

Descriptive analysis of histological findings of Trans Urethral Resection of Prostrate (TURP): experience of a single tertiary care unit

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Abstract- Transurethral resection of the prostate (TURP) represents the gold standard of surgical therapy for the management of symptomatic bladder outlet obstruction due to the prostate. This is a major operative procedure. The objective of this study was to analyze histological findings of Trans Urethral Resection of Prostrate (TURP). The study sample included the patients with lower urinary tract symptoms and prostatomegaly who came to the genitourinary clinic. There were 444 males who underwent TURP as the surgical treatment for BPH. According to the results, out of the sample 14.9% (n=66) found to have prostate carcinoma, 83.8% (n=372) were Benign Prostatic Hyperplasia, 61.5% (n=273) exhibits intra prostatic inflammation, 1.6% (n=7) were Prostatic Intraepithelial Neoplasia (PIN) and 10.4% (n=46) had squamous metaplasia. In the cancer group with a mean age of 66.3(SD=8.9) years, 16.7% coexisted with chronic prostatitis, 4.5% and 3.1% coexisted with PIN and squamous metaplasia respectively. Of the prostate cancer the Gleason grading was favorable (2-6) in 66.7% cases, 19.7% had intermediate (7) and 13.7% had unfavorable Gleason grade (8-9). As the conclusion, chronic prostatitis is more prominent than the acute prostatitis. However, chronic prostatitis is less with dysplasia and compare to total population dysplasia present is lower than the hyperplasia in our study.

Index terms- Transurethral resection of the prostate (TURP), lower urinary tract symptoms, prostatomegaly, prostate carcinoma, Benign Prostatic Hyperplasia, intra prostatic inflammation, Prostatic Intraepithelial Neoplasia, squamous metaplasia, Gleason grade

I. INTRODUCTION

Transurethral resection of the prostate (TURP) represents the accepted standard of surgical therapy for the management of symptomatic bladder outlet obstruction due to benign prostatic hyperplasia (BPH). However, this is a major operative procedure associated with significant perioperative morbidity.⁽¹⁾ Obstructive voiding symptoms are frequent complaints in men with prostate cancer. Some men with prostate cancer require transurethral resection of the prostate (TURP) for relief of these symptoms.⁽¹⁾ When the pathological stage is known, progression and mortality outcomes are similar in TURP and non-TURP treated patients with prostate cancer.⁽⁴⁾

For decades TURP was the undisputed gold standard of therapy for patients with LUTS due to BPH; The main driving forces behind this development were the high prevalence of the disease, with increase in the longevity. Surgery is indicated in only 5–10% of patients with symptomatic BPH.⁽⁵⁾

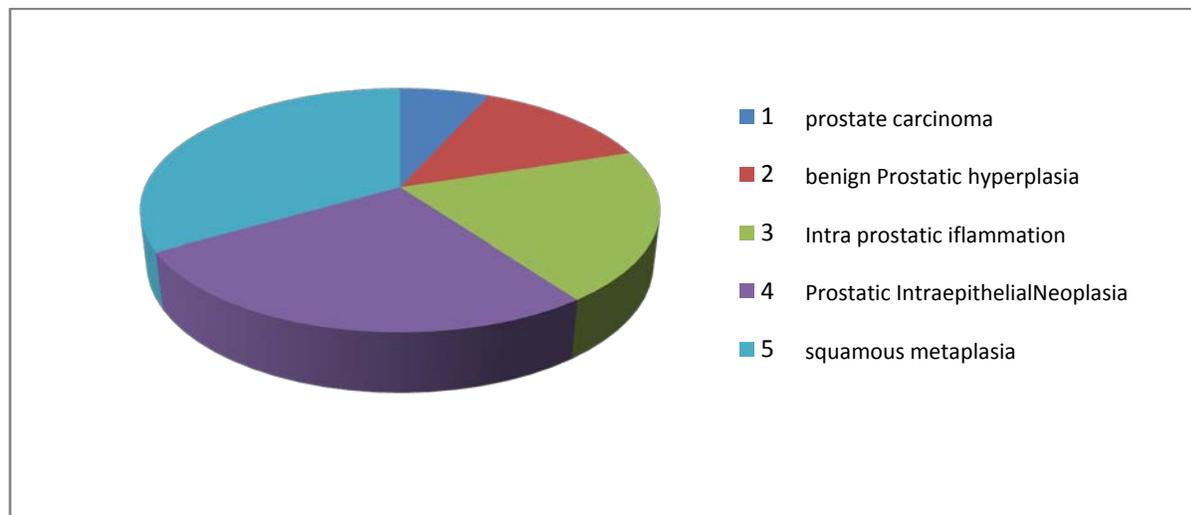
In Sri Lanka, carcinoma of the prostate is the 8th leading cancer in male⁽²⁾ Since PSA (prostate specific antigen) testing is not done routinely in Sri Lanka to aid diagnosis.⁽²⁾ carcinoma prostate is diagnosed mainly on clinical findings and the majority proceed to have a histological diagnosis via trans rectal prostate (TRUS) biopsies. In the West, owing to the availability of other treatment options e.g. pharmacological management for BPH, the frequency of transurethral resection (TUR) or open prostatectomy (enucleation) specimens has greatly reduced⁽³⁾ There are twenty three Urological surgeons serving in Sri Lanka which has a population of 20 million, therefore a significant proportion of Urological surgical work in Sri Lanka is handled by general surgeons too⁽²⁾ The objective of this study was to analysis histological findings of Trans Urethral Resection of Prostate (TURP).

II. MATERIALS AND METHODS.

Retrospective observational study was conducted in histopathological examinations performed on biopsy specimens of TURPs from January 2005 to January 2010 in Teaching Hospital Peradeniya. The study sample included the patients with lower urinary tract symptoms and prostatomegaly who came to the genitourinary clinic. There were 444 males who underwent TURP as the surgical treatment for BPH. Their histopathology records were collected from the Department of Pathology, Faculty of Medicine University of Peradeniya.

III. RESULTS

The study sample composed of 444 patients with mean age of 64 (SD=6.3) years. Out of the sample 14.9% (n=66) found to have prostate carcinoma, 83.8% (n=372) were Benign Prostatic Hyperplasia, 61.5% (n=273) exhibits intra prostatic inflammation, 1.6% (n=7) were Prostatic Intraepithelial Neoplasia (PIN) and 10.4% (n=46) had squamous metaplasia.



In the cancer group with a mean age of 66.3(SD=8.9) years, 16.7% coexisted with chronic prostatitis, 4.5% and 3.1% coexisted with PIN and squamous metaplasia respectively. Of the prostate cancer the Gleason grading was favorable (2-6) in 66.7% cases, 19.7% had intermediate Gleason grade (7) and 13.7% had unfavorable Gleason grade (8-9).

IV.DISCUSSION

In a study done by Anna Pacelli and David G. Bostwick between 1989 and 1990 using 698 TURP specimens, they found out that 570 (81.7%) contained BPH and 128 (18.3%) contained adenocarcinoma and BPH high-grade PIN was identified in 29 cases (4.2%), including 16 (2.8%) of those with BPH and 13 (10.2%) of those with cancer and BPH.[1]

Also another study which was done by Paul B. Gaudin et al between 1984 and 1987 using TURP specimens that did not contain adenocarcinoma of the prostate, they found out that the incidence of high-grade PIN was 2.3%.[2]

Kien T. Mai et al conducted a study using 533 and 449 TURP specimens in the time periods of 1989–1990 and 1997–1999 respectively. In their study out of 533 specimens 464 showed BPH, and in those specimens 62 showed atypical adenomatous hyperplasia while 6 showed prostatic intraepithelial neoplasia. 69 specimens showed BPH with prostatic adenocarcinoma of them 22 showed atypical adenomatous hyperplasia while 9 showed prostatic intraepithelial neoplasia. Out of 464 specimens 413 showed BPH 36 Showed BPH with prostatic adenocarcinoma. Out of the specimens of BPH [3]

In a study conducted by Zeenath Begum et al using 50 TURP specimens, they found out that 48(96%) were BPH with co-existing chronic prostatitis 12(24%) granulomatous prostatitis 1(2%) and acute prostatitis 2(8%). Papillary hyperplasia was predominant finding 17(34%). Less frequent finding was basal cell hyperplasia, 6(12%) atypical adenomatous hyperplasia 4(8%) and cribriform hyperplasia 1 (2%). Proliferative inflammatory atrophy constituted 3 cases(6%). Scattered necrotic glands were present in 20(40%) cases, periglandular lymphoid aggregation was a frequent finding in these necrotic glands. they reported two cases of adenocarcinoma prostate with modified Gleason score of one (5+4=9) and another score of (5+3=8).[4] (Begum et al., 2015)

Josephine conducted a study using 44 needle biopsies and 62 TURP specimens. She found out that Among the 106 biopsies received, 79 (74.52%) cases were of Benign prostatic hyperplasia, two cases (1.89%) were Prostatic intraepithelial neoplasia and 25 cases (23.58%) were Carcinoma of Prostate. Prostatitis was the most common associated lesion in cases of benign prostatic hyperplasia presenting in 25.31% patients. Among the Carcinoma patients, 20 cases (80%) were of Adenocarcinoma of prostate and 5 cases (20%) were Small cell carcinoma of prostate[5] (Josephine, 2014)

Mortality after TURP has decreased substantially during the past 30 years and is <0.25% in contemporary TURP series.⁽¹⁵⁾ Horninger *et al.* reported no postoperative deaths in a consecutive series of 1211 patients undergoing TURP between 1988 and 1991.⁽¹⁰⁾

TURP may have adverse effects on morbidity and mortality in patients with prostate cancer. The most frequent early complications after TURP (within the first 4–6 weeks) are prolonged urinary retention, postoperative bleeding with clot retention and urinary tract infection. However, the predominant cause for prolonged urinary retention after TURP is primary detrusor failure, which cannot be attributed to an insufficient TURP.⁽⁸⁾

One of the other study evaluated whether failure after TURP can be predicted in patients with acute urinary retention and found that those with prolonged retention after TURP were older (mean 83.5 years, SD 8), had larger preoperative retention volumes (1780 vs 1080 mL) and a significantly lower maximum detrusor pressure (24.4 vs 73.5 cmH₂O) at the preoperative urodynamic evaluation.⁽⁸⁾ These data indicate that proper patient selection substantially reduces morbidity after TURP by avoiding surgery in patients that will not benefit from the procedure.⁽⁸⁾

The major intraoperative complication of TURP is bleeding requiring a blood transfusion, and future technical developments should be directed at improving intraoperative haemostasis. Finally, the current morbidity of TURP is lower than previously reported and is expected to decrease further by (i) advances in technology, (ii) improved surgical technique and (iii) better patient selection.⁽⁹⁾

Several increases in dietary substances such as tomatoes, nutrients such as selenium and vitamin E are shown to lower the rates of CaP.⁽⁶⁾ Phyto-oestrogens are shown to be protective for CaP, as seen in Japanese men with a high intake of soy products.⁽⁷⁾ Phyto-oestrogens, isoflavonoids and lignans, are also found in legumes, especially lentils and beans, which are often eaten along with rice, which is the staple diet in Sri Lanka. The typical Sri Lankan diet consists of a high intake of carbohydrates, comparatively low amounts of fat, vegetables and fruits, which also is a feature seen throughout South Asia. All the above features in the South Asian diet may have a protective effect for CaP.^(5,6) Despite an increasing age (55% of patients are older than 70), the associated morbidity of TURP maintained at a low level (<1%) with a mortality rate of 0–0.25%. The major late complications are urethral strictures (2.2–9.8%) and bladder neck contractures (0.3–9.2%). The retreatment rate range is 3–14.5% after five years.

V. CONCLUSION

Chronic prostatitis more prominent than the acute prostatitis. But chronic prostatitis is less with dysplasia and compare to total population dysplasia present is lower than the hyperplasia in our study.

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