in which I had successfully performed this operation, the ages of the patients ranging from 62 to 69 years, and the weights of the prostates from $2\frac{1}{2}$ to $4\frac{1}{2}$ ounces. Two of these patients were present at the lecture, and told their own tales. The four are now in good health, and can retain and pass their urine naturally as well as ever they did. Two of them have resumed the active pursuit of their avocations, which they had abandoned owing to the pain and discomfort incident to catheter life; and two have regained their sexual powers, which had been lost through the debilitating influence of the disease.

I have now to invite your attention to the details of a further series of four cases in which I have undertaken this operation, the patients ranging from 65 to 76 years, and the prostates removed from 3 to $10\frac{1}{2}$ ounces.

CASE V.—This gentleman, aged 75, on the advice of the late Dr. Cox, of Reading, and Dr. Philip, of Boulogne, came from France to consult me on September 2nd, 1901. About fourteen years ago, having for several months previously suffered from severe prostatic symptoms, he was advised to pass a catheter to empty his bladder nightly on going to bed. A severe attack of cystitis ensued, and since then he had never passed urine except through a catheter. After the cystitis passed off he got on fairly well with the aid of his catheter till about eight years ago, but since then he has had repeated attacks of cystitis with purulent urine. For the last few years he has had frequent attacks of hæmaturia, often very profuse, intense pain at times, great scalding in passing the catheter, which he has had to employ latterly every half-hour day and night. The urine was alkaline, contained much pus and blood, and was intensely offensive. He had much difficulty in passing a catheter at times, from 14 to 16 inches of the instrument being introduced before urine flowed, so that specially long catheters had to be employed. As Dr. Philip wrote:

It was only his very fine constitution that enabled him at his age to survive a period of martyrdom which was increasing in severity.

I introduced a long coudée catheter, No. 9 English scale, with some difficulty, $14\frac{1}{2}$ inches entering before urine flowed, and drew off 3 ounces of fetid urine, containing much pus and some blood. The prostate was felt enormously enlarged *per rectum*, but fairly soft and rather nodular. The kidneys were probably affected. The patient was in great agony, but cheerful and hopeful of relief from operation.

On September 6th, assisted by Mr. H. Frankling, Mr. C. Braine giving the anæsthetic, I performed total extirpation of the prostate. I commenced by passing a coudée catheter, and drew off 2 or 3 ounces of urine of a fearful stench. The bladder was washed out repeatedly with solution of permanganate of potash. It was then distended with 12 ounces of boracic lotion, and the catheter being left in, suprapubic cystotomy was performed. On introducing my finger through the wound, I found the bladder almost filled by a rounded tumour (Fig. 1, AA' BB') the size of a cricket-ball, which at first I imagined to be an enormous "middle lobe" of the prostate; but, on closer examination, this was found to be composed of two outgrowths (Figs. 2 and 3, AB, A'B') of the lateral lobes projecting into the

bladder, each the size of half a cricket-ball, with a deep vertical cleft between them, through which the catheter was felt passing into the bladder. A small phosphatic concretion, lying free in the bladder, was removed. The mucous membrane over the most prominent part of the right lobe was then snipped by scissors, the incision enlarged by the finger nail, and that portion of the lobe (Fig. 1, A'B') easily and rapidly detached from its mucous covering, which was pushed down off it. The prominent portion of the left lobe (Fig. 1, AB) was similarly dealt with, the whole mass (AA' BB') then lying bare of mucous membrane. Each half of this mass was then for convenience broken off by the finger along the line BB'), flush with the floor of the bladder, and withdrawn by lithotomy forceps through the suprapubic wound. Their lower portions were found to be quite gangrenous. The main body of the prostate (Figs. 1 and 2, BB' CC') was then attacked and enucleated in its capsule from the sheath and urethra, the finger working its way successively below, outside, above, and on the inner side of each lateral lobe, the lobes separating above by the giving way of the superior commissure, or "joining portion," and the urethra with its accompanying muscles being peeled off and pushed upwards beneath the pubic arch. The prostate was so large that it blocked the space between the pubic arch and rectum, so that the finger passed round it with some difficulty. Strong fibrous bands were met with at the sides and behind the triangular ligament, passing from the sheath to the capsule, which required some force to tear through. The main body of the prostate, now lying loose within its sheath, was tilted to the left beneath the urethra, and delivered into the bladder through the "slit" made in its mucous membrane in removing the portion of the left lobe (Fig. 1, A B) projecting into the bladder. A finger of one hand placed in the rectum steadied the prostate during the enucleation, and pushed it towards, and eventually into, the bladder. The prostate was then withdrawn from the bladder by lithotomy forceps. I would here remark that a very large prostate can be removed whole in this way, owing to the compressibility of the adenomatous tissue of which it is mainly composed. After removal of the prostate the urethra could be traced entire from the triangular ligament to the neck of the bladder surrounding the catheter. Between the finger in the rectum and that in the cavity whence the prostate had been removed only a thin partition, formed by the wall of the rectum and recto-vesical fascia, could be felt. There was very little bleeding, which was rapidly controlled by irrigation with hot boracic lotion, at the cessation of which the cavity left by removal of the prostate had practically disappeared, owing to the rapid contraction of the surrounding tissues. Not a shred of mucous membrane was removed, and no sutures were employed in the bladder. No scissors, forceps, or cutting instrument of any kind was employed in the enucleation of the prostate, which was entirely effected by the finger. A large drainage tube was inserted in the bladder, and the suprapubic wound sutured by silkworm gut. The usual dressings, and large pads of wool for absorption of the urine, were applied. The operation lasted half an hour, the patient being three-quarters of an hour under the anæsthetic. The patient stood the operation well, was not in the least collapsed after it, and on waking from the anæsthetic commenced to laugh and joke. In the evening he was quite happy, and not in the least depressed by the operation. The temperature never rose above 100° F., and remained normal after September 12th. The tube was removed in 48 hours, after which the bladder was irrigated daily. The sutures were removed on September 12th, when the abdominal wound was closed, except where the drainage tube had passed.

On October 7th, 6 ounces of urine were passed naturally by the urethra, after which the quantity discharged in this way gradually increased as the suprapubic wound closed.

On October 16th the patient went for a drive; the fistula had practically closed, and he could retain and pass from 12 to 15 ounces of clear healthy urine naturally. About this period I had the pleasure of showing him to his old friend and former medical adviser Dr. Selwyn Harvey, of South Kensington, who was much pleased at the result of the operation.

On October 29th, after the patient had micturated, I passed a catheter and found that there were only 2 drachms of clear acid urine remaining. I filled the bladder with boric lotion and found that it contained 19 ounces comfortably. The urine flowed when 6 inches of catheter were introduced, in contrast with 14½ inches before the operation. The patient, taking long walks of 4 or 5 miles daily, is now a strong and healthy man.

On November 3rd he returned to France and bore the journey well, but next day there was a leakage of urine by the fistula. This, however, gradually closed, and on December 2nd the patient wrote:

I pass my urine quite well by the natural passage, and hold my water as long as I like. For instance, last night, from 11.30 P.M. till 8 this morning (8½ hours), and no urine by the fistula, so really it is a perfect success.

I pass round for your inspection this enormous prostate, which weighed 10½ ozs., measuring 5½ inches antero-posteriorly and 3½ inches transversely; also two drawings (Figs. 1 and 2) showing its actual size and physical aspects as viewed from above and beneath respectively. It is divided into two lateral lobes by a deep furrow, in which the catheter lies, indicating the position occupied by the urethra, which, however, terminated in its inner orifice about an inch behind the transverse constriction (B, B'). It is further divided transversely by a deep circular groove (B, B') into two parts, a posterior portion (A A' B B') which projected into the bladder, and was covered by mucous membrane, and an anterior portion (B B' C C'), which lay outside the bladder, between the pubic arch and rectum, and was encased in the prostatic sheath formed by the rectovesical fascia. You will observe that the growth is enveloped by a thin, dense, fibrous capsule, which is closely adherent to it. This is the true capsule of the prostate. This (Fig. 2, a)

is one of the adenomata of which the enlarged prostate is mainly composed, and was detached (at B', Fig. 2) during the removal of the latter. These adenomata, which vary in size from that of a white currant to a greengage, possess separate capsules of their own.

CASE VI.—This gentleman, aged 76, was sent by Dr. James Frood, of Topsham, Devon, on September 4th. Had no prostatic trouble till 1888, when he got retention of urine, which was relieved by catheter. Between that period and 1898 he had an instrument passed occasionally; since then complete catheter life. Latterly he has had much pain, increased frequency of micturition, haematuria, and difficulty

in passing the catheter, which he attributes mainly to a false passage having been made some years ago. For some months past he has had to keep the catheter in the bladder most of the night. Extremely feeble and worn from his sufferings; almost reduced to skin and bone. The urine contained much pus and blood, but was acid. A large stone was detected on sounding. The prostate was found *per rectum* much enlarged, but soft and elastic to the touch.

The patient was so extremely fragile that I did not consider he could survive any cutting operation, so on September 7th I performed litholapaxy, removing an extremely hard urate

stone with oxalate nucleus, weighing 508 grs., in fifteen minutes. I hoped that this operation, in addition to removing the symptoms due to the stone, might possibly be followed by the power of voluntary micturition, as has frequently occurred in my practice in similar cases. As there was difficulty in passing the catheter a No. 12 coudée was tied in after the operation for two or three days. After removal of the catheter a little urine was passed naturally, and the quantity increased daily, so that by September 24th, when he was able to sit up and walk about his room, 5 or 6 ounces of urine passed in this way, the catheter being employed four times daily.

By October 6th the patient had vastly improved in his general health, his urine was normal, there was no pain, he could go for six or seven hours without using his catheter, and in the intervals could pass from 1½ to 2 ounces of urine naturally. I suggested to him that most men at his age would rest content with this comparative comfort, and would recoil from the risk of a further large operation. But he argued that he should never regain more than partial power over his bladder, that the prostatic enlargement would continue to in-

crease, that there was always the danger of difficulty arising in passing the catheter, that catheter life was to him intolerable, and that at a later period he would be still less able to bear operation. Under these considerations he pressed for removal of the prostate, and said he was prepared to take the risk attaching thereto. In this course he was backed up by his wife and medical adviser, Dr. Frood, who knew his temperament, so I consented to undertake the operation.

On October 10th, Mr. W. Braine giving the anaesthetic and Mr. Frankling assisting me, I performed total extirpation of the prostate. On opening the bladder suprapubically, I

Fig. 1.—Showing upper aspect of enormous prostate, weighing 10½ ounces, removed from patient, aged 75; exact size. The catheter indicates position occupied by urethra. Portion, A A' B B', lay in bladder; that, B B' C C', outside bladder, between pubic arch and rectum. C C', anterior aspect lying against triangular ligament.

found projections of both lateral lobes in the bladder, each the size of a walnut. There was also a "middle lobe" (Fig. 3, C) the size of a plum, with a narrow neck, forming a short pedicle (Fig. 3, D). The catheter entered the bladder on the right of this pedicle. Introducing sharp-pointed scissors along my finger in the bladder, I snipped the mucous membrane at the apex of the "middle lobe," and then with my finger-nail stripped the mucous membrane off the tumour, which I found was projecting from and attached to the left lobe. I therefore continued the enucleation of the prostate on the left side without detaching the "middle lobe," stripping the left lobe in its capsule from the encasing sheath—gradually working with the finger below, outside, and above, and then internally, separating this lobe from the urethra. Finally, the finger was pushed forward beneath the prostate as far as the triangular ligament, from which the left lobe was shelled off. This lobe, now lying free, was pushed into the bladder by the finger in the rectum, which throughout the manipulations steadied the prostate and thus facilitated its enucleation. It was then delivered through the suprapubic wound. The right lobe was dealt with in the same way. It will be observed that in this case the lobes of the prostate during enucleation separated from each other along both the superior and inferior commissures, and were removed separately. The catheter, which was left in the bladder during the operation, was felt by the finger lying in the urethra whilst stripping the prostatic lobes off that canal, with the thickness of the urethral wall lying between. After the removal of the prostate the urethra could be traced entire, covering the catheter from the triangular ligament to its orifice in the bladder. There was considerable oozing of blood, which was, however, soon controlled by irrigation with hot boric lotion.

The bladder was drained through the suprapubic wound, and the after-treatment generally was the same as in the previous case. The patient was somewhat collapsed immediately after the operation, which lasted forty minutes, but he soon rallied and made satisfactory progress. He passed a little urine naturally on October 29th, after which date

the quantity passed by the urethra increased daily. By November 8th the suprapubic wound had almost closed, most of the urine passed naturally, and the patient was sitting up several hours daily. The fistula was completely closed on November 14th, after which he could retain his urine from five to eight hours, and pass it naturally without the least trouble, and with as much force as at any period of his life. His urine was perfectly normal. The patient put on flesh rapidly, and when he left London for Devonshire on December 10th was hale and hearty, "stronger," as he wrote me, "considering his advanced age, than at any other period of his life." He travelled from London to Topsham, walked from the railway to his house (ten minutes walk), and retained his

water for nine hours without inconvenience. Since then Dr. Frood writes:

The operation has been a magnificent success. My hopes and anticipations from reading your lecture in the BRITISH MEDICAL JOURNAL have been fully realised.

The prostate (Fig. 3) which I show you weighed $3\frac{1}{2}$ ounces. The separate lobes are placed in apposition in their natural position, with a catheter lying in the site occupied by the urethra. Each lobe is enveloped in a thin fibrous capsule—the true prostatic capsule—within which are numerous adenomatous tumours. The so-called "middle lobe" (C) is in reality an outgrowth from the left lobe (A), forming a ball valve to the urethral orifice.

CASE VII.—This was a cabman, aged 70, who was admitted to St.

Peter's Hospital on October 12th, 1901. He had suffered from prostatic symptoms for fifteen or sixteen years, and had employed a catheter for six or seven years. Some five years ago he injured himself in passing a metal catheter. This was followed by profuse haemorrhage into the bladder, and no urine would pass by the catheter. He was admitted to the Westminster Hospital, where suprapubic cystotomy was performed, and an enormous clot, distending the bladder, turned out. My friend, the late Mr. Thomas Bond, who operated, informed me that he found no stone, only enlargement of the prostate.

In March, 1897, he came to St. Peter's Hospital suffering from severe cystitis. Catheterism was then complete, and the prostate greatly enlarged *per rectum*. On sounding I

Fig. 2.—Showing under-aspect of same prostate as in Fig. 1. A B, A'B' growths from lateral lobes projecting into bladder. C B, C'B' prominences felt *per rectum*. a, adenoma detached from prostate.

detected a soft phosphatic stone, which I successfully removed by litholapaxy on March 17th, the *débris* weighing 94 grs. The cystitis disappeared, and the patient kept fairly well for about a year, no urine, however, passing except through the catheter. In October, 1898, he again turned up with similar symptoms of stone, superadded to those of enlarged prostate. I again detected, and successfully removed by litholapaxy, a phosphatic stone, the *débris* of which weighed 84 grs. The patient remained free from cystitis for about a year, but subsequently came to the hospital from time to time suffering from cystitis and haematuria, but no stone was detected on sounding. He had been a hard drinker for years, was in broken health, and mentally depressed. Profuse and almost constant discharge of a glairy substance resembling prostatic fluid was a feature in his case, and to this he attributed his debility and depression of spirits.

On October 16th I cystoscoped him, and found that there was a large tumour corresponding to the left lobe of the prostate, projecting into the bladder, and a fringe on the right side of the urethral orifice. The prostate was enormously enlarged *per rectum*, particularly on the left side, but fairly soft and elastic to the touch.

On October 22nd I removed the prostate entire in its cap-

in succession beneath, outside, and above the left lobe, separating it from the sheath, and then inside, peeling it off the urethra, with its accompanying muscular and fibrous coat, which was pushed up out of the way towards the pubic arch, between the lobes, which during the manipulations separated from each other along the superior commissure. The finger through the same opening in the bladder worked round the right lobe and front of both lobes, peeling them off the triangular ligament. The prostate as a whole (Fig. 4) was then delivered into the bladder, and thence withdrawn by lithotomy forceps. Two adenomatous outgrowths (Fig. 4, C, C') were detached during the extraction, and removed through

Fig. 3.—Prostate weighing $3\frac{1}{4}$ ounces, removed from patient, aged 76; exact size. Catheter shows position occupied by urethra. A, B lateral lobes, C, so-called "middle lobe," being outgrowth from A.

sule (Fig. 4). On opening the bladder suprapubically I found that the prostatic enlargement was "mainly confined" to the left side, forming a large prominent tumour on the left of the urethral orifice, the size of a peach. There was a beaded fringe surmounting a collar, or projecting lip rather, on the right of the orifice. The mucous membrane over the most prominent part of the tumour on the left was snipped by scissors, and then detached by the finger nail from that portion of the left lobe that projected into the bladder. The enucleation of the prostate out of its sheath was then continued by the finger point, the forefinger of the other hand being placed in the rectum, for the purpose of fixing the prostate and pushing it towards the bladder. The finger worked

Fig. 4.—Large prostate, weighing 6 ounces, removed from patient, aged 70. A, left lobe enormously hypertrophied; B, right lobe, elongated, flattened, terminating in outgrowths C, C' in the bladder. The catheter lies in position of urethra, which was very tortuous.

the same opening as the rest of the prostate, by passing the finger to the right beneath the urethra, and hooking them from beneath the mucous membrane.

After removal of the prostate the urethra was traced whole, covering the catheter from the triangular ligament to the neck of the bladder. The haemorrhage was slight and readily controlled by irrigation with hot lotion. A tube for drainage was placed in the suprapubic wound, and the after-treatment, generally, was the same as in the previous cases. An attack of bronchitis followed the operations, and was rather distressing for two or three days, after which the patient began to make favourable progress. The drainage tube was removed in thirty-six hours, after which he began immediately to pass

some urine naturally by the urethra. The quantity thus passed steadily increased daily, and this facilitated keeping the bladder clean. At the end of a week the patient was in excellent spirits, had a hearty appetite, and was in all respects progressing favourably. By the end of a fortnight the suprapubic wound had almost healed, most of the urine was passing naturally, and all anxiety about his recovery had ceased. Suddenly, on November 6th, with a normal temperature, he began to show signs of mental disturbance, suffering from the most extraordinary delusions. Next day acute and violent mania set in, and he had to be put under restraint. Morphine, chloral, and bromides were given in large doses to produce sleep. The patient refused all food, so that he had to be fed artificially. In spite of every care he began to get weaker, and died on November 13th, twenty-two days after the operation, the temperature remaining normal till the last day.

Only a limited necropsy was obtained. The suprapubic wound had practically closed. There was nothing abnormal about the bladder except that it was pear or funnel-shaped, instead of globular, the inner orifice of the urethra terminating at the triangular ligament. It would thus appear that after complete enucleation of the prostate, the prostatic urethra, deprived of its normal support, widens out in funnel fashion, and practically becomes part of the bladder cavity. It further demonstrates definitely that the true sphincter of the urethra (or bladder) is situated at the membranous portion of the urethra.

You will observe that the hypertrophy of this very large prostate (Fig. 4), weighing 6 ounces, is mainly confined to this rounded left lobe (A), the right lobe (B) being pressed out into an elongated, flattened, irregular mass, terminating at its bladder end in three barnacle-like offshoots (C, C', C''). These processes did not hang loosely into the bladder (as they sometimes do), as seen in the specimen. They were gathered together beneath the mucous membrane on the right side of the neck of the bladder, giving it a beaded appearance. The urethra lay in the deep furrow occupied by the catheter, and, as you can see, must have been very tortuous. The lobes are united along the posterior commissure, and the whole mass is enveloped in a thin, strong, fibrous capsule—the true capsule of the prostate.

I daresay you will have seen it somewhat persistently alleged in the medical press that the operation which I have described to you is anatomically impossible—that if the prostatic capsule were removed there must be extravasation of the urine into the pelvis with fatal consequences; and that the prostatic urethra must necessarily be torn away if the whole prostate is removed. But no amount of theoretical objection can withstand the irresistible logic of facts such as I have placed before you. This incredulity has probably its origin, to a large extent, in the defective descriptions of the anatomy of the prostate contained in many of the textbooks in common use, which regard that organ as a single body with a canal tunnelled through it in the form of the urethra. I maintain that the human prostate, which in early fetal life is undoubtedly a double gland, preserves this dual character throughout life, and that, in reality, it consists of two distinct and separate encapsuled glandular bodies, or prostates, lying closely approximated on either side of the urethra, and adherent above and below that canal, like the segments of an orange; and that when in declining life the gland becomes adenomatous, it resolves itself more or less into its dual constituents, by the partial giving way of the adhesions along its upper and lower commissures, or “joining portions,” thus facilitating its removal in its capsule, as a whole, or in two separate parts, the urethra being left behind intact.

There is also much confusion in the textbooks as to what constitutes the prostatic “capsule,” some anatomists describing two distinct capsules—(1) a thin, strong, fibrous covering, closely adherent to the prostatic substance (this is the “true capsule,” and that removed with the prostate in my operation); and (2) the fibrous casing outside this, containing the venous plexus, formed by the recto-vesical fascia, and called the “sheath” (which is left behind in my operation and prevents infiltration of urine). Others, again, do not draw any distinction between these two, but regard the whole as the prostatic capsule. To persons brought up in this latter school my operation must necessarily appear absurd.

To obviate misconception on these points, I have endeavoured in my previous lecture to describe as clearly as possible the anatomical features in accordance with which my operation is practicable, features which I learnt mainly from close examination of the morbid prostates removed in the operation. On looking more carefully into the literature of the subject I am glad to find that these views as to the structure and constitution of the normal prostate were anticipated and held many years ago by Sir Henry Thompson. To anyone desirous of comprehending the anatomical considerations on which my operation is based, I would recommend perusal of the masterly description of the anatomy of the prostate given in Part I of Sir Henry's work, *The Diseases of the Prostate*. Seeing that his descriptions of the anatomy of the prostate were based on careful dissections of a large number of prostates, I cannot conceive why they are practically ignored in most of the textbooks.

I now pass on to the eighth case, which presents some peculiarities, not the least interesting being that though in the removal of the prostate as a whole the urethra was undesignedly torn across at its junction with the bladder no untoward result ensued, the patient making a thorough recovery.

CASE VIII.—This patient, aged 65, had a history of prostatic symptoms for ten years, which during the last two years and a-half had become much aggravated. He had attended St. Peter's Hospital off and on since February, 1901, during which time he was twice sounded owing to severe pain, haematuria, and great frequency of micturition, but no stone was found. In spite of treatment his condition gradually grew worse, and early in November the frequency was very troublesome, seven or eight times by day and ten or twelve by night. The residual urine, which was acid but contained albumen, amounted to 6 ounces, and he bled easily on the introduction of the catheter. There was frequent involuntary discharge of prostatic fluid. The prostate was much enlarged *per rectum*, tense and elastic, globular, scarcely bilobed, and quite movable under the rectal wall. Cystoscopic examination showed an irregular bulging all round the neck of the bladder with a sessile “middle lobe.”

On December 11th I opened the bladder suprapubically, and found a sessile prostatic mass the size of a plum projecting into the bladder below the urethral orifice. Snipping the mucous membrane over this, I rapidly detached the former from the prominent tumour by the finger nail, and then continued the enucleation of the prostate out of its sheath, passing my finger beneath, outside and above the left lobe, the adhesions between the capsule and sheath yielding more readily than in any of the previous operations. I continued the enucleation on the right side, and stripped the prostate off the triangular ligament in front. The prostate was now felt completely detached all round, and lying loose in its sheath, but with the catheter passing through its axis, showing that neither the upper nor the lower commissure had given way. Passing my finger along the upper surface I endeavoured to separate the lobes along the superior commissure in order to strip the prostate off the urethra, counter-pressure being made by the finger in the rectum, when the whole mass was suddenly propelled into the bladder, so that no trace of prostate could be felt *per rectum*. I then noticed that the catheter was covered by the urethra for about 2 inches from the triangular ligament, but that its inner end had been severed from the neck of the bladder. On examination of the prostate after removal through the suprapubic wound I found that it was entire, of the shape and size of a large pear (Fig. 5), and that it had been drawn off the urethra, which was severed at the neck of the bladder, just as a bead is drawn off a string. Not only the mucous membrane of the urethra, but also its muscular covering, had been left behind like a sleeve covering the catheter.

I pass round this specimen (Fig. 5), which is the enlarged prostate, as you can see, complete in all respects. The capsule is distinctly visible covering the whole mass, and continued inwards both in front and behind over the surface of the tunnel in which the catheter now lies, and through which the urethra passed. This tunnel, through which the forefinger can pass easily, is not circular, but vertically slit-like, extending nearly to the upper and lower surfaces of the prostate. On

opening this tunnel to its full limit in front (B) one can see that the lateral lobes are simply agglutinated together along the upper and lower commissures, and that by a little force the separately encapsuled lobes can be peeled from off each other along the middle line, thus affording proof positive that the anatomy of the prostate as already described by me—namely, that it consists of two encapsuled lobes applied face to face along the middle line, and adherent above and below

Fig. 5.—Pear-shaped prostate, weighing 3 ounces, removed from patient, aged 65. A, A', stumps of displaced ejaculatory ducts, which were torn off; B, pubo-prostatic ligaments; C, upper line of demarcation between the lateral lobes.

the urethra, which is folded in their embrace—is correct. There was somewhat more hæmorrhage than in the previous cases, but this was soon controlled by irrigation by hot lotion. The cavity in which the prostate lay rapidly contracted on the urethra. The catheter was withdrawn, and no attempt was made to unite the urethra to the neck of the bladder by suture. A suprapubic drainage tube was inserted, and the after-treatment was the same as in the previous cases.

Though somewhat collapsed after the operation, the patient has made an uninterrupted recovery. He began to pass urine naturally on December 23rd, and the suprapubic wound was completely closed on January 5th, 1902. I have now the pleasure of showing you this gentleman in perfect health. He has no residual urine, a No. 15 catheter can be passed with ease, and he himself will tell you that he can retain and pass his urine naturally as well as he ever did in his life.

I have given full details of all the cases hitherto operated on by me, because, though the general principles of enucleation of the prostate as a whole are the same in all cases, each presents some peculiarities of its own, as no two cases of enlargement of the prostate are exactly alike.

There is, perhaps, no expression which one hears and sees more constantly made use of in connection with prostatic cases than "atony of the bladder." The history of these eight cases goes far to prove, I submit, that no such condition exists, even in the most advanced cases of the disease; and that even when complete catheterism has prevailed for many years, the bladder walls retain their expulsive power. Indeed, they are constantly making involuntary efforts to get rid of the urine, which is merely kept back by the mechanical blockage of the passage by the enlarged prostate. And though in the early stages of the disease a so-called middle lobe may

impede the flow, I am convinced that in the later stages the lateral pressure exerted on the canal is the main cause of the obstruction.

In the work by Sir Henry Thompson already referred to, he ably refutes the theory of the existence of a third or middle lobe in the normal prostate, as first propounded by Sir Everard Home, and generally accepted since his time. An examination of the prostates removed in these operations entirely bears out Sir Henry's contention, for where a so-called middle lobe exists it is found to be merely an outgrowth from one of the lateral lobes.

I venture to hold that the hopeful anticipations from total extirpation of the prostate that I ventured on in my previous lecture have been fully realised in my subsequent operations. We have now eight cases operated on, the ages varying from 62 to 76 years, all in broken health, and some of them almost in a dying condition before operation, with the prostates removed varying from $2\frac{1}{4}$ to $10\frac{1}{4}$ ounces. Seven of these have been completely successful in all respects. The remaining case had recovered from the operation, and was passing his urine naturally, when he was seized by acute mania, from which he died. Whilst recording the death in connection with the operation, it in no way militates against its performance. On the contrary, so far as the operation was concerned urine was passed naturally earlier, and convalescence set in more rapidly than in any of the other cases. Acute mania is an occurrence which, in my experience, is particularly prone to occur in aged males when suffering from advanced prostatic disease, and particularly when accompanied by profuse discharge of prostatic secretion, whether subjected to an operation of any kind, as also in connection with catheter life.

Though a large number of prostatic cases have come under my care during the period of about a year over which these eight operations have been spread, I have hitherto—the operation being on its trial—refrained from undertaking it except in the more advanced cases, in which life was simply intolerable with the aid of the catheter. The comparative absence of shock from so seemingly grave an operation in aged and broken-down patients is certainly remarkable. I attribute this to the rapidity with which the operation is carried out and the trifling hæmorrhage attending it. We have beforehand a definite plan of campaign laid down—namely, to remove the whole prostate in its capsule, and nothing else. This is done by the finger alone, without the aid of cutting forceps, curved scissors, chisels, and cheese-cutters of kinds employed in the various forms of partial prostatectomy, by which, in addition to the salient portions of the prostate, portions of the bladder and prostatic sheath were frequently removed, thus opening up the prostatic plexus of veins and giving rise to profuse hæmorrhage and septicæmia. It was these considerations, as well as the incomplete and temporary results obtained in a very large proportion of cases, that brought the operation of McGill and Belfield into disrepute, so that for several years it has been practically abandoned and replaced by castration and vasectomy.

PROFESSOR LANCEREAUX has been almost unanimously elected Vice-President of the Académie de Médecine in the room of Dr. Riche, who succeeds to the Presidency by right.

HAVANA FREE FROM YELLOW FEVER.—Major W. C. Gorgas, chief sanitary officer at Havana, in his report to Governor-General Wood for November, says: "During the month we have had no cases and no deaths from yellow fever. This can be said of no preceding November since 1762. Last year we had during this month, 214 cases and 54 deaths. This year the last case of yellow fever occurred on September 28th, that is, we have gone over two months without a single case or death belonging to Havana. I consider this a demonstration that Havana has at last been freed from the infection of yellow fever. It must be remembered that October and November are the months when yellow fever is rife in Havana, and that for the past century there has never been a day during these two months when there were not many cases in the city. This result I consider due to the system, introduced last February, of killing infected mosquitos in the neighbourhood of each point of infection as it developed."