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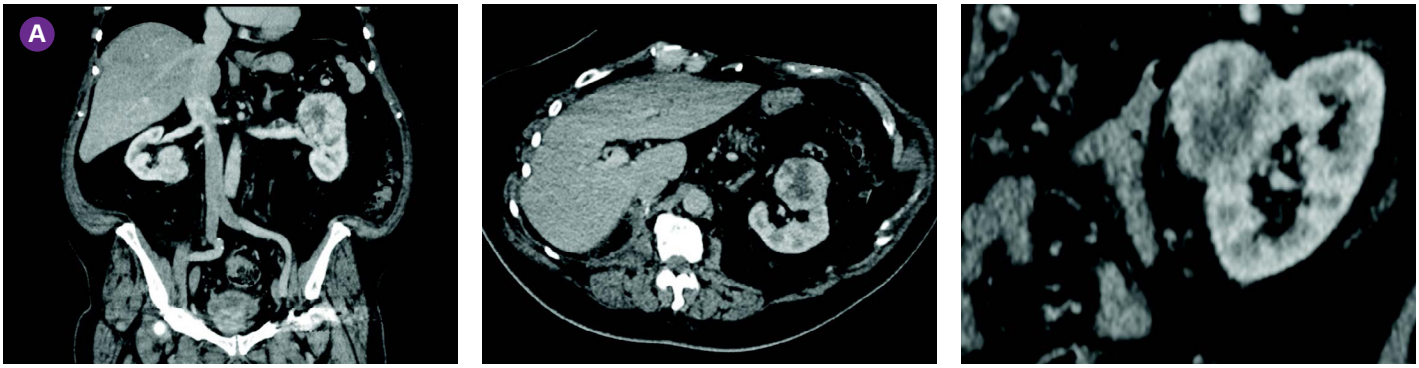
CASE STUDY: RENAL CRYOABLATION

Cryoablation of 7 cm Renal Tumor after Previous Contralateral Nephrectomy

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

PRESENTATION

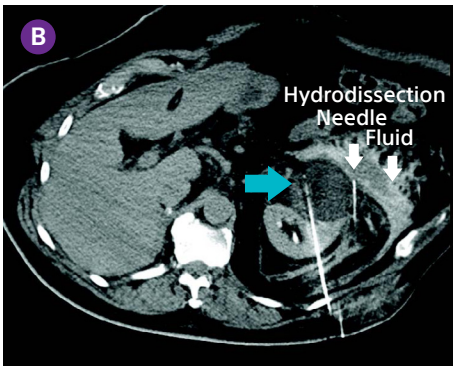
- 78-year-old male
- Right kidney multifocal renal cell carcinoma (RCC) with vein invasion and concurrent 7 cm left anterior renal tumor A
  - Left tumor shown on biopsy to be conventional clear cell RCC



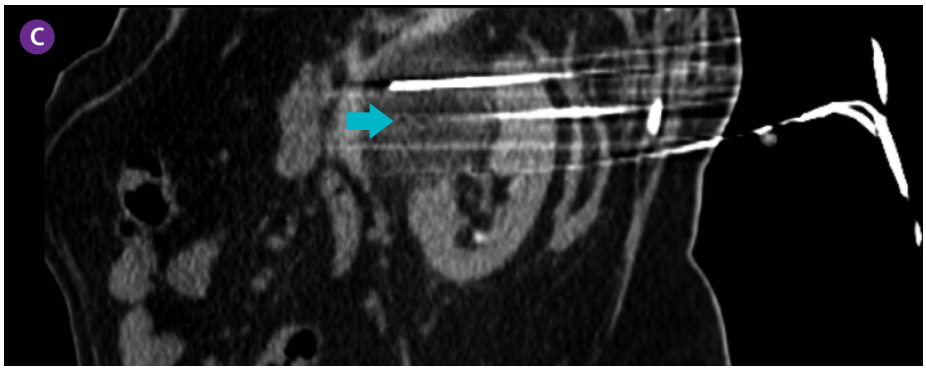
Presentation: Multiphasic CT scans reveal multifocal RCC and a 7 cm left anterior renal tumor in coronal (left), axial (center) and sagittal (right) views

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)

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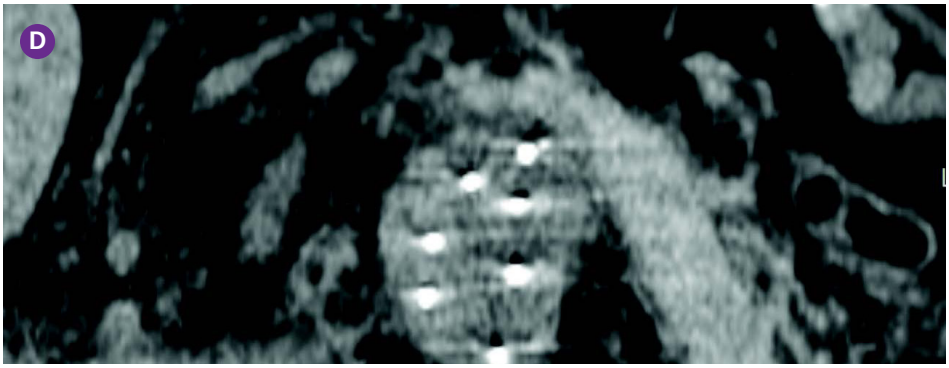
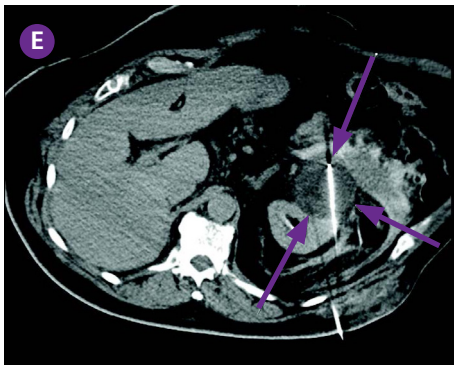


Cryoablation: Coronal CT demonstrates the distribution of needles in the slightly 'bean-shaped' tumor, illustrating how multi-needle cryoablation allows the ice to be sculpted to match the tumor morphology



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

OUTCOME

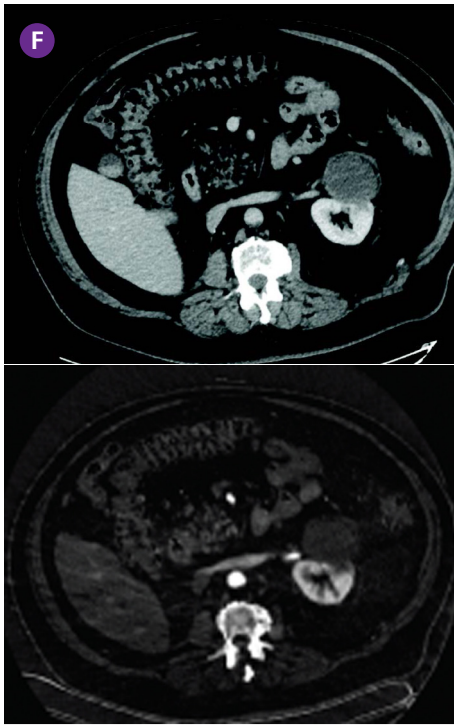
- Cryotherapy required a single night in hospital with simple analgesia
- No reported adverse events
- Early follow-up imaging of left kidney confirmed adequate ablation F

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

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