

Improving outcomes of radical cystectomy: A call for passive over active regionalization

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Radical cystectomy (RC) is the de facto, tried-and-tested treatment for localized muscle-invasive bladder cancer (MIBC). However, RC is a complex surgical procedure with a not insignificant morbidity and mortality rate. Over the past few decades, advances that improve MIBC care have emerged. These include delivery of perioperative chemotherapy (particularly neoadjuvant chemotherapy), increased recognition of the importance of lymphadenectomy at RC, and the need for involvement of multidisciplinary care teams in MIBC decision-making, to name a few.

However, uptake of these processes of care has been sporadic, with widespread variability. High-volume centers and surgeons tend to have the highest adoption rates of these important process measures and, as a corollary, these high-volume providers also have the best outcomes for RC. In this issue of *CUAJ*, Siemens and colleagues describe this phenomenon in Ontario, with high-volume RC hospitals and surgeons displaying the highest probability of providing guideline-concurrent care with higher nodal yields, higher rates of lymph node dissection, higher rates of multidisciplinary referral, and more usage of neoadjuvant chemotherapy.¹ Perhaps, then, it is not surprising that these same high-volume providers also generated the best cancer-specific survival.

The superior quality of care afforded RC patients by high-volume providers is not a new finding. Innumerable series from Canada, the U.S., and Europe have consistently demonstrated improved outcomes for RC when provided in high-volume settings.² Such data have led to regionalization efforts in other parts of the world, including the U.K.³ and the U.S.⁴ In the U.K., the National Institute for Health and Care Excellence (NICE) has recommended that RC be performed in centers with a minimum annual volume of 50 radical pelvic cancer operations per year.⁵ Recent National Cancer Database analyses from the U.S. have supported this value,

with incremental gains in quality of care plateauing after a 50–55 annual cystectomy caseload.⁶ A more recent report from the U.K. did not find any further evidence of volume outcome associations among high-volume centers after centralization, supporting this minimum caseload value and the concept of a plateau effect for morbidity and mortality.⁷ After centralization in the U.K.'s National Health Service (NHS), based on the NICE "improving outcomes guidance," almost 90% of cystectomies are now performed by high-volume providers, and 30-day and long-term mortality rates have dropped significantly, pointing to the potential effectiveness of centralization.³

Further substantiating evidence that complex surgical care should be concentrated, Sahni and colleagues identified a 41% relative risk reduction for cystectomy postoperative mortality in the hands of subspecialized surgeons focusing at least 23% of their case volumes on RC.⁸ Interestingly, in this study, 100% of the volume-outcome relationship for cystectomy was accounted for by surgeon subspecialization. These findings corroborate those of Bhindi et al, who previously demonstrated improved oncological outcomes after cystectomy in bladder cancer-focused surgeons' hands.⁹

With these data in mind, the Canadian Urological Association (CUA), Bladder Cancer Canada (BCC), and the Canadian Urologic Oncology Group (CUOG), in a joint statement, proposed defining bladder cancer "Centers of Expertise," as those performing at least 25 cystectomies per year.¹⁰ This volume threshold is more modest than the NICE/U.S. values but does provide balance between access to care (travel distance and wait times) and centralization of care. Nevertheless, despite dozens of studies pointing to a volume-outcome relationship for complex cancer surgery with endorsement by top Canadian bladder cancer experts, health authorities in Canada have been reluctant to implement a policy of "active" centralization for RC, even with widespread consensus that such a maneuver could improve patient outcomes. Reasons for this resistance are multifactorial, including concerns about preserving access to care for all patients given the vast geography of our nation, the risk of alienating lower-volume healthcare providers, resource

implications for high-volume centers, and the possibility of increased wait times in a regionalized environment.

Even without formal guidance, though, there is some hope, as Darwinian forces are leading to passive centralization. Siemens and colleagues point out that in the most recent era they analyzed, 40% of RCs in Ontario are being performed at high-volume centers.¹ Mean annual surgeon and hospital volumes increased to 6.8 and 16.4 RC, respectively, with documented improvements in outcome. While the reasons for this shift are not clear, we can speculate that: 1) an understanding of evolving volume effects for RC exists among the urological community; 2) there is a recognition that a multidisciplinary approach is necessary for bladder cancer care; 3) the relative rarity of RC eases regionalized referrals; 4) low-volume providers have an appreciation of the complexity of RC care; and 5) the emergence of patient-driven referral patterns are all likely at play.

Although this passive change represents a move in the right direction, a volume-outcome effect is still noted in Ontario, pointing to the need for continued change. The fact that 60% of RCs are still being performed by lower-volume providers is disturbing. In other words, more than half of current RC patients are receiving care that yields suboptimal survival. Bladder cancer requiring RC already has a high overall cancer-specific mortality rate. If governmental agencies are not willing to centralize care, we should, as a urological community, strive to optimize treatment outcomes for our bladder cancer patients with a passive campaign of centralization. To do otherwise would be tantamount to ignoring the vast, accumulated evidence base and would ultimately be a disservice to patients afflicted with this highly lethal disease.

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