

# Moderated Poster Session 6: Oncology: Kidney, Prostate and Testis

## June 30, 2009, 1415–1545

### MP-6.01

#### Tumour location as a predictor of benign disease in the management of renal masses

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**Introduction and Objective:** Over 75% of renal masses are diagnosed incidentally while most are still small in volume, with the standard of care being surgical removal with a partial nephrectomy. However, up to 48% of these masses which are thought to be renal cell carcinoma (RCC) preoperatively have proven to be benign after surgical excision. This study looked at the proportion of benign lesions according to renal location as determined with preoperative imaging.

**Materials and Methods:** This institutional review board-approved study includes 202 patients who underwent treatment for renal masses smaller than 5 cm at our institution between January 2002 and July 2008. Of these patients, 157 were treated with laparoscopic or open partial or radical nephrectomies for what was thought to be RCC. The remainder of these patients were known to have benign disease or were treated with active surveillance or radiofrequency ablation. Clinicopathological data was collected for each patient. Based on preoperative imaging, each mass was designated as central (touching or encroaching on the collecting system), hilar (directly against major renal vessels) or peripheral. Univariate logistic regression was used to determine the association between tumour location and histological diagnoses.

**Results:** The proportion of benign disease for patients treated with surgery was 10.2% (95% CI 0.054%–0.15%). The proportion of benign disease by location was 4.1%, 9.0% and 18.0% for central, hilar and peripheral masses, respectively. The effect of location was found to have a significant prognostic value ( $p = 0.0273$ ) with an odds ratio of 5.21 (95% CI 1.38–19.62) for the odds of a benign diagnosis in peripheral compared with central tumours. The odds ratio was 2.37 (95% CI 0.37–15.15) for the odds of a benign diagnosis in peripheral compared with hilar tumours.

**Conclusion:** The odds of identifying benign disease in centrally located renal masses are 5 times lower than that of peripherally located masses. This information may be used when selecting strategies for the management of renal masses presumed to be RCC. The proportion of benign disease for surgically treated masses in our series was much lower than others reported in the literature. We hypothesize that this is due to the judicious use of all available imaging modalities.

### MP-6.02

#### Comparison between transperitoneal and retroperitoneal laparoscopic partial nephrectomy in a single institution

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**Introduction and Objective:** Laparoscopic partial nephrectomy (LPN) is progressively more an option for small renal tumour. Both retroperitoneal and transperitoneal approaches have their advantages and disadvantages but most urologists prefer the transperitoneal approach. We present our experience with 132 patients undergoing retroperitoneal LPN, and 178 patients undergoing transperitoneal LPN.

**Materials and Methods:** We reviewed retrospectively 310 cases of laparoscopic partial nephrectomy between August 2003 and October 2008. One hundred and seventy-eight were done by transperitoneal approach (TLPN), while 132 by retroperitoneal approach (RLPN). The techniques were similar in 2 groups. Surgeries were done by 2 surgeons and the approach was

not dependent on tumour size or location.

**Results:** Preoperative characteristics (age, sex, creatinine, BMI) were not statistically significant between the 2 groups. Tumour sizes were 3.2 (standard deviation [SD] 1.3) cm and 2.6 (SD 1) cm for TLPN and RLPN ( $p < 0.001$ ). Clear cell carcinoma were diagnosed in 57.7% and 51.5% of tumours from TLPN and RLPN, respectively ( $p > 0.05$ ), while benign tumours were found in 20.4% and 21.9%. T1a pathological stage represented 84% and 91% of cases. Operative time was 127 (SD 31) minutes and 117 (SD 35) minutes for TLPN and RLPN ( $p = 0.0167$ ). Warm ischemia time was 27.7 (SD 9) minutes and 24.6 (SD 10) minutes for TLPN and RLPN ( $p < 0.001$ ). Average blood loss was 184 (SD 266) mL and 138 (SD 228) mL ( $p > 0.05$ ). Urological complications or overall complications were not statistically significant between the 2 groups. However, RLPN showed a shorter hospital stay when compared with TLPN (4.3, SD 2.6, versus 3.4, SD 2.1, d;  $p = 0.02$ ). Multivariate analysis demonstrated that complications and transperitoneal approach were predictive of longer hospital stay, longer operative time and longer warm ischemia time. Finally, we did not find any correlation between BMI or renal function and operative parameters such blood loss or complications.

**Conclusion:** We show that retroperitoneal laparoscopic partial nephrectomy is associated with a significant reduction in hospital stay, operative time and warm ischemia time. These results should encourage the retroperitoneal approach, especially in posterior and lower pole renal tumours.

### MP-6.03

#### A population-based analysis of the rate of cytoreductive nephrectomy for metastatic renal cell carcinoma in the United States

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**Introduction and Objective:** Cytoreductive nephrectomy (CNT) improves survival in patients with metastatic renal cell carcinoma (mRCC). We examined temporal, geographical, socioeconomic and clinical determinants of CNT use in the Surveillance, Epidemiology and End Results (SEER) database.

**Materials and Methods:** Within the SEER database, we identified 4922 mRCC patients, who were either treated with CNT ( $n = 1888$ ) or underwent no surgery ( $n = 3034$ ) between 1989 and 2004. Chi-square and  $\chi^2$  trend tests, as well as multivariable logistic regression models were used to assess the effect of age, gender, race, region of residence and year of surgery on the rate of CNT. Adjustment was made for the size of the primary tumour.

**Results:** The overall rate of CNT was 38.4%. The rate of CNT increased in the most recent year quartile ( $p = 0.002$ ), was more frequent in white patients ( $p = 0.002$ ), in males ( $p < 0.001$ ) and in younger patients ( $p < 0.001$ ). Moreover, CNT was more frequently performed for larger primary tumours ( $p < 0.001$ ). Finally, important variability existed in the rate of CNT between the 9 SEER registries (range 33.1%–47.9%,  $p < 0.002$ ). In multivariable logistic regression models, age ( $p < 0.001$ ), race ( $p < 0.001$ ), the year of surgery ( $p < 0.001$ ), primary tumour size ( $p < 0.001$ ) and SEER region ( $p < 0.001$ ) were independent predictors of CNT rate.

**Conclusion:** Racial and geographic variability in CNT rates is worrisome and warrants further attention. In view of the survival benefits of CNT, its access should be equal for all races and regions.

**MP-6.04**

**Management of the distal ureter affects survival in patients with upper tract transitional cell carcinoma**

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**Introduction and Objective:** Although it is well accepted that removal of a bladder cuff at nephroureterectomy (NU) for upper tract transitional cell carcinoma (UT-TCC) improves cancer control outcomes, no large scale studies have examined the management of distal ureter (removal of a bladder cuff v. nonremoval). In consequence, we examined the effect of bladder cuff removal at NU for UT-TCC on mortality rates.

**Materials and Methods:** Our analyses relied on 4430 patients with UT-TCC from the Surveillance Epidemiology, and End Results (SEER) database. Survival plots and Cox regression models addressed the effect of a bladder cuff removal at NU on cancer-specific mortality. Covariates consisted of age, race, year of surgery, geographic localization, gender, origin of the tumour (renal pelvis v. ureter), pathological stage and grade as well as of the year of surgery.

**Results:** The median follow-up of censored cases was 54 months. Overall, 1337 (30.2%) patients had NU with bladder cuff removal. At 2 and 5 years, cancer-specific survival of NU with cuff removal versus those without cuff removal was 86.3% versus 73.8% and 80.0 versus 68.8%, respectively (log rank test  $p < 0.001$ ). In multivariable analyses, NU without bladder cuff increased the risk of cancer-specific mortality in 44% relative to patients with cuff removal ( $p < 0.001$ ).

**Conclusion:** Our findings validate the necessity for bladder cuff removal at nephroureterectomy for upper tract transitional cell carcinoma. This procedure should be invariably implemented in muscle-invasive surgery modalities for upper tract transitional cell carcinoma.

**MP-6.05**

**Neoadjuvant temsirolimus before radical nephrectomy for advanced renal cell carcinoma: preliminary results**

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**Introduction and Objective:** The current first-line treatment for advanced renal cell carcinoma (RCC) includes targeted therapy with or without cytoreductive radical nephrectomy. There is a paucity of data as to the effectiveness of adjuvant and neoadjuvant treatment before radical nephrectomy for localized high-risk or advanced disease. There is currently no data supporting the use of neoadjuvant therapy in high-risk localized RCC or advanced RCC. We initiated a trial of neoadjuvant temsirolimus before radical nephrectomy for locally advanced and metastatic RCC examining outcomes and biomarkers.

**Materials and Methods:** Patients who presented with advanced RCC were offered enrolment in a single-centre, IRB- approved trial with 12 weeks of temsirolimus before laparoscopic radical nephrectomy. Biopsy tissue was obtained at enrolment and at time of cytoreductive nephrectomy for diagnosis and biomarker analysis. Patients were administered 25 mg in temsirolimus qweekly for 12 weeks, and then underwent radical nephrectomy. Computed tomography scans and biomarkers were obtained on enrolment, 6 weeks and 12 weeks (before nephrectomy). Ongoing outcome and survival data as well as biomarker data were analyzed.

**Results:** To date, 5 patients have been enrolled in the trial. Three patients have undergone uneventful laparoscopic radical nephrectomy. Patient #1 (10-cm renal mass with bulky adenopathy T2N2M0) is NED (no evidence of disease) at 6 months postnephrectomy. Patient #2 (9-cm renal mass, bulky adenopathy, pulmonary metastases T2N2M1) is NED at 3 months postnephrectomy. Patient #3 (7-cm renal mass, pulmonary metastases T2N0M1) has recently undergone uneventful surgery and follow-up CT is pending. Patient #4 and #5 are receiving weekly temsirolimus and surgery is planned.

**Conclusion:** These preliminary results suggest that neoadjuvant temsirolimus

before radical nephrectomy for advanced RCC may improve disease regression postsurgery, and may lead to disease resolution in patients with low-volume disease. Longer term follow-up is necessary to assess overall progression-free survival and overall survival. Biomarker correlation with disease reoccurrence may help determine future responders.

**MP-6.06**

**Nephron-sparing surgery for advanced stage renal cell carcinoma**

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**Introduction and Objective:** The benefit and safety of nephron-sparing surgery (NSS) for T1 renal cell carcinoma (RCC) has become clear. As surgical technique evolves, urologists may consider NSS for more complex tumours. We describe the largest reported series of NSS for advanced stage RCC.

**Materials and Methods:** Between 1970 and 2006, 1807 partial nephrectomies were performed at our institution. Forty-two of these were for sporadic unilateral advanced stage tumours (pT2 = 22; pT3a = 20). We reviewed outcomes of these patients compared with 126 patients treated with radical nephrectomy (RN) matched (3:1) for age, stage, tumour size and baseline renal function.

**Results:** Cancer-specific survival and overall survival were similar between

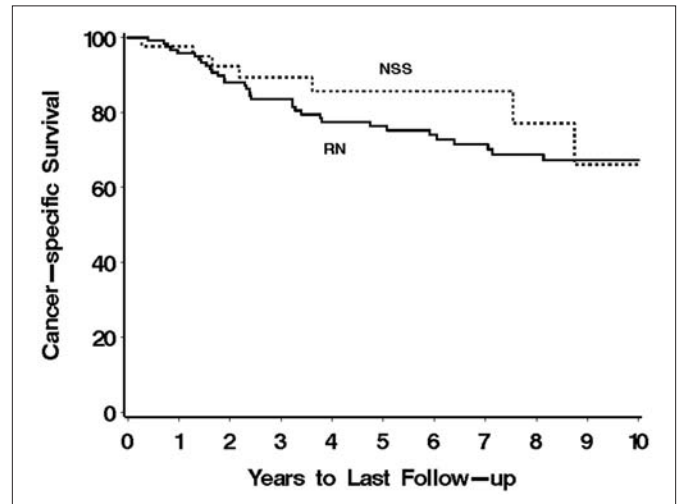


Fig. 1.

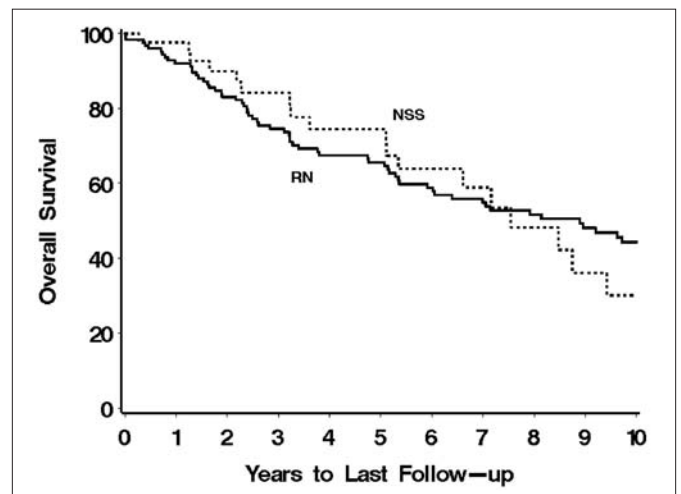


Fig. 2.

patients treated with NSS or RN (Fig. 1, Fig. 2). At a median of 6.1 years follow-up, 7 (17%) NSS patients and 10 (8%) RN patients developed local recurrence (HR 2.31; 0.88 to 6.11) and 11 (26%) NSS patients and 40 (32%) RN patients developed metastatic disease (HR 0.95; 0.48–1.85). Of the NSS group, 7 (17%) were complicated by urine leak and 1 (2%) by retroperitoneal bleed requiring intervention. The average change in serum creatinine was 9.9% for the NSS group compared with 38.3% for the RN group ( $p < 0.001$ ).

**Conclusion:** NSS for advanced RCC preserves renal function and appears to achieve similar oncologic outcomes compared with RN. The role of NSS in patients with T2–3a tumours and a normal contralateral kidney deserves further consideration and study.

### MP-6.07

#### Local recurrence and patient survival after resection of osseous metastases from renal cell carcinoma

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**Introduction and Objective:** Recent studies have reported survival beyond 12 months for a substantial proportion of patients with renal cell carcinoma (RCC) metastatic to bone. Local control therefore becomes an important issue in the surgical management of these cases. The purpose of this study was to determine the local control rate and survival for our patient population based on the type of surgical stabilization performed. **Materials and Methods:** We searched a prospectively accumulated database from 1996 to 2008 for patients treated surgically for RCC metastases to bone, and who had at least 12 months of follow-up or who had died of their disease before 12 months. Patients who had a clinical picture of indolent and slowly progressive disease were chosen for wide resection if technically feasible. The primary outcome variable was local recurrence necessitating reoperation, with overall survival a secondary outcome. Statistical analysis included the  $\chi^2$  and  $t$  tests.

**Results:** There were 41 patients who underwent a total of 50 procedures. Mean patient age was 64 (range, 39–89) years and 61% were male. Wide resection was performed in 15 cases, intramedullary nailing (IMN) in 8 cases and curettage and reconstruction in 27 cases. There were 4 local recurrences at an average of 4.8 (range, 2–7) months. The local control rate was 89% for intralesional procedures and 100% for wide (margin negative) excision ( $p = 0.002$ ). Patients chosen to undergo wide resection had an average survival of 17.3 (range 1–51) months and the patients who underwent IMN or curettage survived an average of 9.2 (range 1–26) months ( $p = 0.01$ ).

**Conclusion:** Patients with RCC metastases to bone are unique within the metastatic bone population in that wide local excision is feasible and in fact indicated in many cases where patient survival is expected to be prolonged. Recurrences occur early and should be treated aggressively.

### MP-6.08

#### The number of positive lymph nodes affects cancer-specific survival in patients with node-positive renal cell carcinoma

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**Introduction and Objective:** To evaluate the impact of the number of positive lymph nodes (LNs) on cancer-specific survival (CSS) in patients with node-positive renal cell carcinoma (RCC).

**Materials and Methods:** The study included 153 consecutive patients who underwent RN and LND between 1987 and 2006 in 3 urological centres. Median patient age was 60 (range 21–83) years. The extent of lymphadenectomy was at the discretion of the primary surgeon. The Kaplan–Meier method and univariable and multivariable Cox regression analyses were used to determine the effect of predictors on cancer-specific survival (CSS). Finally, we identified the most informative

cut-off for the number of positive LNs.

**Results:** Median follow-up was 12 (range 1–234) months. Median follow-up for patients alive was 53 (range 2–234) months. Patient characteristics: pT1/pT1/pT3a/pT3b/pT3c-4: 15/31/26/61/20; pN1/pN2: 50/103; G2/G3/G4: 53/85/16; M0/M+: 73/80. No significant difference in the actuarial 5-year CSS was found between pN1 and pN2 patients (22.9% vs. 22.2%;  $p = 0.41$ ). A higher number of positive LNs was significantly associated with worse CSS ( $p = 0.002$ ; HR 1.07). The cut-off of 4 positive LNs was the most informative discriminator for CSS. Patients with < 4 positive LNs had significantly better 5-year CSS than patients with 4 or more positive LNs (27% v. 14%;  $p = 0.003$ ). In multivariable analysis, the number of positive LNs was independently associated with CSS both when analyzed as a continuous variable (HR 1.07;  $p = 0.005$ ) or when defined dichotomously (< 4 v.  $\geq 4$ ), after adjusting for the effects of age, pathological stage and grade and synchronous metastases (HR 1.69;  $p = 0.01$ ). **Conclusion:** A higher number of positive LNs was significantly associated with worse CSS. Patients with less than 4 positive LNs had significantly better 5-year CSS estimates than patients with 4 or more positive LNs. The current pN stratification of positive LNs is not significantly correlated with patients outcome, while classification as less than 4 or 4 or more positive LNs seems to better reflect the impact of nodal disease on CSS.

### MP-6.09

#### Association between statin use, prostate-specific antigen and prostate cancer diagnosis

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**Introduction and Objective:** The purpose of this study was to assess associations between statin use, risk of elevated prostate-specific antigen (PSA) level, prostate biopsy and prostate cancer diagnosis using data from the Olmsted County Study of Urinary Symptoms and Health Status among Men.

**Materials and Methods:** Men between 40 and 79 years of age were randomly selected from Olmsted County, Minnesota, in 1990 using the Rochester Epidemiology Project. Men who had a history of prostate cancer or prostate surgery were excluded. At baseline, men reported all medication use, and a random subset of patients participated in a detailed clinical examination which included PSA measurement. Prostate-specific antigen levels were obtained biennially through 2007, and men were followed up through their community medical records to determine whether they received a prostate biopsy or developed biopsy-confirmed prostate cancer. Cox proportional hazard models were used to determine associations between statin use and time to age-specific elevated PSA levels, prostate biopsy or prostate cancer.

**Results:** Overall, 2427 subjects were included in the study with a median follow-up of 14.1 (interquartile range 12.1–15.0) years. Of 616 statin users, 75 (12.2%) had a prostate biopsy and 30 (4.9%) were diagnosed with prostate cancer. Compared with patients who did not use statins ( $n = 1811$ ), the age-adjusted hazard ratios (HRs) for prostate biopsy and prostate cancer diagnosis were 0.39 (95% CI 0.30–0.50) and 0.38 (95% CI 0.27–0.55), respectively. Of 618 patients with biennial PSA measurements, 11 (6.3%) statin users exceeded age-specific PSA thresholds compared with 65 (14.7%) nonstatin users (age-adjusted HR 0.35, 95% CI 0.18–0.66).

**Conclusion:** In this large cohort of men with long follow-up, statin use was strongly associated with decreased risk of exceeding age-specific PSA thresholds, prostate biopsy and prostate cancer diagnosis.

### MP-6.10

#### Statin medication use and the risk of biochemical recurrence following radical prostatectomy: results from the SEARCH Database

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**Introduction and Objective:** Though controversial, evidence suggests statins may reduce the risk of advanced prostate cancer, and recently, statin use was shown to be associated with reductions in PSA among men without prostate cancer. To date, no studies have examined the association between statin use and PSA recurrence after radical prostatectomy.

**Materials and Methods:** We examined 1325 men from the Shared Equal Access Regional Cancer Hospital (SEARCH) Database who were treated with radical prostatectomy. Time to PSA recurrence was compared between men on statins at surgery and those who were not on a statin using Cox proportional hazards models adjusted for multiple clinical and pathological features.

**Results:** In total, 237 (18%) men were taking a statin at the time of radical prostatectomy. On average, statin users were 2.0 years older ( $p < 0.001$ ) and underwent radical prostatectomy more recently (median yr of surgery 2004 v. 2002,  $p < 0.001$ ). Statin users were diagnosed at lower clinical stages (67% v. 58% T1c disease,  $p = 0.009$ ) and with lower PSA levels (6.2 v. 6.9 ng/mL,  $p = 0.04$ ). However, statin users tended to have higher biopsy Gleason scores ( $\geq 7$ : 50% v. 38%,  $p = 0.001$ ). After adjusting for multiple clinical and pathological factors, statin use was associated with a 30% lower risk of PSA recurrence (HR 0.70; 95% CI 0.50–0.97,  $p = 0.03$ ).

**Conclusion:** In our cohort of men undergoing radical prostatectomy, statin use was associated with a reduction in the risk of biochemical recurrence. If confirmed in other studies, these findings suggest statins may slow prostate cancer progression after radical prostatectomy.

### MP-6.11

#### “See no touch” during da Vinci robotic radical prostatectomy: visual cues as a surrogate to haptic feedback for oncologic clearance

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**Introduction and Objective:** Lack of haptic feedback has been criticized as being disadvantageous for achieving adequate oncologic clearance during robotic-assisted laparoscopic prostatectomy (RALP), particularly in the posterolateral region during sparing of the neurovascular bundle. We postulate that improved optical magnification during RALP allows for better appreciation of the visual cues suggestive of tumour or extraprostatic extension, for example, changes in colour, texture, tissue adhesiveness or bulging or irregularity of the prostatic surface, and this advantage mitigates against the lack of tactile feedback.

**Materials and Methods:** From January 2005 to August 2008, 1296 patients underwent RALP by a single surgeon (AT). Histopathological reports were

reviewed to assess margin positivity rates and distribution. One hundred eighty-three prostatectomy specimens were independently reviewed by an external GU pathologist, with 87% concordance in final histopathological results with our site pathologist.

**Results:** The mean age was 60.1 years and mean preoperative PSA 5.89 ng/dL. The positive surgical margin (PSM) rate was 9.65% overall, 6.5% for pT2 and 23.1% for pT3 disease. The posterolateral PSM rate was 2.4% overall, 1.52% for pT2 and 6.7% for pT3 disease. Of 125 patients with positive surgical margins, 46.4% occurred at the apex, 24.8% posterolaterally, 9.6% laterally, 9.6% anteriorly, 5.6% at the bladder neck, 1.6% at the base and 2.4% had multifocal margin positivity (Table 1).

**Conclusion:** Visual cues during robotic prostatectomy adequately compensate for the absence of tactile feedback in the hands of an experienced, high-volume robotic prostate cancer surgeon, resulting in surgical margin rates comparable to contemporary open and laparoscopic series.

### MP-6.12

#### Concordance between patient-reported and physician-reported health-related quality of life scores in patients undergoing laparoscopic radical prostatectomy

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**Introduction and Objective:** Functional outcomes in prostate cancer treatment have been shown to vary widely depending on whether they are patient- or physician-reported. We set out to determine the concordance and patterns over time in health-related quality of life (HRQOL) outcomes in patients who underwent a laparoscopic radical prostatectomy (LRP).

**Materials and Methods:** A single surgeon (EDM) performed LRP on 167 patients between July 2004 and October 2007. The UCLA Prostate Cancer Index (PCI) scores as well as the IIEF scores were filled out by the patients online before each follow-up visit. The same validated questionnaires were filled out by the blinded, assessing physician at each follow-up visit. Subscales of each questionnaire were then compared with assess for concordance between patient and physician reported outcomes at baseline, 3 months and 12 months follow-up. This report shows the agreements from 113 patients at baseline.

**Results:** Moderate agreement was found for sexual function, urinary bother as assessed by the UCLA PCI with quadratic weighted  $\kappa$  values of 0.46 (95% CI 0.33–0.58) and 0.37 (95% CI 0.19–0.54), respectively. There was poor agreement with sexual bother scores as assessed by the UCLA PCI with a  $\kappa$  value of 0.01 (95% CI –0.09 to 0.10). There was moderate agreement when it came to the total IIEF scores with an intraclass correlation coefficient of 0.69. Agreement in IIEF scores was good at the extremes (poor or excellent erectile function) and poor for patients with intermediate function.

**Conclusion:** Functional outcomes of LRP remain difficult to assess. Using validated questionnaires, agreement between physician- and patient-reported outcomes are at best moderate for sexual function and urinary bother, and poor for sexual bother.

### MP-6.13

#### Radical prostatectomy and intraoperative radiotherapy (IORT) for advanced prostate cancer: three years' experience

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**Introduction and Objective:** The optimal treatment for high-risk locally advanced prostate cancer remains controversial. Intraoperative radiotherapy (IORT) is a new radiotherapeutic technique that delivers high doses of radiation during surgical treatment.

**Materials and Methods:** From September 2005 to January 2008, 31 consecutive patients underwent RP with pelvic lymph node dissection (PLND)

**Table 1. MP-6.11**

Positive SM breakdown	No. of patients (% of all PSM)	% of all patients
Apex	58 (46.4)	4.48
Posterolateral	31 (24.8)	2.39
Lateral	12 (9.6)	0.93
Bladder neck	7 (5.6)	0.54
Anterior	12 (9.6)	0.93
Base	2 (1.6)	0.15
Multifocal	3 (2.4)	0.23
Total	125 (100)	9.65
Last 100 cases		
+ SM	11 (11.0)	
+ Apical margin	4 (36.4, 4)	
+ PLSM	1 (9.1, 1)	

and IORT for locally advanced prostate cancer. Inclusion criteria were: age younger than 75 years, clinical stage T3-T4, N0-1, M0, probability of extracapsular disease greater than 25% (according to Kattan nomograms) and no inflammatory bowel disease. During surgery the prostate was exposed with dissection of endopelvic fascia and puboprostatic ligaments. A collimator (Mobetron, Intraop) was introduced in the surgical field and supplied a dose of 10–12 Gy with electrons from 9–12 MeV. Radical prostatectomy was completed with an extended PLND. Twenty-seven of 31 patients underwent postoperative radiation treatment 3–4 months after surgery. A box technique (Foton X 6–15 MV) was used and a dose of 50 Gy, splitting of 2 Gy/die, was delivered. Hormonal therapy was associated when indicated.

**Results:** Mean IORT time was 30 minutes. No intraoperative complication was observed. Pathological stage was T2 in 13 (42%), T3 in 15 (48%), T4 in 3 patients (10%). We observed down-staging in 6 patients (19%), positive lymph nodes in 6 patients (19%), positive surgical margins in 20 patients (65%). Twenty-seven patients concluded postoperative radiotherapy, with a median follow-up of 20 (6–36) months. No rectal toxicity was observed and urinary toxicity was low (G<sub>0</sub>–G<sub>2</sub>) in 2 patients. Three patients developed a stricture of the vesicourethral anastomosis. One patient had prolonged postoperative ileum and 5 patients developed a lymphocele. At 12 months, 24 patients had good urinary continence (dry or use of 1 pad/d). To date, all patients are alive. Only 1 patient developed a PSA recurrence 12 months after treatment.

**Conclusion:** Intraoperative radiotherapy during radical prostatectomy is feasible and safe for treatment of high-risk locally advanced prostate cancer. The procedure requires an acceptable surgical time and has minimal toxicity. The oncological outcomes are promising although preliminary. Larger series and longer follow-up are needed in order to confirm these results.

#### MP-6.14

##### Prostate cancer-specific survival differences in patients treated by radical prostatectomy versus curative radiotherapy

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**Introduction and Objective:** The relative treatment effectiveness of radiotherapy versus surgery for prostate cancer is uncertain. This study examined the cause-specific survival difference between these treatments, and explored how analyzing patients by intent to treat may differ from treatment received.

**Methods:** This was a population-based case-cohort study of prostate cancer patients in Ontario diagnosed between 1990 and 1998 who were treated for cure by radiotherapy or surgery, and the subset of patients who received an exploratory lymph node dissection. Cases were oversampled and are those who died of prostate cancer within 10 years. Patients were identified using the Ontario Cancer Registry and charts were reviewed onsite by trained abstractors. Analysis was restricted to patients who were candidates for both treatments. Survival differences were analyzed using Cox-proportional hazard regression, with variance adjustment for the case-cohort sampling. We controlled for PSA, Gleason score, T category and age in each analysis. Analyses used original treatment intent, which was determined using treatments received, treatments offered and outcomes of lymph node dissections. We compared an overall treatment-intent analysis to treatment actually received. The intent-to-treat analyses was also stratified by low risk (15 cases, 390 subcohort) and intermediate risk (102 cases, 623 subcohort).

**Results:** Using original treatment intent, the hazard ratio for radiotherapy

compared with surgery was 1.52 (95% CI 0.93–2.49) compared with 1.85 (1.10–3.10) when analyzed by actual treatment received. When the intent-to-treat analysis was stratified by risk group, the hazard ratios were 1.21 (0.31–4.72) and 1.48 (0.89–2.44) for the low and intermediate risk groups, respectively.

**Conclusion:** Prostate cancer-specific survival differences were smaller using original treatment intent rather than treatment received. The largest differences in these assignments are the subset who had a positive intraoperative lymph node dissection, abandoned surgery and subsequent radiotherapy (treatment intent was surgery, actual treatment was radiotherapy) and those patients who received no treatment following a positive lymph dissection. This study indicates little or no benefit for surgery versus radiotherapy for the low risk group. Dose-escalated radiotherapy for the intermediate risk group may produce a lower hazard ratio than we observed.

#### MP-6.15

##### Role of nerve grafting to preserve antegrade ejaculation in testicular cancer patients undergoing retroperitoneal lymphadenectomy

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**Introduction and Objective:** Testicular tumours continue to represent the most common group of solid malignancies in men aged 20–35. About 2/3 of nonseminomas are candidates for retroperitoneal lymphadenectomy (RPLND) either for small volume nodal disease or for residual mass postchemotherapy. Preservation of postganglionic sympathetic nerves between lumbar sympathetic ganglionic nerve roots and hypogastric nerves is not always possible. This has been reported to cause a loss of antegrade ejaculation in 90+% of patients. To reduce treatment-related morbidity from the treatment of advanced testicular cancer maintaining full sexual function, a nerve graft (NG) technique using genitofemoral (GF) NGs has been pioneered at the Princess Margaret Hospital/University Health Network. The aim of this study is to determine the effectiveness of GF NGs in the preservation of antegrade ejaculation in patients requiring sympathectomy while undergoing RPLND for testis cancer.

**Materials and Methods:** Ten patients, who intraoperatively required bilateral sympathetic nerve excision, underwent genitofemoral NG interposition. Bilateral RPLND was performed in standard manner. Harvesting of the GF NGs was done through the same incision as used for RPLND. Nerve grafts were interposed between the largest ganglionic nerve root(s) and the transected hypogastric nerve ipsilaterally using standard microsurgical anastomotic techniques. Postoperatively information regarding recovery of antegrade ejaculation was collected through questionnaires as well as seminal fluid and postejaculate urine analyses.

**Results:** All 10 procedures were uncomplicated requiring less than one hour of additional operative time to perform the NG. Length of hospitalization following RPL plus NG was comparable to that following RPL alone. Follow-up documentation of ejaculatory status was not available for 2 patients. Of patients with a clear history of preoperative antegrade ejaculation 83% reported recovery of antegrade ejaculation. Mean time for recovery was 1.75 months. Satisfaction with quality of sexual function and activity was reported by 100% of patients.

**Conclusion:** Autologous nerve grafting in testicular cancer patients undergoing non-nerve sparing RPL has not been previously described. It appears that the results of this procedure are promising in regard to preservation of antegrade ejaculation and maintenance of sexual function and satisfaction. Encouraging results of this small-size patient cohort deserve further investigation involving a larger patient group.