

An Observational Study on Incidental Prostatic Carcinoma in Biopsy Specimens of Benign Prostatic Enlargement at RIMS, Ranchi, Jharkhand

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ABSTRACT

Introduction: Carcinoma prostate is the most common malignant tumor in men over the age of 65 years. Studies has shown that incidence of carcinoma prostate has increased in most of the industrial countries but overall mortality has decreased because of increased use of screening methods for early detection of prostate cancer. Incidental prostate carcinoma (IPC) is a form of early prostate cancer which get diagnosed on histopathological examination (HPE) after surgery for benign disease of prostate. Study aimed to observe the cases of incidental prostatic carcinoma in specimens of operated cases of benign prostatic enlargement (BPE).

Material and methods: An observational study was conducted at RIMS Ranchi from July 2015 to June 2017 having 123 patients between ages 50 to 85 years who presented with features of benign prostatic enlargement. The specimens obtained after transvescical prostatectomy were sent for HPE.

Results: The patients of IPC were having predominant symptoms as hematuria and acute retention of urine. 9 patients were found to have IPC. Out of 9 cases, 5 were in 8th, 3 in 7th and 1 in 6th decade of life respectively. The mean age for IPC was 78.5 years. All patients of IPC were having PSA level > 10 ng/ml. 5 cases were having TNM Stage T1a and Gleason's score 6 (3+3) and 4 were in Stage T1b and Gleason's score 7 (3+4).

Conclusion: Incidence of prostate cancer detection increases with age. If it detects earlier, further management can be planned. So there is need to study all biopsy samples of BPE in our scenario, however majority of these incidentally diagnosed prostate cancer do not show any signs of progression so no aggressive management is required.

Keywords: Incidental Prostatic Carcinoma, Transvescical Prostatectomy, Benign Prostatic Enlargement, Prostate Specific Antigen

2.9%.² Incidental prostate carcinoma is a form of early prostate cancer which do not detect on clinical examination, and are diagnosed on HPE of the biopsy specimen after surgery for benign disease of prostate.⁴ They are impalpable tumours found incidentally have stage T1a and T1b. Stage T1a- < 5% of tissue in resection for benign disease has cancer, normal DRE and Stage T1b- >5% of the tissue in resection for benign disease has cancer, normal DRE.² PSA is prostate specific antigen have normal range < 3 ng/dl but no value is specific for prostate cancer. It is prostate specific not cancer specific. Gleason's grading is a sum of primary grade and secondary grade of the cancer. Grades ranges from 1 to 5. Primary grade is most commonly observed pattern and secondary grade is second most commonly observed pattern in HPE. Prostatic intraepithelial neoplasia (PIN) a precursor lesion of carcinoma prostate is classified as low grade and high grade neoplasia.² The incidence of high grade PIN on biopsy average is 7.6% among 38 studies with a median of 5.2%.⁵ The incidence of carcinoma prostate has increased in most of the industrial countries but overall mortality has decreased because of increased use of screening methods for early detection of prostate cancer.⁶ So our need of study to observe the cases of incidental prostate cancer in diagnosed cases of BPE, so that if cancer get diagnosed at earlier age further follow up and management can be planned.

Study aimed to observe the cases of incidental prostatic carcinoma in specimens of operated cases of benign prostatic enlargement (BPE).

MATERIAL AND METHODS

An observational study was conducted in the Department of Surgery at RIMS Ranchi, Jharkhand from July 2015 to June 2017 after taking clearance from institutional ethical committee and consent from the patients. Total 123 patients having age 50 to 85 years were included in the study who were diagnosed to have benign prostatic enlargement on the basis

INTRODUCTION

Carcinoma of the prostate is the most common malignant tumor in men over the age of 65 years. More than 90% of the prostate cancers are adenocarcinomas.¹ 60 to 70% of carcinoma of the prostate originates in the peripheral zone, 10 to 20% in the transitional zone and 5 to 10% in the central zone.² Benign prostate hyperplasia uniformly originates in the transitional zone. Studies shows that prostate cancer arising in transitional zone has good prognosis compared to those arising from peripheral zone.³ Lifetime risk of a 50 year old man for latent carcinoma prostate (as an incidental finding at autopsy) is 40%, for lifetime diagnosis of CaP (Carcinoma Prostate) is 15% and for death from CaP is

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of following chief complaints- frequency of micturition, thin stream of urine, sense of incomplete emptying of the urinary bladder, hesitancy, straining, urgency, nocturia, hematuria and retention of urine. Thorough clinical history, IPSS scoring, digital rectal examination and prostatic specific antigen testing was done. All patients were underwent transvesical suprapubic prostatectomy. All enucleated specimens of prostate were weighed and sent for HPE. The results were recorded as per TNM staging and GLEASON'S grading system. All patients were monitored during post operative period approximate 2 weeks and followed up regularly once every 3-4 weeks.

STATISTICAL ANALYSIS

Microsoft office 2007 was used for the analysis. Descriptive statistics like mean and percentages were used for the analysis.

RESULTS

Out of 123 patients having mean age of 67.5 years of benign prostatic enlargement 9 patients were found to have adenocarcinoma of the prostate. (Table 1)

The presenting complaints of patients of benign prostatic hyperplasia(BPH) were frequency of micturition, sense of incomplete emptying of the bladder, urgency, nocturia, hesitancy. The patients who were later diagnosed as case of IPC were having predominant symptoms as hematuria and acute retention of urine. Out of 9 cases of IPC, 5 cases were in 8th, 3 in 7th and 1 in 6th decade of life respectively. (Table 1) The mean age for patients of BPH was 63.5 years and for IPC was 78.5 years.

DRE findings of all patients was firm, moderate to severely enlarged prostate, with mobile rectal mucosa without any nodularity or induration.

The average IPSS score for BPH was 14 and for IPC were 19. In BPH, 84 patients were having IPSS score between 8 to 19 and 30 patients were having IPSS score between 20 to 35. In IPC, 4 cases were having IPSS score between 8 to 19 and 5 cases were having IPSS score between 20-35. (Table 2)

In our study the patients were having PSA level between 1 ng/ml to 84 ng/ml. All 9 patients of IPC were having PSA level more than 10 ng/ml. And 22 patients with benign disease also had PSA level > 10 ng/dl. (Table 3)

The average weight of the enucleated specimen of prostate for BPH was found to be 46 grams and for IPC was 36 grams. 5 cases were having TNM Stage T1a and Gleason's score was 6 (3+3). 4 cases were having TNM Stage T1b and Gleason's score was 7 (3 + 4). (Figure 1)

In postoperative period 34 patients were complaining of urinary incontinence, 10 patients developed wound dehiscence and 3 patients were having hematuria for > 10 postoperative days so urinary catheter was kept for about 2 weeks duration. 4 patients had suffered electrolyte imbalance and 15 patients did not turn up for follow up.

DISCUSSION

Incidental prostate carcinoma is a form of early prostate cancer which gets diagnosed on histopathological

Age group (years)	BPH		IPC	
	No.	%	No.	%
50-60	8	7.01	0	0
60-70	68	59.64	1	11.11
70-80	34	29.82	3	33.33
> 80	4	3.50	5	55.55
Total	114		9	

Table-1: Incidence of BPH and IPC in different age groups

IPSS score	BPH		IPC	
	No.	%	No.	%
Mild (0-7)	0	0	0	0
Moderate (8-19)	84	73.68	4	44.44
Severe (20-35)	30	26.31	5	55.55
Total	114		9	

Table-2: IPSS score comparison between BPH and IPC

PSA level (ng/ml)	BPH		IPC	
	No.	%	No.	%
0-3	34	29.82	0	0
3-10	58	50.8	0	0
> 10	22	19.29	9	100
Total	114		9	

Table-3: Comparison of serum PSA between BPH and IPC

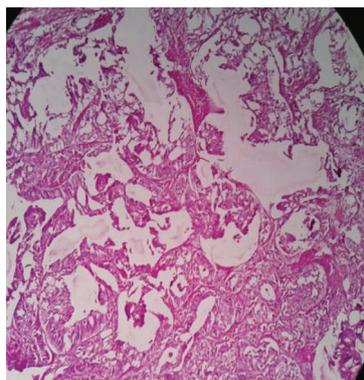


Figure-1: Shows Prostatic Adenocarcinoma [Gleason score 6 (3+3)] (HE x 400)

examination of the enucleated specimen after surgery for benign prostatic disease. Study shows the incidence of IPC is higher in western countries as compared to Asian countries. Prostate cancer prevalence increased with each decade of age. The estimated mean cancer prevalence increased in a non-linear fashion from 5% at age < 30 years to 59% at age >79 years.⁵ Marlon Perera et al observed incidence of prostate carcinoma was 13.4% in men aged <65 years in Australia.⁷ Changhee Yoo et al (2012) reported incidence of prostatic carcinoma after analysis of the specimens after TURP/open was in range of 3-7%.⁸ In a study conducted in Sri Lanka, incidence of prostate carcinoma was 14.9% (66 out of 444 patients).⁹ In 1993, Zigeuner RE, et al found incidence of prostate carcinoma was 13% (314 out of 2422 patients) in Austria.¹⁰ 22% patients out 845 benign prostatic hyperplasia patients were found to have prostatic adenocarcinoma in USA.¹¹ A study conducted in UK from 2005 to 2007 shows incidence of prostatic adenocarcinoma was 11.4% (47 out

of 411 patients), 24/47 were pT1a (51%) and 23/47 were pT1b (49%).¹² Studies has shown that prevalence of cancer detection is more in medium sized prostate (30-40 gm) compare to small and large size prostate.¹³ In our study the average weight of IPC specimens were 36 grams. The data regarding Indian scenario is very less. A study was conducted at Pune, Maharashtra from 2007 to 2011 has shown the incidence of prostatic carcinoma was 15.56%.¹⁴ In our study the incidence of IPC was 7.31% (9 out of 123 patients). In India, Desai et al found incidence of IPC was 6.8%.¹⁵ Our study has also shown similar type of results.

CONCLUSION

The incidence of incidental prostate cancer increases with advancing age. In India incidence is low compare to western countries. Incidence of prostate cancer increases with age, but if it gets detect at earlier age then further management can be planned. Majority of the patients who have diagnosed as having incidental prostate carcinoma does not exhibit any progression therefore these patients do not require any specific medical or surgical therapy. So only wait and watch policy is applied and regular clinical visits, serial PSA measurements and digital rectal examination is sufficient to see any disease progression.

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