capsule. The lower part of the clot free in the pelvic connective tissue lay, not in Douglas's pouch, but in its site and could be detected by touch as a convex mass behind the cervix.

On the night of March 28th, nearly six weeks after the rupture of the tube, the capsule leaked a little posteriorly to its superior limits at the point of adhesion to the omentum.

On this occasion there was sharp pain, such as has been noted in intraperitoneal haemorrhage, but the patient's sufferings must have been largely due to the tension of the capsule of peritoneum, a necessary result of the renewed haemorrhage.

Had a fetus escaped through a rent in the capsule instead of a clot, then, granting that the patient and fetus had survived, a tubo-abdominal pregnancy of the fourth class, according to Taylor,¹⁷ would have developed. Earlier writers believed that most abdominal pregnancies were established in that manner, which implied that abdominal was secondary to tubo-ligamentary pregnancy.¹⁸

The cause of the renewed haemorrhage in Case II was not clear. Most probably it was due to straining at stool. There were no solid motions in the intestinal canal at the time, but, on the contrary, looseness of the bowels following free purgation by magnesium sulphate which had greatly relieved the flatulence. In order to hasten the escape of flatus and liquid motion patients often strain at stool.

The most prominent physical sign, after the presence of a tumour in the hypogastrium, was the convex mass behind the cervix. A similar kind of swelling is to be detected when there is a pelvic haematocoele and the blood in Douglas's pouch has coagulated; a tubal sac in the same position also forms a convex mass behind the cervix.¹⁹ But there is no Douglas's pouch in this case—a fact which was made clear at the operation. All collections of clot, as well as all cysts and fibroids which burrow thoroughly into the posterior fold of the mesometrium, must, if they continue to grow, displace that portion of the peritoneum which constitutes Douglas's pouch, so that it will lie on the top and back of the clot or tumour. This displacement of the peritoneum is very plainly seen when a large fibroid of the broad ligament is exposed and enucleated from its serous investment. I have demonstrated at full length this displacement in the Harveian Lectures for 1902.²⁰

Taylor,²¹ in treating of broad ligament haematoma, observes that in some cases "by burrowing in front of the rectum low down in (*sic*) the pouch of Douglas it may produce a well-defined tumour behind the uterus that closely simulates inter-peritoneal swelling of a distended and adherent tube." But a broad ligament haematoma cannot be in Douglas's pouch, as it is essentially an extraperitoneal condition. Taylor illustrates the above remarks by a drawing from Hart and Carter's work,²² on inspecting it that author's meaning at once becomes clear. The clot is represented behind the posterior layer of Douglas's pouch, being, in the case illustrated, insufficient in bulk to heave up the whole pouch in the manner which I have already endeavoured to explain. Thus the relations of one form of small haematoma are proved by Hart and Carter's section, whilst the relations of an unusually large haematoma were made evident by the condition of the affected parts which I detected when operating on Case II.²³

Thus these two cases indicate, in the first place, that haematoma is not so rare a result of interrupted extra-uterine pregnancy as is generally taught, and that it may be mistaken for haematocoele. Haematoma is, however, decidedly less frequent than haematocoele in relation to ectopic gestation. For the tubal sac is more likely to discharge its contents through the ostium into the peritoneal cavity, or to burst into that cavity, than to rupture between the folds of the broad ligament. When the broad ligament is opened up in this manner experience has proved that, instead of a haematoma forming, the ovum not rarely continues to develop, constituting the tubo-ligamentary pregnancy, anterior or posterior, of Taylor. There remains a considerable minority of cases where the ovum is destroyed and a true haematoma develops and displaces the pelvic peritoneum upwards after the manner of a tubo-ligamentary sac. In such a case the lower part of the haematoma, bulging behind the cervix, may be mistaken for a haematocoele occupying Douglas's pouch, though in reality that pouch no longer exists, its peritoneum lying above the haematoma.

Secondly, the haematoma of extrauterine gestation, even when developed early, is not so innocuous, as compared with haematocoele, as certain authorities are inclined to believe.

The peritoneal capsule may yield, so that dangerous intra-peritoneal haemorrhage ensues.

Thirdly, there can be no doubt of the truth of the prevalent theory that haematocoele is a very frequent result of interrupted tubal gestation. At the same time, whilst the dangers of haematoma have been underrated, the perils of haematocoele have been exaggerated, at least as regards the earlier stages of ectopic gestation. The haematocoele often signifies that the issue of blood from a tubal mole has permanently ceased, nor is it certain that the same may not be said of many cases of early rupture of the tube.

In conclusion, we must admit that the importance of faithful clinical study of extrauterine pregnancy from its early recognizable stages cannot be over-estimated. There is much that we can safely teach, yet there remains more that we must learn about ectopic gestation; above all, as to the relation of prognosis to treatment.

NOTES AND REFERENCES.

- ¹ *Extrauterine Pregnancy*, p. 148. ² *Ibid.*, p. 64. ³ That is to say subperitoneal haemorrhage, as defined above. The term "tubal haematoma" applied to haemorrhagic mole is confusing, and is therefore not employed in this communication. ⁴ *Ibid.*, p. 33. ⁵ *Ibid.*, p. 148. ⁶ *Ibid.*, p. 65. ⁷ *Ibid.*, p. 148. ⁸ *Ibid.*, p. 149. ⁹ "The Conservative or Expectant Treatment of Extrauterine Pregnancy," *Journ. of Obstet. and Gynaec. of the Brit. Empire*, vol. ii, p. 173. See also, for a recent instructive discussion on the same theme, Gustav Klein's "Operiren oder nicht Operiren bei Eileiter Schwangerschaft und Haematocoele?" *Monats. f. Geb. u. Gyn.*, December, 1903, p. 897. The conflicting evidence of Klein and Gossmann deserves consideration. ¹⁰ "A Contribution towards the Study of the Natural History of Tubal Gestation," illustrated by a series of 75 original cases. *Journ. of Obstet. and Gyn. of Brit. Empire*, vol. i, p. 585. ¹¹ Gustav Klein, loc. cit. ¹² *Ibid.*, p. 65. ¹³ This symptom would favour the diagnosis of haematoma. ¹⁴ My thanks are due to my colleague, Dr. Lockyer, for examining and mounting the deciduae from these two cases. ¹⁵ No trace of a fetus could be detected. The pregnancy had been interrupted at a very early stage. ¹⁶ It is very doubtful if any ovarian tissue could have been left, as both ovaries were easily removed with the body of the uterus. In oophorectomy for the cure of uterine fibroids it was quite otherwise. I have discussed this question in the Harveian Lectures (Lecture II, *Lancet*, vol. i, 1903, p. 425. ¹⁷ *Ibid.*, p. 58. ¹⁸ *Ibid.*, pp. 47, 48. ¹⁹ Taylor rightly lays stress on the fact that a swelling behind the cervix in these cases may be the gravid tube and not a haematocoele or haematoma. For his view of the relations of the gravid tube to the haematocoele, see *ibid.*, p. 113, par. 10. ²⁰ Lecture I, *Lancet*, vol. i, 1903, p. 350. Section, "The Surgical Anatomy of the Broad and Ovarian Ligaments." This heaving up of Douglas's pouch has recently been noted by Savariaud when operating upon a case of hydatid cyst burrowing in and beyond the broad ligament. "J'essale en vain deluxer la tumeur hors du Douglas; elle soulève le péritoine pelvien en s'en collant." (The term is most expressive; the clot in my case was *coiffé*, by the pelvic peritoneum). See Savariaud, "Kystes Hydatiques du Ligament Large et du Grand Epiploon," *Rev. de Gynec. et de Chir. Abdom.*, November-December, 1903, p. 986. ²¹ *Ibid.*, p. 65. ²² *Ibid.*, Fig. 27, p. 66. ²³ See Taylor, *ibid.*, Fig. 29, p. 68, where a broad ligament pregnancy has already begun to heave up Douglas's pouch. As that author justly observes (p. 69), this illustration is "exceedingly simple and intelligible." Lawson Tait's well-known "jelly-fish," convex above concave below, represents an intermediate or average type of haematoma.

A Clinical Lecture

ON AN EIGHTH SERIES OF CASES OF

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

Delivered at the Medical Graduates' College and Polyclinic.

By P. J. FREYER, M.A., M.D., M.Ch.,
Surgeon, St Peter's Hospital, London.

GENTLEMEN,—In a lecture delivered by me in this College about two and a-half years ago, and subsequently published in the *BRITISH MEDICAL JOURNAL*,¹ I had the honour of placing before you full details of my operation of total extirpation of the prostate for radical cure of enlargement of that organ. I have since then from time to time, here and elsewhere, lectured on several further series of cases of this operation, and published the lectures in the same *JOURNAL*.² In this manner complete details of my first 53 cases of this operation have been submitted for the consideration of the profession at large. I have now to bring to your notice a further series of 20 cases of the operation, carrying my work in this direction down to the end of 1903. I cannot inflict on you full details of these operations, even were it possible to do so in the limited time at our disposal. I shall therefore content myself with giving brief notes of the majority of the cases, dwelling more at length on those that illustrate some interesting or novel feature in connexion with the operation.

During the course of my remarks I shall have to dwell particularly on two facts: first, that I have latterly been extending the operation to the removal of much smaller prostates than previously attempted; and, secondly, to patients more advanced in life than I had at one time imagined it safe to deal with.

But let me, in the first place, introduce to you this patient, who once previously appeared before this class. This patient, now aged 73, is the first on whom I performed this operation, on December 1st, 1900. He is, as you see, in perfect health, able to pass and retain his urine as well as he ever did. The most satisfactory feature of this operation is the complete and permanent cure that ensues, if the comparatively small mortality be eliminated.

CASE LIV.

Gentleman, aged 63, sent by Dr. W. Bevan, Alton, Hants, July 27th, 1903. Prostatic symptoms for four years, during which blood passed occasionally. Intense pain and frequency of micturition. Residual urine 25 oz. Prostate much enlarged per rectum; bilobed, movable. I opened the bladder suprapubically, August 1st, and found the right lobe of prostate prominent and rounded, but from the left lobe sprang a growth which involved the base and left side of the bladder. The right lobe was easily enucleated, but the left lobe and growth had to be removed piecemeal. The whole weighed $2\frac{1}{2}$ oz. Passed urine naturally August 20th; wound dry August 27th. On September 20th Dr. Bevan wrote: "The patient is going on nicely; passes urine without pain or discomfort."

It is impossible to say whether the growth had its origin in the left lobe of the prostate and extended to the bladder, or vice versa.

CASE LV.

Gentleman, aged 62, with prostatic symptoms for ten years. Intense frequency of micturition—hourly by day and night. Prostate not much enlarged per rectum, but cystoscopic examination revealed a finger-shaped outgrowth in the bladder from right lobe. Prostate, weighing $\frac{3}{4}$ oz., enucleated as a whole in its capsule, August 3rd, 1903. Passed some urine naturally August 23rd; wound closed August 26th. I saw the patient on September 19th, in excellent health, urine quite clear, and passed and retained naturally.

CASE LVI.

Gentleman, aged 57, sent by Dr. Llewellyn Lewis, Neath, South Wales, August 21st, 1903, with prostatic symptoms gradually increasing for five years. Catheter employed for ten months; practically dependent thereon for four months. Cystitis, haemorrhage, rigors; much difficulty in passing catheter.

I removed the prostate as a whole, September 16th, Drs. A. Westley, Montreal, and Rawlings, Swansea, being present. The prostate, which weighed $\frac{3}{4}$ oz., presented an outgrowth in the bladder the size of a cherry, and the inner orifice of the urethra was stenosed. Urine passed naturally October 4th, wound closed October 16th. On December 7th the patient wrote that he was quite well, passing and retaining his urine as well as ever, the urine being clear and free from albumen.

CASE LVII.

W. M., aged 60, admitted to St. Peter's Hospital, September 5th, 1903, with retention of urine, the bladder being distended to the umbilicus; 30 oz. drawn off, alkaline, foul-smelling, and containing muco-pus. Great frequency for a year. Prostate moderately enlarged per rectum, nodulated, elastic, movable. Urine drawn off by catheter regularly and bladder washed out. Patient in very bad health; any exertion produced faintness. By September 15th the urine was acid and the general health improved, but practically the whole of the urine passed by catheter.

On September 16th I removed the prostate, weighing $3\frac{1}{4}$ oz., entire in its capsule. Scarcely any bleeding and no shock. Passed some urine per urethram September 23rd; 10 oz. naturally October 4th; suprapubic wound dry October 8th. Discharged October 25th, passing his urine naturally but still with some frequency. Reported himself at the hospital a few days ago in perfect health, able to retain and pass his urine, which was normal, as well as he ever did.

CASE LVIII.

Gentleman, aged 74, consulted me, June 8th, 1903, on the advice of Mr. Keogh Murphy, of London. Prostatic symptoms for fifteen years; entirely dependent on catheter for eight years. Small stone removed by another surgeon in December, 1902. Has passed much blood since then. Catheter every two hours; severe pain and spasm at times, during which cannot pass catheter. Urine extremely offensive, alkaline, containing much pus, mucus, and albumen. Prostate greatly enlarged per rectum, soft, elastic, movable; felt bimanually. Haemorrhoids present from constant straining. General health good. I urged removal of the prostate without delay, but counter-influences were brought to bear on him, and I did not see him again till August 13th, when he came urging immediate operation. This I could not undertake till the middle of September, as I was starting on my autumn holiday. The patient had markedly lost ground in the interval, was extremely emaciated, feeble, and suffering intensely.

On September 17th, Mr. Keogh Murphy assisting, I removed the prostate, weighing $4\frac{1}{2}$ oz., entire in its capsule. I also removed from the bladder two large and seventeen small phosphatic calculi, weighing $\frac{3}{4}$ oz. There was considerable difficulty in enucleating the prostate owing to extensive adhesions resulting from chronic cystitis, and there

was considerable bleeding. The patient rallied well from the operation, but died suddenly six hours after from heart failure.

This is the only instance among the series of 73 cases in which death was immediately due to the operation. The patient was in an extremely feebly condition, with putrid urine, and his kidneys probably extensively diseased. Still I could not refuse operation, his sufferings were so great. Had the operation been submitted to in June, as advised, he would in all probability have made a good recovery, as his general health was not then much affected.

CASE LX.

Gentleman, aged 63, sent by Dr. W. P. McEldowney, Portsmouth, with prostatic symptoms for twelve years; retention five years ago, since when not a drop of urine passed except by catheter. Great difficulty latterly in introducing catheter, attended by bleeding. Prostate only moderately enlarged per rectum, rather hard. General health good.

On September 18th, 1903, I removed the prostate, weighing $1\frac{1}{4}$ oz., entire in its capsule. It presented in the bladder in the form of a beaded collar, causing stenosis of the orifice, and was removed with difficulty owing to its being tightly enveloped by the sheath of recto-vesical fascia. Uninterrupted recovery. Urine passed per urethram October 13th; wound closed October 20th. Patient left the surgical home in good health October 27th, able to pass and retain his urine naturally.

CASE LXI.

Gentleman, aged 72, sent by Dr. Eyre, of Rome. Prostatic symptoms for fifteen years. Catheter employed for ten years; great frequency and scalding. Prostate much enlarged per rectum, bilobed, dense, movable.

On September 21st, 1903, I enucleated the prostate entire, weighing $3\frac{1}{2}$ oz., Mr. Percy Ratcliffe assisting. Scarcely any bleeding and no shock. Passed urine per urethram October 11th; wound closed October 15th; went home October 26th able to pass and retain his urine naturally.

CASE LXII.

T. H., aged 65, sent by Dr. H. Gurney, Dovercourt, admitted to St. Peter's Hospital September 21st, 1903. Retention six years ago, relieved by catheter; great frequency—hourly by day and night. On admission in great distress; 35 oz. urine, containing much pus, drawn off; practically all urine by catheter afterwards. Bladder washed out daily. Urine and general health much improved by treatment.

On September 30th I removed the prostate entire, weighing $2\frac{3}{4}$ oz. Time occupied between commencing suprapubic cystotomy and delivery of prostate from bladder, four and a-half minutes. Scarcely any bleeding and no shock. After operation patient troubled much with sickness. Feeding by the bowel employed, but vomiting persisted in spite of all efforts to relieve it.

On October 8th the urine was scanty, and he became restless and delirious, and died from uraemia on October 9th, ten days after operation. The wound remained healthy throughout.

At the necropsy the bladder walls were found much thickened, and the kidneys in a state of advanced interstitial nephritis, with greatly dilated pelvis and calices. No trace of prostatic tissue was found in the walls of the cavity, from which the gland had been removed. The kidneys had evidently been diseased from long-continued obstruction to the flow of urine and resulting backward pressure.

CASE LXIII.

A. M., aged 61, admitted to St. Peter's Hospital October 3rd, 1903, with prostatic symptoms of three years' duration, during which he had several attacks of acute retention, relieved by catheter. Great frequency; constant pain in the loins; haematuria occasionally after use of catheter. Prostate uniformly enlarged, elastic, movable. General health very bad; heart weak, and pulse irregular.

On October 7th I removed the prostate entire in its capsule. The prostate was easily enucleated from the surrounding sheath, but much difficulty was experienced in delivering it into the bladder, owing to the dense, unyielding character of the recto-vesical fascia at the neck of the bladder. Considerable shock from the operation, but patient soon rallied. Began to pass urine naturally November 5th. Convalescence very slow. Discharged December 5th. I have now the pleasure of introducing this patient to you, in good health, and untroubled by any urinary symptom.

CASE LXIV.

On October 20th, 1903, I was summoned to Birmingham to see, in consultation with Dr. M. Hallwright, a gentleman, aged 61, who had suffered from prostatic symptoms for seven years, extremely distressing for the last three. Early in 1903 he became suddenly much worse, and a catheter was passed by a surgeon. This was followed by much constitutional disturbance and pyrexia, in consequence of which the catheter was not persisted in. In February he had continued pain, constant spasm with offensive urine. The physician then in charge found tube casts, and considered that pyelitis had set in. Complete retention on March 1st, for which the bladder was opened suprapubically by a well-known surgeon, and a prominent portion of the prostate in the bladder, weighing $\frac{3}{4}$ oz., removed. Although relieved to some extent patient was never free from bladder spasm, though suprapubic drainage was kept up, and after some months he drove out, wearing a urinal. No urine had passed naturally since the operation. Orchitis also supervened, and the straining, and discomfort of the

urinary apparatus became so wearing that complete removal of the prostate was contemplated. It was with this view that I was called in. I found the prostate considerably enlarged per rectum, bilobed, elastic, and movable, and I considered it one capable of being removed. The patient was of a nervous temperament, extremely thin and worn from his constant sufferings, but wiry.

For various reasons it was considered inadvisable to bring the patient to London, so on October 24th I operated at Birmingham—Dr. Haynes, anaesthetist, Dr. Hallwright assisting, and Dr. C. Nichols being present. Having opened up and enlarged the suprapubic fistula I found the right lobe of the prostate somewhat prominent in the bladder, and the enucleation of this portion was quite easy. The left lobe, however, was matted by cicatricial tissue with the bladder, the result of the previous operation, and the enucleation of this portion was effected with considerable difficulty, much force being necessary to separate it from the surrounding tissues. Eventually the prostate, or rather what remained of it from the previous operation, came away in one mass, weighing $1\frac{1}{2}$ oz. There was little bleeding or shock. I saw the patient with Dr. Hallwright several times during the ensuing three weeks. He continued to make favourable progress, though he had several rises of temperature. On November 15th patient passed $\frac{3}{4}$ oz. of urine naturally, and on November 22nd the wound was completely closed. On December 6th Dr. Hallwright wrote: "The patient is better than he has been for years and gains strength daily. He says the water is beautiful and takes no time in passing."

This gentleman is now in excellent health, interesting himself in his business as usual, and undisturbed by any urinary symptom. I have to acknowledge the devotion and skill with which the after-treatment—not the least element of success in these cases—was carried out by Dr. Hallwright. In my last communication³ I called attention to Case XLVIII, in which McGill's operation of partial prostatectomy had been performed a year previously with no relief, followed by complete cure when the entire prostate had been removed. The present case is a further illustration of the same sequence of events.

CASE LXIV.

Gentleman, aged 74, first consulted me in June, 1902, with the usual symptoms of prostatic enlargement, which had existed five years, superadded to which were those of stone in the bladder for one year. Catheter employed for three years, practically all the urine passing in this way. Prostate much enlarged, smooth, tense, bilobed, movable. Cystoscopy on June 29th revealed prominence of the right lobe in the bladder, and a smooth oval stone lying beneath this. Litholapaxy at once performed, the debris of the stone, which was uric covered by phosphates, weighing 84 gr. A rapid recovery ensued, and the patient was enabled to pass about one-half of his urine naturally for some months. But as the prostate continued to grow he became entirely dependent on his catheter, in the introduction of which there was at times considerable difficulty; cystitis frequently. On October 29th, 1903, when he returned to have the prostate removed, the urine contained much pus, and the patient was very feeble.

On October 31st, Sir A. Fripp and Dr. Proust, of Paris, being present, I removed the prostate entire in its capsule; weight 3 oz. Time occupied from commencing the suprapubic incision till the prostate was delivered from the bladder, four minutes. Recovery uninterrupted, though slow. Passed urine naturally November 22nd; wound finally closed December 12th. Went home to the country December 20th able to pass and retain his urine naturally, and has since continued to put on flesh and improve in health generally.

CASE LXV.

Gentleman, aged 77, seen in consultation with Dr. W. Burgess, Streatham Hill, October 28th, 1903. Prostatic symptoms for seven years, the frequency gradually increasing till August last, since when the urine had dribbled away by day and night. Constant pain in the hypogastrium, very feeble; says he has been "going rapidly downhill" for two years; much loss of flesh during last fortnight; depressed; says he feels that he will not live long. A week previously Dr. Burgess had passed a catheter and drawn off 2 quarts of urine; and at the consultation I drew off 3 pints of clear urine of low specific

gravity, 1010; albumen nil. Prostate enlarged considerably per rectum, bilobed, dense, movable.

On November 2nd, Dr. Burgess and Dr. R. Proust, of Paris, being present, I removed the prostate, weighing $1\frac{1}{2}$ oz., with ease, only four minutes elapsing till the gland was delivered from the bladder. There were several small calculi in a pouch behind the prostate. Scarcely any bleeding and no shock. Not a bad symptom for seventeen days, during which patient daily improved in strength, and latterly sat up daily. Some urine passed November 12th, and the wound had almost closed on the 19th. On this day he began to feel very low and lost his appetite. Next day the urine was very scanty and drowsiness set in. He died of uraemic coma on November 21st. Death in this case was obviously due to long-standing disease (insufficiency?) of the kidneys rather than to the operation. Nevertheless it has to be accepted in connexion therewith.

CASE LXVI.

Gentleman, aged 56, seen in consultation with Mr. John Langton, Harley Street, November 6th, 1903. Prostatic symptoms for two years. Cystoscopic examination attempted a year previously, but unsuccessfully, owing to bleeding. Intense frequency of micturition by day and night, so that sleep impossible. Condition most miserable. Much averse to using catheter; in constant dread of retention. Residual urine only 2 oz., clear, healthy. Prostate palpably enlarged, bilobed, soft, movable. We made a cystoscopic examination, November 7th, with difficulty, as bleeding again set in; but the view eventually obtained revealed a finger-like outgrowth of the right lobe of the prostate

in the bladder. I at first counselled postponement of operation till the prostate should have grown larger, and thus become more easy of removal; but Mr. Langton, who knew of the patient's sufferings both physical and mental, was averse to delay, and eventually it was decided to operate at once.

Operation, November 9th. On introducing my finger into the bladder the right lobe was found projecting inwards for $\frac{1}{2}$ in. The prostate was easily and rapidly enucleated, only four minutes elapsing from commencing the suprapubic incision till the gland was delivered from the bladder. Rapid and uneventful recovery, urine passing naturally November 27th, and the wound being dry December 1st. On December 3rd he left the home perfectly well, able to retain his urine for five or six hours, and to pass it naturally—"not so well since he was a boy," as the patient expressed it.

The prostate (Fig. 1, p. 1186), which weighs 1 oz., is a pretty specimen, and shows the finger-like outgrowth from the right lobe in the bladder, which no doubt acted as a foreign body, giving rise to irritation, and acting as a ball-valve to the urethral orifice. This is the youngest patient on whom I have performed this operation. The ease with which the comparatively small prostate was enucleated is remarkable.

CASE LXVII.

Gentleman, aged 81, seen with Dr. Knox Shaw, Wimpole Street, October 29th, 1903. Prostatic symptoms for thirty years, gradually increasing. Catheter passed in June, 1901, showing 13 oz. residual urine. Cystitis in August, with much pus in the urine, and rigors. Catheter five or six times daily in November, 1902. Sounded under an anaesthetic in July, 1903, by another surgeon, but no stone found; entirely dependent on catheter since then, with much pain and occasional bleeding. General health bad. Prostate greatly enlarged per rectum, broad, soft, nodular, movable.

On November 19th, Dr. Knox Shaw and Colonel E. Little, I.M.S., being present, I removed the prostate entire in its capsule with several small calculi from the bladder. There was considerable bleeding, and the patient was feeble for some days after the operation.

By November 29th the suprapubic wound had closed so rapidly that it was necessary to reinsert a small tube to prevent spasm of the bladder. This was removed December 6th, and on the same day the patient began to pass urine naturally. Wound closed December 11th. On December 16th he went out for a walk. He is now quite well, and able to retain and pass his urine naturally.

The prostate (Fig. 2) weighs $4\frac{1}{2}$ oz., and is irregularly enlarged and bossy, the left lobe having been more prominent in the bladder than the right.

CASE LXVIII.

Gentleman, aged 69, with prostatic symptoms for seven years.

Fig. 2 (Case LXVII).—Prostate weighing $4\frac{1}{2}$ oz. removed from patient aged 81. A, left lobe; B, right lobe.

Fig. 1 (Case LXVI).—Prostate, weighing 1 oz., removed from patient, aged 56. A, left lobe; B, right lobe; C, finger-like outgrowth in bladder from right lobe. Catheter indicates course of urethra.

Catheter employed for four years: entirely dependent thereon for two years. Much pain and haemorrhage; urine fetid. Calculi felt by sound. Prostate enlarged, nodular, and movable.

On November 18th, 1903, Colonel S. Porter, I.M.S., being present, I removed two large and twenty-one small phosphatic calculi, weighing 442 gr., and then enucleated the prostate, weighing 2½ oz. Scarcely any bleeding; no shock. Uninterrupted recovery. Commenced to pass urine naturally December 3rd; wound dry December 8th. Left for the country December 22nd, in excellent health, able to retain and pass water as well as he ever did.

CASE LXIX.

E. J., collier, aged 64, sent by Dr. T. D. Griffiths, Swansea, admitted to St. Peter's Hospital November 23rd, 1903, with prostatic symptoms of four years' duration. Retention six months previously; catheter employed since then: entirely dependent thereon for six months. Prostate moderately enlarged per rectum. Cystoscopy revealed a nipple-shaped outgrowth of the left lobe in bladder.

On December 2nd I removed the prostate, weighing 1½ oz., entire in its capsule, the operation from commencing the suprapubic incision till the delivery of the prostate occupying only two minutes and a half. Passed 5 oz. urine naturally December 19th, and wound closed next day.

I have now the pleasure of introducing to you this patient in perfect health, able to pass and retain his urine as well as he ever did.

CASE LXX.

Captain M., aged 84, seen at Windsor with Dr. Bruce Porter, November 22nd, 1903. Prostatic symptoms for eight years; catheter employed for six years; entirely dependent thereon for five years: passed every two hours. Urine contains much blood andropy mucopus, alkaline, fetid. Catheter passed in 13½ in. before urine flowed: stone felt grating against its end. Prostate enormously enlarged per rectum, roundly bilobed, smooth, soft, movable. Patient emaciated, bearing the impress of terrible suffering. "Life not worth living under present condition," as he puts it; morphine daily to mitigate pain. Intermittent and irregular pulse. Rigors and fever periodically. Brought to London November 27th, and bladder washed out twice daily.

On December 4th, Mr. C. Braine, anaesthetist, and Dr. Bruce Porter assisting, I opened the bladder suprapubically, and found two phosphatic stones, which were removed; weight, 2½ drachms. Both ureters dilated to such an extent that the index finger passed readily into them. The prostate felt the size and shape of a cricket ball, jammed beneath the pubic arch, half of it lying in the bladder and half outside. It was enucleated entire in its capsule. Much force was required to separate it from the surrounding sheath. Time from commencing the suprapubic cystotomy till prostate delivered from bladder, seven minutes. There was scarcely any bleeding or shock. Drainage tube removed December 7th: not a bad symptom; no morphine since operation. "Talk of the pains

of an operation," said the patient, "the last four days have been holidays from pain amongst many years." Sat up daily after December 16th. Passed urine naturally December 20th; wound dry December 23rd, and patient walking about. On January 2nd, 1904, travelled home to Windsor in good health and spirits, passing and retaining his urine naturally. Stated that he felt twenty years younger than his age—a truly "grand old man." In spite of the putrid state of the urine before operation the wound remained healthy and free from phosphates throughout.

The prostate (Fig. 3), which weighs 6½ oz., is a fine specimen of symmetrical enlargement, with a small outgrowth in the form of a lip below the orifice of the urethra. This is the oldest patient on whom I have performed this operation, and I submit that the result is a great surgical triumph, considering his age, the large size of the prostate, the weak state of the patient, the presence of chronic cystitis with formation of phosphatic calculi, the dilated condition of the ureters from backward pressure, indicating a probability that the kidneys were much diseased, and in spite of all this the complete restoration of health and function of the bladder.

CASE LXXI.

Gentleman, aged 78, with prostatic symptoms for ten years. Catheter not employed owing to case being complicated by the presence of stricture of the urethra. Great frequency of micturition—every two hours by day and night. Residual urine, 12 oz., contained much pus. Patient extremely feeble, scarcely able to stand up.

On December 11th, Mr. C. Braine anaesthetist, I performed internal urethrotomy and then opened the bladder suprapubically. The prostate presented a nipple-shaped projection on either side of the inner orifice of the urethra, which was stenosed. The bladder was extensively sacculated. The prostate, weighing 3 oz., was enucleated, the lobes coming away separately. On December 27th passed urine naturally; wound closed January 4th, 1904. The patient is now convalescent and able to pass and retain urine naturally.

CASE LXXII.

H. P., aged 59, admitted to St. Peter's Hospital December 5th, 1903, with the usual symptoms of enlarged prostate. This patient had been operated on by another surgeon in April, 1901, by McGill's method, an enlarged "middle lobe" of the prostate being removed. The suprapubic wound did not heal till January, 1902, when the sinus was excised and cauterized. Since then, increasing pain and frequency of micturition. Catheter passed nightly, after which he got five or six hours sleep; at other times had to urinate every two hours. Residual urine, 8 oz., alkaline, fetid, contained much pus. Prostate enlarged per rectum; rounded; tense; fairly movable. Cystoscopy on December 9th, 1903, showed the prostate enlarged and rounded on the left side, irregularly jagged on the right. A mass of muco-pus covered the

Fig. 3 (Case LXX).—Prostate weighing 6½ oz. removed from patient aged 84. A, left lobe; B, right lobe. Catheter shows position occupied by urethra.

trigone, and in this was embedded a phosphatic calculus, which was

Fig. 4 (Case LXXII).—Prostate, weighing 1½ oz., removed from patient, aged 59. A, smooth nodular left lobe; B, jagged right lobe, result of portion having been previously removed by McGill's operation.

removed by litholapaxy. The bladder was washed out daily, with the result that the urine became acid, but there was no diminution in the pus or frequency.

On December 16th Mr. Bickersteth, of Liverpool, and others being present, I removed the prostate. There was considerable difficulty in opening the bladder suprapubically, owing to the scar tissues being matted together, and still greater difficulty in enucleating the prostate, owing to the inflammatory adhesions, resulting from the previous operation, between the inner margins of the prostate and the walls of the bladder, though the gland came away readily from the triangular ligament. A portion of the prostatic urethra came away adherent to the gland. Uninterrupted recovery. The wound was closed December 29th, thirteen days after the operation. The patient is now quite well, walking about the wards, able to retain and pass his urine as well as he ever did.

The prostate (Fig. 4, p. 1186), which weighs $1\frac{1}{4}$ oz., is jagged along the posterior aspect of the right lobe, where it was adherent to and matted with the bladder wall. This is the third case in which my operation of complete enucleation of the prostate has been entirely successful after McGill's operation had failed. The previous operator in this case has persistently in his writings and otherwise minimized and misrepresented the nature and scope of my operation, as being identical with McGill's. It is the irony of fate that this case, in which McGill's operation performed by him had entirely failed to bring relief to the patient, should have fallen into my hands to be completely cured by total extirpation of the prostate.

CASE LXXIII.

A gentleman, aged 76, sent by Dr. T. D. Griffiths, Swansea, seen with Dr. Homerton, London, December 15th, 1903. Prostatic symptoms for three years; retention ten months ago; catheter employed since then with much pain in passing it; great irritability of the bladder; cannot sleep from the frequency of micturition; urine acid but contains much pus and mucus; prostate greatly enlarged, smooth, soft, movable, felt bimanually; patient's health much impaired.

On December 19th, Mr. Thomson Walker and Dr. Homerton assisting, I removed the prostate, weighing $4\frac{1}{2}$ oz., as usual. There was very little bleeding or shock. The patient has had no bad symptom, and is now convalescent.

NOTE.—During the period that has elapsed since this lecture was delivered on January 6th, 1904, I have performed this operation in a further series of 25 cases. Details of these operations will in due course be submitted for the consideration of the profession.

REFERENCES.

¹ July 20th, 1901. ² February 1st, July 26th, and November 8th, 1902; April 18th, July 4th, and October 17th, 1903. ³ BRITISH MEDICAL JOURNAL, October 17th, 1903.

TOTAL PROSTATECTOMY:

DEDUCTIONS TO BE DRAWN FROM THE PRESENCE OF STRIATED MUSCLE FIBRE IN THE "CAPSULE" OF THE PARTS REMOVED.

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MR. THOMSON WALKER, in a recent communication read before the Royal Medical and Chirurgical Society,¹ has drawn attention to the presence of striped muscle fibre on the anterior aspect of the prostate. He describes it as surrounding the apex of the organ and then as passing up on the anterior surface of the gland between the "capsule" and the posterior layers of the recto-vesical sheath of the prostate. (The prostatic plexus of veins lies between the layers of the recto-vesical fascia; consequently there will be a layer of the recto-vesical sheath between the veins and the layer of striped muscle.) In another part of the same paper, when describing the "capsule" on a specimen removed by prostatectomy, it was stated that striped muscle fibre was found in the anterior part of the "capsule." From this it was argued that the line of cleavage in the process of enucleation must have passed outside the confines of the gland, and that therefore the prostatectomy was complete.

In microscopic sections of the normal prostate made at right angles to the long axis of the urethra and midway between the extremities of the gland, the following features in the relation of this striated muscle may be noted.

At the most anterior part of such a transverse section the striated muscle fibres take a transverse or horizontal direction. The bundles are well marked and are separated from each other by a little fine areolar tissue. Near the urethra the bundles become more widely separated, and between them are seen to lie well-marked fibrous tissue and unstriped muscle fibres. Traced outwards towards the lateral parts of the prostate, the striped muscle fibres lose themselves in the substance of the organ. Passing inwards towards the urethra the striped muscle fibres become more and more widely separated by the fibro-muscular stroma of the gland until at last the latter predominates, the striped fibres becoming fewer and fewer until they cease altogether. Some time,

however, before this happens the gland tissue makes its appearance, so that striped muscle fibre, fibro-muscular stroma, and gland tissue are found in the same field; and it is possible to see gland tissue with striped muscle fibres lying on both its central and peripheral aspect, so intimately is the striped fibre insinuated into the peripheral portion of the gland.

Fig. 1.—Showing a portion of the periphery of the prostate of a young adult. A group of striated muscle fibres is seen penetrating the stroma between the gland acini.

It thus follows that the presence of striped muscle fibre in the "capsule" of an enucleated prostate is not to be taken as an irrefragable proof that the line of enucleation has passed outside the confines of the gland, and that therefore the prostatectomy is complete. The completeness, as in other cases, can only be established by a microscopic demonstration of the absence of gland tissue in the parts left behind.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, March 26th, 1904, p. 728.

THE RELATIVE ADVANTAGES OF SUPRAPUBIC AND PERINEAL PROSTATECTOMY.*

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THE prostate must be regarded both anatomically and functionally as an accessory portion of the urethra, to which it is inseparably attached. Its relation to the bladder is much less intimate. The normal prostate is entirely extravescical, and its internal projection within the bladder is hardly visible when the bladder and urethra are slit open from the front. Seen in their normal relations in the living body by means of the cystoscope, the difference between the male and female bladders is much less than would be expected, and all that is seen of the prostate is a low median-grooved projection at the posterior part of the orifice of the urethra. The median groove corresponds to the anterior aspect of the projecting uvula vesicae, and in some cases the uvula itself is seen as a small round projection in the middle of the groove.

The prostatic urethra, $1\frac{1}{4}$ in. in length, is completely embraced by the prostate, but a much thicker portion of prostate covers it behind than in front. Moreover, the anterior portion consists mainly of unstriped muscular fibres, and in some cases no gland tissue at all exists in front of the urethra. The prostatic utricle and seminal ducts open into the projecting veru montanum near the centre of the prostatic urethra, and above the centre are the openings of the prostatic ducts. The connexion of the urethra with the surrounding prostatic

* Read before the Staffordshire Branch of the British Medical Association.