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ORIGINAL ARTICLE

Histologic Analysis of Incidental Carcinomas of The Prostate Gland in Portharcourt: A 10 Year Retrospective Review.

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ABSTRACT

Background: Incidental prostate cancers, i.e. cancers found in the specimens of men undergoing surgery for benign prostatic hyperplasia (BPH), have been regarded as non-lethal and harmless, therefore have most times , been left without treatment. However, recent studies have demonstrated otherwise, showing that there is significant mortality associated with the cancer. We determined the occurrence and evaluated the morphologic characteristics of incidental carcinomas of the prostate in a Teaching Hospital in Nigeria. **Materials and methods:** This was a retrospective review of prostatectomy specimens from patients clinically diagnosed of BPH between 1996 and 2005 at the University of Port Harcourt Teaching Hospital. **Results:** Age range of patients was 52-87 years, with mean of 67.4 years and peak age group of 60-69 years. Thirty-four (10.3%) of the reviewed 331 cases were positive for incidental carcinomas. All cases were adenocarcinomas. Twelve (35.3%) were well differentiated. Gleason score 5-6 constituted the majority of the cases 18 (52.9%). Eighteen cases (52.9%) were of large acinar morphologic pattern. **Conclusion:** The incidence of incidental carcinomas of the prostate in our environment is significant, consequently urologists should exercise high index of suspicion while attending to patients clinically diagnosed of BPH. The overall morphologic features portend fair prognosis and contrasts with the established late presenting, and advanced clinical carcinomas with poor prognosis.

Keywords: Incidental carcinoma, Prostate, Histopathology, Port Harcourt.

INTRODUCTION

Histological examinations of the prostate gland from autopsy procedure and from surgical specimens removed on account of clinically diagnosed benign prostate hyperplasia (BPH) could reveal malignant neoplasm, commonly a carcinoma. The neoplasm comes under various names including occult, latent, unsuspected, incidental or even pathologists' cancer.

The frequency of incidental prostate carcinoma is variable. It is largely influenced by technical methodology, histological criteria for malignancy and (or) selection of materials for study[1,2]. In the developed countries, the literature reported rate of incidental carcinoma in surgically removed specimens ranges from 4.6% to 86%. While in Nigeria, the incidence rate is between 5-49% [3,4,5]

The age of patients at diagnosis varies from study to study. While some observed a relatively high incidence rates among younger age group, [6,7] most others reported increasing incidence with advancing age,[4,8,9] linking on-set of incidental prostate cancer with advanced age [10,11.] Although most studies reported 5th decade as the peak age group, [4,5,12] some studies 6th and 7th decades. Different studies have also reported variations in the mean age of patients, ranging from 61 to 68.9 years. [7,12,13]

Incidental carcinomas of the prostate exhibit a narrow range of morphologic characteristics. Most studies have shown their cases to be predominantly of well differentiated adenocarcinomas,[5,14-16] with fewer cases being moderately and poorly differentiated. Most studies bordering on the biologic behavior of incidental carcinoma have shown that the lower the Gleason grade, the larger the size of the gland and the lower the tumour volume, the better the prognosis for the patient [11,15,17] Also a study by Shroeder [18] has linked better patient survival to the gland morphology of incidental carcinoma, among other key factors.

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Presently, there are no proven primary prevention strategies for prostate cancer in general and no definitive treatments for metastatic diseases are available [17,18]. Therefore control efforts have focused on detecting and treating early-stage prostate cancer with screening tests. Unfortunately the culture of screening has so far not been imbibed in our local environment as most cases present late. [19,20] Therefore, this study evaluated the incidence of incidental carcinoma in a black African population.

MATERIALS AND METHODS

From the in-coming tissue register of the Department of Anatomical Pathology, University of Port Harcourt Teaching Hospital, Port Harcourt all cases of prostatectomy undertaken for clinically diagnosed benign prostatic hyperplasia between January 1996 and December 2005 were identified. The request forms, Haematoxylin and Eosin (H & E) slides and the paraffin embedded tissue blocks of these patients were sorted-out from departmental archives. Information extracted from the request cards of the patients included, age, clinical presentation and diagnosis. The slides were reviewed for histologic evidence of carcinoma. The positive cases were in turn morphologically characterized according to WHO scheme and graded using the Gleason pattern. Where necessary, new H&E slides were prepared from the 10% formalin fixed, paraffin embedded tissue blocks. The results were analyzed using simple descriptive statistics.

RESULTS

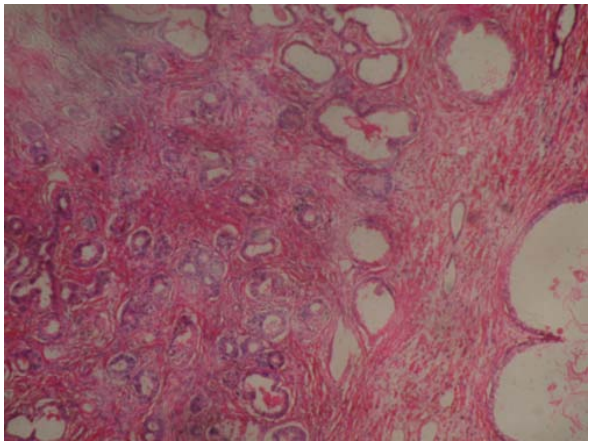
Three hundred and thirty one BPH specimens collected within the 10-year period were reviewed for carcinoma. The patients' ages ranged from 52 to 87 years; the mean age was 67.4 years and the peak age group was 60-69 years. The incidence was observed to increase with age till the peak, beyond which it declined steadily (Table 1). Thirty-four cases (10.3%) had carcinoma. All cases were adenocarcinomas. Twelve cases (35.3%) were well differentiated, while 10 cases (29.4%) were moderately differentiated. Poorly differentiated and undifferentiated constituted 7 (20.6%) and 5 (14.7%) respectively.

Gleason grading showed a distribution range of 4-9, with scores 2-4 constituting 3 cases (8.8%), 5-6 constituted 18 cases (52.9%) while 7-10 constituted 13 cases (38.2%). Peak single score was 6 with 11 cases, constituting 32.4% of all carcinomas (Figs 1 - 4).

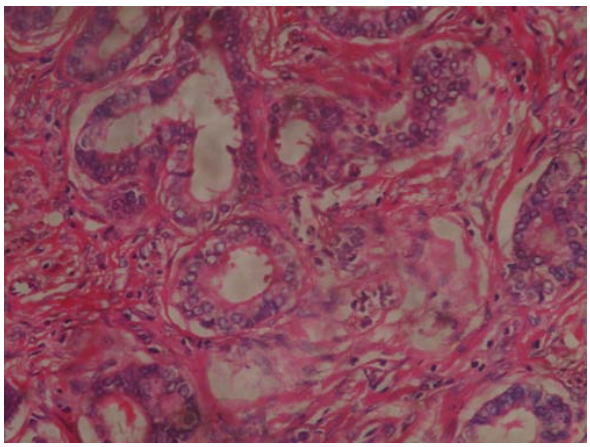
Table 1: Age and Pathology Distribution among Patients

Age	No. of BPH	No. of Carcinoma	% of Ca.
30 - 39	2	0	0
40 - 49	24	0	0
50 - 59	72	6	17.64
60 - 69	116	12	35.29
70 - 79	98	9	26.47
80 - 89	19	7	20.58
Total	331	34	100

Gleason Grade 2 Incidental carcinoma H&E X100

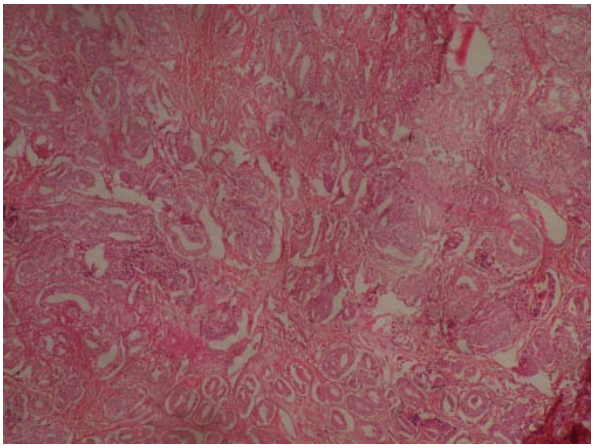


Gleason Grade 3 Incidental carcinoma H&E X100

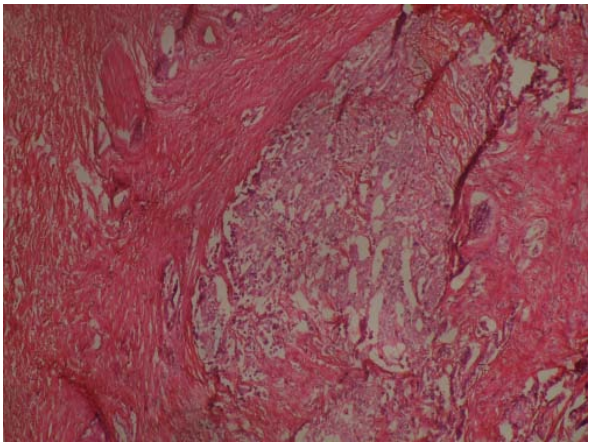


Eleven cases (32.4%) were of large acinar pattern, while small acinar constituted 10 cases (29.4%). Cribriform pattern constituted 8 (23.5%) and solid pattern constituted 5 cases (14.7%).

Gleason Grade 4 Incidental carcinoma H&E X100



Gleason Grade 4 Incidental carcinoma H&E X100



DISCUSSION

The incidence rate of incidental prostatic carcinoma (IPC) in this study is well within the literature documented incidence rate range of 4.6-86%. [1,3,4,5]. The reason for this is consistent with that given by Yatani et al, which is the influence of technical methodology, histological criteria for malignancy and /or selection of materials for study. The dexterity and thoroughness with which step sectioning is done by different pathologists influences the observed incidence. A study by Sheldon [2] found that only 30-50% of incidental carcinomas diagnosed by step-sectioning technique is usually picked up by routine sectioning method. This supposes therefore, that the actual incidence of incidental carcinoma of the prostate in our centre may be much higher than is noted in this study. This is because the tissues, which were examined histologically in this study, were microtomed using random sectioning method, which is the routine practice in our centre.

The relationship between age and incidence of IPC in this study compares well with an earlier study[4, 6,7, 12]. Our finding supports that the incidence of IPC tend to increase with advancing age,[4, 6, 7, 8] although there were fewer young patients with BPH.

All the detected carcinomas were adenocarcinomas, majority of which were well differentiated. This finding is similar to other reports [5,13-15], although the percentage of patients in our study with moderate to poor differentiation was conversely higher than those of the aforementioned studies.

Morphologically, large and small acinar patterns predominate in the IPCs in the present study, with a few cribriform and solid patterns constituting the remainder. Thus, most of our incidental carcinoma cases are expected to have good prognosis because previous studies have linked large sized glands with good prognosis.[11,15]

Gleason grading of the adenocarcinomas showed a distribution range of 4 - 9, with peak score range of 5-6 (52.9%) and peak score of 6. Since a Gleason range of 5-6 portends fair prognosis, the majority of our cases are expected to have fair prognosis.

In conclusion, there is high incidence of IPC in BPH specimens in our setting. This suggests that urologists should have high index of suspicion of carcinoma on clinically diagnosed BPH cases. Although the overall morphologic features and Gleason scores of majority of the cases seen in this study portend fair prognosis, routine prostatic specific antigen (PSA) screening is advocated to facilitate early detection of prostate carcinoma in our environment.

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