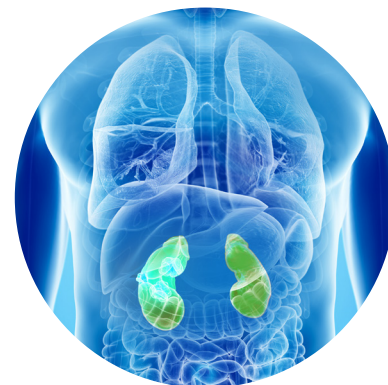


CASE STUDY: RENAL CRYOABLATION

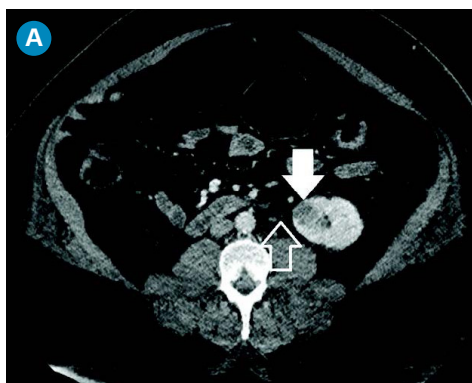
Using the Trajectory of the Cryoablation Needle to Protect Critical Structures

AJ Gunn, MD | University of Alabama at Birmingham | Birmingham, AL



PRESENTATION

- 53-year-old male
- 2.5 cm x 2.3 cm endophytic mass in the anterior aspect of the lower pole of the left kidney discovered incidentally while being evaluated for abdominal pain **A**
 - Biopsy confirmed clear cell renal cell carcinoma



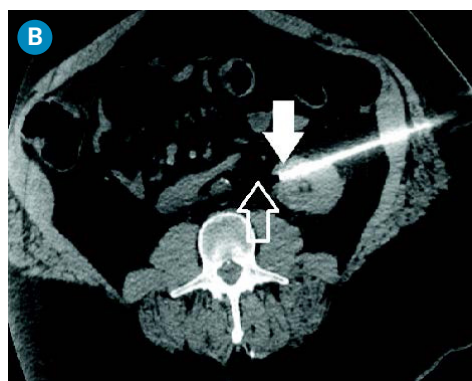
Axial slice from a contrast-enhanced CT scan demonstrates an endophytic mass in the anterior portion of the lower pole of the left kidney (solid white arrow). The ureter is near the potential ablation zone (open white arrow)

TREATMENT

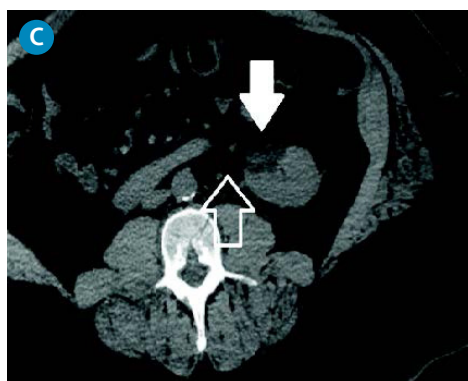
- A single IceForce™ 2.1 CX ablation needle was placed within the lesion under CT guidance. **B C**
The tip of the ablation needle was pointed toward the ureter since lethal ice only extends 5 mm beyond the tip of the needle. Once an appropriate distance from the ureter was achieved, ablation was performed using:



Cautery was performed prior to needle removal



Axial slice from a non-contrast CT obtained during ablation with the patient in supine position shows the cryoablation needle in excellent position (solid white arrow) with a safe distance from the ureter (open white arrow)



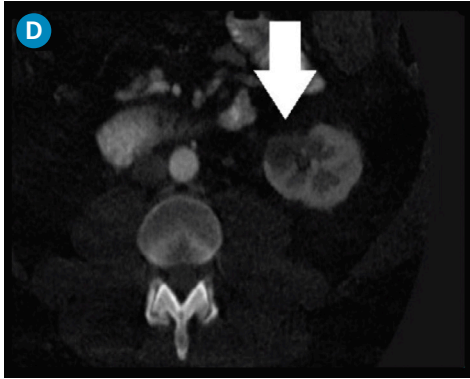
Axial slice from a non-contrast CT obtained during ablation with the patient in supine position shows the iceball (solid white arrow) safely away from the ureter (open white arrow)

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OUTCOME

- The patient was discharged home the same day and no adverse events have been reported
- Follow-up imaging demonstrated no residual or recurrent disease. The patient is now 12 months post ablation **D**



A subtracted axial slice from a contrast-enhanced CT obtained 12 months post ablation shows an ablation defect in the anterior left kidney without evidence of residual or recurrent disease (white arrow)

CONCLUSION

- Percutaneous cryoablation is a safe and effective treatment for renal cell carcinoma. Critical structures can sometimes be avoided by pointing the needle at the critical structure but leaving the tip > 5 mm away since lethal ice only extends 5 mm beyond the tip

CT: Computed tomography GI: Gastrointestinal RCC: Renal cell carcinoma

CRYOABLATION NEEDLES (IceSeed 1.5, IceSphere 1.5, IceSphere 1.5 CX, IceRod 1.5, IceRod 1.5 PLUS, IceRod 1.5 i-Thaw, IceRod 1.5 CX, IcePearl 2.1 CX and IceForce 2.1 CX) and ICEFX and VISUAL ICE CRYOABLATION SYSTEMS

INDICATIONS: The Galil Medical Cryoablation Needles and Systems are intended for cryoablative destruction of tissue during surgical procedures. The Cryoablation Needles, used with a Galil Medical Cryoablation System, are indicated for use as a cryosurgical tool in the fields of general surgery, dermatology, neurology (including cryoanalgesia), thoracic surgery (with the exception of cardiac tissue), ENT, gynecology, oncology, proctology, and urology. Galil Medical Cryoablation Systems are designed to destroy tissue (including prostate and kidney tissue, liver metastases, tumors and skin lesions) by the application of extremely cold temperatures. A full list of specific indications can be found in the respective Galil Medical Cryoablation System User Manuals. **CONTRAINDICATIONS:** There are no known contraindications specific to use of a Galil Medical Cryoablation Needle. **POTENTIAL ADVERSE EVENTS:** There are no known adverse events related to the specific use of the Cryoablation Needles. There are, however, potential adverse events associated with any surgical procedure. Potential adverse events which may be associated with the use of cryoablation may be organ specific or general and may include, but are not limited to abscess, adjacent organ injury, allergic/anaphylactoid reaction, angina/coronary ischemia, arrhythmia, atelectasis, bladder neck contracture, bladder spasms, bleeding/hemorrhage, creation of false urethral passage, creatinine elevation, cystitis, diarrhea, death, delayed/non healing, disseminated intravascular coagulation (DIC), deep vein thrombosis (DVT), ecchymosis, edema/swelling, ejaculatory dysfunction, erectile dysfunction (organic impotence), fever, fistula, genitourinary perforation, glomerular filtration rate elevation, hematoma, hematuria, hypertension, hypotension, hypothermia, idiosyncratic reaction, ileus, impotence, infection, injection site reaction, myocardial infarction, nausea, neuropathy, obstruction, organ failure, pain, pelvic pain, pelvic vein thrombosis, penile tingling/numbness, perirenal fluid collection, pleural effusion, pneumothorax, probe site paresthesia, prolonged chest tube drainage, prolonged intubation, pulmonary embolism, pulmonary insufficiency / failure, rectal pain, renal artery/renal vein injury, renal capsule fracture, renal failure, renal hemorrhage, renal infarct, renal obstruction, renal vein thrombosis, rectourethral fistula, scrotal edema, sepsis, skin burn/frostbite, stricture of the collection system or ureters, stroke, thrombosis/thrombus/embolism, transient ischemic attack, tumor seeding, UPJ obstruction/injury, urethral sloughing, urethral stricture, urinary fistula, urinary frequency/urgency, urinary incontinence, urinary leak, urinary renal leakage, urinary retention/oliguria, urinary tract infection, vagal reaction, voiding complication including irritative voiding symptoms, vomiting, wound complication, and wound infection. PI-719210-AA

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