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ULTRASOUND-GUIDED PERCUTANEOUS ABLATION OF A RENAL MASS IN A RENAL ALLOGRAFT

GREGORY W. HRUBY, JOSHUA K. FINE, AND JAIME LANDMAN

ABSTRACT

A 50-year-old man underwent magnetic resonance imaging and was found to have an incidental 3.2-cm mass in a renal allograft. Because of the multiple comorbidities associated with renal allograft patients, a minimally invasive option such as percutaneous ablation should be considered. The patient underwent percutaneous ultrasound-guided cryoablation. The final histopathologic examination of the needle biopsy was consistent with an oncocytic neoplasm. The 9-month follow-up contrast-enhanced magnetic resonance imaging scan showed no residual tumor. Long-term follow-up and greater clinical experience are still necessary to confirm the efficacy of cryoablation for allograft lesions. UROLOGY **68:** 891.e5–891.e6, 2006. © 2006 Elsevier Inc.

The use of computed tomography, magnetic resonance imaging (MRI), and ultrasound-image guided cryoablation of renal lesions has been shown to be an effective treatment for select patients with short-term follow-up. We report the successful application of ultrasound-guided cryoablation for an enhancing mass within a renal allograft.

CASE REPORT

A 50-year-old man underwent MRI and was found to have an incidental 3.2-cm mass in a renal allograft. He had received a cadaveric renal transplant to the right lower quadrant 8 years previously. Additional evaluation with renal ultrasonography confirmed a solid 3.2 × 2.0-cm, medial, enhancing mass. All surgical options were discussed at length with the patient, and he chose percutaneous cryoablation.

The patient underwent intravenous sedation, and ultrasound-guided percutaneous renal biopsy was performed. Four 1.47-mm cryoprobes (IceRods, Oncura, Plymouth Meeting, Pa) were successfully placed under transcutaneous ultrasound guidance. Two 8-minute freeze cycles, with an intervening active thaw cycle, were performed. The growing iceball was monitored under transcutaneous ultrasonography and extended 1 cm beyond the margin of the renal mass in every dimension without contact with nearby bowel structures. The patient had an uncomplicated course and was discharged on the first postoperative day. No postoperative complications occurred. The final histopathologic findings of the needle biopsy were consistent with an oncocytic neoplasm.

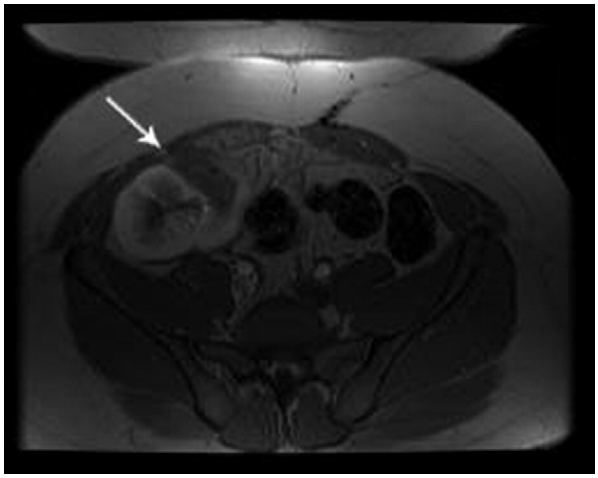

FIGURE 1. *MRI scan at 9 months of follow-up of allograft renal cryolesion. Arrow demonstrates ablated region of tumor.*

At 9 months of follow-up, contrast-enhanced MRI showed no residual tumor, and the cryolesion had decreased in size from 5.8 to 2.2 cm (Fig. 1). The preoperative and recent creatinine value was 2.1 and 2.1, respectively.

From the Department of Urology, Columbia University Medical Center, New York, New York; and Fine and Fine Urology Associates, Dallas, Texas

Address for correspondence: Jaime Landman, M.D., Department of Urology, Columbia University Medical Center, 161 Fort Washington Avenue, Room 1111, New York, NY 10032. E-mail: landmanj@yahoo.com

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COMMENT

The incidence of renal lesions within an allograft kidney is less than 1%.[1] Because these patients typically have multiple comorbidities, a minimally invasive option such as percutaneous ablation should be considered.

Previous reports have demonstrated the short-term success of percutaneous ablation (3 months of follow-up after radiofrequency and cryoablation performed with computed tomography and MRI-guided percutaneous approaches).[2,3] To our knowledge, our case represents the first renal allograft treated with ultrasound guidance and the longest follow-up for percutaneous cryoablation of a mass in a renal allograft. Long-term follow-up and greater clinical experience are still necessary to confirm the efficacy of cryoablation for allograft lesions.

REFERENCES

1. Penn I: Primary kidney tumors before and after renal transplantation. Transplantation **59:** 480–485, 1995.
2. Baughman SM, Sexton WJ, Glanton CW, *et al:* Computerized tomography guided radiofrequency ablation of a renal cell carcinoma within a renal allograft. J Urol **172:** 1262–1263, 2004.
3. Shingleton WB, and Sewell PE: Percutaneous cryoablation of renal cell carcinoma in a transplant kidney. BJU Int **90:** 137–138, 2002.