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Prostatic lesions: A retrospective study of Turp Specimen

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Abstract
Introduction: The term "prostate" is originally derived from the Greek word "prohistani", meaning "to stand in front of" [1]. It is one of the most commonly affected organs in elderly males,so early detection and management is required.
Methods: The study includes 215 cases of TURP specimen for 2 years period from January 2017 to December 2018 received in department of pathology, D. Y. Patil Institute of Medical sciences and Hospital, Kolhapur. Hematoxylin and Eosin sections were examined. The clinical complaints and microscopic details were analysed and compared with similar studies. Malignancy was reported according to Gleasons score.
Results: Of the total 215 TURP specimen, 179 (83.25%) were of nodular hyperplasia, 19 (8.8%) were of nodular hyperplasia with prostatitis, 3 (1.4%) were of prostatic intraepithelial neoplasia and 9 (4.18%) cases were malignant. Few cases were of granulomatous prostatitis in (2) and atypical adenomatous hyperplasia (1). All the 11 cases of prostate cancer were incidental carcinoma, 1 of which was poorly differentiated, 1 case was of well differentiated adenocarcinoma and 9 cases were of moderately differentiated adenocarcinoma.
Conclusion: The present study showed that out of 215 cases of TURP, the most frequently encountered prostatic lesion were benign, out of which majority were BPH 83.25% commonly seen in the age group of 61-70 years. The malignant lesions were common more than 65 years of age. TURP is helpful in early identification of premalignant lesions and incidental prostate cancer.

Keywords: Granulomatous Prostatitis, Benign Prostatic Hyperplasia, atypical adenomatous hyperplasia, prostatic intraepithelial neoplasia, Prostatic adenocarcinoma

Introduction

The term "prostate" is originally derived from the Greek word "prohistani", meaning "to stand in front of". It is one of the most commonly affected organs in elderly males, so early detection and management is required [1].

The histological diagnostic criteria for various non-neoplastic and neoplastic prostatic lesions are well studied. Despite this, a better understanding of these lesions to examine the significance of relationships between known benign lesions and more aggressive, malignant lesions is necessary, in the light of new advances [2, 3].

In a study, the occurrence of epithelial hyperplasia which includes basal cell hyperplasia, papillary hyperplasia and cribriform hyperplasia, significantly correlated with prostatic intraepithelial neoplasia (PIN) and only cribriform hyperplasia correlated frequently with atypical adenomatous hyperplasia (AAH) [4]. These findings underline the positive relationships between benign events such as glandular necrosis with repair and epithelial hyperplasia, which in turn may predispose to recognized premalignant lesions such as PIN [4]. Similarly, premalignant lesions within BPH nodules are frequent and occur in about 20.6% of cases [5].

High-grade PIN consists of architecturally benign prostatic acini lined by cells that seem to be malignant. Prostates with carcinoma have more of these foci than do those without carcinoma. Prostate glands with extensive high-grade prostatic intraepithelial neoplasia also have more multifocal carcinomas. Hence, these findings serve as further histological evidence that High-grade PIN is a precursor to some prostate carcinomas [6].

The diagnosis of prostatic carcinoma is challenged by numerous histologic mimics that should be known to avoid misdiagnosis [7, 8]. These mimics in the prostate include those of prostatic epithelial origin, the most common being atrophy, adenosis (AAH),

basal cell hyperplasia, and crowded benign glands, as well as those of non-prostatic origin, such as seminal vesicle epithelium. Such lesions often mimic lower grade prostatic adenocarcinoma, whereas others, such as clear cell cribriform hyperplasia and granulomatous prostatitis, mimic prostatic adenocarcinoma Gleason grade 4 or 5 [7, 8]. Clinically, the simultaneous presence of benign and malignant disease is observed quite often, and this coexistence is bound to increase with the age of patients [9]. However, with the exception of a few pathognomonic histological features of prostate cancer, the diagnosis of cancer should be based on a constellation of features rather than on any one criterion by itself [8].

Therefore histological identification of prostatic lesions, with a closer look at the benign mimickers that challenge the diagnosis of prostatic carcinomas will enable better understanding of these lesions with appropriate diagnosis and treatment.

Material and methods

The study includes 215 cases of TURP specimen for 2 years period from January 2017 to December 2018 received in department of pathology, D. Y. Patil Institute of Medical sciences and Hospital, Kolhapur. Hematoxylin and Eosin sections were examined. The clinical complaints and microscopic details were analysed and compared with similar studies. Malignancy was reported according to Gleasons score.

Gleason patterns are associated with the following features [9]

Pattern 1 - The cancerous prostate closely resembles normal prostate tissue. The glands are small, well-formed, and closely packed. This corresponds to a well differentiated carcinoma.

Pattern 2 - The tissue still has well-formed glands, but they are larger and have more tissue between them, implying that the stroma has increased. This also corresponds to a moderately differentiated carcinoma.

Pattern 3 - The tissue still has recognizable glands, but the cells are darker. At high magnification, some of these cells have left the glands and are beginning to invade the surrounding tissue or having an infiltrative pattern. This corresponds to a moderately differentiated carcinoma.

Pattern 4 - The tissue has few recognizable glands. Many cells are invading the surrounding tissue in neoplastic clumps. This corresponds to a poorly differentiated carcinoma.

Pattern 5 - The tissue does not have any or only a few recognizable glands. There are often just sheets of cells throughout the surrounding tissue. This corresponds to an anaplastic carcinoma.

Inclusion Criteria: TURP specimens showing spectrum of prostatic lesions.

Exclusion Criteria: Prostatectomy and prostatic biopsy specimens will be excluded from the study.

Results

Of the total 215 TURP specimen, 179 (83.25%) were of nodular hyperplasia, 19 (8.8%) were of nodular hyperplasia with prostatitis, 3 (1.4%) were of prostatic intraepithelial neoplasia and 9 (4.18%) cases were malignant. Few cases were of granulomatous prostatitis in (2) and atypical adenomatous hyperplasia (1). All the 11 cases of prostate cancer were incidental carcinoma, 1 of which was poorly differentiated, 1 case was of well differentiated adenocarcinoma and 9 cases were of moderately differentiated adenocarcinoma.

Table 1: Histo-Pathological distribution of cases

Histo-Pathology	Number of cases	Percentage
Nodular hyperplasia	179	83.25%
Nodular hyperplasia with prostatitis	19	8.8%
Intraepithelial neoplasia	3	1.4%
Granulomatous prostatitis	2	0.9 %
Atypical adenomatous hyperplasia	1	0.46%
Incidental carcinoma	11	5.1%
Total	215	100

Discussion

The total 215 TURP specimen, 179 (83.25%) were of nodular hyperplasia, 19 (8.8%) were of nodular hyperplasia with prostatitis, 3 (1.4%) were of prostatic intraepithelial neoplasia and 9 (4.18%) cases were malignant. This corroborates with findings of Shirish C *et al*, Thapa N *et al* and Josephine A. BPH cases were maximum in the seventh decade in our study which was similar to observations made by Kasliwal N *et al*, Arya RC *et al*, Kumar M *et al*. PIN was noted in our study, between 61-80 years with maximum number of HGPIN cases in 71-80 years age group and LGPIN cases in 61-70 years age group. This correlates with the study of Khatib W *et al*. We observed that the commonly affected age group by malignancy was 71-80 years which was similar to findings of Kasliwal N *et al* and Deshmukh BD *et al*. [10, 11, 12]

Few cases were of granulomatous prostatitis in (2) and atypical adenomatous hyperplasia (1). BPH represents nodular enlargement of the prostate caused by hyperplasia of glandular and stromal components. Majority of the cases of BPH showed a mixed pattern of hyperplasia involving both adenomatous and fibromuscular component which was comparable with Deshmukh BD *et al* and Mittal BV *et al*. Corpora amylacea was present in most of the cases of BPH. Metaplastic changes comprising of squamous or transitional epithelium were noted in 20 cases. One case showed predominantly stromal hyperplasia with scant glandular elements. One case of basal cell hyperplasia was also seen. Similar changes were found in other studies [13, 14, 15].

All the 11 cases of prostate cancer were incidental carcinoma, 1 of which was poorly differentiated, 1 case was of well differentiated adenocarcinoma and 9 cases were of moderately differentiated adenocarcinoma. These findings are similar to the studies of Kasliwal N, Mathi A *et al* and

Puttaswamy K *et al*. AAH (also known as adenosis) is a common mimicker of adenocarcinoma prostate. It is usually an incidental histological finding, mostly localized in the transition zone and thereby seen more often in TURP specimens. AAH, at low magnification appears as complex and disorderly cluster of glands with an expansile margin having minimal infiltration at perimeter but no cytological atypia. The incidence of AAH in our research was noted to be 1.22% which correlates with the findings reported by Puttaswamy K *et al.* (2%) and Garg *et al.* (1.65%) [16, 17].

Conclusion

Spectrum of prostatic lesions includes variety of non-neoplastic and neoplastic lesions. Although benign and malignant lesions of prostate are distinct and are well studied, there are some benign lesions that often mimic cancer causing diagnostic dilemma. These lesions have not been fully studied and lack standardization. Therefore more thorough histopathological examination of prostatic tissue is needed to identify these lesions and to correlate its relation with prostatic carcinomas, which in turn leads to early diagnosis and appropriate treatment.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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