seemed unhinged. Clamoured for immediate operation, which on consultation it was regarded advisable to postpone till after his arrival in London.

This patient, under the advice of Dr. Edgeworth and Mr. Carwardine, had arranged in May last to come to London to be operated on me, but getting temporary relief he postponed doing so till he was practically in extremis.

On December 18th he was moved to London. I had intended keeping him under observation for a few days, with a view to improve his health and prepare him for operation; but he was unable to sleep at night even under the influence of large doses of chloral, jumped out of bed, began to knock his head against the ground, and behaved generally like one out of his mind. I was therefore compelled to operate without delay, so telegraphed for Dr. Edgeworth and Mr. Carwardine.

I operated on the evening of December 20th, assisted by Mr. Carwardine and Mr. Wylie, Dr. Edgeworth being also present. On opening the bladder suprapubically, I found and removed three faceted calculi weighing $\frac{1}{3}$ drachm. The prostate, being prominent in the bladder, was easily enucleated, the lobes coming away separately. The enucleation and removal of prostate occupied four minutes. The prostate weighed $\frac{1}{3}$ oz.

The operation was borne well, and for the first two days no untoward symptom occurred. On December 23rd he became excited and violent, and was with difficulty restrained from jumping out of bed. Morphine was inadmissible, as it caused intense sickness, and large doses of chloral had no soporific effect; in fact, made him more excited. Seen in consultation with Dr. G. F. Blandford, who prescribed 2-drachm doses of paraldehyde, which produced sleep. Had to be removed from the surgical home and isolated as he disturbed the other patients. In spite of his excitement and constant attempts to remove the dressings, the wound rapidly healed, and urine began to pass naturally. He took nourishment freely, and on December 30th was physically stronger than before the operation, the temperature remaining normal throughout, and the pulse getting stronger daily. He now absolutely refused all nourishment, and, though artificially fed, his strength gradually gave way, and he died on January 2nd, on the fifteenth day after operation, from exhaustion, in spite of the most careful and tender nursing.

I approached the operation in this case with great diffidence, knowing that the patient was practically moribund, but in consultation we felt that we could not refrain from operating, to relieve the terrible agony and give the patient the only prospect of recovery. Only for the development of the mental symptoms, which had set in before operation, the patient would undoubtedly have made an excellent recovery.

CASE XXXI.

This patient, aged 68, came to the out-patient department of St. Peter's Hospital on November 29th, 1902, suffering great agony from complete retention of urine for two days. The bladder was enormously distended; the dullness reaching up to the ensiform cartilage. Prostatic symptoms had existed only eight months, but latterly there was great frequency of micturition, every hour and a-half by day and hourly at night. A coude catheter was passed, and a large quantity of alkaline urine containing pus drawn off. He was at once admitted, and the bladder not completely emptied for forty-eight hours. On December 12th I made a cystoscopic examination, and saw both lobes of the prostate enlarged in the bladder; cystitis also existed. Per rectum the prostate was only moderately enlarged, bilobed, and rather hard, particularly the left lobe. On December 18th he was discharged, to attend as an out-patient for the purpose of preparing him for operation. A catheter was passed every four or five hours; not a drop of urine passed naturally after the retention.

His health being sufficiently restored he was readmitted December 29th, and on December 31st I opened his bladder suprapubically, and removed his prostate entire in its capsule, the lobes separating along their superior commissure, and the urethra being left behind. The patient scarcely felt the operation, and was reading a newspaper the next day. He began to pass urine naturally on January 10th, 1903, and the suprapubic wound was quite dry on January 12th. He has been sitting up for several days, and can now retain and pass his urine naturally. There has been no rise of temperature since the operation. The prostate weighs $\frac{1}{2}$ oz.

During the period covered by these operations there were four other cases in which operative interference was necessary in connexion with prostatic troubles. In two of these, aged respectively 76 and 62 years, partial prostatectomy was performed, the portions of prostate removed weighing about $\frac{1}{2}$ oz. It was found impossible to remove the entire prostate, as the adenomatous outgrowth had not sufficiently advanced to define the limits between the prostate and the surrounding tissues. One of these made a good recovery, and, if not cured, is certainly relieved of most of his symptoms. The other died on the eighth day from pneumonia, believed to be due to the ether employed as the anaesthetic. The third case was that of a very feeble gentleman, aged 86, who was in terrible distress from prostatic symptoms which had existed twelve years. On opening the bladder suprapubically the patient became so collapsed that I was afraid to remove the prostate, so I had to rest content with establishing a permanent fistula. He made a good recovery, and is now free from pain, and walks out daily when fine. The fourth case was that of a medical

man, aged 84, who, on the advice of Sir Henry Thompson, commenced catheter life in 1875, and for 26 years had passed practically the whole of his urine by catheter; for the last two years in terrible agony, great difficulty in passing the catheter, and haematuria. I could find no enlargement of the prostate per rectum, so concluded that the enlargement was wholly in the bladder. No sound could be introduced, but the presence of calculi was practically certain. I opened the bladder suprapubically in October, 1902, with a view to remove both calculi and prostate. I found two calculi, each 1 in. in diameter, but to my astonishment there was no enlargement of the prostate in the bladder, and with a finger in the rectum and one in the bladder I could find no enlargement of the prostate whatever. A 15 E solid steel sound was passed through the urethra. The patient made a good recovery, the suprapubic wound being allowed to close, and he is now in good health, able to pass his catheter without any trouble. This case suggests the following questions: (1) Is it possible that prostatic atrophy succeeded to enlargement; and, if so, why did the patient not regain the power of voluntary micturition? (2) Was the case an example of those one occasionally meets with, in which a patient enters on catheter life, sometimes long before the age of prostatic enlargement, and never regains the power of voluntary micturition, though neither enlargement of the prostate nor any other tangible cause can be found to account for this condition?

I have in this and previous lectures given full details of 31 instances of complete removal of the prostate performed by me, in a period extending over about two years, the patients varying in age from 58 to 79 years, the prostates weighing from $\frac{1}{2}$ to 10 $\frac{1}{2}$ oz. Those of you who have followed these lectures will have noticed that a very large proportion of the patients were almost moribund before the operation. Scarcely any of them were free from one or more grave complications, such as putrid cystitis, pyelitis, kidney disease, diabetes, heart disease, chronic bronchitis, etc. Of these, 27 were successful, both immediate and remote. And when I talk of success, I mean an absolute and complete success, the patients being able to retain and pass their urine as well as they ever did. I hear from most of these cases, and see many of them periodically. In no case has there been any relapse. Time only seems to consolidate their cures. There were four deaths in connexion with the operation—namely, two from mania, after the wounds had practically healed and urine was passed naturally; one died suddenly from heat-stroke on the tenth day, when he was convalescent; and one from coma due to retention of morbid products of the urine in the blood, which had set in before the operation. Though these deaths are accepted in connexion with the operation, in only one instance can death be possibly attributed thereto. Increased experience only confirms my early anticipations as to the blessing to poor old suffering male humanity of this operation.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, July 20th, 1901; February 1st, July 26th, and November 8th, 1902. ² Published by Baillière, Tindall, and Cox, London.

ON THE OPERATIVE TREATMENT OF PROSTATIC OBSTRUCTION.*

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It is only within the last fifteen years that attempts have been made to obtain a radical cure by operative interference in cases of prostatic obstruction. Before that time treatment was of a palliative nature, being mainly directed to the relief of the distressing symptoms which are so often met with in this condition—namely, the pain, increased frequency, and difficulty in micturition, culminating in many cases in more or less complete retention of urine.

Great advances have been made of recent years in the surgery of the bladder generally, not only in the methods of examination and means of diagnosis, but also in the operative treatment of many of the diseases to which it is liable. I need hardly remind you of the improvements in the performance of lithotomy, or of the reintroduction into practice of the old and discarded method of opening the bladder from above the pubes—the "high operation," as it was formerly termed, which may be said to date from about the year 1855. The

* Read before the Southport Medical Society.

revival of the latter operation marked an era and opened out a new field in bladder surgery, for it enabled us to deal with various conditions, such as vesical tumours and enlargement of the prostate, which previously were believed to be altogether beyond the scope of successful operative interference.

Prostatic surgery is, therefore, a comparatively modern development, and a few remarks upon its progress, as well as upon the position in which it stands at the present time, will, I hope, prove interesting to you.

At the outset, I may say that it is only in a small proportion of cases that any active surgical interference is required. It is a well-recognized fact that a considerable, and even a very marked, enlargement of the prostate may exist for years without causing any symptoms beyond perhaps an increased frequency in micturition, such as is generally regarded as one of the necessary accompaniments of advancing age. In other cases there may be so much obstruction to micturition that the use of the catheter is required, in some instances only occasionally, in other instances continually, the patients being unable to pass any urine without its assistance. Even under the latter conditions, except for the inconvenience of passing a catheter two or three times a day, patients may for years lead a life of comparative comfort; and, provided they pay proper attention and take ordinary precautions, cystitis—which is the complication to be dreaded under these circumstances—may be warded off almost indefinitely.

Some individuals appear to enjoy a peculiar immunity in this respect, and I have known persons carry a soft india-rubber catheter in their pocket, wrapped up in a handkerchief, using their saliva as a lubricant when they pass it, without incurring any harm.

These cases are of course the exception, for sooner or later it generally happens that the frequent passage of the catheter causes cystitis, even in spite of the most careful antiseptic precautions, usually from neglect of them. In other instances, quite independently of catheterism, cystitis is set up as the result of the irritation of residual urine lodging in a deep post-prostatic pouch, and of the frequent and ineffectual straining efforts of the bladder to completely empty itself of its contents.

In other cases, again, the patient is continually suffering from attacks of retention of urine, or there may be habitual retention, both these conditions necessitating catheterism, which under these circumstances is frequently attended by great pain and difficulty; or there may be frequent hæmorrhages into the bladder, owing to congestion of the vesicoprostatic plexus of veins, these complications being often brought on by very slight causes, such as a sudden chill, constipation, some irregularity in diet, an unusual amount of alcohol, etc.

Now, when one or more of these complications are present, and when catheterism, after a proper trial—accompanied by the usual palliative treatment—fails, or is impracticable, then it becomes a question whether an attempt should not be made to afford relief by surgical interference.

The operative measures which may be adopted under these circumstances may be divided into three classes, viz :

1. Cystotomy and bladder drainage, either perineal or suprapubic.
2. Prostatectomy, or removal of the obstructing portion of the prostate gland.
3. Castration and vasectomy, these operations being performed with the object of removing the obstruction by causing a shrinking or diminution in size of the hypertrophied prostate.

Cystotomy and Bladder Drainage.

This is a valuable means of affording temporary relief in cases where cystitis is a prominent symptom, and where the introduction of a catheter, when it is frequently required, is painful and difficult. The bladder being left in a state of rest, the active congestion of the prostate, which under these circumstances is present, and greatly adds to the size of the gland, quickly subsides. At the same time the cystitis can be treated almost painlessly by bladder irrigation, the result being that the inflammation of the bladder wall is quickly relieved, and the septic condition of the urine is soon corrected. As a temporary measure it is also useful in cases of complete and sudden retention of urine, where catheterism is impossible, and is much to be preferred to simple aspiration of the bladder. When in addition the bladder is distended with blood clot it often affords the only means of completely evacuating its contents. As a permanent measure it may sometimes be adopted with benefit in cases where a patient is too old or too weak to bear the more radical operation of prostatectomy, or when the

condition of the prostate itself—a point to which I will again refer—is such that its removal is not practicable.

Bladder drainage may be effected through either a perineal or a suprapubic opening, and personally I prefer and always adopt the latter route. For perineal drainage the tube introduced by my colleague, Mr. Walter Whitehead, is very useful. For temporary suprapubic drainage a piece of ordinary india-rubber tubing acts very well; while for permanent drainage Sir Henry Thompson's silver shield, or a vulcanite tube through which a soft rubber catheter passes into the bladder, answers every purpose, the other end of the catheter being connected with an indiarubber urinal attached to the patient's leg.

I have made use of the latter method of treatment, both as a temporary and a permanent measure, in many cases of prostatic obstruction, with satisfactory results. I will not trouble you with details of cases, but may just mention that in one instance where the prostate, though enlarged, was too firm and fixed to admit of removal, the patient wore a suprapubic tube for nearly six years, with complete relief to his previous symptoms, being able to mix in society and walk several miles without any discomfort or inconvenience.

Prostatectomy.

Considering next the operation of prostatectomy, or removal of the prostate gland, either partially or completely, this may be attempted by three different routes—urethral, perineal, or suprapubic.

1. Urethral prostatectomy includes Mercier's and Gouley's operations, where portions of the prostate are removed or punched out by an instrument with sliding blades, somewhat resembling a lithotrite, introduced per urethram; and Bottini's method—or galvano-caustic prostatectomy—where an electrode shaped like a sound is passed into the bladder, and, the current being turned on, the beak of the instrument burns its way through the obstructing portion of the gland from behind forwards. I have no experience of these plans of treatment, which have not been much adopted in this country, an obvious objection being the fact that the operation is performed without any definite knowledge of the exact nature of the obstruction, the surgeon, as it were, working "in the dark."

2. In perineal prostatectomy the prostate is exposed from beneath through an opening, median or transverse, in the perineum, and a portion or the whole of the gland is removed either by enucleation or by scissors. Considerable difficulty is often encountered owing to the depth from the surface at which the gland lies, especially in stout subjects; and, in order to overcome this, some recommend that a preliminary suprapubic cystotomy should be performed in order that a finger may be introduced into the bladder and the prostate pressed downwards from above into the perineal wound; or the finger may be passed into the bladder through an opening in the membranous urethra, and then hooked, as it were, round the prostate so as to drag it down, and in this way render it more accessible. Parker Syme, of New York, has devised a special instrument for this purpose, consisting of a hollow rubber retractor with a bulb at one end of the stem. The bulb is introduced in a collapsed condition into the bladder through an opening in the membranous urethra, and then distended with water by means of a syringe. When traction is made upon the stem of the retractor the distended bulb catches against the prostate from behind and draws it downwards into the perineal wound, bringing it well into reach. At the recent meeting of the British Medical Association in Manchester he mentioned details of 21 cases of perineal prostatectomy, where this method of operation had been carried out with complete success.¹

Of perineal prostatectomy I have again no experience, as it has always appeared to me that the gland is more accessible when exposed through a suprapubic opening by the method next described.

3. The operation of suprapubic prostatectomy was first prominently brought into notice in this country by McGill, of Leeds, in 1887, though it had previously been performed in America by Belfield, of Chicago. In that year McGill read a paper before the Clinical Society of London, in which he gave particulars of three successful cases.² In the description of the operation in his first cases the prostate was removed, in his own words, "piecemeal," namely, "partly by tearing with forceps and partly by cutting with scissors, or with a strong cutting instrument which I have devised for the purpose." Two years later, that is, in 1889, in introducing a discussion on the treatment of prostatic enlargement at the

annual meeting of the British Medical Association held at Leeds, McGill brought forward a series of 24 cases of suprapubic prostatectomy, operated upon by himself and his colleagues at the Leeds Infirmary, and a distinct advance had then been made in the technique of the operation, for he says in this paper: "The prostate should be removed as far as possible by enucleation with the finger, and not by cutting. The mucous membrane over the projecting portion having been snipped through, the rest of the operation is completed with finger and forceps..... A pedunculated middle lobe can, however, be removed by cutting through its base."³

A reference to his tabulated list of cases shows that while in his earlier operations McGill removed the prostate "piecemeal," in his later cases he enucleated it with the finger, for in one instance he "enucleated in one piece" a portion of prostate weighing over 2 oz. "which surrounded the urethra laterally and below," while in another "two enlarged lateral lobes were removed by enucleation."

The brilliant results of McGill and his colleagues did much to establish suprapubic prostatectomy as a recognized operation, and it began to be regarded as the proper procedure in cases where—as McGill tersely put it—the catheter treatment fails or is unavailable and more radical measures are necessary. From 1889 onwards the operation was frequently performed, and in suitable cases it was attended with very satisfactory results.

In 1894, however, another method of treatment in cases of prostatic obstruction was suggested by an American surgeon, White, of Philadelphia, which for a time tended to supplant prostatectomy, and therefore gave a distinct check to the further development of this operation. No doubt the much-regretted death of McGill in 1890, at the early age of 44, contributed to the same result, for the operation of suprapubic prostatectomy thus lost its most active and enthusiastic advocate. From the analogy supposed to exist between fibro-myomata of the uterus and hypertrophy of the prostate, White suggested that castration might have the same effect upon the enlarged prostate that removal of the ovaries has upon the uterus, namely, cause a shrinking or atrophy of the gland, which would result in the practical disappearance of the obstruction. This theory was based upon experiments on animals, which showed that removal of the testes was followed by marked atrophy of the prostate, and as double castration in man was a much less serious operation than prostatectomy, it became somewhat generally adopted in this country as well as in America, in spite of the obvious sentimental objection which attended the sacrifice of both testes and the loss of all sexual power. I myself performed the operation in a number of cases, in a few instances with satisfactory results, but in the majority it was followed by very slight or by no improvement whatever in the patient's condition.

It was also found that the patients occasionally developed evidences of serious mental disturbance after removal of both testes, consequently vasectomy, or excision of a portion of the vas deferens on each side, was proposed as a substitute for double castration as being less likely to be followed by mental trouble, in the hope that by causing atrophy of the testes similar changes might be produced secondarily in the prostate. I also tried this treatment but without any apparent benefit, and the results generally have been so unsatisfactory that it is, I believe, now almost entirely given up. In consequence, therefore, of the unfavourable results of the indirect operations (as we may term castration and vasectomy) for reducing the size of the enlarged prostate, surgeons after giving these methods a fair trial for about five or six years began to revert to the operation of prostatectomy, which during this period had fallen very considerably into disuse.

In 1901 Freyer brought it prominently into notice again in a paper published in the *BRITISH MEDICAL JOURNAL*,⁴ in which he described 4 successful cases of "Total Extirpation of the Prostate Gland for Radical Cure of Enlargement of that Organ." Freyer worked on the same lines as McGill had in his later cases, removing the gland not "piecemeal," but performing a somewhat similar, though much more complete and radical operation, by enucleating it entirely within its capsule. In order to understand how this is practicable I may very briefly remind you of a few points in connexion with the anatomy and pathology of the prostate which have an important bearing on this method of removal.

The prostate is composed of two lateral lobes, nearly ovoid in form, lying side by side, their inner surfaces being adherent to each other in the median line, except where

they are separated by the urethral canal. It is invested by a capsule of strong fibrous tissue, from which trabeculae pass into its interior supporting the gland structure, and outside this there is a second covering—"the sheath"—derived from the pelvic fascia; between the capsule and the sheath, which are connected by numerous fibrous bands, lie a number of veins, the prostatic plexus.

As regards its minute anatomy the prostate is composed of glandular structure supported by a stroma of unstriated muscle and fibrous tissue. When enlarged, the hypertrophy may be due mainly to an overgrowth of the muscular and fibrous structures, or it may chiefly affect the gland tissue. In the former case the "fibro-myomatous" prostate, the enlargement is, as a rule, not at all extreme, and the gland under these circumstances, is of dense consistence; on examination per rectum, it feels firm and fixed, and only slightly increased in size. In the latter case, the "adenomatous" prostate, the gland may attain very considerable dimensions; it may be enlarged uniformly, or one lobe may be affected more than the other; frequently there are polypoid outgrowths from the lateral lobes, which, when growing from their posterior surface, are often mistaken for and described as third or middle lobes. If a section is made through one of the hypertrophied lobes, it will often be found that the enlargement is due to the presence of numerous localized overgrowths of the gland tissue, each surrounded by a distinct capsule, and embedded in, but isolated from, the substance of the gland. These so-called "prostatic glandular tumours," which are sometimes no larger than peas, in other cases the size of a walnut, are very loosely connected with the surrounding stroma, so that they can be easily shelled out or enucleated with the finger. The adenomatous prostate is of softish consistence, and on examination per rectum feels elastic and somewhat movable; the enlargement of the gland is often very considerable, being much greater than that met with in the fibro-myomatous variety.

It is interesting to note that there is frequently no relation between the size of the gland and the severity of the symptoms, for a moderately-enlarged prostate may cause as much obstruction as one where the hypertrophy is extreme. It is, however, very important to distinguish clinically between the two varieties of hypertrophy; for, while complete removal is easy in the adenomatous, it is extremely difficult in the fibro-myomatous prostate, as I found to be the case in the specimen here, which was recently removed from a patient aged 65 years. As you will see, the gland, though uniformly enlarged, is not very much increased in size, but still sufficiently so to produce well-marked symptoms of obstruction and the continual presence of a considerable amount of residual urine. It was removed in its capsule, together with the prostatic urethra—as the specimen shows—but the process of separation, or enucleation, was difficult and tedious, for the capsule was intimately adherent to the surrounding sheath. The operation was followed by severe shock, accompanied by complete suppression of urine, and the patient died on the third day from uraemia. On examination after removal the prostate was found to be of dense, fibrous consistence, and to the naked eye free from any overgrowth of the glandular tissue; in fact, a typical example of the fibro-myomatous form of hypertrophy. In another similar case I should leave the prostate alone and drain the bladder through a suprapubic opening, a method of treatment which, as already stated, has proved beneficial when the same condition existed.

I have specimens from two other cases where the same form of hypertrophy was present; but, in addition, there was in one a small pedunculated third or middle lobe, and the removal of this with a pair of scissors was followed by a complete subsidence of the attacks of retention of urine from which the patient had previously suffered. No doubt in this instance the movable third lobe had acted like a ball-valve, being carried forward by the stream of urine, and in this way blocking the vesical orifice of the urethra on attempts at micturition.

In the second case there was a collar-like fringe of small polypoid outgrowths surrounding the orifice of the urethra, which probably acted in the same manner; these were snipped off with scissors, and their removal was followed by a similar improvement in the patient's power of micturition.

In the other variety of hypertrophy—the adenomatous prostate—as the gland increases in size, the capsule and sheath, as well as the fibrous bands which connect these structures, become stretched out and thinned, consequently it is not a difficult matter to separate the capsule from the sheath by breaking down the loose connexions with the finger, or, in other words, to enucleate the prostate in its capsule. This

procedure, which we may term "extracapsular" enucleation of the prostate, is the operation which Freyer has so prominently brought before our notice in the paper referred to, as well as in others subsequently published,¹ and in suitable cases is attended by very satisfactory results. The bladder having been opened from above the pubes, the mucous membrane and thinned-out sheath over the most prominent part of the swelling are divided with scalpel or scissors, or merely scratched through with the finger-nail. The enucleation is then effected entirely by the finger, which separates the sheath from the capsule above, externally, and below, as well as in front and behind, and by working close to the capsule the enucleation and removal of the gland is readily and quickly accomplished.

In cases of great hypertrophy the thinning of the sheath and capsule is so extreme that it is difficult to recognize these structures as such, and it is possible that under these circumstances the capsule becomes in places so stretched out and weakened that the lobulated glandular outgrowths actually burst through it. The gland may be enucleated *en masse*, but this necessitates tearing across, or removing with it, the prostatic portion of the urethra. This accident may be avoided by first dividing the tissue bridging over the urethra, the so-called "anterior commissure," and then working laterally round, and also below, the canal, which is pushed upwards and thus avoided. A safer method is to separate the lateral lobes from one another, and enucleate first one lobe and then the other, stripping them, as it were, from off the urethra which lies between them. If this is done, the urethra—in which a silver catheter should be retained to act as a guide—is less likely to be injured. If the surgeon stands on the left side of the patient and uses the right forefinger to enucleate the prostate, the presence of the left forefinger in the rectum will prove of great assistance, for by pressing the gland upwards it will steady it, and at the same time render it more accessible.

The haemorrhage, which may be free, is usually soon arrested by irrigating the bladder with hot lotion, and the subsequent treatment is identical with that after suprapubic cystotomy for bladder tumours or for other causes. A piece of large-sized drainage tube should be left in the suprapubic opening for a day or two, and until the wound closes, which usually takes place in from three to four weeks, the bladder should be washed out daily with some antiseptic lotion. As healing occurs the power of voluntary micturition gradually returns, the bladder regaining its expulsive power, even when this has been lost for a long period. The specimen, which I show you, is a good illustration of this method of treatment, the entire prostate being removed in its capsule in three portions, consisting of a large right lobe, a smaller left lobe, and a pedunculated third lobe, which was connected posteriorly with the right lobe. The patient, aged 59 years, who had suffered for eighteen months from retention of urine, requiring daily catheterism, made a good recovery from the operation, and completely regained the power of voluntary micturition in less than a month after its performance. Examination of the prostate after removal showed that the enlargement was due to the presence of numerous adenomatous growths embedded in the substance of each lobe.

Instead of removing the prostate in its capsule in the manner advised by Freyer we may enucleate separately the adenomatous growths embedded in its substance. In this method, which may be termed "intracapsular enucleation," the capsule is divided, as well as the mucous membrane and sheath, over the more prominent portion of each lobe. The finger is then passed through the opening in the capsule into the interior of each lobe, and the separate growths are easily detached from the surrounding gland tissue and enucleated one by one. This method, of course, does not so completely remove the obstruction as the "extracapsular enucleation," but it is probably attended by less haemorrhage, as the prostatic plexus of veins is very slightly interfered with. Moreover, there is less likelihood of injuring the prostatic urethra, as no doubt often happens in the more complete removal, and as yet our experience of the latter operation is not sufficient to say whether, if this complication occurs, troublesome contraction of the neck of the bladder may not possibly result in the future.

I adopted this procedure in the case of a gentleman, aged 61 years, in October, 1901, as he was not a good subject for any operation, and I thought it would be less severe than the method of complete enucleation which Freyer in his first paper, based on an experience of four cases, had published only a short time previously. A large number of adenomatous

growths, varying in size from a pea to a filbert, were shelled out of both lateral lobes, and after the suprapubic wound closed he regained and still possesses the power of voluntary micturition, which had been lost for a considerable period.

My subsequent experience, however, of the complete or extracapsular method of enucleation would lead me to adopt this procedure in future, though we must remember that it is not applicable to all cases of prostatic obstruction which call for surgical interference; and when we have the condition present to which I have referred, namely, a moderate fibro-myxomatous enlargement of the gland, it should not be attempted.

Under these circumstances, a partial prostatectomy will often give good results, and when this is not practicable, then cystotomy and bladder drainage will generally afford relief in the manner already described.

Though doubts were expressed by several surgeons as to the possibility of complete removal of the prostate—mainly on anatomical grounds—in the course of a somewhat prolonged correspondence on this subject, which appeared in the *BRITISH MEDICAL JOURNAL*² shortly after the publication of Freyer's early cases, it is my opinion that when the pathological changes to which I have alluded have taken place in the prostate, giving rise to the adenomatous form of hypertrophy, then its total enucleation is quite feasible.

This conclusion is based upon my own experience of the operation, and also upon an examination of many of Freyer's specimens, which were exhibited at the recent meeting of the British Medical Association held at Manchester.

I believe, therefore, that suprapubic prostatectomy on the lines laid down by Freyer is not only possible in properly-selected cases, but that it is an operation which will soon establish for itself a recognized place in surgery.

REFERENCES.

¹ *BRITISH MEDICAL JOURNAL*, November 8th, 1902, p. 1495. ² *Clin. Soc. Trans.*, 1888, vol. xxi, p. 52. ³ *BRITISH MEDICAL JOURNAL*, October 19th, 1889, p. 863. ⁴ *Ibid.*, July 20th, 1901. ⁵ *Ibid.*, February 1st, 1902, p. 249; November 8th, p. 1492. ⁶ *Ibid.*, July 27th to September 14th, 1901.

NOTE UPON A POSSIBLE RELATIONSHIP BETWEEN CARCINOMA AND NERVE OR TROPHIC AREAS.*

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In this communication I wish to point out certain features in the pathology of cancer when it is viewed stripped of the masking effects produced by the presence of secondary deposits.

The features to which I allude are mainly two: First, that there is a proportion of cases which show a marked relationship between the spread of the primary focus and the distribution of nerves and trophic areas. Arising out of this observation is the practical issue that the extent of these areas should be taken into consideration in marking out incisions when removal of cancer is contemplated. I do not wish to detract from the importance we now attach to the lymphatic pathways of distribution; I only desire to add another factor.

My second point is that there is reason for thinking that the incidence of cancer within a nerve area is not a fortuitous circumstance, but that it may be due to the direct or indirect nervous influence over that area.

I will take these two points separately, and will attempt to demonstrate my meaning by showing cases of rodent ulcer, Hutchinson's crateriform ulcer and squamous epithelioma, as they affect the head and face. Before doing so I will remind you of the close central connexion which exists between the fifth cranial, the glosso-pharyngeal, and pneumogastric nerves.

The mode of distribution in the cases remind one of the distribution of herpes, morphea, moles, naevi, and of certain infective processes.

The particular nerves are sensory, but I am not prepared to say whether the following phenomena are due to the influence of peripheral nerves or whether they are due to a central

* Read before the Pathological Society of London. It may be mentioned that the illustrations published with this paper are only a few of the total number shown by the author at the meeting.