

TRANSURETHRAL RESECTION OF PROSTATE AND "OPEN" PROSTATECTOMY —EXPERIENCES IN A GENERAL SURGICAL UNIT

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SYNOPSIS

This study presents the results of prostatectomy before and after T.U.R.P. became available in a General Surgical Unit, and proposes that in the absence of a separate Department of Urology TURP by a person trained in transurethral resection complements the work of the Unit.

INTRODUCTION

Transurethral resection of the prostate (T.U.R.P.) was only readily available as a method of prostatectomy in the University Department of Surgery after September 1975. The results obtained of a hundred consecutive cases of T.U.R.P. have been reported (Beng, 1977). Millin's and Freyer's ("Open") prostatectomy was performed by the surgeons of the Department prior to the availability of T.U.R.P. and is still practised occasionally. The results of both methods of operation are presented and analysed.

MATERIAL STUDIED

A hundred cases of "open" prostatectomy done between February 1973 and June 1977 and a similar number of cases of T.U.R.P. done between September 1975 and March 1977 are studied. During the period of T.U.R.P. so studied, there were twenty-six cases of "open" prostatectomies performed.

The total number of cases of all forms of prostatectomy performed in the University Department of Surgery between 1973 and 1976 are given (Fig. 1 and 2). There has been an increase in the number of operations since the availability of T.U.R. facilities; this

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consists of referrals from other Units and Hospitals, and the total number of prostatectomies for 1977 is expected to exceed a hundred.

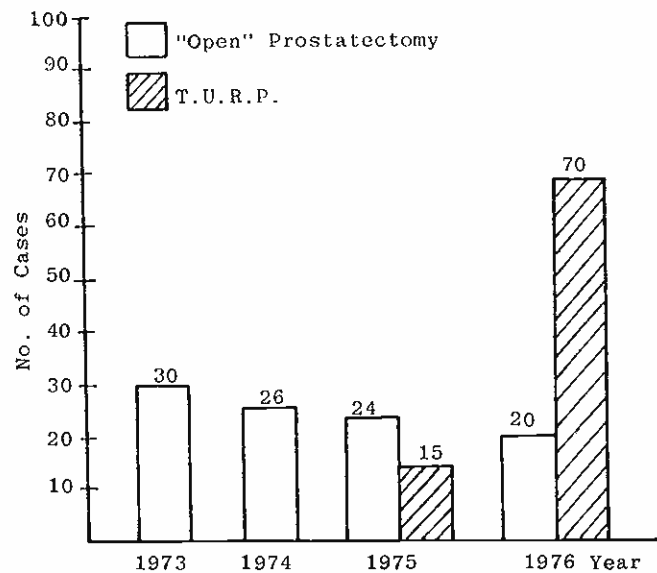


Fig. 1. Number of "Open" and T.U.R.P. cases done in 1973-76.

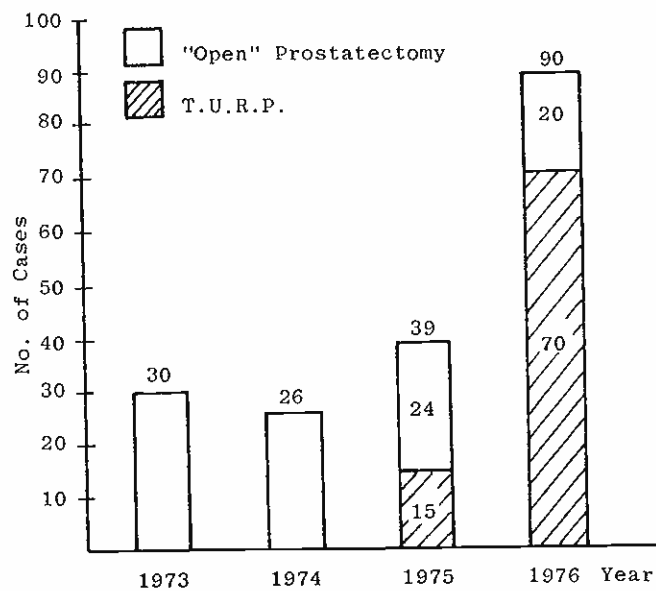


Fig. 2. Total number of Prostate operations done in 1973-76.

THE TYPES OF PATIENT TREATED

Age

The majority of patients for both types of prostatectomy are in the seven and eight decades of life (Table I).

There is a slight preponderance of patients over eighty in the T.U.R.P. group.

TABLE I: Age Distribution

Age Group	No. of Patients	
	"Open"	T.U.R.
Under 60	12	7
60-69	42	42
70-79	39	40
Over 80	7	11
Total	100	100

Ethnic Groups

All races are equally affected and the number of cases seen in each group corresponds to the race incidence of the population (Table II). The belief that prostatic hypertrophy is uncommon amongst Chinese is unfounded.

TABLE II: Ethnic Distribution

Ethnic Group	No. of Patients	
	"Open"	T.U.R.
Chinese	71	85
Malay/Indonesian	19	6
Indian/Ceylonese	7	5
Sikh	3	2
Others	0	2
Total	100	100

Mode of Admission

The great majority of patients for prostatectomy were admitted as emergency cases with retention (Table III). However, there is a slight increase in elective cases with prostatism referred for surgery over the past two years.

TABLE III: Mode of Admission

	No. of Patients	
	"Open"	T.U.R.
Emergency (with Acute Retention)	95	85
Elective	5	15

Associated Major Systemic Diseases and Infections

Cardiovascular and respiratory disorders are common in the patients seen requiring prostatectomy (Table IV). There is a higher incidence of major systemic diseases in the T.U.R.P. group because of selection; some of the patients in this group were referred from other Units where T.U.R. facilities are not available because of their high risk for "open" operations.

TABLE IV: Associated Major Systemic Diseases & Infections

Systems Involved	No. of Patients	
	"Open"	T.U.R.
Cardiovascular Diseases	38	65
Respiratory Diseases	25	48
C.N.S. Diseases	1	6
Diabetes	8	5

ANAESTHETIC TECHNIQUE USED

The majority of patients undergoing "open" prostatectomy received a general anaesthetic whereas the majority of patients for T.U.R.P. were given a regional anaesthetic (Table V). Geriatric patients do not tolerate a general anaesthetic very well and this explains the higher incidence of pulmonary problems in the "open" prostatectomy group (see Prostatectomy Complications below).

TABLE V: Anaesthetic Technique Used

Type of Anaesthesia	No. of Patients	
	"Open"	T.U.R.
Regional (Caudal, Spinal & Epidural)	4	86
General	96	14

DURATION OF OPERATION

Operation time for 8% of "open" prostatectomy was under an hour; whereas 86% of T.U.R.P. cases were dealt with within the same period (Table VI). Twenty-four patients in the "open" group were under a general anaesthetic for a period exceeding two hours.

TABLE VI: Duration of Operation

Time in Minutes	No. of Patients	
	"Open"	T.U.R.
0— 29 (less than ½ hr.)	0	34
30—59 (less than 1 hr.)	8	52
60— 89 (less than 1½ hr.)	27	13
90—119 (less than 2 hr.)	41	1
120—149 (less than 2½ hr.)	19	0
Over 150 (over 2½ hr.)	5	0
Total	100	100

BLOOD TRANSFUSION REQUIRED

Only four cases of "open" prostatectomy did not require blood transfusion whereas sixty-seven cases of T.U.R.P. had no blood given (Table VII). The majority of "open" operations require between one to three units of blood.

TABLE VII: blood Transfusion Required

Volume of Blood Transfused	No. of Patients	
	"Open"	T.U.R.
No Blood Transfusion Required	4	67
1—500 ml.	44	26
501—1000 ml.	29	6
1001—1500 ml.	14	1
1501—2000 ml.	4	0
Over 2000 ml.	5	0
Total	100	1000

In the 100 cases of "open" prostatectomy, forty-one cases were performed by the retropubic (Millin's) route and fifty-nine were transvesical (Freyer's or modification) enucleations. There were nine cases of severe blood loss requiring over a litre and a half replacement. Four cases were Millin's prostatectomy and five transvesical operations. There has been no significant improvement of blood loss in Millin's operation in our experience and the highest recorded transfusion in the whole series was in a Millin's prostatectomy for a 'fibrous' prostate which required 3.82L of blood replacement.

PATHOLOGY OF GLAND

The pathology of the removed gland in both the "open"

and T.U.R.P. groups were closely similar (Table VIII). Carcinoma is rare in Chinese and this is shown in our series.

TABLE IX: Prostatectomy Complications

Type of Complication	No. of Patients	
	"Open"	T.U.R.
Clot Retention	7	1
Urinary Tract Infection	30	6
Bronchopneumonia	16	5
Epididymo-orchitis	9	2
Urethral Stricture	4	4
Incontinence: Partial (Temporary)	9	0
Partial (Permanent)	2	1
Complete (Permanent)	5	0
Deaths	2	1

PROSTATECTOMY COMPLICATIONS (Table IX)

Clot Retention

There were seven cases of clot retention in the "open" group and one case in the T.U.R.P. group. These had to be reoperated to remove the blood clots and to secure haemostasis.

TABLE VIII: Pathology of Gland

	No. of Patients	
	"Open"	T.U.R.
Benign Prostate Hyperplasia	79	77
Benign Hyperplasia with Prostatitis	19	19
Adenocarcinoma of Prostate	2	3
Traumatic False Passage Prostate	0	1
Total	100	100

Urinary Tract Infection:

There were equal numbers of positive urine cultures in both groups but more cases of symptomatic urinary tract infection were noted in the "open" group. This may be due to several factors which include a longer waiting period between the retention episode and the operation, instrumentation (separate cystoscopy) prior to surgery, and longer duration of operation. The authors feel that the three-way continuous irrigating catheter used after T.U.R.P. has contributed to lowering of the incidence of urinary tract infections.

Bronchopneumonia

This was seen three times more frequently in the

"open" operations where general anaesthesia was the rule.

Epididymo-Orchitis

There were nine cases in the "open" group and two in the T.U.R.P. group. Whereas in the pre-antibiotic era incidences were reported in the region of twenty per cent, most series report an incidence about 3-6%. Routine vasectomy is not practised and in the total series, only three vasectomy cases were recorded, all in the "open" group.

Urethral Stricture

Although reported as higher after transurethral resections, this has not been our experience. There were equal numbers of stricture seen and the 4% compares favourably with many reported series.

Incontinence

All nine cases of partial temporary incontinence were seen after transvesical prostatectomy. They made recovery within six weeks and three months. There were two partial (stress) permanent incontinent cases in the "open" group (one each after Millin's and transvesical) and one case after T.U.R.P.

There were five cases of complete incontinence, all in the "open" group, and four of these were after transvesical prostatectomy. The latter operation therefore carries a higher risk of causing incontinence as the distal limit of enucleation is recognized only by feel.

Mortality

There were two deaths in the "open" group and one in the T.U.R.P. group.

The operative mortality of prostatectomy depends on many factors such as the age of the patient, the presentation of the case, the selection of patients for operation, and the selection of operation for the individual case. Other factors of importance are the timing and staging of the operation, skilled post-operative care, the presence of associated disease such as carcinoma of the prostate and established urinary tract infection (Allan, 1966).

Mortality figures reported over the years have varied but today, an acceptable mortality would be about 3.3% for "open" cases and 1.2% for T.U.R.P. Our results of 2% and 1% compare favourably with those reported. Besides, others (McEachen, 1957, Salvaris, 1961) have reported two to four times increase in mortality in prostatectomy cases presenting with acute retention

and our series presented with retention in 95% and 85% for the "open" and T.U.R.P. groups, respectively.

WOUND COMPLICATIONS

Wound problems are non-existent in the T.U.R.P. group, but present a major cause of morbidity and prolong the hospital stay of the "open" prostatectomy patient (Table X). Wound infection rates in our series is high. Seven of the thirty cases of infected wounds had secondary suture. The high incidence of wound infection may be due to a relatively longer waiting period for the "open" operation after the episode of acute retention and the practice of nursing the post-operative patient in a general surgical ward. It was suggested that a vertical sub-umbilical midline incision would reduce wound infection as against a transverse Pfannenstiel type incision. There were 29 vertical incisions made and 71

TABLE X: Wound Complications

Wound Problem	No. of "Open" Cases
Inflamed Wound	8
Infected Wound	30
No. of Secondary Sutures	7
Supra-pubic Leak	18

transverse incisions. The infection rates were 31% (9 cases for the vertical wound) and 30% (21 cases for the transverse wound). Hence it has not been shown out that one incision is likely to produce a lower infection rate than another.

There were 18 cases of suprapubic leaks. This again prolonged the period of post-operative catheter drainage and the period of hospital stay. The leaks occurred in 25% of transversal operations (15 leaks in 59 operations) and 7% of Millin's (3 leaks in 41 operations).

DURATION OF CONVALESCENCE

Approximately four-fifths of patients remain in hospital between two and three weeks after their "open" operation before discharge; the same percentage of the T.U.R.P. patients are home at the end of a week after their operation (Table XI).

CONCLUSION

In conclusion, the experiences of "open" prostatectomy and T.U.R.P. in a General Surgical Unit are presented. The results obtained are critically analysed. The advantages of T.U.R.P. over "open" prostatectomy are

TABLE XI: Duration of Convalescence

No. of Days	No. of Patients	
	"Open"	T.U.R.
Within 7	13	79
8—14	52	19
15—21	21	1
21 or more	14	1
Total	100	100

many. It is our experience that about 80% of our prostatic hypertrophy can be dealt with by T.U.R.P. The very large adenomas, however, are better removed by the "open" operations.

In these days of escalating hospital costs, it is just not enough to cure the patient of his disease. The staggering bill he receives may leave him a financial cripple. Even though a service is provided without consideration to cost to the patient the advantages of T.U.R.P. over the "open" methods of operation expressed in terms of hospital stay of the patient and the productivity of the surgical team is that two patients operated upon transurethrally require the facilities for every one in whom an open operation is done. A transurethral resectionist in a General Surgical Unit can therefore complement the work of the Unit.

ACKNOWLEDGEMENTS

The authors wish to thank Professor S.C. Ong, Head, University Department of Surgery for his encouragement, invaluable help and advice. The surgical staff of the University Department of Surgery for their cooperation in allowing their cases to be studied. The Shaw Foundation for assistance and sponsorship to read the paper at the 1st Biennial General Scientific Meeting of the Association of Surgeons of Southeast Asia in Hong Kong.

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