
BACKGROUND
Data from the general surgery literature suggests that patient morphometric data obtained from preoperative imaging may help predict a patient's risk around surgery.

OBJECTIVES
In this context, we evaluated for associations between psoas muscle area and short-term convalescence following radical cystectomy.

METHODS
After identifying patients who underwent radical cystectomy at our institution (2008 to 2013), we calculated their psoas muscle area from staging computed tomography scans using established analytic morphomic techniques. We then determined early recovery among patients with high and low psoas muscle area using the validated Convalescence and Recovery Evaluation (CARE) questionnaire—a 27-item survey, divided into four domains (activity, cognitive, gastrointestinal, and pain recovery). Finally, we assessed the relationship between psoas muscle area and changes in CARE scores with nested linear regression models.

RESULTS
Among the 86 men and among 31 women in our cohort, the median total psoas muscle area was 2,544mm² and 1,511mm², respectively (P< 0.001 for the comparison). While there was no association between psoas muscle area and recovery in men, women with higher (versus lower) total psoas muscle area had smaller decreases in their pain scores postoperatively and a quicker return to their baseline level (P=0.05). Activity scores also approached baseline levels faster among women with higher psoas muscle area, although this finding did not reach statistical significance.

CONCLUSIONS
Psoas muscle area is potentially an important preoperative predictor of recovery for women undergoing radical cystectomy. More broadly speaking, analytic morphomics may represent a novel approach to better understand perioperative risk.