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Editorial: Organ-sparing surgery for genitourinary cancers

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Editorial on the Research Topic
Organ-sparing surgery for genitourinary cancers

Genitourinary cancers, including renal cancer, bladder cancer, prostate cancer, and other malignancies within the urinary and reproductive system, are common diseases with an increasing incidence worldwide (1). Traditionally, for localized lesions, radical surgeries would be recommended for patients for curative purposes. Although radical therapy is still the primary option for cancer treatment, organ-sparing surgeries were increasingly accepted by surgeons and patients, due to the significantly improved prognosis in recent decades and the better quality of life after organ-sparing treatments.

For example, radical cystectomy is the standard surgical treatment for muscle-invasive bladder cancer, but as the most morbid and complex urologic surgery, radical cystectomy could bring postoperative complications to over half of patients, and about 1-4% of patients might die within 90 days after surgery, let alone the severely impaired quality of life (2). Recently, bladder-preserving therapies have been applied to selected patients. With effective systemic treatments, radical cystectomy might be waived for these patients who achieved complete response while the long-term outcomes were not compromised compared to radical cystectomy (3–5). On the other hand, surgical modifications were also explored. Maximal elimination of bladder tumors by transurethral En bloc resection could be more informative and curative, and might be the new gold standard of transurethral surgery in the new era (6–8). For tumors unfit for transurethral resection, radical cystectomy is not inevitable, as partial cystectomy could be offered for selected patients, and the prognosis is also acceptable (9).

For renal tumors, nephron-sparing surgery has been the recommended treatment for patients with localized tumors due to the equivalent oncological outcomes compared to radical nephrectomy (10, 11). While for more advanced tumors, evidence suggests that partial nephrectomy is still optional for selected patients (12, 13).

Besides, organ-sparing surgeries have also been attempted in other genitourinary tumors, including prostate cancer (14), penis cancer (15), and rare malignancies such as urachal carcinoma (16). For now, organ-sparing surgeries provide additional options for part of patients, and might bring a better balance between cancer control and quality of life. Therefore, this topic is proposed to share the highlight works in organ-sparing surgery, as well as relevant neoadjuvant and adjuvant therapy, for the treatment of genitourinary cancers.

As mentioned above, bladder-preserving therapy has been widely used in muscle-invasive bladder cancer. Al-Qudimat et al. conducted an updated meta-analysis to compare the oncological outcomes of trimodal therapy with radical cystectomy in muscle-invasive bladder cancer, and emphasized the important role of standard radical cystectomy in the management of muscle-invasive bladder cancer. Ghali et al. also focused on the trimodal therapy of bladder cancer, and they found that over a third of patients ≥65 years old received curative-intent radiotherapy alone without concurrent chemotherapy. These two studies alert us that trimodal therapy should be applied according to a more standard protocol with caution. Yin et al. reported a case of bladder squamous cell carcinoma treated with partial cystectomy. This patient remains free of disease recurrence and metastasis 10 years after partial cystectomy, which might provide some reference for the individualized treatment of bladder cancer. Radical cystectomy could sometimes be offered to high-risk non-muscle-invasive bladder cancer patients who experience repeating recurrence. Photodynamic therapy could be an alternative option before radical cystectomy, but the lack of solid research fundaments limited its wide use. Li et al. conducted a systematic review to comprehensively summarize the application of photodynamic therapy in non-muscle-invasive bladder cancer. This study confirmed the safety and efficacy of photodynamic therapy, and warrants further high-quality research to expand the use of it as well.

As for renal tumors, Yan et al. presented their laparoscopic aspirator bracket which could help the aspiration and exposure of the operative field simultaneously during the laparoscopic partial nephrectomy. Li et al. shared their experience of super selective transarterial embolization of renal tumors. This technique allows a more precise blockage of tumor blood supply and zero-ischemia robotic-assisted laparoscopic partial nephrectomy without renal arterial clamping.

In this Research Topic, several studies reported their updated research outcomes, mainly focused on the organ-sparing strategies in bladder cancer and renal cancer. Alternative treatments to avoid radical surgery, switching radical surgery to less damaging organ-sparing surgery, and surgical technique modification were attempted by these studies to preserve the organ. Also, like other organ-sparing strategies, these efforts were preliminary, and future work is warranted to ascertain the beneficiary and standard treatment protocols.

As a promising strategy, organ-sparing surgeries would be more commonly accepted in the future. We confidently look forward to further high-quality studies to solve puzzles in this field and provide more feasible options for patients who suffer from genitourinary cancers.

Author contributions

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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