

A Retrospective Clinicopathological Study of Associated Lesions in Benign Prostatic Hyperplasia and Prostatic Adenocarcinoma in Surgical Biopsy Specimens

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Conflict of interest: Nil

Abstract

Introduction: Benign prostatic hyperplasia and Carcinoma of the prostate are increasingly frequent with advancing age. The aim of the present study is to study the spectrum of prostatic lesions among the biopsies received in our hospital.

Materials and Methods: This retrospective study was conducted on 104 specimens which received in Department of Pathology, Shri Shankaracharya institute of medical sciences (SSIMS). The biopsy material included transurethral resection of prostate specimens, needle biopsies, both trucut and core needle biopsies.

Results: Out of 104 cases analyzed, 90 were TURP specimens, 12 were trucut needle biopsies and 02 were open prostatectomy specimens. Majority of the specimen (92) showed BPH, 86 from TURP, 04 from trucut biopsy and 02 from open prostatectomy specimen.

Conclusion: The present study showed that the most frequently encountered prostatic lesion was BPH, commonly seen in the age group of 61 to 70 years. The prostatic Carcinoma was common among males of more than 60 years. Histopathological examination is the best diagnostic tool for prostatic Carcinoma.

Keywords: Benign Prostatic Hyperplasia, Prostatic Carcinoma, Adenocarcinoma, TURP.

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Introduction

Benign prostatic hyperplasia and prostatic adenocarcinoma are the two principle conditions involving prostate among elderly men in urology practice. It accounts for more than 90% of all prostatic diseases.

Benign prostatic hyperplasia occurs in individuals with intact testis and it is an androgen dependent disorder. After the introduction of screening for prostatic specific antigen, transrectal ultrasound and MRI prostate trucut needle biopsy became

one of the most common urologic procedure to detect prostatic carcinoma. In routine surgical pathology practice, making a morphological diagnosis of prostatic lesions, especially separating benign from malignant lesions is relatively straightforward.

However, there are several glandular and stromal proliferations and normal histoanatomical structures which may be mistaken for malignancy if one is not aware of the key histological features. It is very difficult to interpret these lesions in small

tissue samples such as received in trucut needle biopsies [1].

Aim

Aim of this study is to evaluate the histopathological diversity of prostatic lesions in surgical specimens and the correlation of clinical and demographic data with histological findings.

Method and Materials

This retrospective study was conducted in department of pathology, Shri Shankara Institute of Medical Sciences from March 2017 to December 2022. Total 104 patients were included in this study. The biopsy material included transurethral resection of prostate specimens, needle biopsies, both trucut and core needle biopsies. There were 90 TURP specimens, 12 needle biopsies and 2 Open prostatectomy specimens. All the specimens were fixed in 10% neutral buffered formalin and 5 μ sections were stained with hematoxylin and eosin stain (H & E stain). Relevant clinical data including age, the presenting complaints and S.PSA

values in selected biopsy cases were recorded.

Exclusion Criteria: Cases of prostatic lesions diagnosed by imaging, clinical examination, and/or hormonal profile alone were excluded from the study.

Statistical Analysis

Data were entered in a Microsoft excel sheet and analyzed using descriptive analysis. The quantitative variables such as age are expressed as mean SD (standard deviation), and qualitative variables such as histopathological diagnosis are represented by frequencies and percentages.

Results

The histological spectrum of all associated epithelial and stromal lesions in benign prostatic hyperplasia and adenocarcinoma have been analyzed using various statistical tests. Out of 104 cases analyzed, 90 were TURP specimens, 12 were trucut needle biopsies and 02 were open prostatectomy specimens.

Table 1: Distribution of cases in relation to surgical biopsy specimens

Surgical biopsy specimens	Total No. of cases	Percent
Transurethral resection of prostate	90	87%
Trucut needle biopsy	12	11%
Open prostatectomy	02	2%

Table 2: Distribution of cases based on HPE diagnosis

Lesions	Total no. of cases	TURP	Trucut biopsy	Open prostatectomy
BPH	92	86	04	02
Adenocarcinoma	09	04	05	00
Inadequate tissue	03	00	03	00

Majority of the specimen (92) showed BPH, 86 from TURP, 04 from trucut biopsy and 02 from open prostatectomy specimen. Nine specimens show adenocarcinoma and three were inadequate.

Table 3: Distribution of cases in relation to Age

Age group(years)	No. of cases
41-50	05(5%)
51-60	24(23%)
61-70	41(39%)
71-80	26(25%)
81-90	08(8%)

Discussion

Prostatism is a common malady in the geriatric age group. Benign prostatic hyperplasia and Carcinoma of the prostate are increasingly frequent with advancing age and are uncommon before the age of 40 yrs. A careful examination of the prostate in an unselected series of autopsies disclosed nodular hyperplasia in approximately 20% of the men in 40 yrs of age, a figure that increases to 70% by age 60 and to 90% by eighth decade of life. In India the incidence of benign prostatic hyperplasia is estimated to be 92.97% [1]. In patients with clinically detected nodules, raised PSA, needle biopsy/trucut needle biopsy is an established tool to confirm the diagnosis. It is currently estimated that in United States of America approximately 200,000 new cases are detected every year, of which approximately one fifth prove to be lethal [2].

BPH and prostate carcinoma are becoming more common with advancing age. Both react to the antiandrogenic medication. In the present study, 104 surgical specimens of the prostate were analyzed.

Out of 104 cases analyzed in our study benign prostatic hyperplasia were found in 90 (87%) patients, prostatic adenocarcinoma in 12 (11%) patients and 2 (2%) trucut biopsy specimens turned out to be inadequate samples for making a diagnosis.

The patients were in the age group ranging from 35 to 85 yrs. The peak age group was 61 to 70 yrs, followed by 51-60 yrs. Our data are in agreement with the study by Muthuvel *et al* who showed that 92.98% of cases were of BPH followed by 7.02% of PAC cases [3]. Both BPH and PAC cases were maximum in

the sixth and seventh decades in our study which was similar to observations made by Josephine *et al* and Gajjar *et al* in that there was an increase in the frequency of BPH and PAC as age increased [4,5].

Conclusion

We concluded that benign prostatic hyperplasia was the commonest lesion encountered followed by carcinoma of prostate. CA prostate is associated with elevated levels of serum prostate specific antigen. But definitive diagnosis can be made out by histopathological examination of prostatic biopsies.

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