

Table S1 CT-based evaluation of tumor characteristics

Characteristics	Evaluation	Classification
Tumor location	Assessed by the position of the tumoral main body on multiplanar reconstruction CT images	(I) Cecum and right colon (including hepatic flexure) (II) Transverse colon (III) Left colon (including splenic flexure) (IV) Sigmoid colon (V) Rectum
ctT	(T1) Enhanced tumor not extended into the muscular layer (T2) Enhanced tumor limited in the bowel wall with smooth muscle layer and clear pericolic fat (T3) Presence of irregular out margin or nodular extension of the mass beyond the bowel wall (T4) Tumor invading serosa or other organs, with a distance of <1 mm between the tumor and adjacent organ or recognized serosa	T1, T2, T3, and T4
ctN	Assessed based on the ESGAR	Positive; negative
ctEMVI	Evaluated using the arterial and venous multiplanar reconstruction images. ctEMVI positivity was manifested as soft tissue attenuation within the extramural vessels beyond the bowel wall penetrated by the tumor, with one of the following signs: (I) no enlarged lumen or irregular margin; (II) slightly enlarged lumen with or without rough margin; or (III) obviously enlarged lumen with irregular margin	Positive; negative
MCP	Defined as the maximum tumor invasion proportion around the rectal wall via oblique axial reconstruction review of the maximum tumor dimension	4 degrees (degree 1, 0–0.25; 2, >0.25–0.5; 3, >0.5–0.75, and 4, >0.75–1)
MTL	Defined as the maximum longitudinal extent from the tumor's upper to lower margins via reconstruction review	–
MTT	Defined as the maximum perpendicular distance between the tumor extension's outer margin and the intestinal wall via oblique axial reconstruction review of the maximum tumor dimension	–

CT, computed tomography; ctT, CT-based T stage; ctN, CT-based N stage; ESGAR, European Society of Gastrointestinal and Abdominal Radiology; ctEMVI, CT-based EMVI; EMVI, extramural vascular invasion; MCP, maximum tumor circumferential percentage; MTL, maximum tumor length; MTT, maximum tumor thickness.

Table S2 Univariable regression analysis of 11 clinical and CT morphological parameters in the entire cohort before PSM and 16 DECT spectral parameters in the cohort after PSM

Before matching		After matching	
Clinical and CT morphological parameters	P value	DECT spectral parameters	P value
Age	0.526	Unenhanced Z-eff	0.569
Sex	0.056	IC _{-A}	0.081
CA19-9	0.480	IC _{-V}	0.051
CEA	0.029*	IC _{-E}	0.305
Tumor location	0.919	NIC _{-A}	0.353
ctT	0.107	NIC _{-V}	0.055
ctN	0.177	NIC _{-E}	0.961
ctEMVI	0.004*	1/NIC _{-A}	0.369
MCP	0.537	1/NIC _{-V}	0.025*
MTL	0.195	1/NIC _{-E}	0.784
MTT	0.128	AEF1	0.387
		AEF2	0.313
		VEF	0.007*
		λ_{-A}	0.083
		λ_{-V}	0.018*
		λ_{-E}	0.135

*, statistical significance. CT, computed tomography; PSM, propensity score matching; DECT, dual-energy CT; IC, iodine concentration; CA19-9, carbohydrate antigen 19-9; CEA, carcinoembryonic antigen; NIC, normalized IC; ctT, CT-based T stage; ctN, CT-based N stage; ctEMVI, CT-based EMVI; EMVI, extramural vascular invasion; MCP, maximum tumor circumferential percentage; MTL, maximum tumor length; MTT, maximum tumor thickness; AEF, arterial enhancement fraction; VEF, venous enhancement fraction.