Introduction: To evaluate the final pathologic characteristics of surgically treated low risk prostatic carcinoma (PCa) in order to identify high risk features in this population. Methods: Prospective clinical, pathologic, and outcome data were collected for men who underwent laparoscopic radical prostatectomy (LRP) between May 1998 and October 2008. Preoperative low risk (PLR) was defined as: PSA<10 ng/ml, biopsy Gleason score 3+3 or less and no palpable nodules, cT1c. Upgrade was defined as pT3 disease and or Gleason score 7 or greater in final specimen. BCR was defined as serum PSA >0.2 ng/ml and rising or start of secondary therapy. Kaplan Meier curves and Cox regression analysis was used to estimate predicting factors.

Results: 846 patients with PLR underwent LRP. 342 (40%) patients were upgraded (Gleason>3+4 (n=300-35%) or pT3 disease (n=79-9%). Total number of biopsy cores did not impact the proportion of patients upgraded (P 0.5). Number of positive cores (PC) was a significant predictor of pathologic upgrade (p0.02) (1PC:147/460=32% vs. 2 PC: 198/386=51%). Percentage of positive cores>15% was verified as predictor of pathologic upgrade (233/513(45%) patients >15% vs. 106/322(33%) patients <15%). In multivariate logistic regression analysis, greater age (>60y), presence of 2 positive cores and smaller prostate gland (<50gr) on ultrasound were significant predictors of pathologic upgrading. BCR free survival curves for patients with 5–10 biopsy cores (n=385) did not show any differences in between patients with pathologic low risk disease (pT2, Gleason 3+3) and those who were upgraded (pT3 and or Gleason 7).

Conclusions: Nine to 35% of patients’ eligible for active surveillance whom underwent LRP showed high risk of recurrence features in final pathology.