



Invited commentary on: Variation in the volume-outcome relationship after rectal cancer surgery in the United States: Retrospective study with implications for regionalization



Rectal cancer is a complex disease occurring in the bowel and confined to the bony box of the pelvis. This location challenges surgeons' ability to resect the cancer and cure the patient. Initially Miles' abdominal perineal resection was the surgical procedure of choice. Over time, progression of techniques in sewing and staplers allowed preservation of the anus in select circumstances. Over the past 3 decades there has been a revolution in rectal cancer treatment and care. The first that propelled improvement was the attention focused on the embryologic plane associated with mesorectal resection.¹ Accurate margins encompassing the mesorectum reduced local recurrence rates dramatically in the 1990s. The pathologists then were asked to assess the quality of resection and review in depth the circumferential resection margin. Even before the actual surgery, critically looking at the mesorectum with the use of magnetic imaging of the pelvis allowed planning for neoadjuvant therapy in appropriate patients. The addition of radiation and later improved chemotherapy regimens have further contributed to successful treatment.²

Most recently, emphasis has focused on the multidisciplinary team approach in caring for the patient with rectal cancer.^{1,2} This includes following treatment algorithms based on input from the oncologist, pathologist, radiation therapist, and radiologist along with the surgeon. This is a process approach versus a volume approach. It is difficult to measure the team approach outside of the team following algorithms, strictly discussing patients in a collegial manner, and practicing in a culture that supports this approach. This style of patient care takes commitment from all parties that participate in team meetings where patients are discussed. It also requires coordination and efficient communication among members and the patient as they embark on their cancer journey.

When considering the results found in the article, "Variation in the Volume-Outcome Relationship After Rectal Cancer Surgery in the United States: Retrospective Study With Implications for Regionalization,"³ the authors challenge the notion that high surgical rectal cancer volume leads to improved survival. Using the National Cancer Database, patients with stage I–III rectal cancer between 2004 and 2016 were studied. Bacerra et al³ found that overall increased volume was associated with improved survival.³ However, 25% of hospitals had no benefit in 5-year overall survival in the context of higher volume and 14% had worse volumes. Interestingly, hospitals with higher volumes that were associated with worse outcomes were more likely to be located in the South

Atlantic region. They also were more likely to be comprehensive community cancer centers and less likely to be academic centers. These results support the hypothesis that hospitals with high volumes have improved outcomes; however, there is considerable variability in outcomes related to volume. In other words, volume only does not guarantee acceptable outcome.

One explanation is this study's inability to determine the surgeon's individual volume and their training. Even low-volume surgeons with meticulous technique and the understanding of anatomic resection can naturally outperform someone who performs sloppy surgery. Total mesorectal excision is a teachable skill and the circumferential resection margin can be assessed methodically by the pathologist.¹ Naturally, more volume probably aids most surgeons to learn nuances from previous surgical endeavors. Training for pathologists on surgical specimen processing to gain the most information is also available. Similarly, training for the radiologist looking at the pelvic MRI can elevate the preoperative assessment. A study like this cannot determine the culture of the center and their buy-in for this team approach to rectal cancer. A low-volume center with well-trained surgeons and an excellent process approach to rectal cancer may outperform a high volume center.

This article proves that volume only is short-sited when thinking about how to improve rectal cancer care. All facets of care are critical, and the skillset of all team members is needed to provide optimal care. The National Accreditation Program for Rectal Cancer (mentioned in this article) was developed by the American College of Surgeons Commission on Cancer to provide standards and guidance for rectal cancer programs seeking to improve care.⁴ As mentioned, the standards are difficult to achieve³ but not impossible even for low-volume centers. Evaluating the first 25 approved programs revealed that the most frequent area of non-compliance was lack of patient discussion at the rectal cancer multidisciplinary team meeting before treatment initiation. The second most non-compliant standard was lack of discussion of the patient at this meeting within 4 weeks of surgical treatment.⁴ With improvements in digital meetings, multidisciplinary team meetings sharing radiologic data and pathologic data are now possible as all participants do not need to be in the same physical room. The plan of care can be discussed among all team members and then the plan communicated clearly to the patient. Patients who live in rural areas also could benefit from a virtual team meeting, which can link

experienced team members together. This then puts more emphasis on the barrier being the center's culture—are they dedicated to the process of following algorithms for care and committed to continual improvement in their individual programs? For instance, when technical deficiencies are uncovered, the surgeons and other members can seek coaching and training on improvement in their technique. We have dramatically improved our care of the rectal cancer patient in the past 30 years, but optimal care does not need to be reserved only for patients who are fortunate enough to live by or get referred to a center that provides quality team-based care. We need to focus on the entire process and not just the center's volume when evaluating their cancer care.

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