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Technology and therapy: Paradigm shifts in the treatment of renal cancer -University of California Irvine Experience

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Introduction & Objective: The constantly increasing use and improved sensitivity of modern imaging modalities have led to a steep rise in the detection of renal tumors. This change coupled with the increasing age of the patient population and advances in surgical technology has led to a change in the management of renal masses over the past decade. This study reviews the evolving management of renal tumors at the University of California Irvine Department of Urology.

Methods: A retrospective review of all renal cancer cases treated at the University of California Irvine, from 2002 - 2008 was undertaken. The total number of open, laparoscopic and cryoablative procedures were calculated for each year.

Results: Open surgery, both radical and partial nephrectomy, for renal masses declined precipitously over the past 7 years, to less than 2% of procedures by 2008. Meanwhile, there was a two-fold increase in minimally invasive nephron-sparing procedures. By 2008, over 95% of all nephron-sparing procedures were being done using less invasive techniques; approximately half of the cases performed were laparoscopic partial nephrectomies or wedge excisions while the other half were cryoablations. With regard to cryoablation, the laparoscopic assisted procedure is being challenged by image guided percutaneous cryoablation; with the latter accounting for more than 50% of the cryoablation procedures performed through 2008. Of note, all of the image guided procedures were performed by a combined interventional radiology and urology team.

Conclusions: Two trends in the treatment of renal masses are becoming evident: nephron-sparing procedures and minimally invasive approaches. Cryoablative therapy, especially image guided, now accounts for 25% of the treatment of renal masses at our institution. The importance of learning image guided therapies and cooperating with interventional radiologists can not be over-emphasized for urologists interested in the treatment of renal masses.