Histopathologic Pattern of Enlarged Prostate in Chittagong

*Chowdhury MO,[1] Ahamad MU,[2] Salam A,[3] Ahmed AM,[4] Uddin MJ[5]

To know the histopathologic pattern of prostatic diseases causing prostatic enlargement in Chittagong, Bangladesh, we have conducted the study. The study was conducted during January 2010 to December 2012 in the Department of Pathology of Chattagram Maa o Shishu hospital Medical College, Agrabad, Chittagong, Bangladesh. Specimen was collected from 224 patients. Specimens were received in 10% formalin and processed by paraffin embedding technique and stained with Hematoxilin and Eosin. Most of the samples were received in the form of prostatic chips obtained by transurethral resection of prostate (TURP).The histopathologic pattern was found as follows: nodular hyperplasia 91%, carcinoma 8.5% and others 0.5%. Majority of the adenocarcinoma cases were moderately differentiated (Gleason score 6-8). Age range of the cases was 41-103 years. Mean age was 67.3±10.6. Histopathology of prostatic tissue is very important for effective management of prostatic diseases. So, histopathology of all prostatic tissue should be properly conducted to rule out benign and malignant lesions.

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Key words: Prostatic disease, histopathologic pattern, nodular hyperplasia of prostate, adenocarcinoma, Gleason score

Introduction

Prostate gland is located at bladder neck surrounding urethra. It enlarges with the advancement of age resulting partial or complete obstruction to urinary outflow.[1] Causes of prostatic enlargement are benign, malignant and inflammatory. Nodular hyperplasia is the commonest cause.[2] Latest estimate of global cancer burden manifested prostate cancer as the commonest cause of cancer in men around 65 years age group.[3] Histopathology of properly collected and processed prostatic tissue is the gold standard test for diagnosis of prostatic diseases and Gleason scoring is usually used for grading of prostatic adenocarcinoma.. Histopathologic pattern also indicates management modality of prostatic diseases[4]. One study was carried out by Talukder et al[5] in Mymensingh, Bangladesh. In Chittagong region, so far we know, there is no such study on histopathological pattern of enlarged prostate. So this study is designed to see the histomorphological changes causing prostatic enlargement in Chittagong region of Bangladesh.

1. *Dr. Md. Babul Osman Chowdhury, Associate Professor, Department Of Pathology, Chattagram Maa-O-Shishu Hospital Medical College, Chittagong, Bangladesh. babulosman63@gmail.com*
2. *Dr. M. Shahab Uddin Ahamad, Assistant Professor Department of Pathology Cox's Bazar Medical College, Cox's Bazar, Bangladesh.*
3. *Dr. Abdus Salam, Assistant Professor Department of UrologyCox's Bazar Medical College, Cox's Bazar, Bangladesh.*
4. *Dr. ASM Moshtaque Ahmed, Prof & Head, Department of Pathology and Principal, Chattagram Maa-O-Shishu Hospital Medical College, Chittagong, Bangladesh*
5. *Dr. Mohammad Jalal Uddin, Prof & Head, Dept of Community Medicine Chattagram Maa-O-Shishu Hospital Medical College, Chittagong, Bangladesh.*

** For correspondence*

Methods

It was an observational study. Sampling technique and sample size was purposively determined. The study was conducted during January 2010 to December 2012 at Department of Pathology, Chattagram Maa-O-Shishu Hospital Medical College, Agrabad, Chittagong, Bangladesh. A total of 224 specimens of prostatic tissue were collected from different hospitals and clinics of Chittagong, received in 10% formalin, grossly examined, paraffin embedded sections were made and stained by H& E method. All slides were verified by 2 histopathologists. In case of malignancy Gleason scoring was done accordingly. Collected data was manually managed.

Results

A total of 224 cases were there. Age range of the cases was 41-103 years with mean age of 67.3±10.6. Maximum patients belonged to 61-70 years age group (34%). The age distribution is shown in Table I.

Table I : Age distribution of cases

Age group	No. of cases (%)
≤50 years	20 (09%)
51-60 years	50 (22.5%)
61-70 years	76 (34%)
71-80 years	53 (23.5%)
≥81 years	25 (11%)
Total	224 (100%)

Table II: Histopathologic pattern of prostatic tissue

Histopathologic pattern	No. of cases (%)
Nodular hyperplasia	204(91%)
Adenocarcinoma	18 (08%)
Transitional cell carcinoma	01 (0.5%)
Granulomatous inflammation	01 (0.5%)
Total	224 (100%)

Table III: Accompanying features with nodular hyperplasia

Diagnosis	No. of cases (%)
Nodular hyperplasia only	168 (82.35%)
NHP with Chronic prostatitis	32 (15.6%)
Nodular hyperplasia with Microabscess	03 (1.47%)
NHP with infarction	01 (0.49%)
Total	204 (100%)

NHP-Nodular hyperplasia.

Table IV: Gleason scoring of adenocarcinoma

Type	Gleason score	No. of cases(%)
Well differentiated	2-4	02 (11%)
Moderately differentiated	5-7	14 (78%)
Poorly differentiated	8-10	02 (11%)
Total		18 (100%)

Histopathologic pattern of prostatic tissue was as follows: Nodular hyperplasia 204 (91%), adenocarcinoma 18(08%0, transitional cell carcinoma 01(0.5%). Granulomatous prostatitis was 01 (0.5%). Chronic prostatitis 32 (15.6%), acute inflammation with microabscess 03(1.47%) and infarction 1(0.49%) were accompanying features of nodular hyperplasia. The histopathologic pattern is shown in Table II and frequency of accompanying features is shown in Table III. Adenocarcinoma cases were graded with Gleason scoring. Well differentiated cases 2(11%), moderately differentiated 14 (78%) and poorly differentiated 02(11%) cases. It is shown in Table IV.

Discussion

Basically there are three leisions: Nodular hyperplasia, malignancy, infection and inflammation.[1] Pure leiomyoma of prostate is a rare cause of prostatic enlargement.[6] Nodular hyperplasia is the leading cause. Present study shows 91% is due to nodular hyperplasia, malignancy 8.5% and others 0.5%. The study results were contrasted with

similar studies of home and abroad. There is no significant difference in age group of different study population ($p>0.05$). A Pakistani study conducted by Hamid et al[7] in 2010 showed that Nodular hyperplasia was 86.5% and malignancy was 13.5%. These results significantly differ with present study ($p<0.05$). Cause of this difference is not detected. Study conducted by Talukder et al[5] in 2007 in Bangladesh also significantly differs with present study. Talukder found nodular hyperplasia 77.4% and malignancy 22.6%.[5] However, studies of Saudi Arabia and Oman support present study. According to their studies nodular hyperplasia were 88.5%[8] and 90%[9] respectively.

Conclusion

Benign nodular hyperplasia is the commonest cause of prostatic enlargement giving rise to clinical manifestations. However, prostatic carcinoma is the second ranking prostatic disorders and commonest cancer in male population. So, histopathology of all prostatic tissue should be properly conducted to exclude malignancy. Moreover we suggest PSA screening test for all male over 50 years for early diagnosis of prostatic malignancy.

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