

**Biopsy Technique (Transperineal vs. Transrectal) is not Associated with Positive Surgical Margins or Perioperative Morbidity Following Radical Prostatectomy**

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**INTRODUCTION AND OBJECTIVE:** There is concern that transperineal (TP) prostate biopsy causes increased apical periprostatic inflammation resulting in greater surgical difficulty during radical prostatectomy (RP) compared with transrectal (TR) biopsy. We evaluated the short-term oncologic and perioperative outcomes of patients undergoing RP with TP compared with TR biopsy.

**METHODS:** We reviewed the Pennsylvania Urologic Regional Collaborative (PURC) registry for men undergoing RP with TP or TR biopsy. To avoid the influence of serial biopsies on surgical complexity, men with multiple biopsies prior to RP were excluded. Men undergoing TP biopsy were randomly matched by PSA, age, and Gleason score (GS) with men undergoing TR biopsy in a 1:3 ratio. Short-term oncologic outcomes of interest were positive surgical margins (PSM) and first postoperative PSA value. Measures of perioperative morbidity included EBL, LOS, length of catheter placement, and readmission. Baseline demographics were compared with the Chi-squared test and Wilcoxon rank sum test. Due to the matched pairs nature of the data, conditional logistic regression models were fit to test for an association of biopsy approach (TP vs. TR) with the outcomes of interest.

**RESULTS:** Of 4,071 men undergoing RP from May 2015 to July 2021, 48 men (1.2%) had a TP biopsy prior to RP. We matched 45 men undergoing TP biopsy with 133 men undergoing TR biopsy, generating a cohort of 178 patients (one TP case was matched with 1 TR case; 3 TP cases were unmatched). Distribution of age ( $p=0.999$ ), PSA ( $p=0.800$ ), and GS ( $p=0.998$ ) was similar for men with TP vs. TR biopsy. Compared with men undergoing TR biopsy, men undergoing TP biopsy had similar incidence of PSM (TR: 32% vs. TP 33%,  $p=0.924$ ) and similar median values of their first postoperative PSA (TR: 0.09 ng/mL vs. TP: 0.09 ng/mL,  $p=0.697$ ). Furthermore, we noted similar median EBL (TR: 150 ml vs. TP: 170 ml,  $p=0.468$ ), median LOS (TR: 1 day vs TP: 1 day,  $p=0.241$ ), median duration of catheter placement postoperatively (TR: 7 days vs. TP 6 days,  $p=0.537$ ), and incidence of readmission (TR: 3.8% vs. TP 6.7%,  $p=0.551$ ) for men undergoing TR compared with TP biopsy.

**CONCLUSIONS:** Despite concerns that TP biopsy increases perioperative complexity by virtue of inducing periprostatic inflammation, men undergoing RP after TP and TR biopsy seemed to have similar short-term oncologic outcomes and comparable perioperative morbidity. These early findings support the continued adoption of TP biopsy.

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