

Histopathological Spectrum of Prostatic Lesions Evaluated in a Tertiary Hospital

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Abstract

Objective: To determine the age distribution of various prostatic lesions, to evaluate histopathological pattern of prostatic lesions and to analyze adenocarcinoma of prostate according to Gleason system.

Methods: This was a retrospective study comprising of 178 cases, carried out at the department of Pathology, Ad-din Women's Medical College Hospital during the period of January 2017 to December 2019.

Results: Out of 178 cases, 159(89.32%) were diagnosed as benign lesion, nodular hyperplasia being the commonest one. Prostatic adenocarcinoma was found in 16(9%) cases, majority of which belonged to Gleasons score 7.

Conclusion: Histopathological examination of prostatic biopsy specimen is essential for diagnosis of benign and malignant lesions, to rule out the incidental carcinoma and HGPIN.

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Keywords: Nodular hyperplasia of prostate, prostatic carcinoma, HGPIN

Introduction

The prostate that weights up to 20 gm in normal adult depends for its subsequent growth and differentiation on androgenic hormones.^{1,2} Lesions of prostate are extremely common over the age of 50 years and important cause of morbidity and mortality in male in advance age. Pathological processes affecting this organ include inflammation, benign nodular enlargement and tumor.¹ The clinical incidence of the diseases is only 8% during the 4th decade but it reaches 50% in the 5th decade and 75% in the 8th decade.² Benign prostatic hyperplasia(BPH) and carcinoma are increasingly frequent with advancing age.³ BPH results from hyperplasia of both stromal and epithelial cells, gradually being enlarged,

compress and narrow the urethral canal and often leads to urinary obstruction. Inflammation of prostate is known as prostatitis and divided into acute, chronic and granulomatous prostatitis. Prostatic carcinoma is one of the most common malignancies affecting men, also it is the sixth leading cause of cancer death in male.⁴ Among the prostatic malignancies 95% is adenocarcinoma. premalignant lesion of prostatic adenocarcinoma is known as high grade intraepithelial neoplasia (HGPIN). The objective of this study was to determine the age distribution of various prostatic lesions, to evaluate histopathological pattern of prostatic lesions and to analyze adenocarcinoma of prostate according to Gleason system.

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Methods

The study was conducted in the Department of Pathology, Ad-din Women's Medical College Hospital – a tertiary level hospital of Dhaka, Bangladesh. The study period was from January 2017 to December 2019. The data were collected retrospectively from histopathology register. A total of 178 TURP (Transurethral resection of prostate) were evaluated. The received specimen were fixed in 10% formalin and routine paraffin processing followed by hematoxylin and eosin staining was done and the slides were examined under light microscope. The specimens were analyzed as type of specimen, age of the patient, histopathological pattern and final diagnosis. The tumour were classified according to 2016 WHO classification and histological grading was done using modified Gleason's system. Data were analyzed using tables, figures and percentage.

Results

A total of 178 cases were included in our study, all of which (100%) were TURP specimen. In the present study, most of the prostatic lesions were benign(89.32%) followed by malignant (9.6%) and HPIN (1.12%) and ratio of benign and malignant lesions is 1:9, approximately.

In the present study, benign lesions were mostly found (45%) in the age group of 61-70 years and 34% in the age group of 51-60 years, whereas malignant lesions were common 41% in the age group of 71-80 years and 29% in the age group of 61-70 years of

age. In our study, benign lesions(159) were nodular hyperplasia of prostate 130(73.03%) and nodular hyperplasia of prostate with co-existing prostatitis 29(16.3%). Out of 29 cases of prostatitis, 24 cases were chronic non specific prostatitis, 2 cases were granulomatous prostatitis and 3 cases were acute prostatitis. In our study, 2(1.12%) cases were diagnosed as HGPIN and 17(9.6%) cases were diagnosed as malignant. Most of the malignant cases 16(9%) were prostatic adenocarcinoma and 1(0.56%) was metastatic adenocarcinoma. In this study, 41% cases of malignant belong to 71-80 years age group and 29% cases belong to 61-70 years age group. According to Gleason score, most commonly (81.25%) found grade was grade 7, in this study.

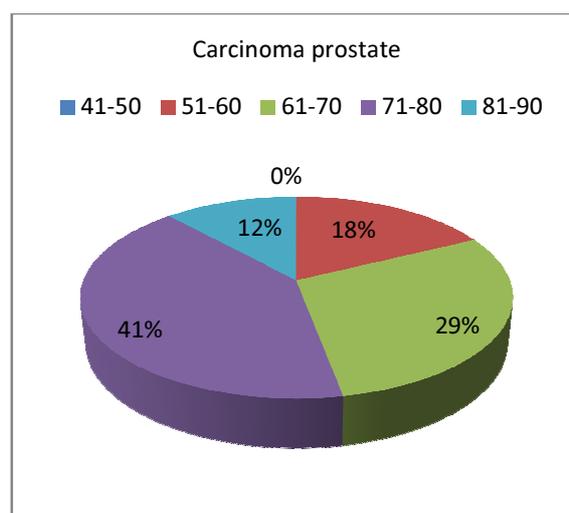


Figure 1. Prostatic carcinoma according to age

Table I: Distribution of the cases according to age

Age (Years)	Benign	HGPIN	Malignant	Total (%)
41-50	14	0	0	14(7.86)
51-60	54	1	3	58 (32.58)
61-70	72	1	5	78 (43.82)
71-80	12	0	7	19(10.67)
81-90	7	0	2	9 (5.05)
Total (%)	159 (89.32)	2(1.12)	17(9.6)	178(100)

Table II: Histopathological diagnosis of prostatic lesions

Histopathological diagnosis	No. of cases	%
Nodular hyperplasia of prostate	130	73.03
Nodular hyperplasia of prostate with prostatitis	29	16.3
HGPIN	2	1.12
Adenocarcinoma of prostate	16	9
Metastatic carcinoma	1	0.56
Total	178	100

Table III: Gleason score in malignant prostatic lesions

Gleason score	Number of cases	%
6	1	6.25
7	13	81.25
8	1	6.25
9	1	6.25
Total	16	100

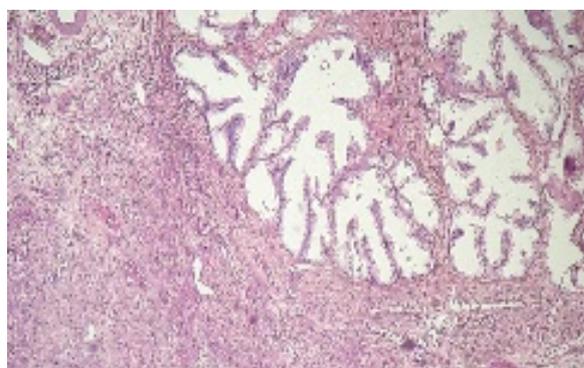


Figure 1. Nodular hyperplasia of prostate (H&E stain, 20X) prostatitis (H&E stain, 10X)

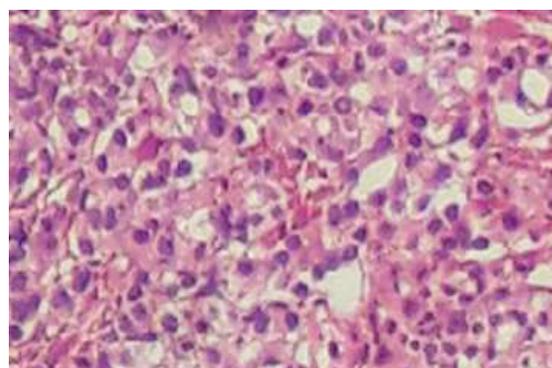


Figure 2. Adenocarcinoma of Prostate prostate (H&E stain, 40x)

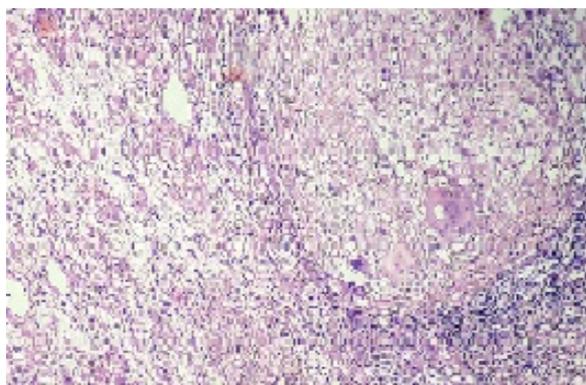


Figure 3. Granulomatous prostatitis (H&E stain, 10X)

Discussion

We enrolled a total of 178 cases in our study, all of which (100%) were TURP specimen. Bhatta S et al⁵ have found 88.54% specimen of TURP in their study. Screening procedure like trans-rectal ultrasound, prostate specific antigen (PSA) are still used, but biopsy remains the gold standard for final diagnosis.⁶ In the present study, most of the prostatic lesions were benign (89.32%) followed by malignant (9.6%) and HPIN (1.12%). These findings are similar to the studies done by Bhatta S et al,⁵ Bal et al,⁷ Jehoram et al,⁸ and Bhat S et al.⁹ They found (89.58%), (87%), (93%) and (92.4%) cases of BPH in their study, respectively. In our study, ratio of benign and malignant lesions is 1:9, approximately.

In the present study, benign lesions were mostly found 45% in the age group of 61-70 years and 34% in the age group of 51-60 years, whereas malignant lesions were common 41% in the age group of 71-80 years and 29% in the age group of 61-70 years of age. These findings are in concordance with other studies.^{10,11,12}

In our study, benign lesions(159) were nodular hyperplasia of prostate 130(73.03%) and nodular hyperplasia of prostate with co-existing prostatitis 29(16.3%). Out of 29 cases

of prostatitis, 24 cases were chronic non specific prostatitis, 2 cases were granulomatous prostatitis and 3 cases were acute prostatitis. Bhatta S et al found 24(25%) cases of prostatitis associated with nodular hyperplasia of prostate, out of which 22 cases were chronic non specific prostatitis and two cases were acute prostatitis.⁵ Prostatic carcinoma is one of the most common malignancies affecting men. In our study, 2(1.12%) cases were diagnosed as HGPIN and 17(9.6%) cases were diagnosed as malignant. Most of the malignant cases 16(9%) were prostatic adenocarcinoma and 1(0.56%) was metastatic adenocarcinoma. Bhatta S et. al⁵ found 2.08% of HGPIN and 8.34% of prostatic carcinoma. Also Deshmukh BD et. al¹¹ and Bhat S et. al⁹ found similar observation. In this study, 41% cases of malignant belong to 71-80 years age group and 29% cases belong to 61-70 years age group. Bhat S et. al¹² found 75% cases of malignancy diagnosed after 60 years. All the cases of prostatic adenocarcinoma were graded according to Gleason score which determine the tumour aggressiveness.¹ In this study, most commonly 13(81.25%) found grade was grade 7. Albasri et al.¹³ found Gleasons score 5-7 as the commonest among 71 cases of prostatic adenocarcinoma. Bhat S et. al⁹ found 56.16% of adenocarcinoma with Gleason score 8-9.

Conclusion

Histopathological examination of prostatic lesions is essential for diagnosis and management. Prostatic lesions are common in the age group of 60-70 years. All the specimen received were TURP. Benign prostatic hyperplasia (BPH) was predominant type among all the lesions. Majority of the malignant lesions were incidental diagnosis and most of the malignant lesions were prostatic adenocarcinoma. Emphasis should be given to identify premalignant lesions.

References

1. Epstein JI. The lower urinary tract and male genital system. 8th rev ed. Kumar V, Abbas AK, Fausto N, Aster JC, editors. Robbins and Cotran. New Delhi: Elsevier Pathologic Basis of Disease, 2010. p993-1002.
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. A Josephin-2014, clinicopathological study of prostatic biopsy, ©2014;journal of Clinical and Diagnostic Research.2014 Sep; 8(9): FC04-FC06.
4. Chandanwale S, Jadhav PS, Anwekar SC, Kumar H, Buch AC, Chaudhari US, et al. Clinico-pathological study of benign and malignant lesions of prostate. IJPBS. 2013;3:162-178.
5. Bhatta S, Hirachan S. Prostatic lesions: Histopathological Study in a Tertiary Care Hospital. JMMIHS. 2018;4(1):12-19.
6. Garg M, Kaur G, Malhotra V, Garg R. Histopathological spectrum of 364 prostatic specimens including immunohistochemistry with special reference to grey zone lesions. Prostate Intl. 2013;1:146-151.
7. Bal MS, Kanwal S, Goyal AK, Singla N, Prostatic lesions in surgical biopsyspecimen. JK Pract 2011;16:33-4.
8. Jehoram TA, Sitara AS, Mohammed EB. Hyperplastic , premalignant and malignant lesions of the prostate gland. Hum Pathol. 2005;36:480-5.
9. 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.
10. Shakya G, Malla S, Shakya KN. Salient and co-morbid features in benign prostatic hyperplasia: A histopathological study of the prostate. Kathmandu Univ Med J. 2003;2:104-109.
11. Deshmukh BD, Ramteerthakar NA, Sulhyan KR. Histopathological study of lesions of prostate- A five year study. Int J Health Sci Res. 2014;4:1-9.
12. Yadav M, Desai H, Goswami H. Study of Various Histopathological Patterns in Prostate Biopsy. IJCRR. 2017;9(21):59-63.
13. Albasri A, EL-Sidding A, Hussainy A, Mahrous M, Alhosaini AA, Alhujaily A. Histopathologic characterization of prostatic diseases in Madinah, Saudi Arabia. Asian Pac J Cancer prev. 2014;15:4175-9.