

## Can Apical Prostatic Adenocarcinoma at Biopsy Stratify Patients for Ablative Therapies?

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**Background:** Ablative therapies that rely on urethral protective methods have been used as alternatives to surgical treatment of prostatic adenocarcinoma. These protective methods may result in inadequate treatment of tumor located in the periurethral region. It is known that the apex is the most common location of recurrence. This study was designed to identify if the presence of apical involvement on prostatic biopsies can be used to predict tumor in the periurethral area.

**Design:** Eighty-nine consecutive radical prostatectomy specimens with corresponding data of pre-resection biopsies from February 2007 to August 2008 were studied. Right and left central sagittally-sectioned whole mount slides from each case, including the entire length of the prostatic urethra from apex to base, were reviewed to determine the distance from the urethra to the nearest cancer. The urethra-cancer distance was correlated with tumor location and percentage of core involvement in the corresponding biopsies.

**Results:** The majority of the cases (69.7%, 62/89) showed apical involvement in the biopsy, which correlated significantly with the prostatectomy findings ( $p < 0.001$ ). The presence of apical tumor alone, when compared to non-apical involvement in the biopsy, did not correlate with periurethral tumor (urethra-cancer distance  $\leq 3$  mm) in the prostatectomies. However, the amount of tumor at the apex in the biopsy (10% or greater of the core) did correlate with the frequency of periurethral tumor when compared with those cases demonstrating less than 10% and non-apical involvement (65.9% vs. 37.5%;  $p = 0.007$ ). The presence of bilateral apical tumor involvement also correlates with the frequency of periurethral tumor in the prostatectomy specimens (76.9% vs. 46.1%;  $p < 0.05$ ). In addition, the highest frequency of periurethral tumor was obtained in those biopsy cases that demonstrated bilateral apical involvement with tumor extent of 10% or greater (90.9% vs. 44.9%;  $p = 0.004$ ).

**Conclusions:** 1. Prostate biopsy information can be used to predict periurethral tumor location in the prostatectomy specimen. 2. Apical involvement, when combined with tumor extent and bilaterality, exhibits the highest frequency of periurethral involvement. 3. Patients with above characteristics on prostate biopsies may not benefit from ablative therapy.