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Research Article

PATTERN OF PROSTRATE DISEASES- A HISTOPATHOLOGICAL STUDY IN JAMMU

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ABSTRACT
Benign hypertrophic prostate (BHP) is the most common urologic disorder in men beyond 40 years of age group and is almost present in men aged 80-90 years of age group. There are many similarities between BHP and cancer. Most cancers arise in prostate together with BHP and cancer is found accidentally in 10% of TRUP specimens. BHP is not premalignant lesion of the prostatic cancer but it may be related to prostate cancer arising in transition zone. As there is no study from Jammu region so we have conducted this study to survey pattern of prostate diseases based on analysis of histopathological specimens. The data will be useful for planning facilitied after management of prostatic diseases especially cancer prostate. The present study was conducted to determine histologic pattern and age distribution of various prostatic lesions by analyzing prostate specimens and to carry out detaied morphologic study of various prostatic lesions along with grading and scoring of carcinomas according to the Gleason system. Out of 200 prostate specimens, majority of the cases were of BHP alone 50.5% (101/200). The decade wise distribution of various prostate lesions, the incidence of BHP alone and BHP with prostatitis was highest in 61-70 year. The age range noted in BHP was from 52-90 years. A similar increasing trend was seen in age incidence and distribution of prostate cancer which was highest in the 61-70 year age group. Thus, the commonest prostatic lesion encountered was BHP, the incidence of prostate cancer being low. BHP was observed in 51-80 year age group with peak in the 7th decade. The morphologic pattern of BHP consisted predominantly of fibroglandular hyperplasia, followed by squamous metaplasia other variants include clear cell hyperplasia, stromal hyperplasia, transitional hyperplasia and basal cell hyperplasia.

Keywords: *Prostrate Diseases, Benign Hypertrophic Prostate*

INTRODUCTION
Benign hypertrophic prostate (BHP) is the most common urologic disorder in men beyond 40 years of age group and is almost present in men aged 80-90 years of age group. 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 (Rosai, 2005). Advanced age and an intact androgen supply are the only undisputed risk factors for BHP (Bostwick *et al.,* 1992). There are many similarities between BHP and cancer (Bostwick and Amin, 1997). Most cancers arise in prostate together with BHP and cancer is found accidentally in 10% of TRUP specimens. BHP is not premalignant lesion of the prostatic cancer but it may be related to prostate cancer arising in transition zone (Difenbach *et al.,* 2002). In Europe and United States, prostate cancer is the most commonly diagnosed malignancy in elderly men and second leading cause of cancer related deaths in the male population (Ro *et al.,* 2001). In 1993, the Gleason grading system was recommended by WHO consensus conference (Murphy *et al.,* 1993). This system is based on glandular architecture and is an effective prognostic factor on all prostatic samples (Egevad *et al.,* 2004). As there is no study from Jammu region so we have conducted this study to survey pattern of prostate diseases based on analysis of histopathological specimens. The data will be useful for planning facilitated after management of prostatic diseases especially cancer prostate.

Aim and Objectives
The present study was conducted to determine histological pattern and age distribution of various prostatic lesions by analyzing prostate specimens and to carry out detailed morphologic study of various prostatic lesions along with grading and scoring of carcinomas according to the Gleason system.

MATERIALS AND METHODS

The study was approved by the Institute Ethical Committee and was conducted retrospectively as well prospectively. Retrospective study comprising of collection of cases of prostatic specimens for a period of four years. All the available slides were retrieved and reviewed. Prospective study comprising of fresh cases of prostrate lesions that were present in the course of one year. During this period, a total of 200 prostate specimens were received. In each case brief clinical history and physical examination along with other clinical information provided in requisition form regarding age, sex, type of prostatic biopsy and clinical diagnosis is taken into consideration and recorded in a pre-structured performa after obtaining their written consent.

All the specimens were fixed in 10% neutral buffered formalin immediately. Three types of prostrate tissue biopsy were received-Open prostatectomy, TURP chips and trucut needle biopsy. Tissue processing was done in automatic tissue processor (Histokinette), followed by staining done by Haematoxylin and Eosin (Stevens, 1986). The slides were examined under light microscope and observations were made.

RESULTS AND DISCUSSION

Results

The data was recorded and compiled. All prostatic lesions were categorized into benign and malignant and among benign lesions pattern of prostatic hyperplasia and inflammatory disorders were tabulated with their frequency and age distribution (Table 1). Out of 200 prostate specimens, majority of the cases were of BHP alone 50.5% (101/200). The decade wise distribution of various prostate lesions, the incidence of BHP alone and BHP with prostatitis was highest in 61-70 year. The age range noted in BHP was from 52-90 years. A similar increasing trend was seen in age incidence and distribution of prostate cancer which was highest in the 61-70 year age group. In majority of the BHP cases, varying portions of glandular and stromal proliferative tissue was seen. These cases were diagnosed as fibroglandular hyperplasia which constituted 78.5% (146/186) of total BHP cases. The next common variant was BHP with squamous metaplasia 11.8% (22/186). Clear cell cribriform hyperplasia and stromal hyperplasia constituted 3.8% (7/186) and 2.7% (22/186) cases respectively. BHP with transitional cell hyperplasia and basal call hyperplasia were the least common variants (Figure 1) where as all cases of prostatic cancer was adenocarcinoma. Out of 14 cases of prostate carcinoma, 33.7% (5/14) were graded in Gleason score 4-6 while 64.3% (9/14) were Gleason score 7-10 (Figure 2).

Discussion

Prostatic tissue is a common specimen received for histopathological examination. With the increasing longevity and ageing population, the pathology of the prostate may claim a separate domain of its own. Prostatism is a common malady in the geriatric age group. BHP and carcinoma of the prostate are increasingly frequent with advancing age.

Table 1: Distribution of Various Prostate Lesions and their demographic profile

Diagnosis	No.Of cases	Percentage (%)	Age distribution(in years)			
			51-60	61-70	71-80	81-90
BHP alone	101	50.5	28	44	23	06
BHP+ Prostatis	85	42.5	23	43	11	08
Prostate cancer alone	10	5	02	04	02	02
BHP+Prostate cancer	02	1	00	01	01	00
PIN+Prostate cancer	02	1	00	02	00	00

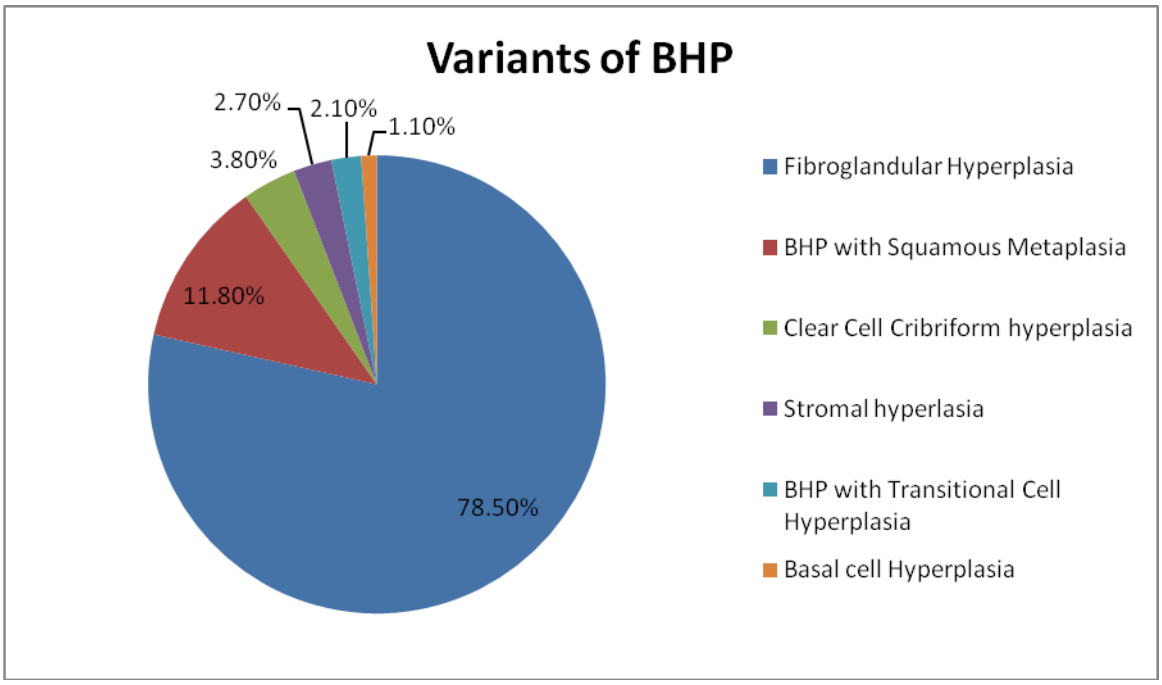

Figure 1: Variants of BHP

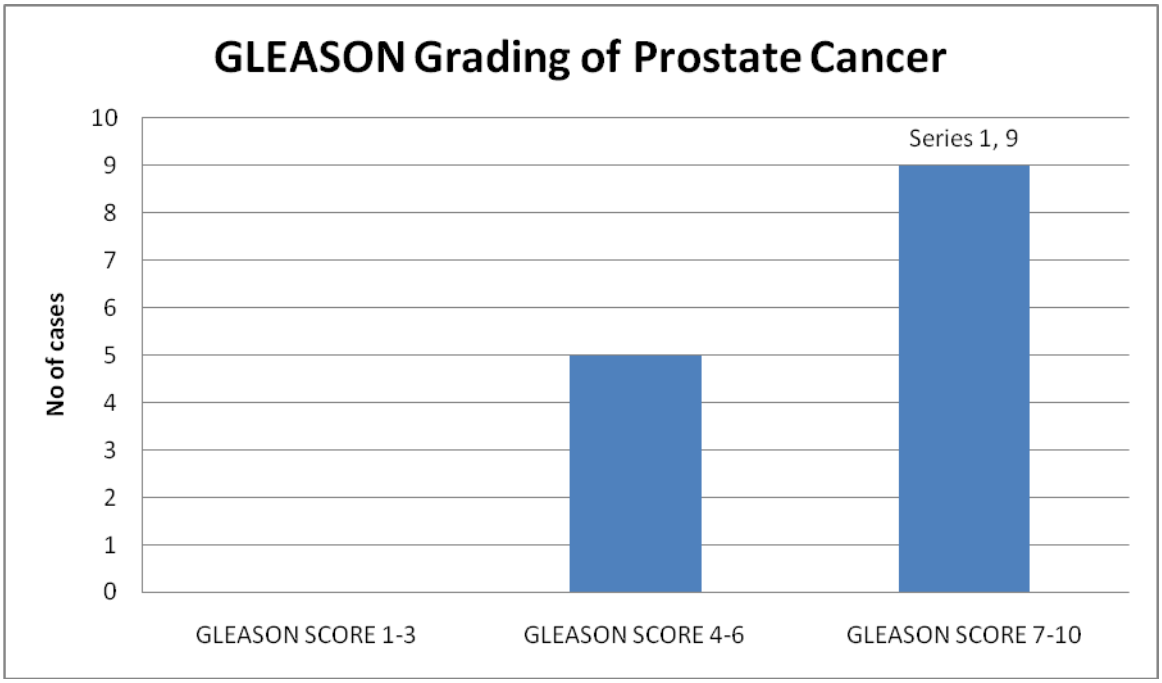

Figure 2: Gleason Score Of Prostate Cancer (n=14)

There are various lesions which have increased the burden of the patient suffering from these diseases. The role of the pathologist in assessing them has assumed much importance with the advent of needle biopsy. In our study, the predominant lesion was BHP (50.5%) followed by BHP with prostatitis (42.5%) and prostate cancer (7%). This pattern is comparable to that of other studies done by Jayaram *et al.*, (1993) Shakya *et al.*, (2003) Rekhi *et al.*, (2004) Anim *et al.*,(1998) found mean age of 63 years while Di Silverio *et al.*, (2003) found mean age of 68.85. Our study is in close match with the studies of Anim *et*

al., (1998) and Di Silverio *et al.,* (2003) in relation to the mean age in years for BHP. Our study was in agreement with Mittal *et al.,* (1989) Ibrahim (2003), Karkuzhali *et al.,* (2004) in respect that fibroglandular hyperplasia was most commonly noted. However there are higher no of cases of BHP with basal cell hyperplasia, clear cell cribriform hyperplasia and stromal hyperplasia in studies of Mittal *et al.,* (1989) and Karkuzhali *et al.,* (2004) Squamous metaplasia is the next predominant morphological feature of BHP, attributable to the fact that it is a reactive process that occurs due to hormonal manipulation or when the centre of the nodule undergoes haemorrhagic necrosis. The detection of basal cell carcinoma is attributable to the fact that epithelial hyperplasia which starts with basal cell hyperplasia which follows regeneration of glands (Anim *et al.,* 1998). In present study cases of prostatic carcinoma were 7% (14/200) were adenocarinoma and perineural invasion was observed in 21.43% (3/200), Alberto *et al.,* (2005) found adenocarcinoma prostate in 546/1422 patients with clinical suspicion of prostate cancer an dperineural invasion was seen in 25% (137/1422) cases. In this study, out of 14 cases of prostate cancer, 5 (35.7%) cases were graded in Gleason score 4-6 while 9 (64.3%) cases were graded in Gleason score of 7-10, where as in other studies done by Ahmed and Muzaffar (2002) majority of tumours were moderately differentiated. Other study done by Angwafo *et al.,* (2003) found 6 cases of prostate cancer in needle biopsies performed on 24 cases. Gleason score ranged from 5 to 9.

Conclusion

Thus, the commonest prostatic lesion encountered was BHP, the incidence of prostate cancer being low. BHP was observed in 51-80 year age group with peak in the 7th decade. The morphologic pattern of BHP consisted predominantly of fibroglandular hyperplasia; followed by squamous metaplasia other variants include clear cell hyperplasia, stromal hyperplasia, transitional hyperplasia and basal cell hyperplasia.

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