

**Table S1.** Univariable and multivariable cox regression analysis to detect potential confounders associated with local tumor progression-free survival (LTPFS). After removal of initial CRLM diagnosis and number of recurrent metastasis, and adjusting for the confounder time between initial treatment and diagnosis recurrence, corrected HR of repeat local treatment was 1.486 (95% CI, 0.594–3.714;  $p = 0.397$ ).

		Univariable Analysis		Multivariable Analysis	
		HR (CI)	<i>p</i> -Value	HR (CI)	<i>p</i> -Value
Repeat local treatment	Repeat resection	Reference	0.959	Reference	0.397
	Repeat thermal ablation	1.023 (0.426–2.454)		1.486 (0.594–3.714)	
<b>Patient-Related Factors</b>					
Gender	Male	Reference	0.655		
	Female	1.233 (0.492–3.089)			
Age (years)		1.006 (0.970–1.044)	0.730		
ASA physical status	1	Reference	0.263		
	2	1.713 (0.230–12.747)			
	3	0.645 (0.067–6.208)			
Comorbidities	None	Reference	0.776		
	Minimal	1.288 (0.568–2.919)			
	Major	0.857 (0.191–3.838)			
BMI (kg/cm <sup>2</sup> )		1.065 (0.979–1.159)	0.141		
Primary tumor location	Rectum	Reference	0.715		
	Colon left-sided	0.678 (0.268–1.720)			
	Colon right-sided	0.819 (0.297–2.262)			
<b>Factors Regarding Initial Local Treatment of CRLM</b>					
Initial CRLM diagnosis	Synchronous	Reference	0.002	Reference	0.077
	Metachronous	3.964 (1.643–9.560)		2.391 (0.909–6.284)	
Number of tumors	1	Reference	0.898		
	2–5	1.273 (0.454–3.574)			
	>5	1.150 (0.365–3.625)			
Size of largest metastasis (mm)	Small (1–30)	Reference	0.353		
	Intermediate (31–50)	0.399 (0.114–1.390)			
	Large (>50)	*			
Extrahepatic disease	No	Reference	0.545		
	Yes	0.538 (0.072–4.004)			
Type of procedure	Resection	Reference	0.950		
	Thermal ablation	1.018 (0.401–2.585)			
	Resection and thermal ablation	0.693 (0.264–1.820)			
	IRE	*			
	SBRT	*			
<b>Factors Regarding Repeat Local Treatment of CRLM</b>					
Time between initial treatment and diagnosis recurrence (months)		1.029 (1.010–1.049)	0.003	1.032 (1.012–1.052)	0.001
Number of tumors	1	Reference	0.016	Reference	0.194
	2–5	0.292 (0.126–0.677)		0.431 (0.173–1.072)	
	>5	*		*	
Size of metastasis (mm)	Small (1–30)	Reference	0.525		
	Intermediate (31–50)	1.914 (0.624–5.871)			
	Large (>50)	*			
Chemotherapy	No	Reference	0.264		
	Yes	0.592 (0.236–1.485)			
Margin size	<5mm	Reference	0.652		
	>5mm	0.717 (0.169–3.042)			

HR = hazard ratio, CI = 95% confidence interval, ASA = American Society of Anesthesiologists score, BMI = body mass index, \* = insufficient subgroup size for each treatment group.

**Table S2.** Univariable and multivariable cox regression analysis to detect potential confounders associated with distant progression-free survival (DPFS). After removal of age and initial CRLM diagnosis, and adjusting for the confounders size of largest recurrent metastasis and time between initial treatment and diagnosis recurrence, corrected HR of repeat local treatment was 1.024 (95% CI, 0.545–1.922;  $p = 0.942$ ).

		Univariable Analysis		Multivariable Analysis	
		HR (CI)	$p$ -Value	HR (CI)	$p$ -Value
Repeat local treatment	Repeat resection	Reference	0.660	Reference	0.942
	Repeat thermal ablation	1.139 (0.637–2.038)		1.024 (0.545–1.922)	
<b>Patient-Related Factors</b>					
Gender	Male	Reference	0.834		
	Female	1.052 (0.655–1.691)			
	Age (years)	0.982 (0.962–1.003)	<b>0.092</b>	0.986 (0.964–1.009)	0.239
ASA physical status	1	Reference	0.470		
	2	1.425 (0.570–3.562)			
	3	1.748 (0.664–4.607)			
Comorbidities	None	Reference	0.649		
	Minimal	1.015 (0.648–1.590)			
	Major	1.344 (0.707–2.554)			
	BMI (kg/cm <sup>2</sup> )	0.971 (0.919–1.027)	0.305		
Primary tumor location	Rectum	Reference	0.877		
	Colon left-sided	1.008 (0.606–1.677)			
	Colon right-sided	1.134 (0.643–2.000)			
<b>Factors Regarding Initial Local Treatment of CRLM</b>					
Initial CRLM diagnosis	Synchronous	Reference	<b>0.089</b>	Reference	0.199
	Metachronous	0.691 (0.452–1.058)		0.731 (0.453–1.179)	
Number of tumors	1	Reference	0.311		
	2–5	1.077 (0.645–1.798)			
	>5	1.504 (0.843–2.684)			
Size of largest metastasis (mm)	Small (1–30)	Reference	0.189		
	Intermediate (31–50)	0.630 (0.379–1.046)			
	Large (>50)	0.731 (0.291–1.840)			
Extrahepatic disease	No	Reference	0.238		
	Yes	0.577 (0.232–1.437)			
Type of procedure	Resection	Reference	0.824		
	Thermal ablation	1.203 (0.717–2.017)			
	Resection and thermal ablation	0.889 (0.529–1.496)			
	IRE	1.108 (0.263–4.668)			
	SBRT	0.698 (0.095–5.153)			
<b>Factors Regarding Repeat Local Treatment of CRLM</b>					
Time between initial treatment and diagnosis recurrence (months)		0.980 (0.963–0.998)	<b>0.032</b>	0.973 (0.951–0.995)	<b>0.016</b>
Number of tumors	1	Reference	0.235		
	2–5	1.422 (0.934–2.164)			
	>5	1.852 (0.254–13.511)			
Size of largest metastasis (mm)	Small (1–30)	Reference	<b>0.008</b>	Reference	<b>0.002</b>
	Intermediate (31–50)	1.533 (0.839–2.803)		1.959 (1.054–3.641)	
	Large (>50)	8.469 (1.982–36.183)		10.409 (2.266–47.816)	
Chemotherapy	No	Reference	0.158		
	Yes	0.707 (0.437–1.144)			

HR = hazard ratio, CI = 95% confidence interval, ASA = American Society of Anesthesiologists score, BMI = body mass index.