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Original Research Article

Incidence of Carcinoma Prostate in Transurethral Resection Specimen in a Teaching Hospital of Nepal

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ABSTRACT:

Introduction: As suggested through several autopsy studies there is a high prevalence of latent prostate cancer in the population. A much smaller proportion of prostate cancer is detected because of clinical symptoms. This study was done to identify the rates of incidentally detected prostate cancer in patients undergoing surgical management of Benign Prostatic Hyperplasia (BPH) in our centre. **Methods**: A retrospective review was done on all transurethral resections of the prostate (TURP) cases from May 2014 to May 2015 at a single tertiary care institution. One hundred and three men, aged 40 to 88 year, underwent TURP and their specimens were sent for the histopathological analysis. **Results**: Five (4.85%) patients were diagnosed with the prostate cancer. All the five patients had Gleason score of seven or more. Two patients had moderately differentiated adenocarcinoma with Gleason score of seven. Three patients had poorly differentiated adenocarcinoma with Gleason score of eight or above. The Prostate cancer was seen only in the age group above 65 years but it was not statistically significant. **Conclusion**: Our series demonstrated that 4.85% of patients had latent prostate cancer. It occurs mainly in men above 65 years of age though this was not statistically significant.

Keywords: prostate-specific antigen • prostatic hyperplasia • prostatic neoplasms • transurethral resection of prostate

INTRODUCTION:

Prostate cancer is the fourth leading cancer in both gender and the second most common cancer in male. The incidence of prostate cancer is on the rise. The reasons for the increase of this disease are not known, but increasing life expectancy and modified diagnostic techniques have been suggested as causes.[1]

The landmark study by Bill-Axelson et al. in 2011, confirmed early prostatectomy was significantly associated with reduced mortality when compared with watchful waiting.[2] At 23 year follow up, men aged ≤65 years experienced the greatest oncological benefit, with a reduction in overall mortality of 25.5% and a prostate cancer death reduction of 15.8% following prostatectomy.[3] Furthermore, this study reported that in men aged ≤65 years, the number needed to treat to avert one death was only four. These findings suggest that early prostate cancer diagnosis and management is critical in this younger population.

Prostate cancer isolated exclusively in the transitional zone (TZ) is uncommon, accounting for only 2-7% of all prostate cancers.[4-6] Several recent studies have reported that cancer arising from the TZ have a more favorable prognosis than

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tumors that arise in the peripheral zone (PZ).[4] As a result, several groups argue that the trans-urethral resection of prostate (TURP) specimen may hold limited diagnostic value.[7] With an increase in PSA screening, there has been a decrease in incidence of carcinoma prostate. The reason being adoption of new technologies do not always provide tissue for pathological examination leading to potentially missed cancers. Some incidental prostate cancers have been shown to be clinically relevant, specifically tumors with a higher Gleason score and stage pT1b.[8] In the context of current screening practices and changing practice patterns, we sought to identify the rates of incidentally detected prostate cancer in TURP specimens.

METHODS:

After obtaining Institutional Review Committee (IRC) approval, a retrospective review was performed on all cases of transurethral resection of the prostate that provided a tissue specimen between 15th May 2014 to 14th May 2015. One hundred and three men, aged from 40 to 88 years, were identified as having BPH who underwent TURP. The patients were divided into two groups i.e. one group consisting of patients younger than 65 years and the other group being 65 years or more. The data were retrieved from the hospital records. Demography details, findings of digital rectal examination (DRE), PSA value and histopathological results were recorded. Patients with a preoperative diagnosis of prostate cancer were excluded from the analysis.

Data were tabulated in Microsoft excel sheet and was analyzed in SPSS 21. Frequencies and percentages were calculated for descriptive data meanwhile Pearson Chi-square test was used to compare the association between categorical data. *P* value less than 0.05 was considered significant.

RESULTS:

There were a total of 103 patients with majority of patients (n=75, 72.8%) 65 years of age or older. This difference was statistically significant ($X^2[N=103, df=1] = 21.4, p<.001$).

Ninety-five (92.2%) patients were histologically diagnosed as having BPH. Forty-five had BPH with chronic prostatitis and one patient was diagnosed to have prostatic intraepithelial neoplasia. Other two had prostatic abscess and necrotic tissue respectively.

Five (4.8%) patients, all above 65 yr of age, were diagnosed with prostate cancer. Two of them had moderately differentiated adenocarcinoma with Gleason score of seven and three had poorly differentiated adenocarcinoma with Gleason score more then seven. Fisher exact test was applied to see the relation between age group and occurrence of incidental prostate cancer and there was no significant difference in cancer occurrence in those age-group (p=.32).

DISCUSSION:

Our study showed an incidental prostate cancer rate of 4.8% the Gleason sum of which ranged from 7 to 9. This detection rate is lower than several other recently published series; however, it is consistent with the overall decrease in incidental prostate cancer in the PSA era. Mai et al. showed similar results in their review of almost 1000 TURP specimens. They found significant decreases in the overall detection rate, 12.9 to 8%, and the amount of pT1b lesions, 10% to 5%.[9] More recently, Jones et al. found a decrease of incidental prostate cancer from 14.9% to 5.2% (pre versus post PSA era) in over 700 patients.[10] They saw significant decreases in both pT1a and pT1b incidental prostate cancer (4.4% to 2.2% and 10.5% to 2.8%, respectively) between the pre-PSA and the PSA era. Other possible reasons for the reduction in incidental prostate cancer include the decreased rate of surgical management of BPH due to increased use of medical therapy as well as an increased use of ablative therapies, which do not always provide tissue for pathologic analysis in patients who ultimately require surgical management of their BPH.[11,12]

Several studies, in addition to ours, have looked at the incidental prostate cancer rate in the PSA era. Prior to our findings, detection rates in the PSA era ranged from 4.8% to 16.7%.[8-11,13-15] Dellavedova et al. found an incidental prostate cancer detection rate of 7% when they reviewed 100 patients who underwent bipolar TURP.[11] Six patients had Gleason grade 3+3 pT1a disease and one patient had Gleason grade 3+4 pT1b disease. Helfand et al. studied the postoperative changes in PSA and PSA velocity in patients undergoing surgical management of BPH, they found an incidental prostate cancer rate of 8.7% in 313 patients who underwent monopolar or bipolar TURP.[13] Twenty patients had pT1a disease and 10 had pT1b disease. They also showed that postoperative PSA values decreased less and PSA velocity was higher in patients who had incidental

prostate cancer compared to BPH.[13] Voigt et al. found an incidental prostate cancer rate of 11.1% in their study trying to identify risk factors for clinically relevant prostate cancer discovered incidentally.[8] 3.4% of the patients in their series had clinically relevant prostate cancer, pT1b, or Gleason grade 7–10 disease. Trpkov et al. have reported the highest incidental prostate cancer rate (16.7%) in the PSA era; however, their study included patients with known prostate cancer.[14] A recent multi-centric review by Yoo et al. showed an incidental prostate cancer rate of 4.8% in over 1600 patients.[15] They found that in addition to DRE findings, the combination of transitional zone volume and PSA could be useful predictors of incidental prostate cancer. Overall, these studies continue to support both a decreased overall prevalence of incidental prostate cancer and more specifically pT1b lesions in the modern era. In addition, they support the use of technologies that do not provide tissue for pathologic examination at the time of BPH surgical management. Besides this, the importance of diagnosis of prostate cancer in younger males is well established in contemporary urological practice.[16] But in our study, none of the patient had incidental detection of carcinoma prostate in population younger than 65 yrs. However in a study conducted by Marlon Perera, prostate cancer was diagnosed in 13.4% of the younger group and 28.7% in the older group.[17] The younger group had a higher proportion of low-volume disease (pT1a). Of the diagnosed prostate cancers, the 92.2% were of acinar adenocarcinoma subtype, with similar proportions between subgroups. Within the younger group, a significantly higher rate of low-grade prostate cancer was diagnosed (Gleason score 6). None of the younger patients were diagnosed having carcinoma prostate in our study but it was not statistically significant.

CONCLUSIONS:

We demonstrated an incidental prostate cancer rate of 4.8% in this PSA era and prostate cancer was seen only in population older than 65 years though not statistically significant.

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