DIFFERENCE IN TUMOR SIZE MEASURED ON CONTEMPORARY IMAGING COMPARED TO FINAL PATHOLOGY FOLLOWING RADICAL NEPHRECTOMY.

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Introduction
The purpose of this study was to compare preoperative tumor size on a series of contemporary imaging to size on final pathology in patients undergoing radical nephrectomy.

Materials & Methods
After Institutional Review Board approval, a retrospective review of 126 consecutive patients who underwent radical nephrectomy (42 open, 84 laparoscopic, 2 robot assisted) at our institution between 1996 and 2008 was performed. Preoperative size of tumor on imaging (computed tomography or magnetic resonance imaging) was compared to size reported on final pathology.

Results
Mean preoperative size on imaging was 7.0 ± 4.0 cm (range: 1.0 – 21) and mean postoperative size in final pathology was 6.7 ± 4.6 cm (range: 1.0 – 30). The mean difference in size was a decrease of 0.24 ± 2.2 cm (range: 6.5 – 11.6). The preoperative and postoperative size groups were compared with a paired, one-tailed t-test and this size difference was determined not be significant (p=0.1). Preoperative size was larger in 67 patients (52.4%) and smaller in 33 patients (26.2%) when compared to final pathologic tumor size. There were 26 patients (20.6%) with the same pre- and postoperative tumor size. There were 75 patients (59.5%) whose clinical stage remained the same as pathologic stage. A total of 17 patients (13.5%) had their clinical stage was downgraded to pathologic stage. Of these 17 patients, none had positive surgical margins or perinephric fat invasion. In 13 patients with tumors larger than 4 cm (cT1b), the size in final pathology was 4 cm or smaller (pT1a), and the tumors were subsequently downgraded in stage. There was one tumor downgraded from cT2 (greater than 7cm) to pT1a and 3 tumors downgraded from cT2 to pT1b. Eight tumors were upgraded in stage due to size. One tumor was upgraded from T1a to T1b and 7 tumors were upgraded from T1b to T2. There were 27 tumors of clinical stage T1 and T2 that were upgraded to stage T3 or T4 due to extra-renal invasion of perinephric fat or renal vein.

Conclusion
Clinical staging of renal tumors based on preoperative imaging may be higher than pathological stage. This information may be helpful in counseling patients preoperatively regarding staging.