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ORIGINAL ARTICLE

Evaluation of histopathological features of Prostate lesions

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***ABSTRACT*:**
Background: Prostate cancer has been a disease of antiquity in men. The present study was conducted to evaluate histopathological features of Prostate lesions. **Materials & Methods:** The present study was conducted on 68 specimens of prostate obtained in the department. A brief clinical history followed by a clinical examination, digital rectal examination (DRE), and transrectal ultrasound (TRUS) findings were recorded. The received specimens were fixed in 10% neutral buffered formalin, and routine paraffin processing was done, followed by hematoxylin and eosin (H and E) staining of sections. **Results:** Out of 68 specimens, 30-40 years had 4, 40-50 years had 7, 50-60 years had 13, 60-70 years had 16 and >70 years had 28 cases. Basal cell hyperplasia was seen in 4, prostate atrophy in 12, clear-cell cribriform hyperplasia in 15, atypical adenomatous hyperplasia in 20, prostatic intraepithelial neoplasia in 16. The difference was significant (P< 0.05). **Conclusion:** Authors found cases of basal cell hyperplasia, prostate atrophy, clear-cell cribriform hyperplasia, atypical adenomatous hyperplasia and prostatic intraepithelial neoplasia.
Key words: Prostate, Adenomatous hyperplasia, intraepithelial neoplasia.

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INTRODUCTION

Prostate cancer has been a disease of antiquity in men. It was first described by an English surgeon called Adams about a century and a half ago. Although, it is the most common cancer in men worldwide, it is commonly encountered in middle-aged and elderly males; however, it is rare in men before the age of 40 years.[1] Globally, there is an epidemiological increase the incidence of prostate cancer. Nevertheless, it is still under reported due to lack of adequate data from most developing countries. Reports have it that there is ethnic variation in its prevalence. It is most common in African-American and the Scandinavians, followed by Caucasians and least common in Asia.[2]

Prostate cancer ranked among the leading cause of morbidity and mortality worldwide. Studies have shown that it is the second most common cause of cancer mortality in Caucasians. Prostate cancer prognostic index can be assessed by Gleason's scoring system. It is a method of predicting the degree of severity of the disease. Prostate cancer with high Gleason's score is often associated with aggressive behavioral pattern.[3]

Prostate adenocarcinoma (PC) is the sixth most common malignancy and the second commonest cancer in men worldwide. It is the most common cancer in men in Europe, North America, and parts of Africa.[4] The present study was conducted to evaluate histopathological features of Prostate lesions.

MATERIALS & METHODS

The present study was conducted in the department of General pathology. It comprised of 68 specimens of prostate obtained in the department.

A brief clinical history followed by a clinical examination, digital rectal examination (DRE), and transrectal ultrasound (TRUS) findings were recorded. Serum prostate-specific antigen (PSA) levels were also assessed. The received specimens were fixed in 10% neutral buffered formalin, and routine paraffin processing was done, followed by hematoxylin and eosin (H and E) staining of sections. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant (P< 0.05).

RESULTS

Table I Age wise distribution of specimens

Age group (Years)	Number	P value
30-40	4	0.01
40-50	7	
50-60	13	
60-70	16	
>70	28	

Table I, graph I shows that out of 68 specimens, 30-40 years had 4, 40-50 years had 7, 50-60 years had 13, 60-70 years had 16 and >70 years had 28 cases.

Graph I Age wise distribution of specimens

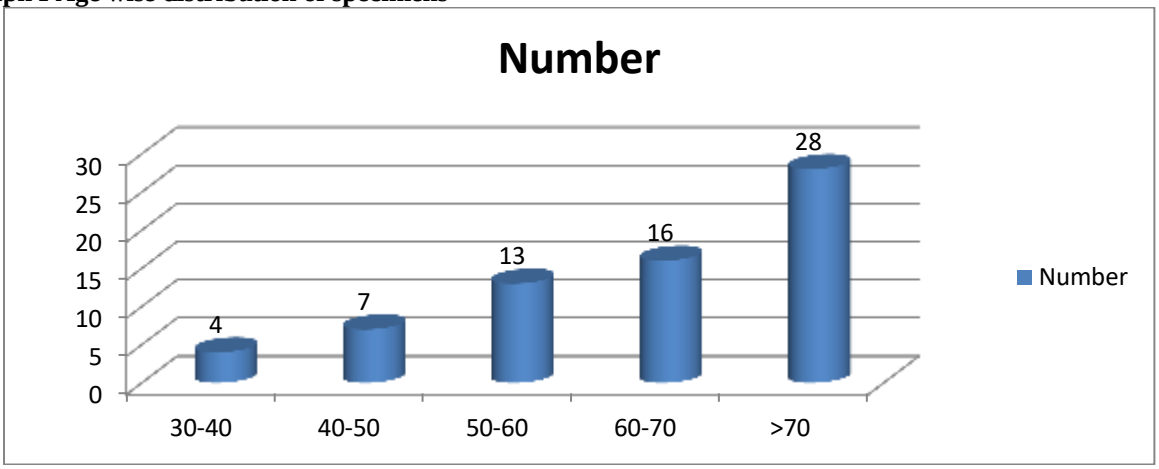
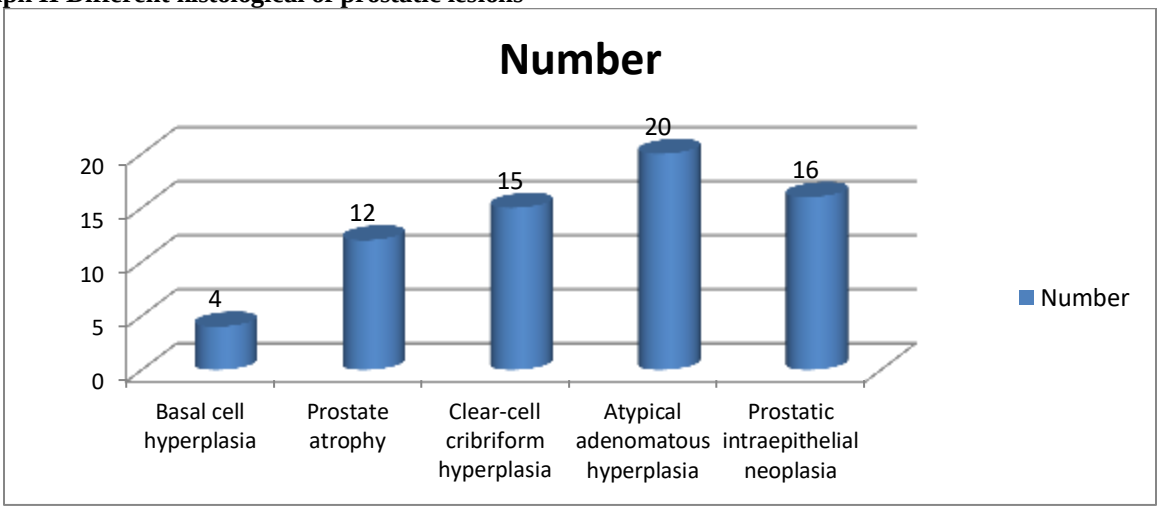


Table II Different histological of prostatic lesions

Histology	Number	P value
Basal cell hyperplasia	4	0.02
Prostate atrophy	12	
Clear-cell cribriform hyperplasia	15	
Atypical adenomatous hyperplasia	20	
Prostatic intraepithelial neoplasia	16	

Table II, graph II shows that basal cell hyperplasia was seen in 4, prostate atrophy in 12, clear-cell cribriform hyperplasia in 15, atypical adenomatous hyperplasia in 20, prostatic intraepithelial neoplasia in 16. The difference was significant (P< 0.05).

Graph II Different histological of prostatic lesions



DISCUSSION

Prostate cancer is a major problem in the United States, with a predicted 234,000 cases and 27,000 deaths in 2006 according to the American Cancer Society. Patient prognosis is greatly increased if the condition is diagnosed early. The current gold standard for prostate cancer diagnosis is histological analysis of tissue samples obtained via transrectal ultrasound (TRUS) biopsy. Current TRUS protocols mandate between 12-20 biopsy samples per patient. The low accuracy of TRUS (20-25%) for elevated prostate specific antigen levels means that pathologists spend several man hours sieving through mostly benign tissue.[5]

The main histopathological features of malignancy which help in differentiating adenocarcinoma from its mimics are abnormal architectural pattern, absence of basal cells, and nuclear atypia in the form of nuclear enlargement and nucleolar enlargement. Nucleomegaly and absence of basal cell layer were observed in 93% and 86%, respectively, in this study. Prominent nucleoli were seen in 60% of cases.[6] Not all adenocarcinomas have prominent nucleoli as they may be obscured by hyperchromatic nuclei or overstained sections and can sometimes be difficult to distinguish after formalin fixation. The minor histopathologic criteria of PC are intraluminal wispy blue mucin (blue-tinged or basophilic mucinous secretions), pink amorphous secretions, mitotic figures, intraluminal crystalloids, adjacent high PIN, and amphophilic cytoplasm.[7] The present study was conducted to evaluate histopathological features of Prostate lesions.

In this study, out of 68 specimens, 30-40 years had 4, 40-50 years had 7, 50-60 years had 13, 60-70 years had 16 and >70 years had 28 cases. Algaba et al[8] found PC was the most frequent diagnosis in 28 patients of 50 cases (56.0%). Basal cell hyperplasia formed the predominant mimic (26.0%), followed by prostatic intraepithelial neoplasia (8%), prostate atrophy (4%), clear-cell cribriform hyperplasia(4%), and one case of atypical adenomatous hyperplasia (2%). Serum PSA was >4 ng/mL in all the cases of PC. In three of the mimics, PSA was >4 ng/mL.

We found that basal cell hyperplasia was seen in 4, prostate atrophy in 12, clear-cell cribriform hyperplasia in 15, atypical adenomatous hyperplasia in 20, prostatic intraepithelial neoplasia in 16. Leroy et al[9] found that a total of 908 prostatic tumors and 226 urological malignancies were diagnosed. Among this, 214 were prostatic cancer. Prostatic cancer, therefore, constitutes 23.6% and 94.7% of all prostatic tumor and urological tumor, respectively. The peak age range was 70-79 years constituting 83 cases (38.8%) of all age group. The mean age for prostate cancer was 68 years ± 4.6 S.D. Prostatic adenocarcinoma accounted for 201 cases constituting 93.9% of prostatic cancer. A total of 53 cases (30.4%) had Gleason's score 2-4, 104 cases (59.8%) had Gleason's score 5-7, and 17 cases (9.8%) had Gleason's score 8-10. Prostate cancer is the most common tumor of the uro-genital system in males with majority as moderately differentiated prostatic adenocarcinoma having Gleason's score of 5-7.

Garg et al[10] found that most cases of prostate cancer encountered in this study have peak incidence between 60 and 79 years accounting for 73.4%. No case was reported before the age of 40 years and only few cases were reported after 80 years of age. This again is in tandem with African and Caucasian series where age is the major risk factor to the disease. The disease was reported to be extremely rare before the 4th decade of life.

CONCLUSION

Authors found cases of basal cell hyperplasia, prostate atrophy, clear-cell cribriform hyperplasia, atypical adenomatous hyperplasia and prostatic intraepithelial neoplasia.

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