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Focal Therapy: The Art of Harmonizing Cancer Control with Quality of Life

Thomas J. Polascik,^{1,2} Mahdi Mottaghi,^{1,2} and Rafael Sanchez-Salas³

The concept of focal therapy (FT) stems from historical lessons in breast cancer treatment, where it became evident that the depth of the surgeon's cut bears no sway on the rhythm of survival's song. In 1894, William Halsted introduced radical mastectomy to be a curative treatment based on the belief that centrifugal cancer spread through the lymph nodes, yet the survival rates remained poor. Attempts to further extend the surgical procedure to the chest wall and even upper extremity amputations failed to improve outcomes. Between the 1950s and the 1970s, randomized trials showed that breast-preserving strategies (i.e., FT such as lumpectomy) provide similar survival rates to radical procedures. Similar evidence from other cancers, such as melanoma, thyroid, and now prostate (PCa) and kidney cancers, supports the optimization of treatments to align with patient values and avoid overtreatment. The current issue of the *Journal of Endourology* features a special "Focal Therapy Supplement," highlighting the ongoing shift among surgeons toward less invasive treatments that prioritize both cancer control and patients' quality of life. In this issue, several research teams present valuable insights into the strengths and weaknesses of FT, along with recommendations for improvement.

Regarding FT for kidney cancer, Lucignani et al. present trifecta-based outcomes following small renal mass ablation, reporting major complications in fewer than 5% of procedures and a local recurrence rate below 10%. With trifecta outcomes (no major Clavien–Dindo grade >2 complications within 90 days after ablation, <10% long-term GFR decline, and no local recurrence at last follow-up) achieved in about 60% of their study population, they conclude that optimized patient selection, particularly considering tumor location and choice of energy modality, holds the potential for even better outcomes.

Recognizing that the precision of biopsies is a crucial factor in the success of FT, Avolio and colleagues sought to enhance prostate biopsy decision-making by considering the tumor-to-prostate volume ratio (TVR). They proposed a model that included age, history of previous biopsy, and TVR that showed an AUC of 0.84 for predicting clinically significant PCa using transperineal biopsy.

Three well-designed articles discuss transperineal MRI-fusion ablation. Bianco et al. reported their 5-year outcomes of office-based focal cryoablation of PCa cases diagnosed by transperineal biopsy. The disease progression rate (defined as further whole-gland treatment, androgen deprivation therapy, or metastasis) was about 10% at 5-year follow-up. Interestingly, out-of-field recurrence was significantly higher in patients who underwent a second cryoablation compared with in-field recurrence. The median quality-of-life score was 1 (corresponding to "pleased"), with no reported urinary incontinence. Rodríguez-Sánchez et al. challenged the *a la carte* approach and addressed its biased proposition that cryotherapy is unsuitable for posterior lesions. These authors showed that anterior and posterior lesion location did not predict disease progression (defined as radical treatment, hormonal therapy, or metastasis) at a median of 28-month follow-up. Maiolino et al. reported the outcomes of their phase-1 clinical trial of MRI-ultrasound fusion focal laser

¹Department of Urology, Duke University Durham, North Carolina, USA.

²Institute for Medical Research, Durham VAHCS, Durham, North Carolina, USA.

³Division of Urology, Department of Surgery, McGill University, Montréal, Quebec, Canada.

ablation. No urinary incontinence or significant decline in sexual function was reported, whereas 83% (25/30) were free from clinically significant PCa at 12-month follow-up.

Concluding this special issue with two reviews, Taratkin and colleagues conducted a systematic review of minimally invasive treatments for PCa management. These authors report focal irreversible electroporation, focal cryoablation, focal high-intensity focused ultrasound, and focal brachytherapy as the safest modalities regarding urinary outcomes. Hesswani et al. conducted a nonsystematic review to navigate perspectives and future trajectories in the FT landscape in Canada. The authors reported promising perspectives as several clinical trials are in progress that could establish broader acceptance of new practices within the clinical guidelines. They mentioned several barriers to FT adoption in Canada, including delays in MRI acquisition, funding complexities, limited operating room access, and differences in provincial coverage.

The lower side effect profile and improved quality of life offered by FT have sparked significant interest in recent years, leading many top medical institutions to publish patient data supporting the approach. Today, it is encouraging that most international urology conferences now include sessions on FT with broader extension to precision imaging, image-guided interventions, understanding the tumor microenvironment, and incorporation of genetic evaluation of individual tumors, all of which have contributed to significant advancements in this field. Patients are requesting less intrusive means to treat and manage their cancer that preserves quality of life.