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STUDY OF MORPHOLOGICAL SPECTRUM OF PROSTATIC LESIONS

Pathology

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ABSTRACT

Introduction: This study was planned to study histopathological spectrum of prostate specimen received in the department , to assign Gleasons grade, score and class to the malignant tumors and to study the incidence of malignant tumors in the prostatic specimen. **Objective:** To study morphological spectrum of prostatic specimens received in the department of pathology and to assign gleason score to malignant lesions. **Methodology:** It is cross sectional study in which 100 prostatic biopsies were assessed grossly and histopathologically. Specimens were received in 10% formal in, then after grossing, processing and Hematoxylin & Eosin staining microscopic examination was done. **Results:** Out of 100 cases, 75 % cases were diagnosed as Benign prostatic tissue consistent with Nodular hyperplasia of prostate,14 % as Benign prostatic tissue consistent with Nodular hyperplasia of prostate with chronic prostatitis, 11% as adenocarcinoma , According to assigned Gleason score 54.55% malignant cases were diagnosed with score 7,followed by 18.18% cases with score 8 and 27.27% cases were assigned score 9 .

KEYWORDS

Gleason score, prostatic chips, adenocarcinoma.

INTRODUCTION

Diseases of prostate gland are important source of morbidity and mortality in male patients. The spectrum of diseases consists of inflammatory conditions, nodular hyperplasia, malignancy etc[1,2]. Prostate biopsy is essentially a test which detects cancer and other benign conditions of the prostate in patients who have specific indications for it.[3]

MATERIALS AND METHODS

The prostatic biopsies received in the department of pathology, Jhalawar medical college, Jhalawar were included. The samples were fixed in 10% neutral buffered formalin, histopathological slides were prepared and stained with Hematoxylin and Eosin stain.

Inclusion Criteria

All prostatic specimens received in the department of pathology with proper labelling and documentation.

Exclusion Criteria

Inadequate biopsies and poorly preserved prostatic specimens were excluded.

METHODOLOGY

Ethical approval was taken from institutional ethical committee for conducting the study. Prostatic biopsies were obtained in the department of pathology. The three dimensional size and shape of the biopsy was assessed and weighed.

The prostatic specimens received in the department were mostly TURP chips.

Submission of chips was random as grossly it is not possible to recognize prostate cancer in TURP chips.

TURP specimens that weigh less than or equal 12 gm were completely submitted in 6 to 8 cassettes. For specimen weighing more than 12 gm ,a base weight of 12 gm was submitted plus one cassette for every additional 5 gm of tissue.[4]

The biopsy was submitted for routine processing. In automated tissue processor, the specimen first pass through increasing concentrations of ethanol for dehydration, then through xylene for lipid extraction and clearing of alcohol.

Finally, the tissues were infiltrated with several changes of hot, melted paraffin to provide a matrix so that the tissue can be stabilized and cut easily. Following processing, the specimens were embedded with the prostatic chips down into the cassette base mold, in the liquid paraffin, which was allowed to harden.Trimming is done at 20µm, specimens are then cut on a rotary microtome into sections, approximately 5µm thick.[5,6]

The sections were then submitted for Hematoxylin and Eosin staining.

OBSERVATION AND RESULTS

Out of 100 cases, patients age ranging from 35 to 90 years, 75 % cases were diagnosed as Benign prostatic tissue consistent with Nodular hyperplasia of prostate,14 % as Benign prostatic tissue consistent with Nodular hyperplasia of prostate with chronic prostatitis, 11% as adenocarcinoma. According to assigned Gleason score 54.55% malignant cases were diagnosed with score 7,followed by 18.18% cases with score 8 and 27.27% cases were assigned score 9 .

Table No.1: Distribution Of Prostatic Lesions As Benign And Malignant

Total cases	100	100%
Benign	89	89%
Malignant	11	11%

Table No.2: Histopathological Pattern In Prostate Biopsy

Histopathological pattern	No of cases	Percentage
BPT with NH	75	75%
BPT with NH with Prostatitis	14	14%
Adenocarcinoma of prostate	11	11%

Table No.3: Gleason Score Assigned To Malignant Lesions

Gleason score	Frequency	Percentage
Gleason score 7	6	54.55%
Gleason score 8	2	18.18%
Gleason score 9	3	27.27%

DISCUSSION:

The present study was planned to study histopathological spectrum of prostate specimen received in the department of Pathology, Jhalawar medical college and hospital and to assign Gleason's Grade, Score and Class to the malignant prostate lesions. The present study was conducted from January 2021 to July 2022. The total of 100 prostatic biopsies received in the Department of Pathology were enrolled for the study. The study was carried out after obtaining approval from the Institutional Research Ethical Committee. An informed and written consent was obtained.

Out of 100 cases, patients age ranging from 35 to 90 years , 75 % cases were diagnosed as Benign prostatic tissue consistent with Nodular hyperplasia of prostate,14 % as Benign prostatic tissue consistent with Nodular hyperplasia of prostate with chronic prostatitis, 11% as

adenocarcinoma .According to assigned Gleason score 54.55% malignant cases were diagnosed with score 7,followed by 18.18% cases with score 8 and 27.27% cases were assigned score 9 .

Lim KB[7] found that BPH prevalence rises after 40 years of age, with the maximum prevalence rate of 8 to 60% at the age of 90 years.

Loeb S et al.[8] found that the volume of prostate rises with age that suggest a growth rate of prostate around 2 to 2.5% per year in elder patients.

Bosch J.L et al.[9] revealed that a constant growth of prostate is a risk factor for progression of LUTS. Larger prostates are linked with the benign prostatic enlargement (BPE), thus increasing the risks of progression of clinical BPH, retention of urine and requirement of prostatic surgery. **Rawla P** observed that rate of incidence and mortality of prostatic cancer is strongly correlated with the age of patients, showing the highest incidence rate by the age of >65yrs in elderly males.

CONCLUSION:

LUTS (lower urinary tract symptoms) in men is often concurrent with benign prostatic enlargement ,benign prostatic hyperplasia was the most prevalent benign lesion and adenocarcinoma was most common prostatic cancer.As in study 11% were malignant which shows importance of histopathological study.

REFERENCES:

1. David Bostwick M D. Prospective origins of prostate carcinoma; prostatic intraepithelial neoplasia and atypical adenomatous hyperplasia cancer 1996; July 15, 78(2): 330-334.
2. Gleason D F Atypical hyperplasia, benign hyperplasia and well differentiated adenocarcinoma of the prostate. Am. J. Surg. Pathol, 1985; 9 (Suppl): 53-67.
3. Mc Neal JE. Cancer volume and site of origin of adenocarcinoma in the prostate, relationship to local and distant spread. Hum Pathol, 1992; 23: 258-266.
4. Untergasser G, Madersbacher S, Berger P. Benign prostatic hyperplasia: age-related tissue-remodeling. Exp Gerontol 2005;40(3):121 - 128.
5. Fox H. Nodular histiocytic prostatitis. J Urol 1966;96:372-374.
6. Cambell's Urology 8th Edn, Vol.4,2002 edited by Walsh, Retick, Vaughan, Wein.
7. Jackson MA, Ahluwalia BS, Attah EB, Connolly CA, Herson J, et al. Characterization of prostatic carcinoma among blacks: a preliminary report. Cancer Chemother Rep 1975; 59(1):3-15.
8. Gleason DF. Classification of prostatic carcinomas. Cancer Chemother Rep. 1966;50(3):125–8.
9. Trock BJ, Guo CC, Gonzalgo ML, Magheli A, Loeb S, Epstein JI. Tertiary Gleason patterns and biochemical recurrence after prostatectomy: proposal for a modified Gleason scoring system. J Urol. 2009;182(4):1364–70.