For Debate

Price of Prostatectomy

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Summary

Three different urological units found that transurethral prostatectomy required a hospital stay at least one week shorter than open Millin or transvesical prostatectomy. By making transurethral resection more widely available there could be a substantial financial saving; but more surgeons would have to specialize in urology.

Introduction

Since one in every ten men will undergo prostatectomy at some time¹ operations for benign enlargement of the prostate occupy much operating theatre time and many beds; while those waiting for prostatectomy make up a daunting proportion of the nation's surgical waiting lists. It has been repeatedly shown that transurethral resection (TUR) gives as permanent and as effective symptomatic relief as transvesical or retropubic prostatectomy, and is significantly safer in terms of mortality and morbidity.²⁻⁵ Another advantage of transurethral resection has received insufficient attention: its shorter period of hospital admission. The patient who undergoes a straightforward operation need only stay in hospital five or six days after the operation whereas an open prostatectomy will keep him in hospital until his wound has healed—say, 10 to 12 days.

According to the *Hospital Inpatient Enquiry 1970*⁶ 2,428 operations on the prostate were noted in the sample studied. From this one should perhaps subtract 90 operations for "destruction of lesions of the prostate" (whatever that may mean), as well as 20 "radical prostatectomies," presumably done for cancer. To the total remaining one might add suprapubic cystostomies, but only six were recorded, and, as not all of these were necessarily for benign enlargement of the prostate, it seemed simplest to discount them from our reckoning. We have, therefore, taken the sample figure of 2,428, less 90+20, giving a figure of 2,318. This is multiplied by a factor of 11.065 for acute surgical cases to give an esti-

mate of the total number of prostatectomies performed in England and Wales in the year 1970. The result is 25,800.

In Britain today only relatively few prostate operations are performed by surgeons who specialize in urology—a situation which is quite different from for example, North America, most of Europe, South Africa, Australia, and New Zealand, where there is much more specialization. Transurethral resection demands a prolonged and specialized apprenticeship, and, therefore, is usually, though not entirely, limited to specialist urologists.

In 1970 in England and Wales there were 1,021,521 patients discharged from general surgeons' beds, compared with 69,613 discharged from urologists' beds—a mere 6.5% of the total though urological conditions account for from 25 to 30% of general surgeons' work. Granted that a few experienced (and indeed eminent) urologists prefer to be designated as general surgeons, there is still a discrepancy between the need for expertise and the number of available experts. This discrepancy is reflected in the relatively few prostatectomies which are performed transurethrally in Britain today. Of the annual number of 25,800 prostatectomies only 23% were transurethral.⁶ In centres where urologists are trained in transurethral work about 90% of prostatectomies are performed by this method, which is applicable to all but the very largest adenomata, except when diverticula or stones in the bladder require to be removed at the time of prostatectomy. If provision for transurethral resection were to become more widely available it could be offered to at least 80% of cases—that is, at least 15,000 patients per annum in England and Wales—a considerable underestimation.

It is not our concern in this paper to dwell on the saving the extension of transurethral resection might bring about in terms of lives, postoperative pain, or suffering (though we believe these would be considerable) but to evaluate the financial implications of shortening the patients' stay in hospital.

We, therefore, set out to see how long men had to stay in hospital after transurethral resection and compare this with the length of their admission for an open prostatectomy. We then attempted to estimate the financial implications of any differences.

Methods

The duration of stay in hospital was obtained by examining the inpatient case records of men in three urological units in which transurethral resection was the method of choice for prostatectomy whenever feasible. Before considering the length of stay in hospital required for the various methods of prostatectomy we had to accept a certain source of error in the figures, which stemmed from our conviction that transurethral resection is the safer operation and so can be offered to a greater proportion of patients who are particularly old or particularly sick. The list of men operated on transurethrally included an unduly high proportion of patients admitted to hospital for cardiac infarction, heart failure, attention to an indwelling

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cardiac pacemaker, total replacement of the hip, abdominal perineal resection of cancer of the rectosigmoid, or recent pneumonectomy for cancer of the lung. Their stay in hospital—the figure we studied—was often prolonged not because of their prostatic trouble, but because of their other more serious illnesses. Hence our statistics were necessarily biased against TUR, but we have not allowed for this bias in discussion.

Case material

THE LONDON HOSPITAL

We studied the case records of 200 consecutive patients undergoing open prostatectomy between 1968 and 1972, and 200 consecutive patients undergoing transurethral resection during the last two of these years. No attempt was made to match patients according to age or clinical state, and the cases are drawn from the larger series of 1,135 patients reported previously, in which the patients operated upon transurethrally were found to be significantly older and more decrepit than those operated on by open methods.⁴

LIVERPOOL

During the two years ending December 1973 348 prostatectomies were performed, 330 transurethrally, 16 by Millin's open technique, and two through the bladder because of coincidental pathology. The average age was 72, and 68 patients were more than 80 years old.

PORTSMOUTH

We compared 100 consecutive transurethral operations with 100 consecutive retropubic prostatectomies from two different periods (1971 and 1972).

Results

THE LONDON HOSPITAL

The mean stay in hospital, including the time wasted prior to operation, was 15.9 days for an open prostatectomy and 8.1 days for transurethral resection.

LIVERPOOL

The mean stay for open prostatectomy was 19 days and 10.1 days for the transurethral procedure. Furthermore, if we exclude from this group all those aged 80 years or more, whose stay was prolonged because of concomitant cardiovascular, cerebrovascular, or senile changes, or because of the difficulty of finding accommodation for the patients when they were ready to leave hospital, then the mean stay for transurethral resection was only 7.6 days. Old age provides problems in all branches of medicine, and this is especially true in urology where retention demands surgical relief.

PORTSMOUTH

The mean stay in hospital for open prostatectomy was 14.2 days, compared with 8.2 days for transurethral resection. In spite of the loading of relatively more aged and infirm men, over 60% of the latter patients left hospital in 7 days or less.

Discussion

It is no exaggeration to claim that transurethral resection demands about a week less in hospital than an open prostatectomy. Our combined figures show that this difference obtains in three widely separated urological units, and is independent of local variations in the type of instrument used, of operative irrigation, or of postoperative care. Discussion with many other urological colleagues in other centres suggests that these findings are entirely representative of most urological units where transurethral resection is the preferred technique.

What are the financial implications of this saving of a week in an acute surgical bed? It is necessary to consider revenue costs as well as capital expenditure. For an acute surgical bed the former vary from one hospital to another, reflecting differences in the method of calculation of the figure and local differences in overhead costs. At the two acute hospitals of the London Hospital Group, the average cost per inpatient week in 1972 was £125.87 (and is bound to be much higher now and in the future). The costs for an average district general hospital may not be as high, and for present purposes we have taken a weekly cost of £100 as a rough estimate which is certainly not an exaggeration.

As we have seen, at least 15,000 men could be offered transurethral resection if only the expertise were available, so this would entail a revenue saving of $£100 \times 15,000 = £1.5 \text{ m.}$ per annum in England and Wales.

Increasing the proportion of transurethral operations would have even more striking economies if one considers possible savings in capital expenditure. Let us consider a hypothetical district general hospital which serves a local population of 300,000 persons. According to the H.I.P.E. survey for 1970⁶ "hyperplasia of the prostate" accounted for 12.6 discharges per 10,000 population per annum—for example, our district general hospital must provide for about 380 prostatectomies per annum. Given today's conditions, when only about 20% of these will be done transurethrally, two beds will be needed for the transurethral procedures, and 13 for the open operations—a total of 15 beds to be set aside for prostatectomy. If a urological unit was established 10 beds would be needed—six for the transurethral resection and four for the open cases even if only 80% of cases were done transurethrally.

In 1971 the capital cost of an acute surgical bed was estimated at £30,000 for a teaching centre, and £20,000 for a non-teaching hospital. Even taking the lower figure, the saving for the Treasury would be $5 \times £20,000 (£100,000)$ per hospital. A population of 50 million requires 170 district general hospitals, and if £100,000 were to be saved for each, the saving to the Treasury in capital costs alone would be £17 million, at 1971 prices.

REDUCED WAITING LISTS

But this is not the end of the story. Some of the most pertinent criticism of the National Health Service has always been directed at long waiting lists for common surgical operations, among which prostatectomy is often, and deservedly, singled out for attention. A department which can offer transurethral resection for most of its prostatectomy cases can make use of the same bed for another patient on the next week's operating list; but an open operation will occupy the bed nearly twice as long. The waiting list moves twice as fast if transurethral resection is available.

Increased costs and a longer waiting list would be justified if the result of open prostatectomy were in some way better than that of transurethral resection. But in fact all the evidence shows that transurethral resection is safer—notably because of lower risk of pulmonary embolism. Furthermore, there are no increased risks of incontinence, stricture, or the need for a further operation.⁴

SPECIALIZED TRAINING

There remain, however, valid objections to transurethral resection: it is difficult to do, difficult to learn, and difficult to teach. Hence it demands prolonged and specialized training, and at the moment there are too few trained urologists to meet the need. If the advantages of transurethral surgery are to be made more widely available, the first need is for more urologists. It is true that urologists need expensive equipment to do their work properly, but the capital costs of such equipment are negligible compared with the costs of hospital beds.

The need for more training facilities is equally important; the day has passed when general surgeons meddled with eyes, neurosurgery, or orthopaedics. Urological surgery should be left to those who have undergone special training. But additional training can only be provided by expanding the limited facilities available at present and by halting the trend of deliberately restricting the number of senior registrar training posts in urology. Another look should be taken at the dispersal of trainee surgeons away from teaching centres and into the periphery.

It is high time that we faced the truth that, as in other specialties, there is a difference between the results which can be obtained in urological surgery by those who specialize. The difference in results is not merely a difference in cost effectiveness, or of administrative convenience. As Ashley *et al.*⁷ showed, with cruel clarity, the price of prostatectomy at hospital B is a price which is not only paid in cash, but in lives. Nevertheless, as we have illustrated, the saving in money is by no means negligible—an argument which we trust may weigh more with those who clutch the purse strings on which the hospital service depends.

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Aspects of Plastic Surgery

Maxillofacial Injuries

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Introduction

Civilian maxillofacial injuries result mainly from road-traffic and industrial accidents or from fights and it is unusual for general practitioners to see them at an early stage or to be involved in their treatment. But late management of any resulting disablement or disfigurement may require a fairly detailed understanding of all the associated clinical problems. Casualties of this kind were previously normally treated in the larger plastic and oral surgery centres, sometimes at a considerable distance from the patient's home, and this tended to separate him from his own doctor until he was finally discharged. The development throughout the country of accident centres with improved resources now reduces the need for transfer to the more specialized units. In most large towns the dental and oral surgery services are based on a general hospital and patients with maxillofacial injuries are treated nearer home. So there may often be a greater need for the general practitioner to be involved in aftercare until patients are fully recovered or sufficiently rehabilitated to return to their normal occupations or some more suitable employment.

The overall incidence of injuries of the face and facial skeleton, like the incidence of head injuries, is difficult to estimate but the number of patients who require continued care, after discharge from hospital, is a relatively small proportion of the total spectrum of trauma. The contribution which can be made by general medical and dental practitioners towards restoring self-confidence and morale is nevertheless important even though improved

standards of treatment have resulted in greatly reduced morbidity and residual deformity.

The injuries under discussion can range from quite trivial fractures to the most severe compound and complex fractures of several or all of the facial bones, extending into the orbits and anterior fossa of the skull. Sometimes there can be extensive penetrating wounds of the soft tissues of the face, nasal passages, tongue, and the orbital contents. In all these cases early assessment is most important in achieving a high overall standard of results, since time can be utilized at this stage in preparing splints. This applies even where there is little evidence of initial disability or alternatively where the actual treatment of the facial wounds may be necessarily delayed by the urgent need for resuscitation or perhaps by the treatment of more serious life-endangering head, chest, or abdominal injuries.

The only features which demand immediate action from the time of injury are the dangers from obstruction of the airway and continued bleeding from the nose, mouth, and pharynx. Great improvements in the first aid training of ambulance crews and others has, without doubt, improved the mortality rates from these two causes alone but there is still room for much more to be done to help those who are called upon to make the first assessment at the roadside or in the factory. The insertion of a simple oral airway is possible in the unconscious patient but better still is the passing of a nasopharyngeal or endotracheal tube in the first instance. This technique should be much more widely taught and applied in practice even if it is not the only vital action necessary for safe transportation.

Simple Fractures

Minor injuries involving the dislocation or avulsion of front teeth with or without facial lacerations, particularly in children, are a common feature of any accident and emergency department

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