

 SMALL RENAL MASSES

What next for the small renal mass?

Small renal masses (SRMs) are a clinical conundrum. Over the past few decades, they have been increasingly detected incidentally—as a result of the expansion of high-resolution abdominal imaging for other indications—and represent a heterogeneous population of lesions that can range from indolent disease to malignant cancer. Urologists have limited ability to evaluate their aggressiveness, yet are faced with an expanding selection of treatment options, from active surveillance to focal therapies and robot-assisted surgery, which they must weigh up against potential overtreatment and loss of renal function. This focus issue of *Nature Reviews Urology* is dedicated to the contemporary management of SRMs, to help clinicians navigate this tricky field.

SRMs have been likened to prostate tumours identified by PSA screening—in both cases, early detection has led to increased diagnosis of small, low-grade lesions that might not progress to aggressive disease during the patient's lifetime, leading to concerns of overdiagnosis and overtreatment. The controversies surrounding prostate cancer are well documented, so what can we learn about SRMs from this comparison?

The advocacy of active surveillance is perhaps the most obvious parallel between low-risk prostate cancer and SRMs. The much-anticipated results of PIVOT last year confirmed what many urologists already believed—that observation is a viable option for carefully selected men with prostate cancer, sparing them the unnecessary morbidity of surgery. In this issue, Marc Smaldone *et al.* discuss the efforts that have been made to introduce active surveillance for the SRM. Although a randomized controlled trial is noticeably absent, a growing body of evidence exists on the natural history of untreated SRMs, which can provide urologists with invaluable insight.

Partial nephrectomy remains the standard of care for SRMs, providing an excellent balance between good oncological outcomes and preservation of renal function. However, despite abundant high-level supporting evidence, it continues to be underused (in favour of radical nephrectomy) in clinical practice. In this issue, Inderbir Gill and colleagues provide a state-of-the-art update on partial nephrectomy procedures and outcomes. As with prostatectomy, robotic assistance has been largely embraced by surgeons, and it is hoped that the shorter learning curve will encourage wider adoption of partial nephrectomy, wherever feasible.

Focal ablation techniques lie in the gap between active surveillance and surgery, and are currently making the transition from experimental to routine clinical procedures. At this exciting time, perhaps we should heed a warning from the accelerated adoption of focal techniques in prostate cancer, some of which lack high-level evidence to support their use. The published outcomes of thermal ablation for SRMs, reviewed here by Raymond Leveillee and colleagues, are certainly promising and further research will hopefully guarantee a place for these techniques in the clinic.

Finally, Paul Russo tackles the importance of preserving renal function in these patients. Methods to reduce the harms of prostate cancer treatment (such as nerve-sparing surgery) are an area of intense research but an appreciation of the risks of nephrectomy (chronic kidney disease, cardiovascular dysfunction and, sometimes, death) is not yet reflected in utilization trends. Nephron sparing is imperative in this patient population and must be at the forefront of the treating physician's mind.

There is, however, one key difference between prostate cancer and SRMs—PSA screening can be debated, but abdominal imaging for other indications cannot. If the detection of SRMs is unavoidable, treatment selection takes centre stage. Efforts to characterize clinically significant disease in prostate cancer have explored biomarkers and biopsy, and this is where SRM research must follow. The search for clinically useful biomarkers of renal cell carcinoma has been difficult but continues apace. Percutaneous renal biopsy, neglected for several years owing to worrying reports of bleeding, tumour seeding and nondiagnostic results, is going through somewhat of a renaissance, with experts endorsing its use and calling for more research into its safety and optimization. Wherever the SRM is headed, we at *Nature Reviews Urology* will be watching with interest.

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Competing interests
The author declares no competing interests.



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