

Diffusion-weighted imaging of the kidney

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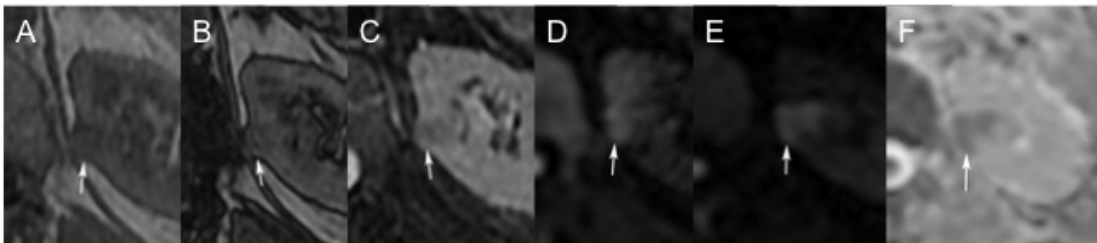
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Purpose:

- 1) To review the technique of diffusion-weighted MR imaging in assessment of renal lesions
- 2) To demonstrate the added value of diffusion-weighted imaging (DWI) in the characterization of the renal lesions and in the assessment for disease recurrence following treatment

Outline of Content:

Optimize the technique of DWI for renal mass characterization and detection of tumor recurrence post treatment. Discuss the role of DWI in characterization of the malignant renal lesion. Present the added value of DWI in the assessment of disease recurrence following RFA and surgery. Illustrate potential pitfalls of DWI of renal lesions such as bacterial pyelonephritis and hematoma.



Axial MR images of a focal kidney lesion on the medial cortex of the left kidney. The lesion is hypointense on the T2-weighted image (A) and hypointense on the T1-weighted in- (B) and out-of-phase (C) images with no signal loss. Diffusion-weighted imaging demonstrates restricted diffusion with higher signal on the b-1000 (E) image than the b-500 (D) image and corresponding low signal on the ADC map (F). The appearances are typical for a small renal cell carcinoma confirmed surgically in this case.

Summary:

Diffusion-weighted MR imaging in the assessment of the indeterminate renal lesion can provide additional valuable information. The aim of the exhibit is to highlight the use of DWI in both the initial evaluation of the renal lesion and also in post treatment appearances.