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Complete response: A lens into the future of urology?

Urologic oncology's eras in a nutshell: 1) divine how to perform the "radical Xectomy" and teach others; 2) refine through thousands of cases and publish outcomes; 3) harvest administrative databases to elucidate disparities and real-world outcomes. Robotics arrived and revived the second era. We now sit at the intersection of urologic cancer as an *anatomic challenge* and as a *biological entity*; a future in which the latter is solved will inevitably marginalize the former.

The GU buzz at the 2025 ESMO meeting surrounded the presentation of KEYNOTE-905/EV-303, using preoperative EV/pembro for cisplatin-ineligible muscle-invasive bladder cancer (MIBC) patients facing cystectomy.¹ What struck me was the <50% lower risk of death, but the 57% pathologic complete response rate in the cystectomy group, a far sight higher than prior trials. These data are simply begging for biomarkers to reveal which *half* may not need cystectomy at all.

Ablation has nibbled many small renal masses away from surgery, and surveillance another. Trimodal therapy has a foothold in MIBC. The PACE-B trial shows an attractive five fractions is non-inferior to 25 for intermediate-risk prostate cancer, and surveillance is great for others.² If these data are the thin edge of a wedge, what does urologic surgery look like in 10 years? Thirty? Let me Chicken Little a future where swaths of discipline-defining operations are culled, centralized, and complicated. What does urology look like *then*?

First, if your reflex is that this type of change simply won't happen, that the current long waitlists and impending boomer senescence will ensure endless surgical substrate, note that similar changes have been underway for years. Passive centralization of cystectomy has pulled an all-day case toward a smaller group of centers and surgeons.³ Prostatectomy numbers stagnated without a post-COVID resurgence, unlike hips, knees, and cataracts.⁴ Within academic and large community

practices, prostatectomy is centralized when Da Vinci rolls into town. Seven urologists doing open prostates quickly becomes two with robot time, and five filling time with shorter bread-and-butter cases. Agency attenuation, subtle practice shifts, and quiet animosity arise.

My buddy Andy is a geologist. One day, I was musing about how we used to be told there would inevitably be another ice age, and how as a kid, I envisioned great heaters and fans keeping glaciers at bay as they surrounded cities. He reminded me that, of course, it doesn't work that way; what happens centuries before is that the climate cools, permafrost creeps, and the land becomes less arable and livable. The signals are not blizzards and advancing ice fronts but economic decline, conflict, and migrations — none of which obviously herald an impending ice age.

A urosurgical ice age would likewise begin with insidious changes that won't obviously betray a sea change, rather than a sudden redrawing of the map and siloing of collapsed case volumes. What would the "biomarkers" of a looming shift look like, and would we recognize them as such? One could imagine an apparent renaissance in which wait times shrink to benchmark as OR time is liberated.⁵ Oncology cases are long, and their absence may need 3:1 replacement with smaller benign cases. Administrative data would show cancer case numbers dropping and benign work rising. Median operating times decrease while median distance between home and hospital for cancer surgery increases.

Within a given center, after-hours work might lessen as daytime space becomes available. Dual-urologist cases increase in response to income threats ("B-codes" rise in Ontario, for example). Colleagues guard consults jealously and perceive injustice more readily. Sporadic infighting becomes less jarring and more mundane. At the workforce level, job openings once again stagnate, or early retirements skim the top off the census. Oncology fellowships are an open question —

stagnation due to a less-attractive discipline, or inflation so trainees can access at least some quaternary cases to bolster confidence and employability.

Urology is robust, however. Attenuation of oncologic surgery does not mean its end; “Heal with Steel” is as much a state of mind as an axiom, and some patients will always be better served getting the damned cancer cut out. Technical advances will decrease invasiveness, and salvage work will breed some of our best selves. And besides, cancer isn’t close to the sum of our specialty. As long as there are genitals dangling and bladders voiding and urine concentrating, there will be our stewardship. We razz ourselves as plumbers of a sort, but that is no small role. I predict the anatomy-forward disciplines to rise in relative prominence. Reconstruction will be evergreen, as will management of stress incontinence. The tech revolution in ureteroscopy and lithotripsy will continue to boom and democratize large stone management beyond the PCNL. Laser enucleation for the mammoth prostates will spread, and the festival of minimally invasive BPH techniques has fomented a “save-the-bladder” movement, building a case for early action at the outlet rather than decades on pills. If we can harness the attention spans of the entrepreneurial MISTers long enough to get some of these techniques on the public roster, a new stream of work affecting a whole generation of patients appears.

Medical and non-invasive displacement of major urologic surgery will have many knock-on effects. Shorter median cases and freed time will decrease waits and expand access to quality-of-life work, an underrated surgical outcome, and the center of much of our clinical life already. Oncologists, long having adopted the language of clinical trials, cement their leadership as both prime movers and loci of trust as first-contact and longitudinal care of cancer patients remains in urology. Perhaps the much-riffed-upon concept of the “medical urologist” comes into being, through shifts or new pathways in training.

Re: training, our residents are the bystanders and often collateral of major practice shifts. After two decades, the proportion of robot-ready graduates is minuscule, even as the bot occupies ever more theatre time. A further shift away from the skillset of open oncology requires a generation of adjustment and new expectations for trainees. Does a PGY5 year spent in quaternary care cases — largely incongruent with most graduates’ future practice — still hold water? This happened south of the border already, so I believe in the resilience of well-principled graduates to adapt and thrive. Quality residency teaches

surgical principles and judgment as much as technique, and on-the-job learning through responsibility remains the primary honing ground.

The negative externalities bear mention as well. Doctors relinquish agency and income very reluctantly, so the risk of *indication creep* is real. The swing from right-sizing access to sudden abundance could see tiny stones reframed as time bombs. Clinic fulgurations become TURBTs. A residual of 70 cc becomes a hydraulic crisis in waiting. Pelvic floor physio is pooh-pooed for a quick sling. Advocating for access and shorter waits become governance of overtreatment. A perceived shrinking job market or winnowing post-grad numbers creates a delayed feedback loop in the stock-and-flow workforce system that can’t easily adapt to shifting need. Alternative cancer therapies that find a lucrative private market before finding an evidence base proliferate, and the honor of the specialty is dulled.

This is hyperbole after a single, eye-opening trial result, and a steel-man case for the resilience of urologists and the surfeit of need rolls of the tongue as easily as worried hand-waving. Perhaps the literal biomarkers of complete response don’t come (the history of bladder cancer biomarkers is a graveyard of good ideas after all). Perhaps pT0 is more like an undetectable PSA on dual therapy: excellent but not a knockout.

The future unfolds as it will, and medical advances are a welcome part. There is no moral weight to improvements in one domain obviating some part of another; better and less morbid outcomes are good, even if the players and playing field must adapt. Innovation and change are hallmarks, and the source of much of urology’s satisfaction and allure. We’ll be fine (he says to the mirror).

REFERENCES

1. Vulsteke C, et al. Perioperative (periop) enfortumab vedotin (EV) plus pembrolizumab (pembro) in participants (pts) with muscle-invasive bladder cancer (MIBC) who are cisplatin-ineligible: The phase 3 KEYNOTE-905 study. Presented at the European Society of Medical Oncology Annual Meeting, Berlin, Germany, October 2025
2. van As N, Griffin C, Tree A, et al. Phase 3 trial of stereotactic body radiotherapy in localized prostate cancer. *New Engl J Med* 2024;391:1413-25. <https://doi.org/10.1056/NEJMoa2403365>
3. Siemsen DR, Visram K, Wei X, et al. Effect of centralization on complex surgical care: A population-based case study of radical cystectomy. *Can Urol Assoc J* 2019;14:91-6. <https://doi.org/10.5489/cuoj.5998>
4. Canadian Institute for Health Information. Wait times for priority procedures, 2019 to 2024: Insights into trends and contributing factors. Available at: <https://www.cihi.ca/en/wait-times-for-priority-procedures-2019-to-2024-insights-into-trends-and-contributing-factors> (accessed October 27, 2025)
5. Razvi H, Sitland T, Saad, F. Establishing maximal wait times for urologic surgery in Canada in 2024. *Can Urol Assoc J* 2024;18:376-8. <https://doi.org/10.5489/cuoj.9029>

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