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**Original Research Article**

# Study of histopathological spectrum in various prostatic lesions in transurethral resection of prostate specimen

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## ABSTRACT

**Background:** The prostate is an organ located retroperitoneally that surrounds the neck of the bladder and urethra. The majority of instances of prostatic disease are caused by benign prostatic hyperplasia (BPH), followed by prostatic adenocarcinoma. Transurethral resection of prostate (TURP) is required to detect prostatic abnormalities. Purpose of this study was to examine histomorphological spectrum of prostatic lesions in TURP specimen.
**Methods:** Total 150 TURP specimens were studied which were received during September,2022 to July 2023 at Universal pathology laboratory, a private laboratory. Sections of typical lesional tissue and gross findings were observed in all received TURP specimen. Haematoxylin and eosin (H&E) stained slides were examined. Following histological assessment, tumors were classified according to WHO recommendation, and histological grading was done using modified Gleason system.
**Results:** A total 150 TURP specimens were studied were included 145(96.66%) non-neoplastic and 5 (3.33%) to be cancerous (Table no.2). Among the benign lesions, Benign Prostatic Hyperplasia (BPH) 116 cases, BPH+ Chronic prostatitis 21 cases, BPH+ basal cell hyperplasia 4 cases, Granulomatous prostatitis 1 case, Atypical adenomatous hyperplasia 3 cases and 4 cases of malignant lesions were observed.
Conclusions: TURP plays a significant role in the diagnosis of prostatic lesions. The benign lesions are more common than malignant ones. The modified Gleason score is applied for prostatic cancer, which is simple and accurate to grade these malignancies.

**Keywords:** Prostate, Benign prostatic hyperplasia, Prostate cancer, Gleason score

## INTRODUCTION

The prostate is an organ located retroperitoneally that surrounds the neck of the bladder and urethra and does not have a separate capsule and symptoms related to urination, such as hesitation, retention, urgency, and dribbling, may result from its enlargement.[1] In advance age, the occurrence of prostatic conditions such as cancer and benign prostatic hyperplasia (BHP) rises.[2] The majority of instances of prostatic disease are caused by benign prostatic hyperplasia (BPH), followed by prostatic adenocarcinoma. With prostate carcinoma being the second most prevalent cancer diagnosed in males, a thorough examination of an adult man with prostatic hyperplasia becomes critical.[3] Prostate disorders have garnered significant attention in the past twenty years, partly because of the perception of a high incidence of prostate cancer across many geographic and ethnic groups worldwide.[4] Transurethral resection of prostate (TURP) is most frequently performed surgical procedure in the clinical practice and it aids in early identification of premalignant lesions and incidental prostate cancer which can improve the treatment outcome of patients.[5] Histopathological evaluation plays a major role in the diagnosis and management of prostate lesions as both benign and malignant lesions present with similar clinical presentation.[6] Up to 27% of prostate malignancies were unintentionally discovered at the time of TURP before the

PSA era.[7] Purpose of this study was to examine histomorphological spectrum of prostatic lesions in TURP specimen.

## METHODS

The current retrospective study was carried out in Universal pathology laboratory, a private laboratory, from September 2022 to July 2023. TURP specimen obtained during this period were examined. All prostate specimen labelled as TURP were included in my study and all prostatic core biopsy specimen were excluded from study.

Sections of typical lesional tissue and gross findings were observed in all received TURP specimen. Haematoxylin and eosin (H&E) stained slides were examined. Histopathological assessment done in all slides and classified with reference to age.

Following histological assessment lesions were classified according to standard method and tumors were classified according to WHO recommendation, and histological grading was done using modified Gleason system. Data were analysed with use of Microsoft office excel program.

## RESULTS

Over the course of study, 150 TURP specimens were seen at Universal pathology laboratory. The age range covered 41 to 90 years of age. The age distribution of lesions that are non-neoplastic and cancerous is shown in Table 1.

**Table 1: Distribution of prostatic lesions by age.**

| Age range (in years) | Benign condition, n (%) | Malignant condition, n (%) |
|---|---|---|
| **41-50** | 5 (3.33) | 0 |
| **51-60** | 32 (21.33) | 0 |
| **61-70** | 58 (38.66) | 4 (2.66) |
| **71-80** | 39 (26) | 1 (0.66) |
| **81-90** | 11 (7.33) | 0 |

**Table 2: Distribution of benign and malignant prostatic lesion.**

| Prostatic lesion | |
|---|---|
| **Carcinoma prostate** | 3.33% |
| **Benign condition** | 96.66% |

**Table 3: Distribution of the prostatic specimens as per histological lesions.**

| Histopathological pattern | Number of cases | % of cases |
|---|---|---|
| **BPH** | 116 | 77.33 |
| **BPH+ Chronic prostatitis** | 21 | 14 |
| **BPH+ basal cell hyperplasia** | 4 | 2.66 |
| **Granulomatous prostatitis** | 1 | 0.66 |
| **Atypical adenomatous hyperplasia** | 3 | 2 |
| **Adenocarcinoma** | 5 | 3.33 |

All prostatic specimens were broadly classified in to 145 (96.66%) non-neoplastic and 5 (3.33%) to be cancerous (Table 2).

Following that, each group was further divided into several categories using established classification schemes Out of 150 TURP specimens benign prostatic hyperplasia (BPH) 116 (77.33%) cases (Figure 1).

BPH+ chronic prostatitis 21 (14%) cases (Figure 2), BPH+basal cell hyperplasia 4 (2.66%) cases (Figure 3), granulomatous prostatitis 1 (0.66%) cases (Figure 4), Atypical adenomatous hyperplasia 3 (2%) cases (Figure 5), adenocarcinoma of prostate 5 (3.33%) cases (Figure 6).

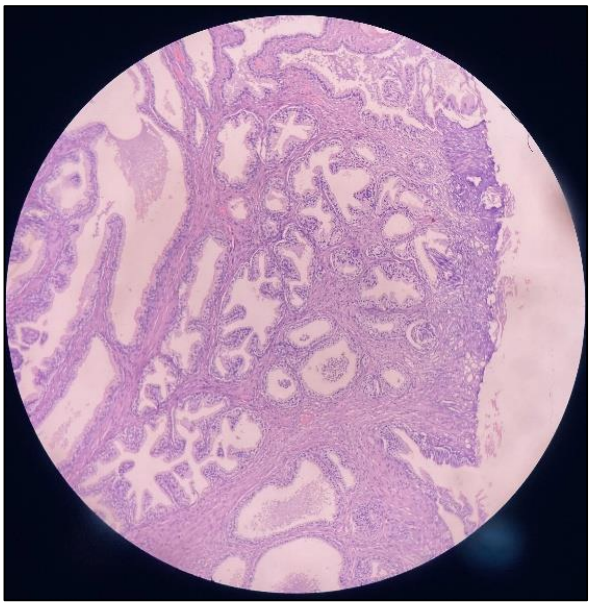

**Figure 1: Benign prostatic hyperplasia.**

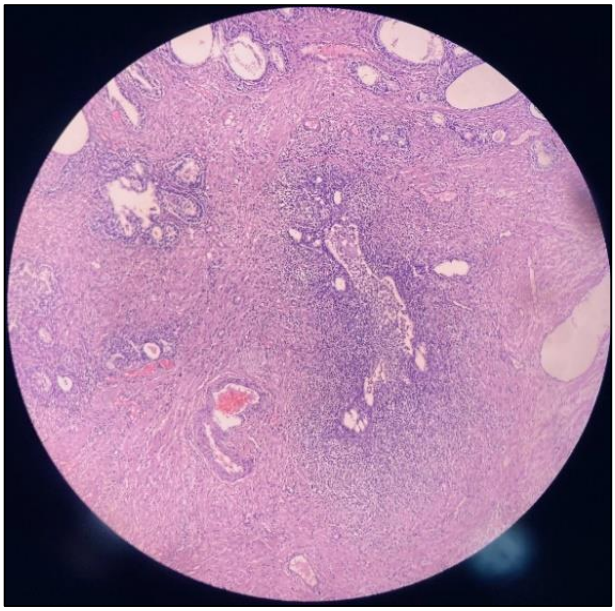

**Figure 2: BPH with Chronic prostatitis.**

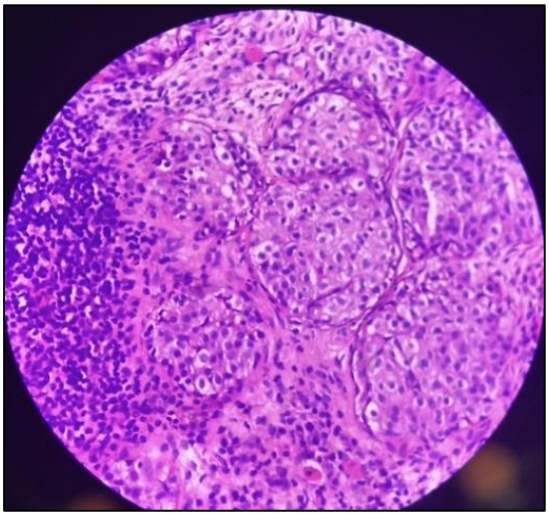

**Figure 3: BPH with Basal cell hyperplasia.**

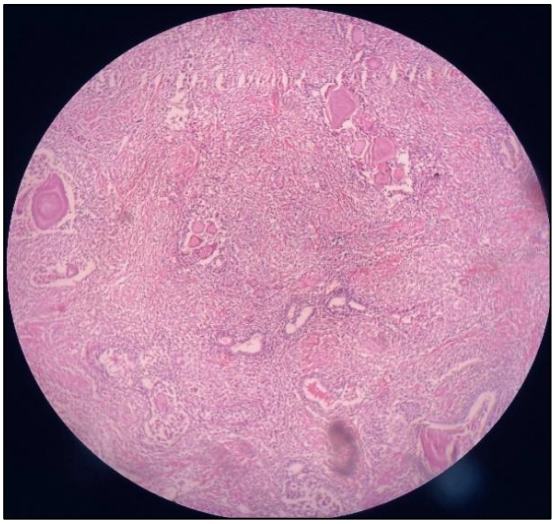

**Figure 4: Granulomatous prostatitis.**

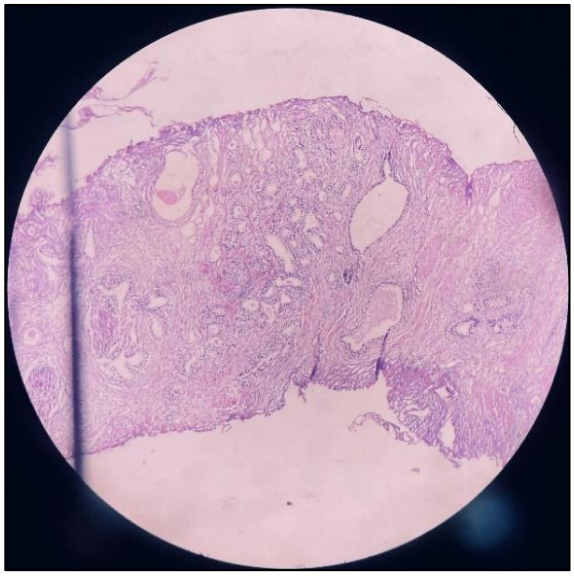

**Figure 5: Atypical adenomatous hyperplasia.**

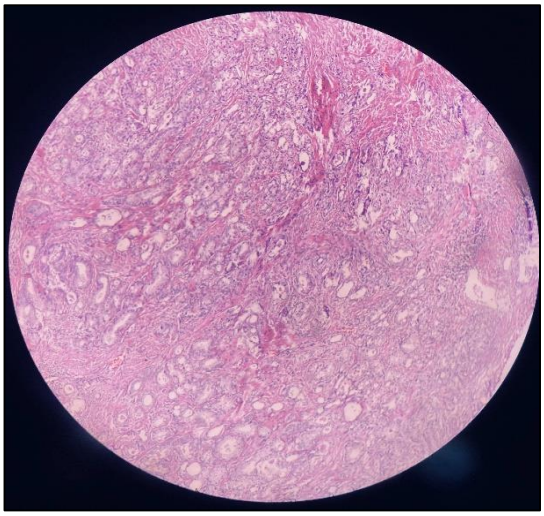

**Figure 6: Adenocarcinoma of prostate.**

## DISCUSSION

Prostatic pathology encompasses a range of conditions affecting the prostate gland, with prostate cancer being one of the most significant due to its prevalence & impact on men's health.[8] The most popular procedure used to treat BPH is the TUR-P surgery, and although it happens infrequently, prostate cancer can be unintentionally discovered. The periphery zone, transitional zone, and core zone are the three main zones of the prostate. The primary location of cancer is the peripheral zone.[9] The study is aimed to understand the histopathological spectrum of different prostatic lesions and their frequency in different age groups.

The examination revealed that 38.66% of the cases belonged to the age range of 61-70 years, followed by 26% in the 71-80 years, 21.33% in the 51-60 years, 7.33% in the >80 years, and 3.33% in the 40-50 years area. This is consistent with observational studies.[1,2,6,10] There was no incidence of prostate adenocarcinoma before 50 years old. The results are consistent with previous research.[11] In this study, 150 TURP specimens were examined. Similar to previous Indian studies, benign lesions were more common than malignancies.[12]

Limitation of this study is the potential for underestimation of incidental prostate cancer due to limited sampling or misrepresentation the tumors overall grade and the fact that only portion of TURP specimen is typically examined especially for larger specimen.

## CONCLUSION

Prostatic lesions, such as BPH and tumors, are a major cause of morbidity and death in adult men. Prostatic disorders become more common as people become older. The most prevalent benign prostatic lesion was BPH, while the most common histological subtype of prostatic malignancy was adenocarcinoma. Prostate lesions are

most common in men aged 61-70 years and 71-80 years with benign conditions outnumbering malignant ones. Increased awareness of prostatic malignancy with age, as well as prompt mass screening for prostatic lesions, is indicated for early identification and mortality reduction. Histopathological diagnosis and grading are crucial in the treatment of prostate cancer.

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## REFERENCES

1. Sudha V. B, Sawant S, Reddy S, Gaonpande V, Haldankar P. Histopathological Pattern in turp specimens analysed retrospectively in a tertiary care hospital. J Neonatal Surg. 2024;14(8):253-7.
2. Lim KB. Epidemiology of clinical benign prostatic hyperplasia. Asian J Urol. 2017;4(3):148-51.
3. Jyotirmaya N, Nagendra K. R, Sridhar P, Gopabandhu P, Madhab M. Histopathological Spectrum of Various Prostatic Lesions in TURP Specimens: A Retrospective Study. Int J of Pharma and Clin Res. 2023:15(12): 212-6.
4. Von Eschenback AC. The change of prostate cancer CA-Cancer J Clin 1999;49:262.
5. Sharma A, Sharma M, Gandhi S, Khajuria A, Goswami KC. Histomorphological spectrum of prostatic lesions: a retrospective analysis of transurethral resection of prostate specimens, International Jo Res Med Sci. 2017;5(6):2373-8.
6. Budihal N, Anushree MN, Rashmi MV. Histopathological spectrum of various prostatic lesions in TURP specimens: A retrospective study. J of Cardiovas Dis Res. 2022:13(8):265-71.
7. Tombal L, Visccher JP, Cosyn F, Lorge R, Opsomer K, Wese F et al. Assessing the risk of unsuspected prostate cancer in patient with Benign Prostatic hypertrophy: a 13 years' retrospective study of incidence and natural history of T1a-T1b Prostate cancers, "BJU International, 1999;84(9):1015-20.
8. Patel K, Jani H, Goswami J. Correlation of serum PSA level with histopathological findings of prostate specimens in tertiary care hospital. International J Clin and Diagnos Pathol. 2024;7(3):159-63.
9. Epstein JI, Lotan TL. The lower urinary tract and male genital system. In: Kumar V,Abbas AK, Aster JC, editors. Robbins and Cotran Pathologic Basis of Disease. 9th ed.New Delhi: Elsevier. 2014: 980-990.
10. Bhat S, Chaudhri S, Bhat P. Histopathological study of prostatic diseases in Garhwal region. Int J Sci Stud. 2015;3(8):136-48.
11. Albasri A, EL-Siddig A, Hussainy A, Mahrous M , Alhosaini AA, Alhujaily A. Histopathological characterisation of prostate diseases in Madinath, Saudi Arabia. Asian Pac J Cancer Prev. 2014;15:4175-9.
12. Begum z, Attar A H, Mandakini B. T, Ahmed M.M. Study of Various Histopathological Patterns in Turp Specimens and Incidental Detection of Carcinoma Prostate. Indian J Pathol and Oncol. 2015;2(4);303-8.

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