



**Figure S1** iShim DWI showing a clear tumor and bladder contour without image distortion (A), SS-EPI DWI showing a slightly blurred lesion and bladder contour and image distortion with substantial noise (B), iShim ADC showing a uniform urine signal (C), SS-EPI ADC showing an uneven urine signal (D). iShim, integrated slice-specific dynamic shimming; DWI, diffusion-weighted imaging; SS-EPI, single-shot echo-planar imaging; ADC, apparent diffusion coefficient.

**Table S1** iShim and SS-EPI DWI with the same parameters

Parameters	iShim DWI	SS-EPI DWI
Scan plane	Axial	Axial
Diffusion mode	4-scan trace	4-scan trace
Repetition time (ms)	3,700	3,700
Echo time (ms)	48	48
Field of view (mm <sup>2</sup> )	240×211	240×211
Matrix	100×88	100×88
Number of slices	24	24
Slice thickness (mm)	3.5	3.5
Slice gap (mm)	0	0
b values (s/mm <sup>2</sup> )	50; 600; 1,200	50; 600; 1,200
Average	2; 3; 5	2; 3; 5
Bandwidth (Hz/Px)	2272	2272
Parallel imaging	GRAPPA	GRAPPA
Acceleration factor	2	2
Acquisition time	2 min 46 s	2 min 42 s

iShim, integrated slice-specific dynamic shimming; SS-EPI, single-shot echo-planar imaging; DWI, diffusion-weighted imaging; GRAPPA, generalized autocalibrating partial parallel acquisitions.

**Table S2** Comparison of quantitative indices of DWI image quality

	iShim DWI	SS-EPI DWI	P value
SNR	78.02±13.66	55.64±15.84	0.003
CNR	43.11±12.43	25.83±13.88	0.002
ADC value (×10 <sup>-3</sup> mm <sup>2</sup> /s)	0.84±0.09	0.85±0.12	0.678

DWI, diffusion-weighted imaging; iShim, integrated slice-specific dynamic shimming; SS-EPI, single-shot echo-planar imaging; SNR, signal-to-noise ratio; CNR, contrast-to-noise ratio; ADC, apparent diffusion coefficient.