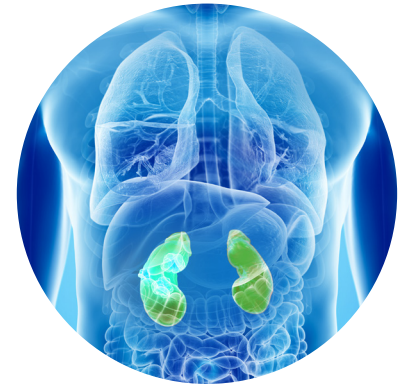


# CASE STUDY: RENAL CRYOABLATION

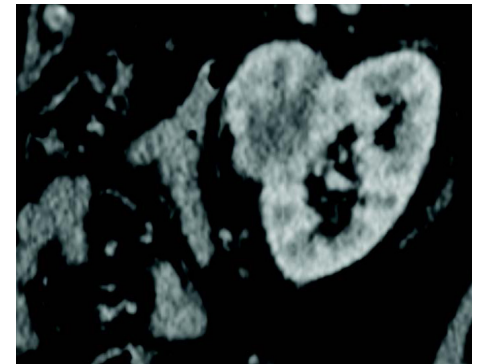
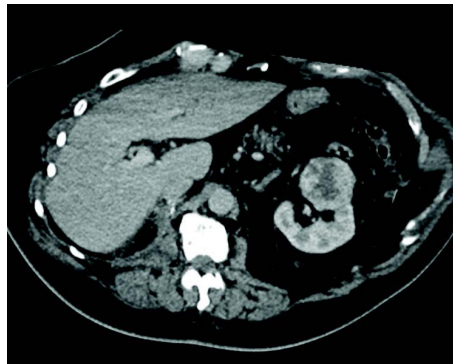
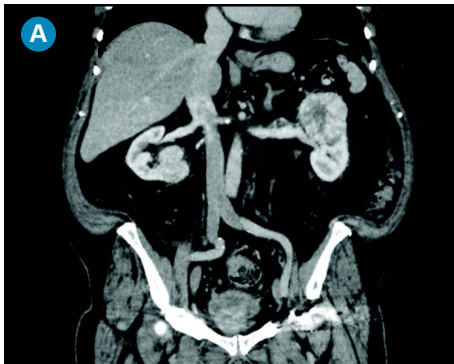
## Cryoablation of 7cm Renal Tumor after Previous Contralateral Nephrectomy

Alex King, MD | University Hospital Southampton | Southampton, UK



### PRESENTATION

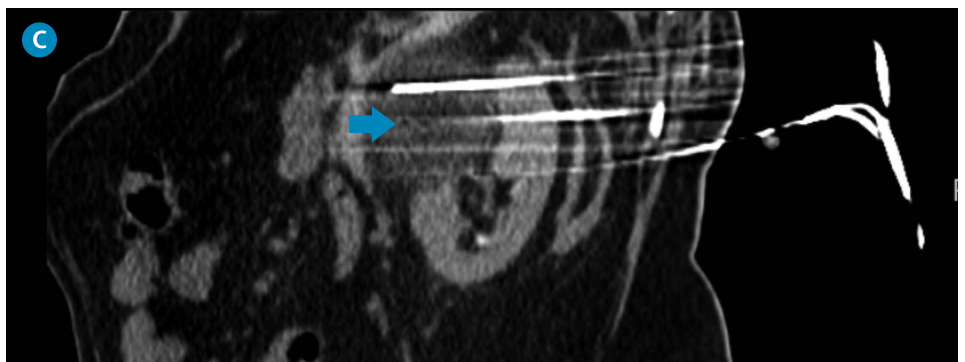
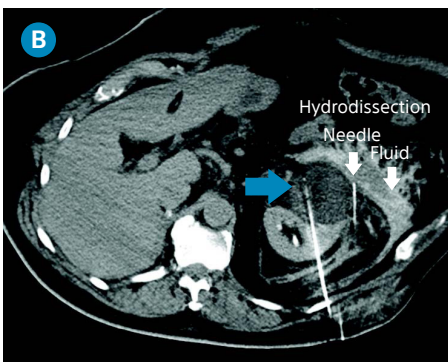
- 78-year-old male
- Right kidney multifocal renal cell carcinoma (RCC) with vein invasion and concurrent 7 cm left anterior renal tumor **A**
  - Left tumor shown on biopsy to be conventional clear cell RCC



Presentation: Multiphasic CT scans reveal multifocal RCC and a 7 cm left anterior renal tumor in coronal (left), axial (center) and sagittal (right) views

### TREATMENT

- Right nephrectomy
- Left kidney cryoablation (three months after nephrectomy)
  - Hydrodissection to protect adjacent structures **B**
  - Seven IceRod™ 1.5 PLUS needles used to sculpt the ice to match the shape of the tumor **C D E**

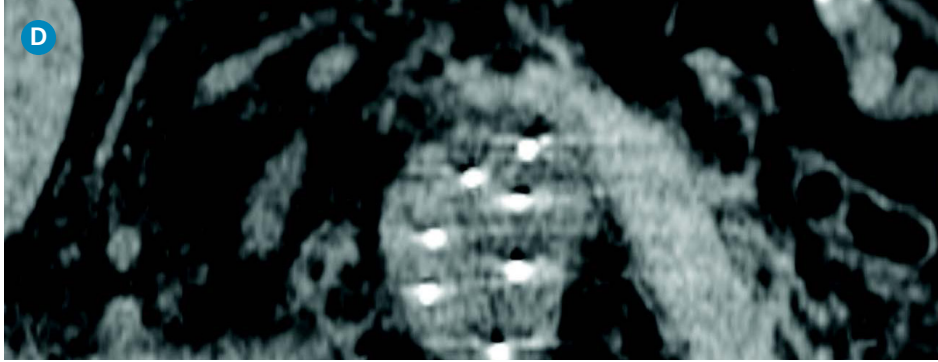


Cryoablation: CT (axial view) shows hydrodissection (white arrows) and hypodense iceball formation (blue arrow)

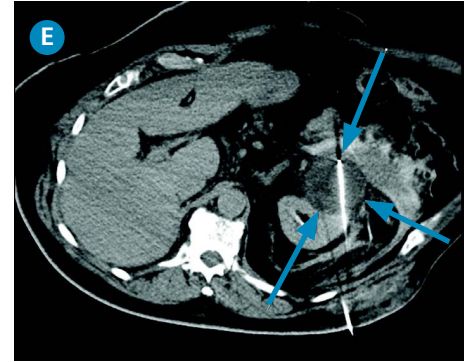
Cryoablation: Needle placement and hypodense iceball formation in sagittal view (blue arrow)

# Cryoablation of 7 cm Renal Tumor after Previous Contralateral Nephrectomy

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Cryoablation: Coronal CT demonstrates the distribution of needles in the slightly 'bean-shaped' tumor, illustrating how multi-needle cryoablation allows the ice to be sculpted to match the tumor morphology



Cryoablation: Visibility of leading edge of iceball on axial CT during treatment (arrows) allows confirmation of tumor coverage and appropriate parenchymal 'safety' margin

## OUTCOME

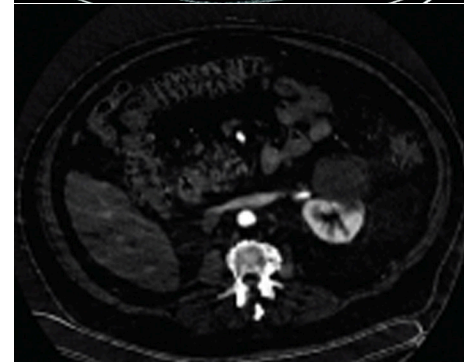
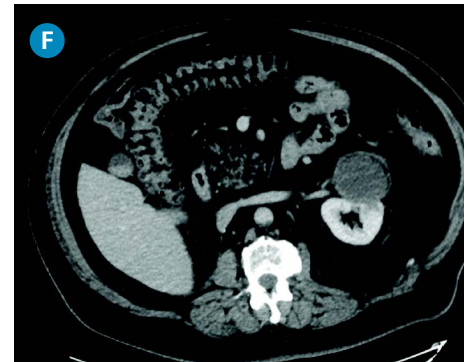
- Cryotherapy required a single night in hospital with simple analgesia
- No reported adverse events
- Early follow-up imaging of left kidney confirmed adequate ablation **F**

## CONCLUSION

- This case highlights the benefit of cryoablation to avoid bilateral nephrectomy and subsequent dialysis or the morbidity of open partial nephrectomy

“ Careful hydrodissection and precise probe placement permitted a safe and adequate ablation without procedural complication. ”

“ In the setting of a previous contralateral nephrectomy, percutaneous cryoablation of this 7 cm tumor offered a nephron-sparing option without the morbidity of open surgery. ”



Post cryoablation: Three-month follow-up CT scans. Top: conventional venous phase imaging. Bottom: Iodine map from dual energy scan showing absence of residual tumoral enhancement

CT: Computed Tomography

**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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