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A prospective study to detect silent or latent malignancy of prostate and its relation to age and digital rectal examination

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Abstract
Background: With advancing age, the prostate gland enlarges. A proper pre-operative assessment of size of prostate clinically and by sonography is recommended.
Aims and Objectives: To study biopsy report and compare it with age and digital rectal examination.
Materials and methods: A total hundred prostatism cases were studied at the Department of School of Medical Sciences & Research, Sharda University Greater Noida, from January 2016 to January 2018. Detailed history was obtained from each patients followed by digital rectal examination (DRE). Biopsy results were compared with age of the cases and DRE.
Results: No significant association was obtained between age and biopsy report in cases of prostatism ($p>0.05$). However, BPH was more common among the age group of 61-70 years with average age of 67.24 years. Ca prostate was common (60%) in the age group of 71-80 years with average age of 71.50 years. Most common symptom among cases was frequency (84%) followed by nocturia (80%), urgency (74%) and terminal dribbling (74%). Comparing DRE with biopsy report found that 50% of the BPH (out of 18 cases) had suspicion for ca prostate ($p<0.01$).
Conclusion: No significant association was found between age and biopsy report in cases of prostatism. DRE has little role in the screening for prostate cancer but it should not be omitted from the physical examination of patients, as 50% prostate cancer can be diagnosed by DRE.

Keywords: DRE, prostatism, prostate cancer, biopsy

Introduction
Prostate cancer is the most commonly diagnosed non-cutaneous (visceral) cancer and the second most common cause of death from cancer in males [1]. It is estimated that the lifetime risk of developing microscopic cancer is about 13%, developing clinical disease is 10% and dying from prostatic cancer is 3% [2].
With advancing age, the prostate gland enlarges. A proper pre-operative clinical assessment of size of prostate is recommended.
Digital rectal examination (DRE) is the oldest and most commonly used screening test for prostate cancer and its use has been recommended by several expert groups including American Cancer Society and American Urological Association [3, 4]. DRE can provide erroneous results in predicting size, surface and consistency of prostate. DRE is still a basic step in the suspecting prostate cancer [5].
In present study we tried to find out the silent/ latent malignancy of prostrate by transperineal prostate biopsy in patients coming to surgery OPD with complaints of prostatism.

Materials and methods
Present prospective study was performed on 100 cases of prostatism coming to Surgery outpatient Department of School of Medical Sciences & Research, Sharda University Greater Noida, from January 2016 to January 2018.
All male patients above 50 years of age having complaints of frequency, nocturia, urgency, hesitancy, weak stream and acute retention of urine and those willing to give a written informed consent were included.
Confirmed cases of prostate cancer, deranged coagulation profile and unwilling to participate were excluded from the present study.
Detail history along with clinical examination of patient including digital rectal examination (DRE) was done. Routine laboratory investigations complete hemogram with bleeding time and clotting time, liver function tests, renal function tests, urine routine and microscopy was done. Biopsy procedure explained to patient in details and written informed consent taken. Antibiotic coverage was given to patient before and after procedure. No anesthesia was required in present study.
Under all aseptic condition transperineal prostate biopsy was taken and samples were sent to pathology laboratory for reporting. If necessary, admission was done for one day in ward. All the data analysis was performed using IBM SPSS ver. 20 software. Quantitative data was expressed as mean ± standard deviation (SD) whereas categorical data was expressed as percentage. Cross tabulation and frequency distribution was used to prepare the table and Microsoft excel 2010 was used to prepare the required graph. Level of significance was assessed at 5% level.

Results

Table 1: Comparing age and Biopsy report in cases of Prostatism

Age (years)	BPH	Ca prostate	Atypia	Inconclusive/failure of procedure	Total (%)
51-60	13 (14.13)	0 (0)	0 (0)	0 (0)	13
61-70	53 (56.52)	2 (40)	1 (100)	1 (100)	57
71-80	25 (27.17)	3 (60)	0 (0)	0 (0)	28
81-90	2 (2.18)	0 (0)	0 (0)	0 (0)	2
Total (%)	93	5	1	1	100
Mean ± SD	67.64±14.25	71.50±11.57	65.5±0	65.5±0	67.60± 16.47

Data is expressed as nu of patients (%)

On applying Chi-square test we did not find significant association between age and biopsy report in cases of prostatism ($p>0.05$). BPH was commonest / higher (57%) in the age group of 61-70 years with average age of 67.24 years. Ca prostate was common (60%) in the age group of 71-80 years with average age of 71.50 years.

Frequency (84%) was the commonest symptom followed by nocturia (80%), urgency (74%), terminal dribbling (74%), hesitancy (42%), weak stream (42%) and acute retention of urine (16%) observed in the cases of prostatism.

DRE findings of enlarged prostate revealed that in 7%, 8% and 3% patient's consistency was hard, surface was irregular and rectal mucosa was fixed.

Table 2: Comparing Digital Rectal Examination (DRE) and Biopsy report in cases of prostatism

DRE examination	BPH	Ca prostate	Atypia	Inconclusive/failure of procedure	Total (%)
Positive	4 (50)	4 (50)	0 (0)	0 (0)	8
Negative	89 (96.74)	1 (1.09)	1 (1.09)	1 (1.09)	92
Total (%)	93	5	1	1	100

DRE Positive; suspicious for ca prostate, DRE Negative; non-suspicious for ca prostate, Value of $\chi^2 = 189.34$, d.f.=3, $p<0.01$, highly significant

Discussion

Prostate cancer is rarely diagnosed in men younger than 50 yrs old, but becomes more common with advancing age [6]. The average age of incidence of Ca Prostate in our study was 71.8 years and 60 % patients of Ca prostate in age group 71-80 years.

This findings were confirmed with those of Hankey *et al.* who has shown the average age at the time of diagnosis of Ca prostate was 70 yrs [7]. Shaker *et al.*, [5] in the study of 213 cases found average age of 69.6 years, whereas Ries *et al.* found average age of diagnosis of Ca prostate as 68 yrs with 63 % diagnosed after the age of 65 years [8].

BPH was higher (57%) in the age group of 61-70 years with average age of 67.24 years. Shrivastava *et al.* [9] found the average age of BPH between 51-70 years in 75% cases where Tang *et al.* in study of 372 cases had found average age of 67 years [10].

In our study, commonest symptom of presentation of patients was frequency (84%) followed by nocturia (80%), urgency and terminal dribbling (74%), hesitancy & weak stream (42%) and acute retention of urine (16%). Miller quoted 80% incidence of frequency while Michell stated 75%. Boyle *et al.* stated prevalence of nocturia 78%. Miller quoted only 12% incidence of urinary retention [11, 12].

Higher incidence of retention of urine (16%) and hesitancy and weak stream (42%) noted in our study, is because of ignorant rural old people who neglected irritative symptoms of prostatism & attended OPD after development of obstructive symptoms of prostatism.

On DRE 93 % cases were firm consistency, 7 % cases were hard in consistency; 92 % cases were smooth in surface and 8 % cases had irregular surface; 97 % cases had no involvement of rectal mucosa while 3 % cases were suspected to have involved rectal mucosa. In ca prostate, prostate is hard, irregular, nodular, indurated and rectal wall may be fixed or free.

On DRE only 8 cases were suspected as Ca prostate and 92 cases were suspected as Benign Prostatic Enlargement. On biopsy, out of 8 suspected cases of Ca prostate, only 4 cases (50%) confirmed as Ca prostate. Out of 92 suspected cases of Benign Prostatic Hypertrophy, 89 cases confirmed as Benign Hypertrophic Prostate, 1 case found to have Ca prostate, 1 case Prostatic Atypia and 1 case had Inconclusive report. These findings were confirmed with those of Miller *et al.*, who detect 58% of prostate cancer on DRE [13]. Thompson *et al.* [14] suspected 888 cases of Ca prostate on DRE and confirmed only 364 (41%) cases. Shaker *et al.*, [5] diagnosed 60 % cases of Ca prostate on DRE, whereas El Imam *et al.* [15] 48 % cases of Ca prostate.

Mild complications are relatively common, major complications are very rare after prostate biopsy [16]. Most of the series reporting on transperineal prostate biopsy provide data concerning the complications related to the procedure. According to those data, Transperineal biopsy is safe procedure.

In present study, the complications seen on transperineal prostate biopsy were severe hematuria (1%), significant pain (6%). These findings confirmed with Novella *et al.* [17] who found 2.2 % cases of significant pain after transperineal prostate biopsy, Ficarra *et al.* (Ficarra V 2006) and Kawakami *et al.* [18] found severe hematuria in 0.4 % cases and fever in 0.6 % and 0.8 % cases in respective studies. Galfano *et al.* [19].

studied cases of transperineal prostate biopsy and found 0.4 % cases with severe hematuria, 1.6 % cases of significant pain, 0-1% cases of fever.

However the study is small and of cross sectional in nature, large randomized clinical trial is needed to strengthen the present study findings.

Conclusion

Prostate cancer screening has currently increased the importance of prostate biopsy in urological practice and the detection of prostate cancer. In this study, Ca prostate was found in 7th decades of life in males while BPH was seen in 6th decade of life. BPH was the most common cause of prostates but Ca prostate was the most feared one. DRE has little role in the screening for prostate cancer but it should not be omitted from the physical examination of patients, as 50% prostate cancer can be diagnosed by DRE.

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