Any suggestion of a means test at the stage when a subject is about to begin a course of rehabilitation will cause many to refuse to accept such services. Many chest physicians believe that rehabilitation is a part of treatment, and if this is free then rehabilitation should also be free. It is hoped that those responsible will realize that the harm that will be done by application of a means test and the collection of small sums from the disabled can never be compensated by the financial gain to public funds.

Summary

Three difficulties complicate the rehabilitation of the tuberculous: (1) it is impossible to be sure that a tuberculous person has completely recovered from his infection; (2) there are no means of assessing the tuberculous person's capacity for work, except by trial and error; and (3) persons with active tuberculosis are usually infectious.

Each of these difficulties is discussed, and suggestions are made for overcoming them. The financial problem is perhaps the most difficult to solve.

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PROSTATIC OBSTRUCTION*

BY

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Over a period of eight years 2,192 patients were admitted to my wards with symptoms due to non-malignant disease of the prostate, and of these 1,960 were submitted to prostatectomy, with an overall mortality from all causes, whether attributable to the operation or not, of 3.01%. In private cases the mortality was 1.96%. The following Table gives a detailed report on these results.

Results of Treatment of 2,192 Cases of Prostatic Obstruction (Non-malignant). 1,960 Cases Submitted to Prostatectomy, With a Mortality from All Causes of 3.01%; 44.9% Admitted with Acute Retention

	No. of Patients	Percentage of Total	No. with Acute Retention in Each Group	Mortality
Perurethral prostatectomy ..	1,347	61.4%	510 (37.8%)	41 (3.04%)
Suprapubic prostatectomy ..	613	27.9%	291 (47.5%)	18 (2.93%)
One-stage ..	363		143	12
Two-stage ..	250		148	6
Suprapubic cystostomy† ..	183	8.3%	135 (73.8%)	13%
No operation ..	49	2.2%	—	—

A patient aged 90 had a perurethral prostatectomy successfully performed. There was a consecutive series of 150 prostatectomies without a death.

† A number of these cases will be suitable for prostatectomy later.

Causes of Death following Prostatectomy

Cardiac failure ..	25	Malignant endocarditis ..	1
Coronary thrombosis ..		Cerebral abscess ..	1
Pulmonary embolism ..		Haematemesis ..	1
Uraemia ..	8	Cerebral tumour ..	1
Clot retention ..	5	Tetanus ..	1
Cerebral thrombosis ..	4	No records available ..	5
Shock and collapse ..	7		

During this period it was evident that doctors tended to send their good-risk cases to the voluntary hospital and their poor-risk cases to the municipal hospital. A surgeon working only at a voluntary hospital has therefore an

unfair advantage so far as results are concerned. In the series here recorded the cases were admitted to both voluntary and municipal hospitals and to a nursing-home, and it is thus possible to judge the results of prostatic surgery carried out on a cross-section of the community.

The operations were performed by various routes—the perurethral, transvesical, and retropubic.

Acute Retention as a Result of Prostatic Obstruction

A man apparently in good health may suddenly and painfully be made aware that he suffers from a prostatic obstruction by the development of an acute retention, for which the doctor may be asked to see him for the first time. This apparent misfortune may be a blessing in disguise by directing attention to the need for radical treatment. The doctor's decision regarding the immediate treatment may profoundly influence the subsequent course of the illness. He has the choice of several methods of procedure, and I give the three best in order of preference: (A) Injection of morphine $\frac{1}{2}$ gr. (11 mg.) and immediate transportation of the case to hospital; (B) catheterization; (C) suprapubic aspiration.

(A) There is no doubt in my mind that this is the best course to adopt. The patient is immediately placed under the best conditions, and any procedure can be carried out with strict asepsis.

(B) If the patient is living in the country far from a hospital or is unfit for removal for any reason, then catheterization is permissible. The passage of a catheter should be regarded as of the same importance as a major operation. The dangers of catheterization are: (i) Trauma of the mucous membrane of the urethra, with the risk of opening venous sinuses; this may be followed by rigors and sepsis. (ii) Introduction of infection. (iii) Rapid decompression of the bladder with its attendant risks of suppression of urine and haemorrhage, particularly when an acute retention is superimposed upon a pre-existing chronic retention. (iv) Failure of catheterization.

The avoidance of trauma is of paramount importance. In the ordinary way the beak of the catheter loses its lubricant in the first part of the urethra and passes along the remainder unlubricated, and is apt to cause trauma. This difficulty can be overcome if the technique described below is carried out, and, moreover, failure of catheterization will be very rare indeed.

FIG. 1

*Read in opening a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association, Harrogate, 1949.

FIG. 2

About 10 ml. of sterile water-soluble lubricant is injected slowly into the urethra by means of a "record" syringe to which a rubber nozzle has been fitted (Fig. 1). The glans penis is compressed to prevent the jelly escaping. The beak of the catheter, the open end of which has been closed with artery forceps, is now introduced into the meatus and digital compression of the glans penis immediately reapplied (Fig. 2). The catheter is now advanced along the urethra, and, as an air-lock is present in the catheter as a result of closure of the end, a column of lubricant is pushed in front of the catheter. This acts as a dilator of the mucous membrane, removing any folds or light obstructions which may impede the passage of the catheter.

Repeated catheterization in these cases of retention in the hope that the patient will eventually pass urine should, except in special cases, have no place in modern treatment. Even though the congestion of the enlarged prostate should settle and the patient pass urine again, some degree of bladder-neck obstruction will persist. In due course a further retention will occur, or, if the patient is unlucky, he will live on in failing health until severe renal damage has occurred, with associated secondary cardiovascular changes. The doctor has thus merely postponed the evil day, and in the end the patient will face the operation in a poor state of health.

(C) The doctor should assure himself by percussion that the distended bladder is not intraperitoneal. After injection

FIG. 3

of a local analgesic with a fine needle into the midline of the abdominal wall a larger needle is inserted obliquely into the bladder, as illustrated in Fig. 3, and the urine from the bladder aspirated.

The patient should then be admitted to hospital without delay.

Treatment of Acute Retention in Hospital

Three methods have been used in this series of cases. (i) After calibration of the urethra an indwelling Foley's catheter (18 Charrière gauge) was inserted by the technique described. The bladder was then decompressed. In this way an emergency operation subject to difficulties which could not always be foreseen, such as cancer of the bladder complicating the obstruction, was avoided, and time was allowed for a thorough investigation of the case and an improvement of the patient's renal function. (ii) Immediate prostatectomy was performed when the retention was complicated by the existence of a tight phimosis or other conditions which made the passage of a catheter inadvisable, and when the blood urea was not raised above 100 mg. per 100 ml. (iii) Suprapubic cystostomy and decompression of the bladder was performed under local analgesia on those patients unsuited for catheterization, who were in poor general condition, or who were gravely uraemic, and any further operative treatment was delayed.

The Non-Emergency Case

Symptoms and Physical Signs

When prostatic obstruction causes retention of urine the diagnosis is easy. When it causes sufficient trouble with micturition to bring the patient to the doctor the diagnosis is generally easy. There are some cases, however, in which urinary phenomena are so slight and their onset so gradual that the patients are unaware of anything wrong with the working of the bladder. These patients seek advice because of general symptoms, such as dyspepsia or loss of appetite, lack of power of concentration, lassitude, cardiovascular disease, abdominal discomfort, backache, haematuria, etc., and the condition of the bladder-neck obstruction is discovered on routine examination. Comparatively young patients with prostatic bars of fibrous or congenital origin come into this class.

These cases of silent obstruction can very easily be missed. On abdominal examination palpation or percussion may reveal a distended bladder, but on the other hand the bladder dome may be intraperitoneal and intestine may lie in front of it. The diagnosis in several such cases has been suspected by their medical attendants only by observing displacement upwards of the pelvic colon in the radiographs taken for suspected gastric disorders. These cases will not be missed if the physician or surgeon will examine the bladder bimanually by ballottement when making a routine rectal examination.

The ordinary symptoms of prostatic obstruction are well known, and I shall not enlarge upon them. It is important, however, that the doctor should be able to tell whether the condition is a straightforward one of prostatic obstruction or is complicated by other urological lesions. Suspicion should be aroused if terminal dysuria is a symptom. Some coexisting condition, such as infection, new growth, or stones, should then be expected. Again, haematuria is not, in my experience, a common symptom of prostatic enlargement, and when occurring in a case of obstructing prostate should not be assumed to be of prostatic origin. These cases require full investigation.

The presence of pus in the urine, whether sterile or not, should always arouse suspicion. Sterile pus may be present

in the urine in a case of uncomplicated prostatic obstruction. This may be due to trauma of the mucosa from overstretching or to compression of the mucous membrane as the result of gross hypertrophy of the bladder musculature. It may, however, indicate, and often does, associated lesions such as a stone, growths, tuberculosis, etc. An infected urine in a patient who has never been catheterized should also arouse suspicion.

Examination of the Prostate

The patient should be asked to pass urine before the examination.

Left Lateral Position.—The rectum is examined. The enlargement of the prostate into the rectum is recorded (0 to 4+) and its consistence noted. Any irregularities on its surface are discovered by light palpation or, if in the substance of the gland, by deep palpation. Any adhesions to or tethering of the rectal mucous membrane are observed. The presence or absence of the median groove and lateral fornices is noted. Can the upper notch be palpated? If so, is there any perivesicular infiltration? If the finger in the rectum is now rotated so that the pulp of the finger faces upwards it is often possible to examine the base of the bladder with the side of the finger. The middle finger of the hand lies in the fold between the buttocks, and as a result the finger can be introduced a greater distance. An infiltrating carcinoma of the bladder base may be recognized in this way.

Knee-chest Position.—The lumbar curve is exaggerated. The deep palpation of the prostate is repeated, and any crepitation noted which may indicate the presence of prostatic calculi. The seminal vesicles are examined and any perivesicular infiltration, whether neo-plastic or inflammatory, observed.

Supine Position.—The legs are flexed and abducted slightly, and a bimanual examination is then made as described below.

Clinical Determination of the Amount of Residual Urine and the Size of the Prostate Gland without Cysto-urethroscopy

The dangers of catheterization and cysto-urethroscopic examinations in cases of prostatic obstruction are at last being recognized. The passage of a catheter in order to discover the amount of residual urine should be unnecessary except in very stout patients or in one who refuses to co-operate, and even then the desired information will be given by the post-evacuation cystograms. If a coexisting stricture is suspected, then diagnostic catheterization is permissible.

There is a clinical method of determining the amount of residual urine which I have found of extreme value, as it enables a decision to be made in cases of doubt, without the passage of a catheter, whether operation is advisable or not. The ability to use it requires practice and experience. The method is as follows:

The patient lies supine, with the legs flexed and slightly abducted. He should then be told that a delicate examination is to be made, which necessitates relaxation of the abdominal wall, and that he must not resist when the surgeon's fingers dip into the abdomen. The right index finger in the rectum is put as high up as possible and the tip of the finger placed in contact with the prostate or bladder base, if this can be reached. The fingers of the left hand palpate the abdomen. The upper limit of the bladder can now be determined by ballotement, the impulse being transmitted to the finger in the rectum (Fig. 4). The amount of residual urine (if present) can be assessed with a high degree of accuracy.

FIG. 4

The fingers of the left hand now sink into the pelvis and the prostate gland is examined bimanually. The degree of intravesical enlargement of the prostate can be fairly accurately determined in the majority of cases if the patient is not too stout or the residual urine or hypertrophy of the bladder musculature is not too excessive. The size of the gland is recorded—intravesical 0 to 4+, rectal 0 to 4+.

The information on the size of the prostate is of extreme value when deciding whether a perurethral prostatectomy should be performed.

The Role of Radiography

This subject is too extensive to be covered in a short paper such as this, but I should like to emphasize that the last radiographs of the series should be taken after micturition and the amount of residual urine can then be assessed.

Indications for Operation

I believe that prostatectomy should be performed as soon as the diagnosis of prostatic obstruction is established, unless coexisting diseases make the expectation of life short. To delay operation until renal damage has occurred or secondary cardiovascular disease has developed is not in harmony with modern views on preventive medicine. The beneficial effect of prostatectomy upon the cardiovascular system is often most striking. Angina of effort often becomes less troublesome. In cases of hyperpiesia the blood pressure often falls, adding considerably to the patient's comfort. I wonder how many patients would have been spared a cardiovascular catastrophe, such as a coronary thrombosis, if the prostate had been removed when it first gave obstructive symptoms.

In cases of slight obstruction without marked frequency or residual urine the patient may be kept under observation. It may be argued, however, that many of these cases will require operation in the end, and thus why not operate upon them early and avoid the risk of secondary changes in the kidneys and cardiovascular system? There is no doubt that many patients suffering from prostatic obstruction still come for treatment too late in the progress of the disease.

Surgical Treatment of Prostatic Obstruction: General Considerations

Care of the Indwelling Foley Catheter

The glands in the urethral mucous membrane secrete mucus, and adequate provision must be made for this to escape externally. A severe urethritis, with its serious sequelae, will follow within 48 hours of the introduction of the catheter if the meatus fits too tightly round the

catheter or if the catheter is too large and prevents free escape of this mucous discharge. I feel that failure to observe this principle is one of the reasons for pre- and post-operative sepsis and the development of urethral strictures, whatever type of operation is used.

After the catheter has been introduced a light dressing soaked in a water-soluble lubricant containing sulphacetamide is applied around the end of the penis and catheter and lightly bandaged or strapped in position. This lubricant prevents the mucus from drying and forming a crust which will impede further drainage of the mucus. Each day and sometimes twice a day the dressing is changed. The penis is retracted along the catheter and any dried mucus removed with "cetavlon" or weak "dettol" solution. The penis is then allowed to return to its original position and the dressing is reapplied. The patient in the pre-operative period should have daily baths.

Urethral Stricture and Congenitally Narrow Urethra

A strictured or congenitally narrow meatus can be enlarged successfully by a meatotomy. It is therefore important that the surgeon should know the calibre of the urethra behind a narrow meatus. In my clinics the urethra in the perineal and peno-scrotal regions and at the meatus is calibrated as a routine procedure. The present small Thompson punch has a size of 27 Ch., and if the measurement of the urethra is not satisfactory an open operation is preferred. If an open operation is definitely contra-indicated the instrument is inserted through an opening made in the bulb of the urethra and a perineal perurethral operation performed.

Knowledge of the size of the urethra is also of value in open operations, because the catheters are passed retrograde as recommended by Wilson Hey. The maximum size of catheter which can be comfortably taken by the urethra is known and the risk of trauma with possible stricture formation diminished.

It is often wise in these cases of a narrow urethra, after a transvesical prostatectomy has been performed, to insert a suprapubic catheter at the end of the operation as an additional safeguard instead of closing the bladder.

Calibration of the Anterior Urethra (Fig. 5).

— Sterile water-soluble lubricant is injected into the anterior urethra. The penis is held so that the penile and perineal urethrae are in line. The calibrator is passed with the blades closed. By means of the graduated wheel the blades are opened until the patient experiences a faint discomfort in the perineum. The blades are then slightly closed until all discomfort has disappeared and then reopened slowly until the patient again experiences discomfort. The reading on the graduated wheel is now noted. The instrument is then

withdrawn slowly, and if the passage of the blades is impeded they are closed slightly until they can be withdrawn with ease. Absolute gentleness is necessary and the procedure must be atraumatic. In order to obtain the calibration of the various parts of the urethra in Charrière gauge the blades of the instrument are passed, after the examination, through the appropriate foramina in the metal gauge, starting with the smallest number noted on the graduated wheel. It is advisable to know roughly before the examination the number on the graduated wheel which corresponds to 27 Ch. The instrument is made for me by Messrs. Chas. Thackray, of Leeds.

The avoidance of pre-operative catheterization of the bladder has the disadvantage that a coexisting stricture in the bulb of the urethra may not be recognized until the time of operation.

If a surgeon over-dilates a stricture or stretches a congenitally narrow urethra in order to introduce a large-bore catheter or punch he will most certainly find that the stricture will become more troublesome in the future, and he will have transformed a congenitally narrow urethra into a strictured one.

History of a Gonorrhoeal Infection

Filmy strictures may be present, and, although an instrument or catheter may be passed without encountering any definite obstruction, blood may be noticed on the instrument. Relatively innocuous strictures may be changed into strictures that require treatment. It is advisable to perform an open operation in these cases, and a narrow urethral catheter should be used.

Prostatic Obstruction Complicated by Lesions of the Upper Urinary Tract

Severe sepsis or other urgent conditions in the upper urinary tract complicating a case of prostatic obstruction may necessitate a preliminary suprapubic drainage, followed by treatment of the renal or ureteric lesion. The prostate is removed later.

Cardiovascular Disease

Cases with cardiac decompensation usually improve rapidly once the chronic uraemia has been relieved by urethral drainage. Many cases which would appear hopeless at first become quite good operative risks after a few weeks. If fibrillation is present they are given digitalis. The use of mersalyl or "neptal" has proved a life-saving measure in some of these cases.

The cases which cause anxiety are those with gross hyperpiesia and those with a history of coronary thrombosis. These are preferably operated upon by the perurethral route. It is essential that no shock be permitted to occur during the operation and that the loss of blood be minimal. Once the blood pressure has been allowed to fall it may be difficult to get it back to normal limits, and, although the renal function may be excellent, secondary renal failure develops as a result of failure of the circulation. Intravenous saline is given by drip and also pressor substances are used irrespective of hyperpiesia.

Senility

In patients who are suffering from cerebral softening, even in an early stage, a prostatectomy, however successful as regards the urinary condition, is apt to cause further mental deterioration. They may become more confused and incontinent of urine and often also of faeces. Of all cases these have the worst prognosis, and if a patient shows signs of cerebral softening, even though these be only early, I now refuse to operate unless an acute retention is imminent. In some patients who are uraemic it may be difficult to decide how much of the mental change is due to renal failure and how much to cerebral degeneration. When

FIG. 5

any real doubt exists it may be permissible to try the effect of urethral drainage, and if the mental condition clears up completely then a prostatectomy is justifiable.

Prostatectomy

It is in my opinion a mistake to use one method to the exclusion of others. Each individual case should be judged on its own merits. Surgeons will vary in their views on choice of operation, depending to a great extent on their relative skill and experience of results with each, and also on whether they have the time, patience, inclination, and nursing staff to persevere with the difficult technique necessary for the perurethral method. Since the advent of the modern open one-stage operations, with their good results, the incentive for the younger surgeon to learn the difficult technique is not so great as it was ten years ago.

Perurethral Prostatectomy

This operation was performed in 1,347 of this series of non-malignant cases, with a mortality of 3.04%. In the nursing-home 74.3% of prostatectomies were performed by this method, with a mortality of 2.1%. The Thompson punch was used in all cases. The great majority of the really bad-risk cases, including the derelicts admitted to the municipal hospital, were operated upon by this method. It also included the bad-risk cases referred from other centres.

It would appear to be not generally known among doctors that if this operation is properly performed the obstructing gland is removed as thoroughly as by enucleation and the risk of recurrence is no greater. "Resection" of prostatic tissue with the purpose of leaving a channel through which urine can pass should be the aim only in malignant cases.

The advantages of this method are immense. The patient has no wound and he is able, if he suffers from a bad chest, to cough without pain. Adiposity does not make the operation more difficult. Patients with poor cardiovascular systems, especially those with low blood pressure in association with hardened arteries, and those with a history of thrombosis, are more safely operated upon by this method. Urinary obstructions due to fibrous and malignant prostates are also indications for its use. The patient is allowed up twenty-four hours after the operation, and the catheter is removed on the first to the third post-operative day, and in the ordinary run of cases he is discharged home eight to ten days after the operation. The operative risk is less than by open operation, and many cases considered unsuited for the latter procedure can be operated upon by this method without undue risk.

The disadvantages are equally clear. The method is difficult to learn, as the surgeon alone has the operative field in view. At least 300 operations must be performed before the surgeon can really consider himself proficient, and he must have a sound urological background and an extensive experience of cystoscopic work before attempting this method of operating. Such surgeons are not created overnight, but once the skill has been acquired great satisfaction is given to patients and surgeon alike.

A nursing team trained in this type of surgery is essential, and operations performed under adverse conditions can only bring the method into disrepute. Further, an attempt to remove a very large prostate at one sitting by this method may result in severe shock or an incomplete operation. It is thus necessary for the surgeon to determine beforehand the size of the prostate by such a method as has been described, and he is then able from experience to decide whether the gland can be removed with a Thompson punch

in one sitting with ease or with difficulty, or whether it would be better removed by open operation.

The amount of tissue individual surgeons can remove at one sitting with safety varies very much with experience. The maximum amount which I have removed successfully with the punch instrument at one sitting is 116 g. I feel, however, that multiple sittings are to be avoided if possible, and I prefer to remove large glands of 70 g. or more by open operation. The average prostate weighs about 30 g., and thus the majority of cases from this point of view are suitable for perurethral removal. I usually judge that a 3+ gland (e.g., intrarectal ++, intravesical +) can be completely and easily removed down to the true capsule and will weigh between 40 and 50 g.

The case of the indwelling Fo'ey catheter is of paramount importance, and the value of frequent baths in this respect cannot be overstressed.

Open Prostatectomy

Transvesical procedures of various types in one or two stages and also retropubic operations were performed in 613 cases of this series (27.9%), with a mortality from all causes of 2.93%. The majority of the really bad-risk cases, however, were operated upon by the perurethral method.

It is of interest to note that in the early period, 1941-4 inclusive, one-stage operations were performed in 16% only of the suprapubic prostatectomies, whereas in the later period, 1945-8 inclusive, the percentage had risen to 70.9%.* The mortality did not alter to any extent—2.29% compared with 3% in the later period. Thus the more modern suprapubic methods have enabled a one-stage operation to be performed without increased risk in a greater number of cases. The reduction in the number of two-stage operations has resulted in a great saving in human discomfort and enabled many more cases to be treated in the available number of beds.

The main indications for an open operation are, in my opinion: (1) Prostatic obstruction complicated by the presence of a carcinoma of the bladder, large vesical diverticula, large vesical calculi, urethral stricture, or congenitally narrow urethra; (2) the large prostate of 70 g. or more; (3) large prostatic calculi—small prostatic calculi are no bar to the performance of a perurethral prostatectomy.

In the great majority of open operations the transvesical route was adopted. In the later years the bladder was closed in 90.5% of cases following the prostatectomy, whether it was a one-stage or a two-stage operation. In those cases in which the bladder was not closed a fine suprapubic catheter was retained until bleeding had ceased, and was then removed. The urethral catheter was retained for not longer than seven days. Suprapubic leakage did not occur in 75% of cases. In those cases in which leakage did occur the suprapubic sinus closed within 48 hours in 16%, and in the remainder within seven days from the removal of the urethral catheter.

Treatment of Carcinoma of the Prostate

Cases of carcinoma of the prostate without marked residual urine and with normal renal function were treated by the administration of synthetic oestrogen†—dienoestrol 20 mg. or ethinyl oestradiol 1-3 mg. daily—and their progress observed. Radiographs of the bones of the pelvis and blood-acid-phosphatase examinations were carried out

*A number of two-stage cases in the later series were referred for prostatectomy from other centres. A suprapubic cystostomy had already been carried out.

†When oestrogen therapy proved inadequate the testicles were removed in a few cases with temporarily beneficial results.

at two-monthly intervals. If residual urine was considerable or renal impairment evident the cases were observed weekly, and if rapid improvement did not occur a perurethral resection was carried out. Cases suffering from acute retention were as a rule submitted to perurethral resection after preliminary catheter drainage if necessary, and oestrogen given by the mouth subsequently. If microscopical examination revealed an undifferentiated carcinoma, deep x-ray therapy was often given in addition to synthetic oestrogen by the mouth, as my experience had suggested that this form of cancer was less likely to be kept in check by oestrogen therapy alone.

Results in a Series of 176 Malignant Cases Admitted to Hospital

145 (82%) submitted to operation:			
101 (70%)	Perurethral resection	Deaths 3 (2.8%)	
30 (20%)	Suprapubic prostatectomy	Deaths 2 (6.6%)	
14 (10%)	Suprapubic cystostomy		
31 (18%) not submitted to operation:			
25 (14% of total)	Dienoestrol alone		
7	Died in hospital		

Summary

A clinical method of diagnosis to prevent cases of prostatic obstruction being missed is described. The treatment of the acute cases and the indications for the various types of operations are discussed.

The paper is based upon a series of 2,192 consecutive cases of bladder-neck obstruction due to non-malignant disease of the prostate, of which 1,960 cases were submitted to prostatectomy, with a mortality from all causes of 3.01%. The perurethral method was used in 68.73% of cases (74.3% in private cases).

The perurethral method is considered the method of choice in the majority of cases.

The treatment of cancer of the prostate is discussed.

Prostatic obstruction should be relieved as early as possible before secondary changes occur in the renal and cardiovascular systems: too many cases still come for treatment late in the progress of the disease.

I wish to thank Sisters Deacon, Meek, and Walker, without whose care, organization, and enthusiasm these results could not have been obtained. My grateful thanks are also due to Mr. Hadda, past registrar, and to Messrs. Breckenridge and Harrison, present registrars, for operating upon many of the cases, and also to Mr. Harrison for compiling the results. Last, but not least, I thank the many house-surgeons who have helped me.

When Sir William Marshall delivered his presidential address at the annual conference of the Scottish Association of Executive Councils on September 30 he said that they heard from all sides about the heavy demands on the services of the doctors, and it was clear that these demands were excessive and sometimes even unreasonable (*Scotsman*, October 1). Doubtless when the novelty of the scheme had worn off the rush to the doctor's surgery might lessen, but every consideration should be given to methods of reducing claims on the doctor's time for non-medical purposes. The call for certificates was using up much time which should properly be devoted to clinical work. Waste and extravagance must be checked. Some rearrangements might be necessary to bring home to the people the need for limiting their demands to what was in actual fact necessary. Claims for repairs, both to dentures and spectacles, were increasing month by month. Executive councils had a right in cases of negligence to refuse replacements or to make the applicant pay part of the cost, but this implied inquiry, which was both difficult and distasteful. As the State had already met the primary cost, it might well be left to the individual to meet the charge for repairs, with perhaps some power of the executive council to waive this in cases of real need. Whether it would be possible to make any charge in the case of drugs was more doubtful, but with regard to appliances there might be some provision to entitle the executive council to insist on payment of at least part of the cost.

MULTIPLE MYELOMA

A NOTE ON EIGHT CASES

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[WITH PHOTOGRAPHURE PLATE]

Until recently multiple myeloma was considered a comparatively rare disease. Its incidence was given as 0.03% of all malignant growths (Brewer, 1948), and the post-mortem incidence of three large hospitals was 16 in 19,000 (0.084%). Since the introduction of marrow biopsy as a means of diagnosis more cases have been recognized, and in the last few years larger series have been published.

We were struck by the frequency of the disease at this hospital. Eight cases were diagnosed during 1948, five of them coming to necropsy during that year and two since then. This gives a post-mortem incidence for 1948 of 5 in 442 (1.13%). This high figure may, however, be to a certain extent due to selection. It represents 2% of all deaths from malignant disease occurring in the hospital—a substantially higher proportion than previous figures would suggest.

There have been very full reports in the recent literature by Atkinson (1937), Snapper (1943), Harwood Stevenson (1948), and others. We are therefore confining our remarks to some points in these eight cases which appear to be of special interest.

Symptoms and Signs

First, the way in which these patients presented. Most of them complained of pain in the lower part of the back, general weakness, and vomiting. The last-named symptom has not been mentioned much by other writers. It occurred with normal blood-urea levels and was not caused by treatment. Anaemia was also prominent, and was normocytic or microcytic. Collapsed vertebra was one of the presenting signs in two patients, but the incidence and distribution of backache had no relation to the location of this lesion.

We confirm the well-recognized fact that the E.S.R. is very rapid, reaching 80–120 (Westergren) in the first hour. One of our patients, however, had an E.S.R. of only 15 and 25 in the first and second hours respectively. She was one of the most rapidly progressive diffuse cases, but her plasma proteins were normal. In another case extremely rapid agglutination prevented readings.

Albuminuria was present in every case, and Bence-Jones proteins were found in seven patients, though their presence varied from week to week. Most writers give figures of from 50 to 75% for the occurrence of Bence-Jones proteins, but Magnus-Levy (1932), giving a figure of 80%, points out the difficulty of their demonstration at times, especially in the presence of albumin.

A finding that has not often been reported is the presence of a raised C.S.F. protein, which was seen in the three cases which had lumbar punctures. Cabot (1934) found a raised C.S.F. protein in one patient, who, however, had tumours growing into the subarachnoid space. Only one writer—Magnus-Levy (1933)—reports the undoubted presence of Bence-Jones proteins in the C.S.F. We tried to demonstrate this, but were unable to do so in any of the three cases examined.