

# Histopathological Study on Pattern of Prostatic Diseases in Patients Admitted at a Medical College.

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## Abstract

**Background:** Benign prostatic hyperplasia is common in elderly males, while accidental finding of prostatic carcinoma in TURP specimen is also not uncommon in this age group. **Subjects and Methods:** The present hospital based cross-sectional study was done to find the various histopathological patterns of the prostatic lesions seen in transurethral resection of prostate (TURP) specimens at a tertiary care center. Histopathological examination was done to observe the type and morphology of these lesions. **Results:** 90% of the patients suffered from benign prostatic hyperplasia while prevalence of carcinoma of prostate in TURP specimens was 5%. **Conclusion:** Routine histopathological examination of TURP specimen is helpful in diagnosing the undiagnosed cancer.

**Keywords:** Histopathology, Pattern, Prostate, TURP.

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## Introduction

Prostatic disorders are an important cause of morbidity and mortality in elderly males.<sup>[1]</sup> The most common urological disorder encountered after fourth decade is benign prostatic hyperplasia (BPH). While it affects only 8% of males during their fourth decade, its prevalence reaches 75% by the eighth decade of life.<sup>[2]</sup>

The other lesion seen in elderly males is prostatic carcinoma. It is the most commonly diagnosed malignancy in this group and also the second leading cause of cancer related deaths in men older than 50 years.<sup>[3]</sup> In India, 5% of all male cancers is prostatic cancer. While autopsy studies have reported the prevalence of the disease to be 30% in men above 50 years, foci of adenocarcinoma has been present in virtually all men after 90 years.<sup>[4]</sup>

The prevalence and pattern of prostatic illness is helpful in proper management of these cases. Hence, this study was conducted.

### Aims & objectives

The present study was done to find the various histopathological patterns of the prostatic lesions seen in transurethral resection of prostate (TURP) specimens.

### Subjects and Methods

The present study was hospital based cross-sectional in nature conducted at a tertiary care center. The patients

admitted at the tertiary care center, found to be suffering from prostatic enlargement and undergoing TURP or tru-cut needle biopsy were included in the present study. Those with diagnosed prostatic malignancy and those refusing surgery were excluded. Clinical details of patients including history and clinical examination were noted in the pre-tested proforma. A total of 60 patients were included in the present study.

The specimens obtained after TURP of these patients were received in the department of Pathology and were fixed in 10% formalin. The volume of specimen was assessed. Initial 12 cc of specimen was processed in toto. If the volume was more than 12 cc, additional material was processed in the blocks of 5 cc. Paraffin-fixed tissue sections were cut in thicknesses of 5  $\mu$  and stained routinely with hematoxylin and eosin.

Different types of BHP were described as per Franks classification.<sup>[5]</sup> The prostatic tumors were classified according to WHO classification and the adenocarcinomas were graded histologically according to the Gleason's system.<sup>[6-7]</sup> Data were entered in Microsoft excel 2007 and analyzed using Statistical Package for Social Science (SPSS, version 16) for Windows.

### Results

A total of 60 patients of prostatism were studied. [Table 1] shows the findings of histological examination of the specimen. 90% of the patients suffered from benign prostatic hyperplasia (PIN). One case each of atypical

adenomatous hyperplasia was seen (1.7%). 3.3% cases of prostatic intraepithelial neoplasia were seen. The prevalence of carcinoma of prostate in TURP specimens was 5% and all the cases were adenocarcinoma.

Among the cases with benign prostatic hyperplasia, 22 cases (36.7%) had BPH with prostatitis and 31 cases (51.7%) were without prostatitis. Among the cases with prostatic intraepithelial neoplasia, one case (1.7%) had low-grade prostatic intraepithelial neoplasia while equal number (1.7%) had high-grade prostatic intraepithelial neoplasia.

**Table 1: Histopathological profile of TURP specimens.**

Prostatic pathology	Subtypes	Frequency	%	95% CI
Benign Prostatic Hyperplasia (n=54)	Without prostatitis	31	51.7	39.3-63.8%
	With prostatitis	22	36.7	25.6-49.3%
Atypical Adenomatous Hyperplasia	-	1	1.7	0.3-8.9%
Prostatic Intraepithelial Neoplasia (n=2)	LGPIN	1	1.7	0.3-8.9%
	HGPIN	1	1.7	0.3-8.9%
Carcinoma of prostate	-	3	5	1.7-13.7

[Table 2] shows the findings of histopathological examination among cases with prostatitis (n=54). Majority of the cases (81.8%) had chronic prostatitis while 13.6% had acute prostatitis. There was one case (4.5%) of granulomatous prostatitis.

**Table 2: Findings in cases of prostatitis.**

Histopathology	Frequency (n=22)	%	95% CI
Chronic prostatitis	18	81.8	61.5-92.7%
Acute prostatitis	3	13.6	4.7-33.3%
Granulomatous prostatitis	1	4.5	0.8-21.8%

[Table 3] shows the histopathological changes in cases with benign prostatic hyperplasia. 72.2% cases had fibromyoadenoma, 22.2% had fibroadenoma, 3.7% had fibromuscular changes and stromal change was seen in one case (1.9%).

**Table 3: Findings in cases of Benign Prostatic Hyperplasia.**

Histopathology	Frequency (n=54)	%	95% CI
Fibromyoadenoma	39	72.2	59.1-82.4%
Fibroadenoma	12	22.2	13.2-34.9%
Fibromuscular	2	3.7	1-12.5%
Stromal	1	1.9	0.3-9.8%

Two cases of carcinoma prostate had Gleason score between 7-9 while one case each had scores of 1-3 and 4-6.

## Discussion

The present study included 60 patients of prostatism. Histopathological examination revealed that the prevalence

of benign prostatic hyperplasia was 90%. Among the cases with benign prostatic hyperplasia, 36.7% cases had BPH with prostatitis and 51.7% were without prostatitis. 72.2% cases had fibromyoadenoma, 22.2% had fibroadenoma, 3.7% had fibromuscular changes and stromal change was seen in one case (1.9%). Begum et al found that 96% cases were benign. Glandulostromal pattern of hyperplasia was the most frequent pattern and stromal pattern of hyperplasia was least common.<sup>[8]</sup> Sharma et al observed that 91.02% cases were having nodular hyperplasia (BPH).<sup>[9]</sup> Puttaswamy et al observed that benign lesions constituted 80.6%.<sup>[10]</sup> Bal et al found that 87% cases had nodular hyperplasia. Fibroglandular was the most common type of BPH seen in their study.<sup>[11]</sup> Angurana reported that BHP alone was seen in 50.5% cases. Fibroglandular hyperplasia constituted 78.5%.<sup>[11]</sup> Bhat et al found that BPH was the commonest lesion (92.6%) and was on many occasions associated with prostatitis. Fibromyoadenomatous pattern was seen to be the most common pattern of BHP.<sup>[12]</sup> Bhatta et al reported that nodular hyperplasia was seen in 89.58% cases.<sup>[13]</sup>

Majority of the cases with prostatitis had chronic prostatitis (81.8%) while 13.6% had acute prostatitis. There was one case (4.5%) of granulomatous prostatitis. Begum et al found that BPH was associated with acute prostatitis in 4% and chronic prostatitis in 24%.<sup>[8]</sup>

One case each of atypical adenomatous hyperplasia was seen (1.7%). 3.3% cases of prostatic intraepithelial neoplasia were seen. Among the cases with prostatic intraepithelial neoplasia, one case (1.7%) had low-grade prostatic intraepithelial neoplasia while equal number (1.7%) had high-grade prostatic intraepithelial neoplasia. Sharma et al found that 5.71% cases were of PIN.<sup>[9]</sup>

The prevalence of carcinoma of prostate in TURP specimens was 5% and all the cases were adenocarcinoma. Two cases of carcinoma prostate had Gleason score between 7-9 while one case each had scores of 1-3 and 4-6. Begum et al found that 4% cases suffered from prostatic carcinoma while Sharma et al found that 3.26% cases were malignant.<sup>[8,9]</sup> Puttaswamy et al observed that premalignant and malignant lesions constituted 19.4%. They reported that Gleason's score of 7 was the most common, seen in 36.3% of cases.<sup>[10]</sup> Bal et al found that 10% specimen were positive for prostatic cancer. PIN had statistically significant association with cancer.<sup>[11]</sup> Angurana reported that cancer was seen in 7% cases. 33.7% were graded in Gleason score 4-6 while 64.3% in Gleason score 7-10.<sup>[12]</sup> Bhat et al found that prostatic adenocarcinoma was present in about 7.4% of all cases and majority of these cases were of high grade adenocarcinoma.<sup>[13]</sup> Bhatta et al reported that malignant lesions were seen in 8.34% cases of all prostatic lesions. All the cases of prostate carcinoma were adenocarcinoma. The most frequent Gleason score was 9.<sup>[14]</sup>

Various reports have presented different findings regarding prevalence of prostatic lesions. However, BPH is the most common abnormality and prevalence of prostatic cancer ranges from 3% - 17%.

## Conclusion

BPH is present in 90% cases. About one-third of cases of BPH had prostatitis also. Prostatic carcinoma was seen in 5%. All the cancers were adenocarcinoma. Routine histopathological examination of resected tissue will be helpful in screening for prostatic cancer.

## References

1. Epstein JI, Allsbrook WC Jr, Amin MB, Egevad LL; ISUP Grading Committee. The 2005 International Society of Urological Pathology (ISUP) Consensus Conference on Gleason Grading of Prostatic Carcinoma. *Am J Surg Pathol* 2005;29:1228-42.
2. Rosai J. Male reproductive system. In: Rosai J, editor. *Rosai and Ackerman's Surgical Pathology*. 10th ed. New Delhi: Elsevier, 2011:1287-1333.
3. Ro JY, Amin MB, Saihin AA and Ayala AG (2001). Tumors and timorous conditions of the male genital and urinary tract, *Diagnostic Histopathology of Tumors* 1 773-4.
4. Garg M, Kaur G, Malhotra V, Garg R. Histopathological spectrum of 364 prostatic specimens including immunohistochemistry with special reference to grey zone lesions. *Prostate Int* 2013; vol 1 (4) : 146-151.
5. Franks LM. Benign nodular hyperplasia of the prostate; a review. *Ann R Coll Surg Engl* 1953;14:92-106.
6. Mostofi FK, Sesterhenn I, Sobin LH. Histological typing of prostatic tumours. In: *International Histological Classification of Tumours*. Geneva: World Health Organization; 1980: 22.
7. Epstein JI, Allsbrook WC Jr, Amin MB, Egevad LL. ISUP Grading Committee. The 2005 International Society of Urological Pathology (ISUP) Consensus Conference on Gleason Grading of Prostatic Carcinoma. *Am J Surg Pathol* 2005;29:1228-42.
8. Begum Z, Attar AK, Tengli MB, Ahmed MM. Study of Various Histopathological Patterns in Turp Specimens and Incidental Detection of Carcinoma Prostate. *Indian Journal of Pathology and Oncology*, October – December 2015;2(4):303-8.
9. Sharma A, Sharma M, Gandhi S, Khajuria A, Goswami KC. Histomorphological spectrum of prostatic lesions: a retrospective analysis of transurethral resection of prostate specimens. *Int J Res Med Sci* 2017;5:2373-8.
10. Puttaswamy K, Parthiban R, Shariff S. Histopathological Study of Prostatic Biopsies in Men with Prostatism. *Journal of Medical Sciences and Health* 2016; 2 (1): 11-7.
11. Bal MS, Kanwal S, Goyal AK, Singla N. Prostatic lesions in surgical biopsy specimens. *JK Practitioner* 2011;16(1-2):33-4.
12. Angurana N. Pattern of prostate diseases- a histopathological study in Jammu. *International Journal of Basic and Applied Medical Sciences* 2014; 4(3): 163-7.
13. Bhat S, Chaudhri S, Bhat P, Hatwal D. Histopathological Study of Prostatic Diseases in Garhwal Region. *Int J Sci Stud* 2015;3(8):136-140.
14. Bhatta S, Hirachan S. Prostatic lesions: histopathological study in a tertiary care hospital. *JMMHS*.2018;4(1):12-19.

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