

Table S1. DVH parameters results (%) for both VMAT_{CBCT} and IMRT_{MRI} workflows for plans optimized with the PTV_{mean}. Results are divided per each workflow according to the patient nephrectomy side. Significance difference between groups was tested using a Mann-Whitney test (P<.01).

		Nephrectomy side			
		PTV _{mean}	left (n=7)	right (n=8)	(P<.01)
Kidney	D_{mean}	VMAT_{CBCT}	25.3 ± 8.4	23.2 ± 10.6	0.39
		IMRT_{MRI}	21.7 ± 7.1	19.8 ± 10.5	0.39
	D_{2%}	VMAT_{CBCT}	85.6 ± 15.2	70.3 ± 25.0	0.33
		IMRT_{MRI}	79.4 ± 16.0	66.7 ± 22.5	0.28
Liver	D_{mean}	VMAT_{CBCT}	26.3 ± 8.6	45.9 ± 16.3	5.90E-3
		IMRT_{MRI}	23.7 ± 7.2	42.0 ± 15.4	9.30E-3
	D_{2%}	VMAT_{CBCT}	77.8 ± 12.4	101.8 ± 1.6	3.10E-4
		IMRT_{MRI}	72.3 ± 11.6	101.7 ± 2.7	3.10E-4
Spleen	D_{mean}	VMAT_{CBCT}	60.6 ± 33.9	7.3 ± 3.2	0.02
		IMRT_{MRI}	55.9 ± 21.5	6.6 ± 2.0	0.02
	D_{2%}	VMAT_{CBCT}	91.9 ± 33.2	22.9 ± 9.5	0.02
		IMRT_{MRI}	91.3 ± 30.3	22.5 ± 7.9	9.30E-3
Pancreas	D_{mean}	VMAT_{CBCT}	88.7 ± 7.6	65.8 ± 15.2	0.04
		IMRT_{MRI}	84.3 ± 7.5	59.8 ± 16.2	0.02
	D_{2%}	VMAT_{CBCT}	105.0 ± 3.5	97.9 ± 13.1	0.22
		IMRT_{MRI}	103.9 ± 2.7	95.5 ± 16.0	0.05

The VMAT_{CBCT} plans were optimized using a 10 MV beam as standard of practice while IMRT_{MRI} plans were restricted by the specific beam configuration of the MRL system (7MV FFF beam). To discard the possibility that differences in beam energy, beam configuration and delivery technique could influence the final dose distributions, the following scenarios were considered:

1. VMAT_{CBCT} with a 6 MV beam vs. VMAT_{CBCT} with a 10 MV beam. Plans were optimized using the same PTV margin (PTV_{mean}) and using the beam configuration of the clinical linac with different beam energies (Table S2).
2. IMRT_{MRI} with a 7 MV beam vs. IMRT_{MRI} with a 10 MV beam. Plans were optimized using the same PTV margin (PTV_{mean}) and using the beam configuration of the MRL and of the clinical linac, respectively (Table S3).
3. VMAT_{CBCT} with a 10 MV beam vs. IMRT_{MRI} with a 10 MV beam. Plans were optimized using the same PTV margin (3mm) and using the same beam configuration and beam energy (Table S4).

Table S2. DVH and NTID results (%) for VMAT_{CBCT} plans optimized using the PTV_{mean} (5mm), the same beam configuration and different beam energies. Mean and standard deviation (SD) results are shown. Significance difference between plans was tested using a Wilcoxon test (P<.01).

Abbreviations: SD=standard deviation.

		VMAT _{CBCT} (6MV)		VMAT _{CBCT} (10MV)		Difference		
		Mean	SD	Mean	SD	Mean	SD	(P<.01)
ITV	D _{98%}	98.4	0.9	98.5	0.8	-0.1	0.9	0.89
	D _{mean}	101.9	0.8	101.9	0.7	0.0	0.6	0.89
	D _{2%}	106.8	1.6	106.8	1.4	0.0	0.8	0.61
Kidney	D _{mean}	24.0	8.1	24.0	9.0	0.0	1.9	0.59
	D _{2%}	79.1	19.9	79.0	20.9	0.1	4.1	0.52
Liver	D _{mean}	36.6	14.6	37.0	16.0	-0.4	1.9	0.05
	D _{2%}	90.7	14.4	90.5	14.9	0.2	1.6	0.95
Spleen	D _{mean}	37.5	37.3	37.5	37.4	0.0	0.8	0.05
	D _{2%}	60.1	43.4	60.5	43.0	-0.4	2.6	0.95
Pancreas	D _{mean}	78.2	19.2	78.8	17.1	-0.6	2.4	0.22
	D _{2%}	101.7	12.2	101.6	9.6	0.1	3.3	0.19
NT	V _{>95%}	3.9	1.2	3.7	1.1	0.3	0.3	0.61
	V _{>2Gy}	31.3	8.7	31.7	8.9	-0.4	1.3	0.49
	NTID	18.7	4.5	18.5	4.5	0.2	0.7	0.25

Table S3. DVH and NTID results (%) for IMRT_{MRI} plans optimized using the PTV_{mean} (3mm) and different beam configurations and beam energies. Mean and standard deviation (SD) results are shown. Significance difference between plans was tested using a Wilcoxon test (P<.01).

Abbreviations: SD=standard deviation.

		IMRT _{MRI} (7MV)		IMRT _{MRI} (10MV)		Difference		
		Mean	SD	Mean	SD	Mean	SD	(P<.01)
ITV	D _{98%}	97.8	0.9	98.1	1.2	-0.4	0.5	0.05
	D _{mean}	101.7	0.9	102.0	0.9	-0.3	0.3	0.05
	D _{2%}	106.7	1.6	106.9	1.6	-0.1	0.6	0.05
Kidney	D _{mean}	20.6	8.4	20.6	8.0	-0.1	1.0	1.00
	D _{2%}	73.6	19.3	74.0	19.3	-0.3	4.4	0.81
Liver	D _{mean}	33.6	14.7	33.9	15.5	-0.3	1.1	0.30
	D _{2%}	86.6	16.9	86.4	18.1	0.2	2.8	0.92
Spleen	D _{mean}	34.7	34.7	34.8	35.2	-0.2	1.0	0.30
	D _{2%}	60.0	41.8	60.8	42.0	-0.8	2.7	0.92
Pancreas	D _{mean}	73.9	18.4	73.1	18.9	0.8	1.6	0.07
	D _{2%}	100.0	11.5	99.9	10.3	0.1	1.9	0.63
NT	V _{>95%}	2.7	0.9	2.8	0.9	0.0	0.3	0.64
	V _{>2Gy}	31.5	9.2	31.1	9.1	0.4	0.6	0.06
	NTID	18.5	4.4	18.2	4.3	0.3	0.3	0.05

Table S4. DVH and NTID results (%) for VMAT_{CBCT} and IMRT_{MRI} plans optimized using the same PTV margin (3mm) and the same beam configuration and beam energy. Mean and standard deviation (SD) results are shown. Significance difference between plans was tested using a Wilcoxon test (P<.01). *Abbreviations: SD=standard deviation.*

		VMAT _{CBCT} (10MV)		IMRT _{MRI} (10MV)		Difference		(P<0.1)
		Mean	SD	Mean	SD	Mean	SD	
ITV	D _{98%}	98.3	0.9	98.1	1.2	0.1	1.2	0.46
	D _{mean}	101.9	1.0	102.0	0.9	-0.1	1.2	1.00
	D _{2%}	106.9	1.6	106.9	1.6	0.1	1.8	0.87
Kidney	D _{mean}	20.8	8.4	20.6	8.0	0.2	1.8	0.66
	D _{2%}	71.9	20.4	74.0	19.3	-2.1	6.7	0.13
Liver	D _{mean}	33.8	15.2	33.9	15.5	-0.1	2.3	0.80
	D _{2%}	87.7	16.8	86.4	18.1	1.3	4.1	0.25
Spleen	D _{mean}	34.3	35.6	34.8	35.2	-0.5	1.8	0.05
	D _{2%}	57.5	43.5	60.8	42.0	-3.3	4.1	6.10E-4
Pancreas	D _{mean}	73.6	18.7	73.1	18.9	0.5	3.0	0.36
	D _{2%}	100.8	8.1	99.9	10.3	0.9	3.2	0.21
NT	V _{>95%}	2.7	0.8	2.8	0.9	-0.1	0.5	0.36
	V _{>2Gy}	30.2	8.8	31.1	9.1	-0.9	1.0	3.00E-3
	NTID	17.2	4.1	18.2	4.3	-1.0	0.8	9.00E-3

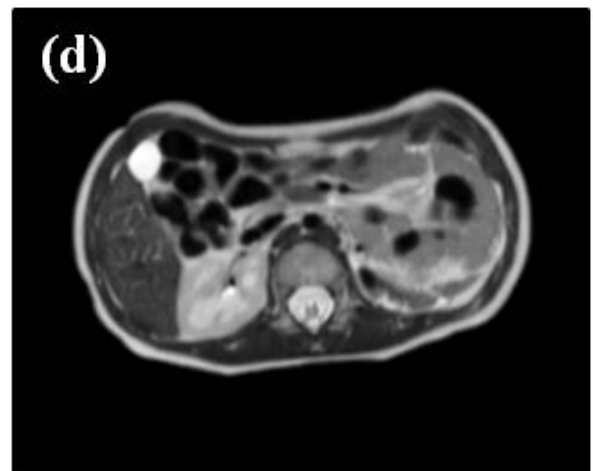
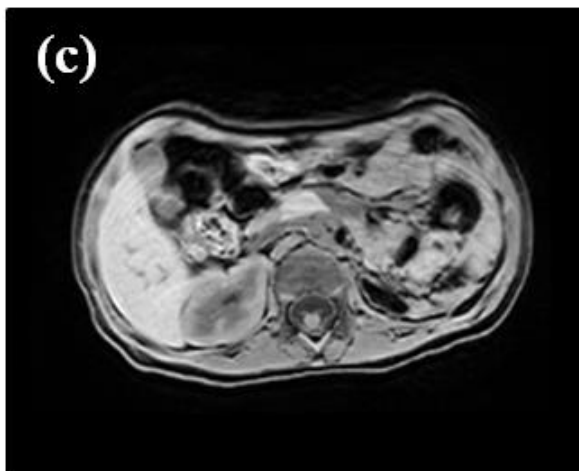
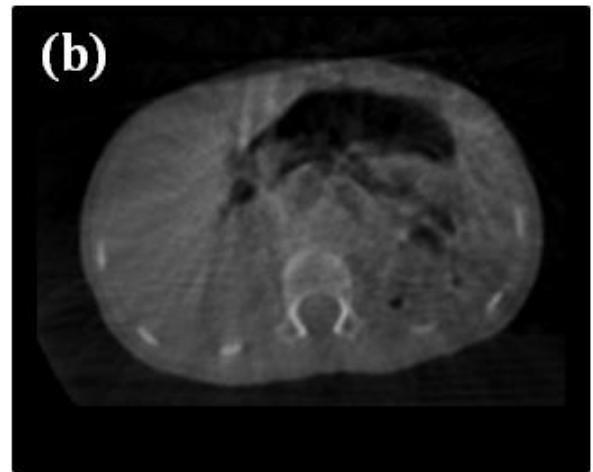
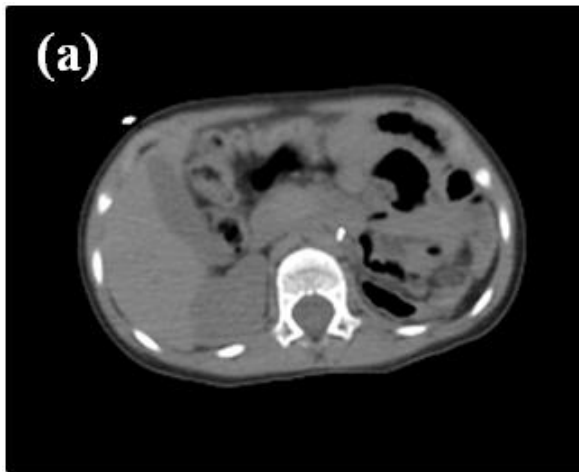


Figure S1. Transversal slices of (a) planning-CT, (b) CBCT, (c) T1w- and (d) T2w- MR images used in the uncertainty analysis in this study.