



Cryoablation of Renal Cell Carcinoma

Happy
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There are many ways to treat renal tumors apart from surgery. Radiofrequency ablation (RFA) has been used for renal tumors, especially in single kidneys or in patients at high risk for surgery/anesthesia, for more than two decades now. Cryoablation is now an alternative.

As with any ablative technique, the cryoprobe is guided into the tumor using CT and CT fluoroscopy and then depending on the size, the ablation is performed for a specific period of time. While cryoablation has been used for larger than 4 cm lesions, mainly for palliation, it is best suited for < 4 cm sized lesions, especially in single kidneys, or when the patient is not a candidate for surgery (Fig. 1), where the extent of renal damage can be controlled and where the extent of nephron sparing is better than with surgery.

Cryoablation is ideal for renal tumors, mainly because the iceball (Fig. 2) and hence the ablation zone can be much better defined than other thermal ablative techniques such as RFA or microwave. The procedure is usually quite simple and straightforward, done without sedation, unless the patient is uncomfortable, in which case, conscious sedation is used.

Though, a randomized controlled trial has not yet been performed, observational data shows good efficacy and accuracy of cryoablation (Fig. 3).

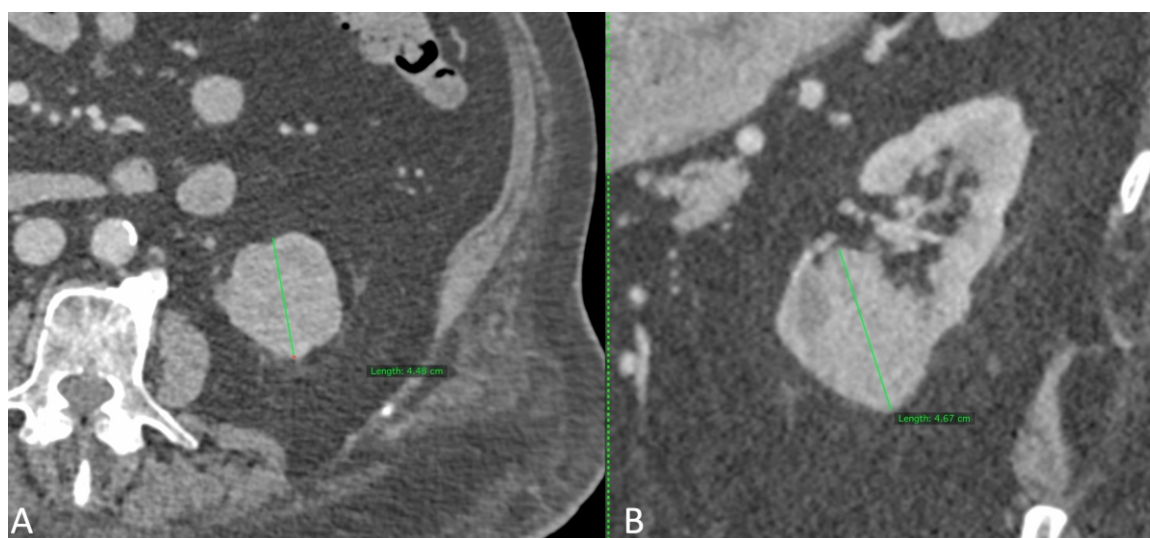
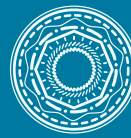


Fig. 1 (A,B): 75-years old with multiple co-morbidities and anesthesia risk. The CT scan shows a <5.0 cm solid enhancing mass arising from the lower pole of the right kidney in the axial (A) and coronal (B) planes. After consulting with the uro-oncosurgeon and the medical oncologist, the patient and relatives took a decision to go ahead with cryoablation.



At a glance:

- ◆ Cryoablation is an emerging technique for small renal tumors
- ◆ The best indication at present is <4 cm tumors either in single kidneys or in patients at high risk for surgical/anesthetic complications.
- ◆ Cryoablation is also possible in larger tumors, mainly for palliation though occasionally curative ablation is possible for <5 cm tumors.

Fig. 2 (A,B): Using a 13G cryoprobe (B), the lesion was ablated along the inferior (A) and superior (B) aspects with a freeze-thaw-freeze cycle of 14-10-14 minutes and 12-10.8 minutes respectively. There was no complication.

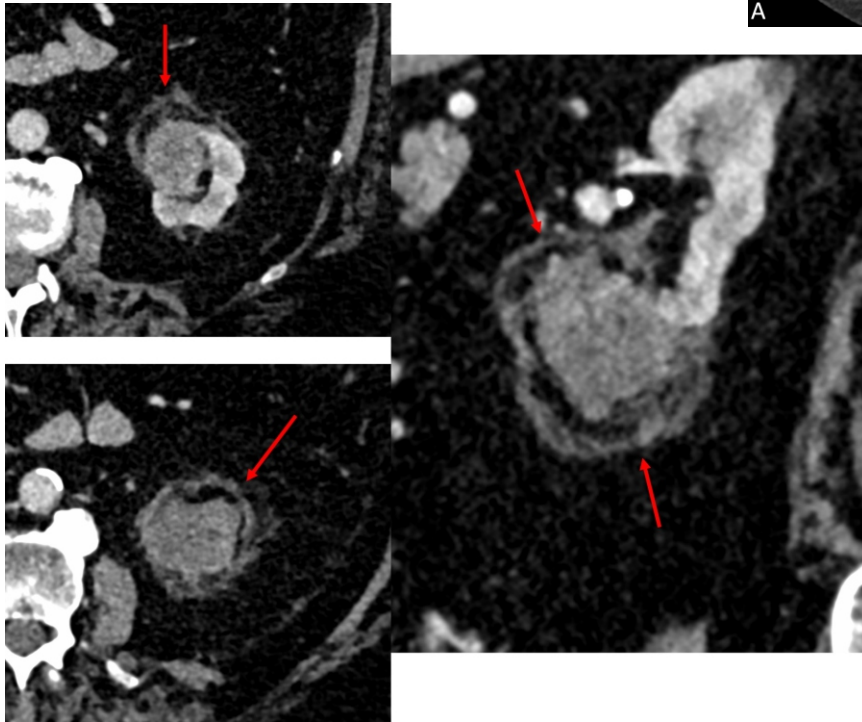
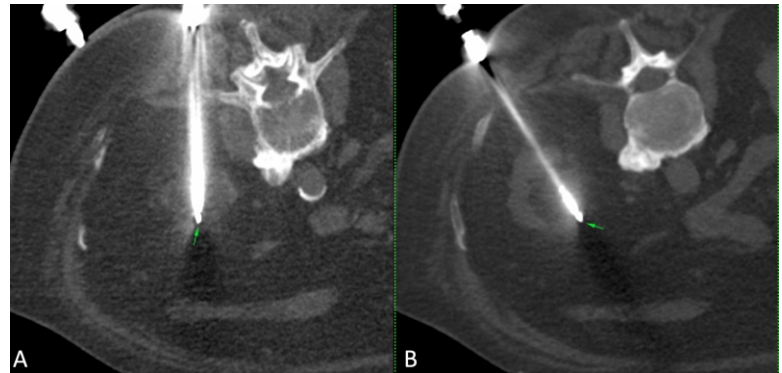


Fig. 3: A repeat contrast CT scan 3 months later showed no enhancement, suggesting complete ablation with a zone of ablation, seen as a circumferential ring (arrows) around the tumor.

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