

Hatzichristodoulou G.¹, Weirich G.², Wagenpfeil S.³, Herkommer K.¹, Autenrieth M.¹, Maurer T.¹, Thalgott M.¹, Horn T.¹, Heck M.¹, Gschwend J.E.¹, Kübler H.¹

¹Technical University of Munich, Klinikum Rechts Der Isar, Dept. of Urology, Munich, Germany, ²Technical University of Munich, Klinikum Rechts Der Isar, Institute For Pathology and Pathological Anatomy, Munich, Germany, ³Technical University of Munich, Klinikum Rechts Der Isar, Institute For Medical Statistics and Epidemiology, Munich, Germany

INTRODUCTION & OBJECTIVES: Positive surgical margins (PSM) after radical prostatectomy (RP) affect oncologic outcome by increasing the risk of biochemical recurrence of prostate cancer (PCA). During nerve-sparing (ns) RP, PSM mainly occur at the postero-lateral aspect of the prostate. The aim of this study was to assess the efficacy of intraoperative frozen sections (FS) of the prostate to reduce PSM to a minimum, while preserving function. Here we present data of a consecutive series of 500 patients.

MATERIAL & METHODS: Patients with presumed organ-confined PCA were included in this prospective study independent from other adverse prognostic factors (Bx cores, Gleason, PSA). All patients underwent standardized open retropubic ns RP (single surgeon: JG). After removal, the prostate was ink-marked and both postero-lateral parts (from apex to base) were sent for intraoperative FS after en-bloc preparation. In case of PSM, additional tissue was partly resected from the prostatic bed along the neurovascular bundles (NVB) corresponding to the extent of PSM.

RESULTS: From April 2008 to May 2012, five hundred consecutive patients were included in the study. Mean patient age was 64.8 years (range: 39-80). Mean prostate specific antigen at surgery was 7.4 ng/ml (range: 0.8-49.0). pT2 and pT3 cancer was found in 77.7% and 22.1% of patients, respectively. One patient (0.2%) had pT4 disease. Seven patients were excluded because of neoadjuvant treatment. A ns procedure was attempted in 489/493 patients (99.2%). Intraoperative PSM were detected in 150/493 patients (30.4%). After secondary resection along the NVB 138/150 patients (92.0%) converted to definitive negative surgical margins. 12 patients showed a persistent PSM after secondary resection. False-negative rate of FS was 2.2% (11/493 patients). Additional, 4/493 patients (0.8%) showed PSM outside of the FS area. Thus, the overall PSM rate of the whole study cohort in final pathologic examination was 5.4% (27/493 patients).

CONCLUSIONS: Intraoperative FS of the prostate is highly effective in reducing PSM in patients undergoing an attempted ns RP for PCA independent of adverse pathologic factors. Intraoperative FS may be recommended in order to reduce PSM while optimizing the rate of nerve-sparing procedures. However, this technique requires a trained uro/pathology team during surgery.