

Nowadays, with improved technologies/techniques, it would be unethical to set up a study that includes a treatment group undergoing long ischemia.

The surgical urology community has made consistent efforts in the attempt of raising the level of evidence regarding the adoption of certain “unconventional” approaches during RPN, but – quoting Margaret Mitchell – *life’s under no obligation to give us what we expect*.

As a conclusion, although published randomized trials would discourage the continued use of techniques to minimize ischemia, surgeon’s preference plays a role. The possibility to choose is supported by the fact that, in the setting of randomized trials, selective or zero ischemia approaches scored comparable complications rates to that of standard main artery clamping.

In contrast, appropriate indication, skills and technology are mandatory before embarking in minimized ischemia techniques.

Conflict of interest

None declared.

Approval of the research protocol by an Institutional Reviewer Board

Not applicable.

Informed consent

Not applicable.

Editorial Comment

Editorial Comment to Randomized trials to determine the ideal management of the renal artery during partial nephrectomy: Life’s under no obligation to give us what we expect

We read with great interest the Urological Note by Bertolo *et al.*, which elegantly discussed the potential impact of different clamping techniques on functional outcomes after robot-assisted partial nephrectomy (RAPN), and the current challenges in the interpretation of available randomized controlled trials (RCTs) in this setting.¹

Although the impact of ischemia on postoperative renal function after RAPN has been debated for decades (challenging the “every minute counts” dogma), neither prospective observational studies nor RCTs have clarified whether specific clamping techniques do contribute to clinically meaningful changes in postoperative estimated glomerular filtration rate, especially in patients with preserved baseline renal function.

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Registry and the Registration No. of the study/trial

Not applicable.

Animal studies

Not applicable.

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The controversial results of available RCTs stem from the fact that renal ischemia is just one of the several and partly unknown drivers of functional outcomes after RAPN. Recent well-designed studies have robustly shown that the quality of the kidney, the baseline patient characteristics, resection techniques (enucleation vs enucleoresection vs resection²), reconstruction techniques³ (the technical finesse in renal renorrhaphy after tumor excision⁴) and, importantly, surgeon experience and skills,⁵ do have a tremendous impact on functional recovery after RAPN. As such, predicting estimated glomerular filtration rate trajectories after RAPN is still highly nuanced in individual patients, making the kidney reaction to RAPN still a “black box” difficult to decode.

This is essentially why RCTs failed to provide definitive evidence on the harms of ischemia during RAPN: while representing “level 1” evidence, they were often limited by a variety of factors, including suboptimal granularity of datasets, selection bias, surgeon bias, confounding and cross-over between arms.¹ These caveats highlight the inherent complexity of this topic, which resembles the Heisenberg’s indeterminism principle: assessing

the impact of a single factor on postoperative renal function after RAPN might be simply not possible, even with RCTs (too many factors to randomize – patients, tumors, surgeons, hospitals and techniques – and/or to control for in statistical analyses). Furthermore, the evolving indications for RAPN coupled with the increasing use of cutting-edge technology to improve pre- and intraoperative surgical planning,⁴ ultimately make the question, “to clamp or not to clamp the renal hilum”, old fashioned.

Even if an ideal RCT could be designed, a serious challenge would be to choose the most appropriate end-point for clinicians and patients. Although current renal function efficacy measures might be challenging to interpret, considering their multifactorial etiology, one could argue that a more meaningful end-point for trials comparing different clamping techniques during RAPN would be oncological and patient safety.

In conclusion, life is under no obligation to give us what we expect. Yet, kidney cancer surgeons do acknowledge that there are distinct clinical scenarios and specific patient cohorts that might benefit from all possible efforts to maximize the precision of tumor excision and renal reconstruction with the least amount of ischemia. Technology-based tailoring of ischemia, resection and renorrhaphy techniques according to the individual patient and tumor characteristics will be the key to achieve value-based care for patients who are candidates for RAPN.

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None declared.

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