Spectrum of Histological Lesions in the Prostatic Specimens – A Two Year Study

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Abstract: Prostate gland of male reproductive system is about the size of walnut and surrounds the urethra. With increasing life expectancy, increasing awareness and better health services, lesions of prostate has become a common specimen received for diagnostic of both benign and malignant lesions which may have a very similar presentation but their management and prognosis is quite different. Most important investigation is the biopsy of the prostate. A histopathological study of features of the lesion gives best diagnosis. Our objective of study is to evaluate the spectrum and correlation of prostatic lesions with presenting complaints of the patient. It was a combined cross-sectional study conducted in Pathology Departments of both Bhaskar Medical College and Satya Diagnostic Centre, Himayath Nagar during the period from November 2015 to October 2017. Specimens were taken through transurethral resection of prostate (TURP) and needle core biopsy (simple prostatectomy and radical prostatectomy). Data including name, age, department, symptoms and clinical diagnosis were noted. During the 2 year period, out of 105 specimens, incidence of benign lesions were 91.4% (96 cases) and malignant lesions were 8.6 % (9 cases) in the study. Benign lesions included Benign prostatic hyperplasia and malignant lesions included Prostatic adenocarcinoma. In benign lesions, maximum 41.7% (40 cases) were found in the age group of 61-70 years. The most common chief complaints in benign lesions were frequency 32.3% (31 cases), nocturia 20.9% (20 cases) and urgency 9.4 %(9 cases) followed by retention 7.3 % (7 cases), hesitancy 6.3%(6 cases) and poor stream 5.2%(5 cases). Among the malignant lesions, maximum 33.3% (3 cases) were seen in the age group 71-80 years with most common complaint of nocturia and hematuria in 22.2%(2 cases) followed by frequency, poor stream, intermittent stream, dribbling and retention constituting to 11.1% (1 case each). Benign and malignant prostatic lesions presents commonly in men more than 60 years of age. Frequency and nocturia were the common presenting symptoms in benign, whereas nocturia and hematuria were significantly associated with malignant lesions.

Keywords: Frequency, nocturia, hematuria, BPH (Benign Prostatic Hypertrophy), Adenocarcinoma.

INTRODUCTION

Prostate is one of the most commonly affected organ in males with increasing age accounting for significant morbidity and mortality. Most frequently encountered diseases affecting prostate are Prostatitis, Benign prostatic hyperplasia and Prostatic carcinoma. Enlargement of prostate in a aged male is the main cause of dysuria and retention of urine. It is an extremely common problem in elderly men over the age of 50 years [1]. Inflammation of the prostate gland is called Prostatitis, it is characterized by urinary frequency, dysuria, body aches and sometimes fever. Prostatitis may be infective and non-infective [2]. BPH or Nodular hyperplasia is the non-malignant adenomatous overgrowth of prostate gland [3]. It is characterized by hyperplasia of prostatic stromal and epithelial cells, resulting in the formation of large discrete nodules in the large discrete nodules in the peri-urethral region of prostate [4]. Prostatic carcinoma is the second most common cause of cancer death in men in the most developed countries and its incidence is increasing significantly [1]. Prostatic cancer is most common in India compared to other Asian countries [5]. At some time in their lives approximately one in 22 Indian males will be stuck by Prostatic cancer and its incidence is increasing by 3.5% every year [6]. Most important risk factor for developing Prostate Carcinoma are family history, increasing age, lack of exercise and high calcium intake [7]. In most cases, it is asymptomatic and develops slowly. However, it may present with pain, difficulty in urinating and problems during sexual intercourse [2].

AIMS AND OBJECTIVES

Our main goal of the study was to evaluate the spectrum of histological lesions in the prostatic specimens and correlate the histopathological features of prostatic lesions with the clinical data.

MATERIALS AND METHODS

It was a combined cross-sectional study conducted during the period of November 2015 to October 2017 in the Department of Pathology of Bhaskar Medical College, Moinabad and Satya Diagnostic Center, Himayatnagar. Specimen examined were taken by TURP and Needle Biopsy. Biopsies were kept in 10% neutral buffered formalin. Specimen were grossly examined and size, quality and weight of all specimen were recorded. After cutting and processing of section they were embedded in Paraffin. Section of 4-6 µm thick were cut and they were stained with Hematoxylin and Eosin in all cases, while PAS and Mucicarmine were also used in some cases.

Inclusion criteria

All types of prostatic specimen including TURP and Needle biopsies were considered in the study.

Exclusion criteria

Inadequate biopsies and poorly preserved prostatic specimens were excluded.

Sample size

Total 108 specimens were received in the study duration. With reference to the above mentioned exclusion criteria 3 specimens were excluded because of inadequate biopsies and poor preservation. Therefore, total of 105 prostatic specimens were included in the present study. Detail clinical data were noted from the history provided along with the gross specimens. All the prostatic specimen were subjected to a careful and detailed gross examination. 10% Formalin fixed and Paraffin embedded tissue section from these specimens were used for microscopic study. 4 to 5 µm thick sections were being prepared and stained routinely with Hematoxylin and Eosin and classified into various benign and malignant lesions. The clinical finding in the patients and histological findings were compared with each other. Results are presented as number and percentages for qualitative data.

RESULTS

Table-1: Distribution of Benign and Malignant lesions

BENIGN LESIONS	MALIGNANT LESIONS	TOTAL
96	9	100
91.4%	8.6%	100%

In the present study, total 105 specimens of prostatic lesions were studied and it was observed that 96 were Benign lesion whereas remaining 9 were Malignant lesions. Incidence of benign lesions were 91.2% and Malignant lesions were 8.6% in this study. Out of total 105 cases, 96 (91.4%) cases were suggestive of Benign lesions which included Benign prostatic hyperplasia (BPH), among which 49 (51%)

BPH cases were associated with chronic prostatitis changes. 9 (8.6%) cases were suggestive of Malignant lesions which included Prostatic adenocarcinoma. Prostatic intraepithelial neoplasia (PIN) and Atypical small acinar proliferation (ASAP) were infrequent. Out of 105 specimens received, 101 were TURP and 4 were needle biopsies.
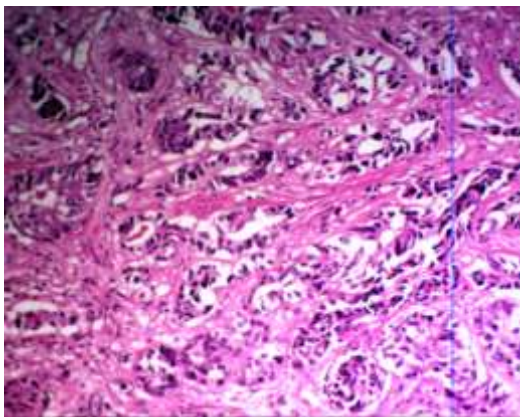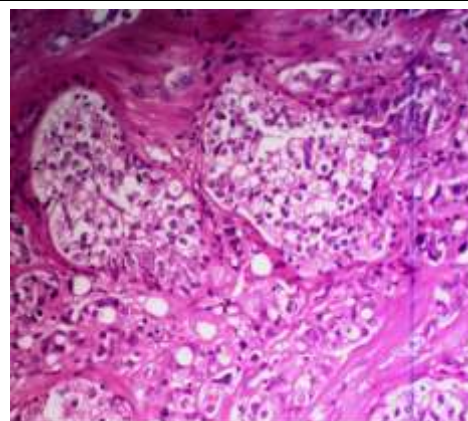

Fig-1: Benign Prostatic hyperplasia (H&Ex100)
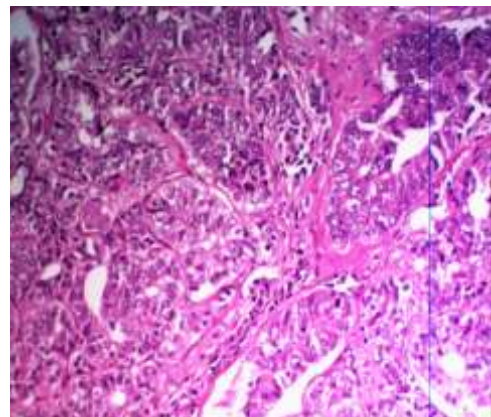
Fig-2: Prostatic adenocarcinoma with glandular pattern (H&Ex100)
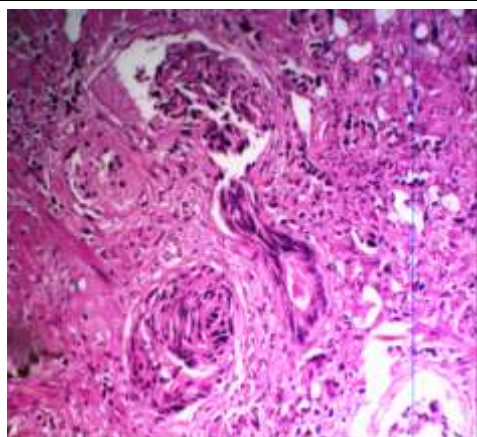
Fig-3: Perineural invasion in Prostatic carcinoma (H&Ex100)

Fig-4: Clear cell pattern in Prostatic adenocarcinoma (H&Ex100)

Table-2: Age wise incidence of various prostatic lesions

Age (yrs)	Malignant lesion	Benign lesion	Total
41-50	01	06	07
51-60	02	36	38
61-70	02	40	42
71-80	03	12	15
81-90	01	02	03

In Benign lesions, maximum 41.7% (40 cases) were found in the age group of 61-70 years. Among Malignant lesions, maximum 33.3% (3 cases) were seen in age group of 71-80 years.

Table-3: Clinical presentation of Prostatic lesions

Symptoms	Benign lesions (n=96)	Malignant lesions (n=9)	Total
Frequency	31	01	32
Nocturia	20	02	22
Urgency	09	0	9
Hesitancy	06	0	6
Poor stream	05	01	6
Dribbling	06	01	7
Retention	07	01	8
Hematuria	02	02	4
Fever & chills	05	00	5
Intermittent stream	05	01	6

The most common chief complaints in benign lesions were frequency 32.3% (31 cases), nocturia 20.9% (20 cases) and urgency 9.4 % (9 cases) followed by retention 7.3 % (7 cases), hesitancy 6.3%(6 cases) and poor stream 5.2%(5 cases). Among the malignant lesions, the most common complaint of nocturia and hematuria in 22.2% (2 cases) followed by frequency, poor stream, intermittent stream, dribbling and retention constituting to 11.1% (1 case each).

DISCUSSION

The present study was conducted with objective to correlate the histopathological features of prostatic lesions with the clinical data. During the present study period, total 105 prostatic specimens were analyzed in the Department of Pathology of the study institute to achieve the above mentioned objectives. Out of the total 105 patients, 101 cases were obtained by TURP and 4 specimens were obtained by Transrectal needle biopsy. In the present study, it was observed that out of 105 specimens, incidence of carcinoma was 8.57%. It was evident from the table no.2 that Benign lesions were more common in the age group of 61-70 years which were comparable with the study of As Anjoin *et al.*, [3] in which incidence was 90.4% in same age group. The incidence of malignancy increases with age and it was more in the age group of 71-80 years (33.3%) , similar findings were also reported by Rich *et al.*, (41%) and Andrews et al.(43.75) [8] Information about various clinical presentations was also collected from the patients. It was observed that in benign lesions, the most common chief complaints were frequency 32.3% (31 cases), nocturia 20.9% (20 cases) and urgency 9.4 %(9 cases) followed by retention 7.3 % (7 cases), hesitancy 6.3%(6 cases) and poor stream 5.2%(5 cases). In the study carried out by Barakzai MA *et al.*,

[9], the main presenting symptom of the patients were retention of urine (37%), poor stream (33.3%), frequency (27.7%), urgency (16.6%), hematuria (12.9%), incomplete emptying (11.1%), nocturia (11.1%), hesistancy (7.4%) and post void dribbling (5.5%) in variable combination. Overall 91% of patients were symptomatic at the time of presentation. In our study, poor stream was comparable whereas frequency and nocturia were higher as compared to study conducted by Barakzai MA *et al*., [9]. In patients with Malignant lesion, most common symptom was hematuria and nocturia. Miller DC *et al.*, [10] found that prostate cancer is typically asymptomatic in its early stages. It is commonly found during a routine health checkup. If it is symptomatic, then it usually mimics benign prostatic hyperplasia. Polyuria, nocturia, urinary retention, hematuria and dysuria are characteristic symptoms. DRE (Digital Rectal Examination) findings suggestive of benign lesion were more in the age group of 61-70 years (40 cases) and DRE findings s/o Malignant lesions were more common in the age group of 71-80 years. i.e., 6 cases. These findings were comparable with the study done by Lamine Niang *et al.*, [11].

CONCLUSION

Thus in conclusion, the commonest pathology encountered in the prostrate studied was BPH (91.2%) and incidence of carcinoma was low (8.6%), both benign and malignant lesions are seen mostly after 60 years. Urinary frequency and nocturia were the common presenting symptoms in Benign, whereas hematuria and intermittent stream were significantly associated with Malignant lesions. Frequency of prostatic cancer is on the rise and measures should be taken for its early detection .Screening protocols and awareness programs need to be introduced.

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