ONE HUNDRED CONSECUTIVE CASES OF TRANSURETHRAL RESECTION OF PROSTATE

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SYNOPSIS

One hundred consecutive cases of transurethral resection of prostate done between September 1975 and March 1977 are presented and the results analysed. No patient suitable for regional anaesthesia is denied the operation. The policy of subjecting smaller hypertrophied glands to transurethral resection and the larger glands to "open" methods has yielded uniformly good results.

INTRODUCTION

Transurethral resection of the prostate (T.U.R.P.) was not a readily available operation in the University Department of Surgery prior to September 1975. A hundred consecutive cases of T.U.R.P. beginning from September 1975 through March 1977 are studied and analysed. This paper serves as a preliminary report for a more detailed and larger series in preparation.

MATERIAL STUDIES

The cases studied are a personal series collected over the period so stated. Twenty one cases of transurethral resection of bladder neck (T.U.R.B.N.) were performed during this period and are excluded from analysis. A summary of the results of T.U.R.B.N. is shown in Table I.

The criteria for selection of patients for T.U.R.P. are as follows:

1. There should be no major systemic diseases contraindicating anaesthesia, preferably regional.
2. Small and medium size glands (less than 40 grms.) assessed by digital and endoscopic examination.

The author subscribes to the belief that there is no advantage to the patient if a very large gland is removed transurethrally. (Mitchell, 1972., Duffy, 1975.)

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TABLE I: Summary of T.U.R.B.N. — 21 Cases

Duration of Operation: 5—15 mins. Negligible blood loss in all 21 cases.	
Patient Profile	**No. of Cases**
Bladder Outlet Problems	7
Associated Vesical Stone	5
Post Cerebral Vascular Accident	4
Post-surgical: Orthopaedic	2
Opthalmic	1
Urology	1
Parkinson's Disease	1
Neurosyphilis	1
Total*	22
*Case of Neurosyphilis with Vesical Stone.	

THE TYPES OF PATIENT TREATED

Age:

The age groups of the patients are given in Table II. The youngest patient was 50 yrs. old and the oldest 89 yrs. old.

TABLE II: Age Distribution

Age Group	No. of Patients
50—59	7
60—69	42
70—79	40
80—89	11
Total	100

Ethnic Groups:

Table III shows the incidence by race of the patient groups which approximates that of our population.

TABLE III: Ethnic Distribution

Ethnic Group	No. of Patients
Chinese	85
Malay/Indonesian	6
Indian/Ceylonese	5
Sikh	2
Others	2
Total	100

Mode of Admission:

85 cases were admitted as an emergency with acute retention of urine (Table IV). This was also the experience of others (Wong, 1973; Yong, 1973); which contrasts sharply with the experience of Urologists practising in the Western Hemisphere, Australia and New Zealand. The majority of patients in the latter countries would have their operations done electively.

TABLE IV: Mode of Admission

Emergency (with Acute Retention)	85
Elective	15
Total	100

Associated Major Systemic Diseases and Infections:

This is shown in Table V. Cardio-respiratory disorders predominate and 30 cases have positive urine culture.

TABLE V: Associated Major Systemic Diseases & Infections

Systems Involved	No. of Patients
Cardiovascular Diseases	65
Respiratory Diseases	48
U.T.I. (positive urine culture)	30
C.N.S. Diseases	6
Diabetes Mellitus	5
Chronic Renal Failure	2
Carcinoma	2

The types of cardiovascular diseases and respiratory disease are shown in Table VI and VII respectively. The large number of patients with cardio-respiratory disorders can be explained by the fact that the patients were referred from other Hospitals (where T.U.R.P.

TABLE VI: T.U.R.P. Associated Cardiovascular Disease

Type of Disorder	No. of Patients
Ischaemic Heart Disease	49
Hypertension	36
Myocardial Infarction	9
Cardiac Failure	7
Valvular Disease	3

facilities are not available) because of their high risks for "open" operations.

TABLE VII: T.U.R.P. Associated Respiratory Disease

Type of Disease	No. of Patients
Pulmonary Tuberculosis	38
Chronic Obstructive Airway Disease	19
Bronchial Asthma	5
Opium Addict	3
Bronchietasis	1
Bronchopneumonia	1

ANESTHETIC TECHNIC USED

The majority of patients were operated under regional anaesthesia as shown in Table VIII. Only 14 cases were given a general anaesthetic and even so, a few were because of failure in the former technique. Hypotensive anaesthesia was used in a few cases. The main advantages of a regional anaesthetic is a relatively less blood loss and a much lowered incidence of post-operative respiratory complications. (see Table XIII)

TABLE VIII: Anaesthetic Technique Used*

Type of Anaesthesia	No. of Patients
Caudal	70
Spinal	10
Epidural	6
General	14
Total	100
*86 cases had regional anaesthesia	

RESULTS OF T.U.R.P.

Duration of Operation:

This is shown in Table IX, and the operation time for 86 cases was less than one hour. This compares favourably against "open" prostatectomy.

Blood Transfusion Required:

Table X shows the blood transfusion requirements of the patients. About a third of cases required blood transfusion but the majority of the group needed only less than one pint for replacement. Transfusion requirements rapidly rise with increase of gland size and operation time; hence the criteria for selecting small and medium glands for T.U.R.P. Large adenomas are easily enucleated by the "open" operation which are usually completed in just as expedient a manner as by resection.

TABLE IX: Duration of Operation*

Time in Minutes	No. of Patients
0—29 (less than ½ hr.)	34
30—59 (less than 1 hr.)	52
60—89 (less than 1½ hr.)	13
Over 90	1
Total	100
*86 cases requiring less than 1 hour operation.	

TABLE X: Blood Transfusion Required*

Volume of Blood Transfused	No. of Patients
1—500 ml.	26
501—1000 ml.	6
1001—1500 ml.	1
Total	33
*67 patients did not require blood transfusion.	

Pathology of Gland:

There were only 3 cases of carcinoma of the prostate gland; the majority are Benign Hyperplasias (Table XI). Prostatitis was present in 19 cases.

TABLE XI: Pathology of Gland

Benign Prostate Hyperplasia	77
Benign Hyperplasia with Prostatitis	19
Adenocarcinoma of Prostate	3
T.U.R.P. for Traumatic False Passage	1
Total	100

Intra-Operative Complications:

These are few and are listed in Table XII. There were 4 cases of post-operative clot retentions requiring re-operation and haemostasis. All four subsequently made

TABLE XII: Intra-Operative Complications

Type of Complication	No. of Patients
Post-T.U.R.P. Clot Retention	4
Perforation of Capsule: Major	1
Minor	2
Incomplete Resections	3

complete recovery. A major perforation of the prostatic capsule was encountered early in the series. This required supra-pubic drainage. In retrospect, this would have been avoided had the patient not been restless under caudal anaesthesia. The lesson to learn in this case was not to proceed with T. U.R.P. with a struggling patient. The minor perforations were recognised at operation and only required systemic antibiotics and cathether drainage.

T.U.R.P. Complications:

The early and late complications are listed in Table XIII. There were no cases of septicemic shock, haemolysis or dilutional hyponatraemia (the 'TUR' reaction). Although sterile water was used as an irrigation solution, haemolysis and TUR reaction did not occur because of strict adherance to the principle of operating on small and medium glands, thus not exposing the patient to prolonged operation.

One death was encountered in the 85th case of the series and this was a 76 yrs. old man who was refered from another hospital with acute retention. He had severe ischaemic changes seen in the E.C.G., and was in mild heart failure. Chest X-ray showed old pulmonary tuberculosis and emphysema. He had a 22 .grm. adenoma removed and although there was no excessive blood loss at and after operation, he succumbed to a myocardial infarct on the 5th post-operative day.

TABLE XIII: T.U.R.P. Complications*

	No. of Patients
I Early Complications:	
Pyrexia	8
U.T.I.	6
Bronchopneumonia	5
Epididymo-orchitis	2
Atonic Bladder	1
II Late Complications	
Urethral stricture	4
Secondary haemorrhage	4
U.T.I.	2
Temporary Incontinence	1
*60 cases are without complications	
III Death	1

Duration of Convalescence:

This is shown in Table XIV. 79 cases were home before one week after the operation. One case was discharged only two days after operation so that he can join his family for the traditional Chinese New Year eve dinner!

It is now routine to have the patient discharged on the 5th or 6th day after operation in uncomplicated cases.

TABLE XIV: Duration of Convalescence

No. of Days	No. of Patients
Within 7	79
8—14	19
15—21	1
21 or more	1
Total	100

SUMMARY:

A summary of the results obtained in the 100 consecutive cases of T.U.R.P. is listed in Table XV.

TABLE XV: Summary of T.U.R.P. — 100 Cases

Age Distribution: 82 cases are in the 7th and 8th decades.
Ethnic Distribution: All races are equally affected.
Mode of Admission: 85 cases are in Acute Retention.
Associated Major Diseases: 65 cases with C.V.S. problems.
48 cases with Respiratory problems.
30 cases with Urinary Tract Infection.
Anaesthetic Technique: 86 cases are suitable for Regional Anaesthesia.
Duration of Operation: 86 cases operated in less than one hour.
Blood Transfusion Required: 67 cases do not require blood.
Pathology: Only 3 cases of Adenocarcinoma encountered.
Duration of Convalescence: 79 cases recovered within a week.

CONCLUSION

The advantages of T.U.R.P. over the "open" methods are many. The T.U.R. patient does not receive a scar and the pain that goes with this; morbidity is low and there should be a mortality of less than 2% in experienced hands. Strictly from a logistic point; blood transfusion, operation time and total hosptial stay require-

ments are less in T.U.R.P.'s. The operation, however has little advantage for the large adenomas.

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