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Research Article

HISTOPATHOLOGICAL SPECTRUM OF PROSTATIC LESIONS: AN INSTITUTIONAL STUDY

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ABSTRACT

Introduction: Prostate gland specimens account for the significant percentage of diagnostically challenging cases in surgical pathology practice. Benign prostatic hyperplasia is an extremely common condition in men over the age of 50 yrs. In India prostate cancers constitute about 5% of all cancers in male. **Aims and Objectives**:1) To estimate the various histopathological pattern of prostatic lesion.2) To estimate the occurrence of benign prostatic hyperplasia, prostatitis, type of carcinoma. **Materials and Methods**: This is a retrospective study of two years conducted at Azeezia Medical College, Kollam during the period of September 2018 to September 2020 with a total of 135 cases of lesions of prostate. The received specimen were fixed in 10% neutral buffered formalin and routine paraffin processing followed by Hematoxylin and Eosin staining was done. Lesion classified as benign and malignant and histologic grading done using modified Gleason score. **Observations and Results**: Total cases in the study period is 135. Non neoplastic case is 125 (92.5%), and neoplastic cases are 10(7.4%). The maximum number of BPH cases were seen during the age group of 60-70 yrs (34%) and also the maximum number of adenocarcinoma (3.7%) were seen in the same age group. The maximum number of cases were received as TURP 93.3% and the rest 6.6% as Trucut Among the cases the majority of cases were of BPH 73.3%, followed by BPH with prostatitis 14.8%, Adenocarcinoma 7.4%, followed by BPH with basal cell hyperplasia and granulomatous prostatitis 2.2%. In the malignant cases the most common modified gleason score is 4+4. **Conclusion:** Histopathological diagnosis and grading plays an important role in the management of prostatic cancer. For satisfactory management of patient, a high degree of the awareness of the advances along with team approach has become imperative

INTRODUCTION

The immense medical problems caused by prostate gland are increasing at an alarming rate. The number of cases has continuously increased over the past decades, partly due to the higher life expectancy. Prostate gland specimens account for the significant percentage of diagnostically challenging cases in surgical pathology practice.

Benign prostatic hyperplasia is an extremely common condition in men over the age of 50 years and shows remarkable racial and geographical variations in incidence and mortality. The clinical incidence of this disease is only 8% during the 4th decade, but it reaches 50% in the 5th decade and 75%in the 8th decade[(1)]

Benign prostatic hyperplasia (BPH)is not premalignant lesion for the prostatic cancer but it may be related to prostate cancer arising in transition zone (Difenbach *et al*., 2002).[(2)] Non-specific granulomatous prostatitis is noticed occasionally in prostate specimen. It was first described by Tanner and Mc Donald in 1943, who reported an incidence of 3.3% of granulomatous prostatitis in inflammatory lesions. Recently premalignant lesions have become defined, largely as a result of advances in technology.

Carcinoma of prostate is most common internal malignancy among men in United State and is responsible for 10% of cancer deaths .In India, prostate cancers constitute about 5% of all cancers in male,[(3)].Prostatic carcinoma is globally the second most frequently diagnosed cancer and the sixth leading cause of cancer death in males**.** The modified Gleason system appears to better predict progression –free survival after radical prostatectomy than the original Gleason system did. Prior to the PSA era, up to 27% of prostate cancers were detected incidentally at the time of TURP[(4)]

Screening of prostatic lesions constitute prostate specific antigen, digital rectal examination, and transrectal ultrasound, but biopsy remains the gold standard diagnostic tool for final diagnosis. The aim of current study was to describe the pattern of various pathologies of prostate gland encountered in all specimens received in a tertiary care hospital in Kerala

Aims and Objectives of Study

1. To estimate the various histopathological pattern of prostatic lesion.

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2. To estimate the occurrence of benign prostatic hyperplasia, prostatitis, type of carcinoma

MATERIALS AND METHODS

This is a retrospective study of two years conducted at Azeezia Medical College, Kollam during the period of September 2018 to September 2020 with a total of 135 cases of lesions of prostate.

The gross specimen received include prostectomies, TURP, Tru- cut biopsies. The clinical data were collected from the biopsy requisition form. The received specimen were fixed in 10% neutral buffered formalin and routine paraffin processing followed by Hematoxylin and Eosin staining was done. Special stain used where ever necessary .All the slides examined under light microscopy and prostatic lesion classified as benign and malignant, tumours were classified according to WHO recommendation and histologic grading done using modified Gleason score.

OBSERVATION AND RESULTS

Total cases in the study period is 135. Non neoplastic case is 125(92.5%), and neoplastic cases are 10(7.4%).

Age wise distribution

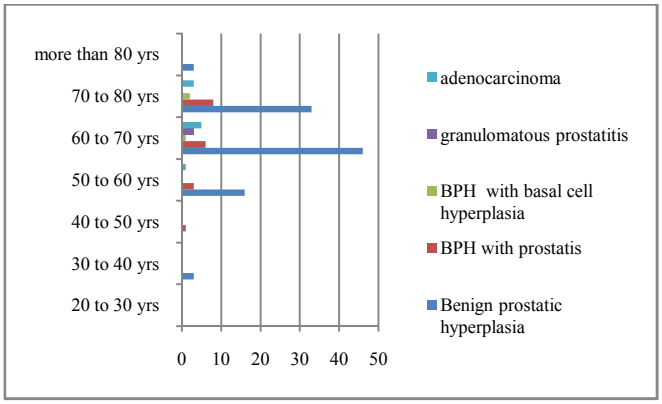

Fig 1

The maximum number of BPH cases were seen during the age group of 60-70 yrs(34%) and also the maximum number of adenocarcinoma (3.7%) were seen in the same age group. Above the age of 80 yrs 2.2% BPH cases and 1.4% BPH with prostatis were seen .No cases of BPH in the age group of 20 to 30 yrs. In the age group of 30 to 40 yrs showed 2.2% of BPH cases.

Type of specimen received

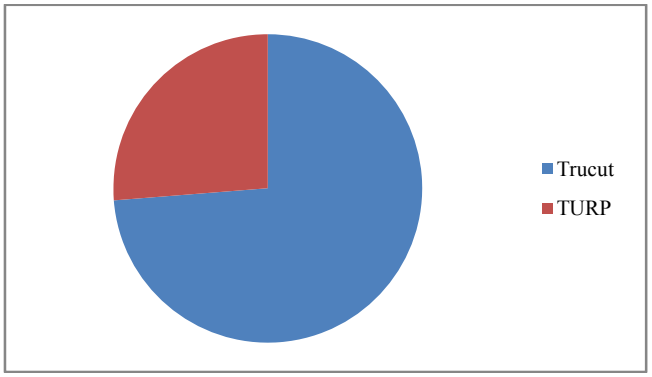

Fig 2

The maximum number of cases were received as TURP 93.3% and the rest 6.6% as Trucut

Various pattern distribution of the prostatic lesion

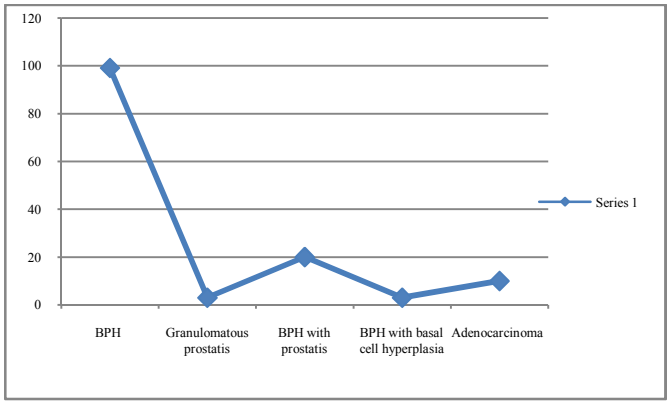

Fig 3

Among the cases the maximum cases were of BPH 73.3% , followed by BPH with prostatitis 14.8%, Adenocarcinoma 7.4% ,followed by BPH with basal cell hyperplasia and granulomatous prostatitis 2.2%.

Gleason score distribution

Fig 4

Primary pattern	Secondary pattern	cases
4	4	5(3.7%)
4	3	2(1.4%)
3	4	1(0.7%)
3	3	2(1.48%)

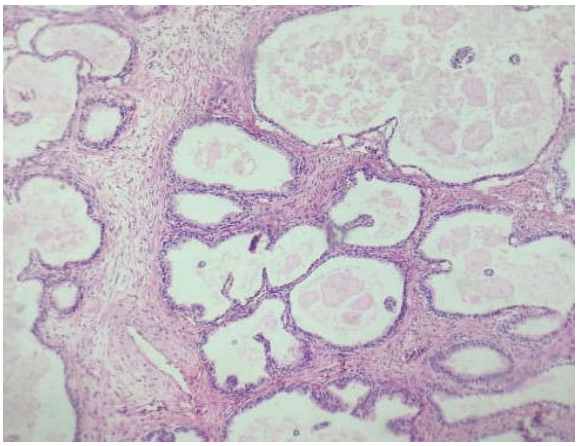

Fig 5 Benign Prostatic Hyperplasia

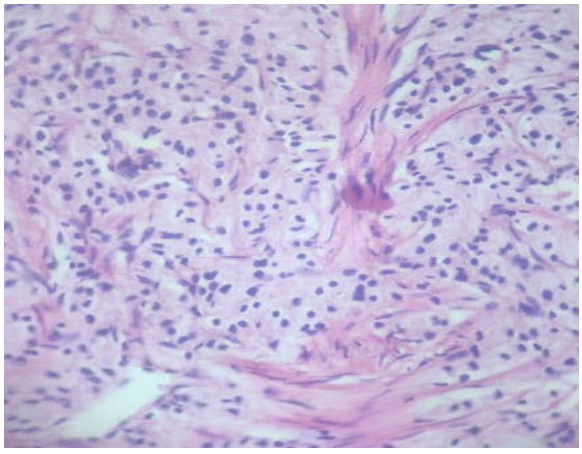

Fig 6 Adenocarcinoma

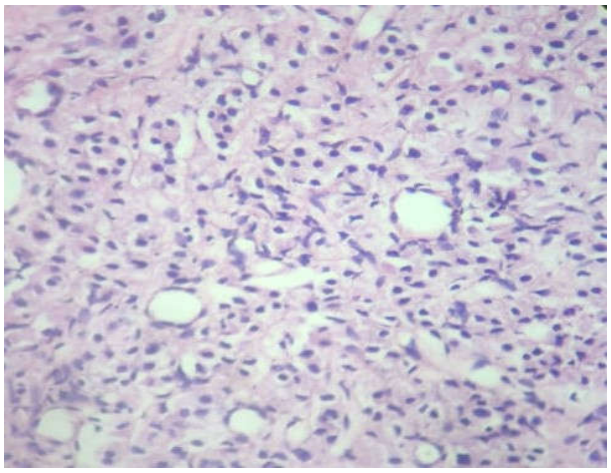

Fig 7 Adenocarcinoma

In the malignant cases the most common modified gleason score is 4 +4

DISCUSSION

A retrospective study of 135 cases of prostate biopsy were done, result were noted and comparison with other studies were undertaken as follows: Total cases in the study period is 135. BPH and adenocarcinoma are the two pathological processes which frequently affect the prostate gland, in our study, we had more of TURP 93.3% specimen like other studies conducted by Mittal *et al*[5] and Shakya *et al*[6] had higher percentage of TURP specimens.

In the present study, we had 92.5% cases of BPH, 7.4% cases of acinar adenocarcinoma. The findings in our study are comparable with those of Mittal *et al*[5] Sharma *et al* [7]and Mohammed *et al*[8] .

The clinical incidence is 8% during the 4th decade but it reaches 75% in the 8th decade .The maximum number of BPH cases in the present study were seen during the age group of 60-70 yrs(34.07%) and also the maximum number of adenocarcinoma(3.7%). In the present study above the age of 80 yrs 2.2% of BPH cases and 1.4% of BPH with prostatitis were seen .In the present study no cases of BPH in the age group of 20 to 30 yrs and in 30 to 40 yrs showed 2.2% of BPH cases. Maximum cases of BPH were in the 7th decade which was similar to other studies like that of Sharma *et al*[7] but studies conducted by Kim KB *et al* [9]had more cases in 8th decade while Matapurkar *et al*[10] found highest incidence in 6th decade.

Maximum cases of benign prostatic hyperplasia BPH (28.1%) were seen in the 61-70 years age group similar to Matapurkar *et al*.[10] Kim KB *et al*.[11] had more cases(44) in 71-80 age group. Malignant lesions encountered predominantly in age group 61-70 years that are similar to Sharma *et al*.[7]

Benign prostatic hyperplasia (BPH) and adenocarcinoma are the two most common conditions affecting prostate gland.

Granulomatous prostatitis can be clinically confused with prostatic carcinoma. The reported incidence of granulomatous prostatitis is 0.36-4%[12,13] Epstein *et al*[14] classified it depending on the possible causative agent into idiopathic (nonspecific), infectious, iatrogenic and allergic (eosinophilic) granulomatous prostatitis and malakoplakia. Granulomatous prostatitis is probably caused by blockage of prostatic ducts and the stasis of secretions, regardless of its aetiology.Most commonly diagnosed granulomatous process within the prostate is non specific. It is thought to represent an initially immune-mediated process accompanied by a reaction to the prostatic secretions released from obstructed ducts on microscopic examination-large nodular aggregate of histiocytes, epithelioid cells, lymphocytes, and plasma cells. . In present study granulomatous prostatitis(2.2%) was observed. The incidence of non specific granulomatous prostatitis was 0.5% obsereved in Stillwell TJ, Engen DE, Farrow in their study

Among the cases the maximum cases were of BPH (73.3%), followed by BPH with prostatitis (14.8%), adenocarcinoma (7.4%), followed by BPH with basal cell hyperplasia and granulomatous prostatitis (2.2%) The reported incidence of adenocarcinoma is 10.9- 21%.[17,18] Maximum numbers of our cases were in the 6th decade whereas Sharma *et al* [7]had more cases in 7th decade while Gilliland *et al*[19] in 7th & 8th decade. Matapurkar *et al*[10] found maximum number of cases in the 7th decade. In present study, the predominant lesion was benign prostatic hyperplasia (BPH) (73.3%) similar to Neha Angurana's[20] study (50.5%).

In the malignant cases the most common modified gleason score is 4 +4 .We found maximum number of cases) showing predominant pattern 4 which was not in concurrence with those of Vollmer[21] Maximum number of cases (3.7%) had Gleason score 8. Brawn *et al*[22] had score 6 & 7 whereas Vollmer[23] had score 6 most common.

CONCLUSION

Histopathological diagnosis and grading plays an important role in the management of prostatic cancer. For satisfactory management of patient, a high degree of the awareness of the advances along with team approach has become imperative We conclude that prostatic lesions are common in age group of 61-70 years. Benign conditions are more common than malignant conditions Among the histological types of prostatic lesions, benign prostatic hyperplasia (BPH) is predominant type. Efforts should be made to apply modified Gleason's system in case of adenocarcinoma of prostate to improve management.

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