

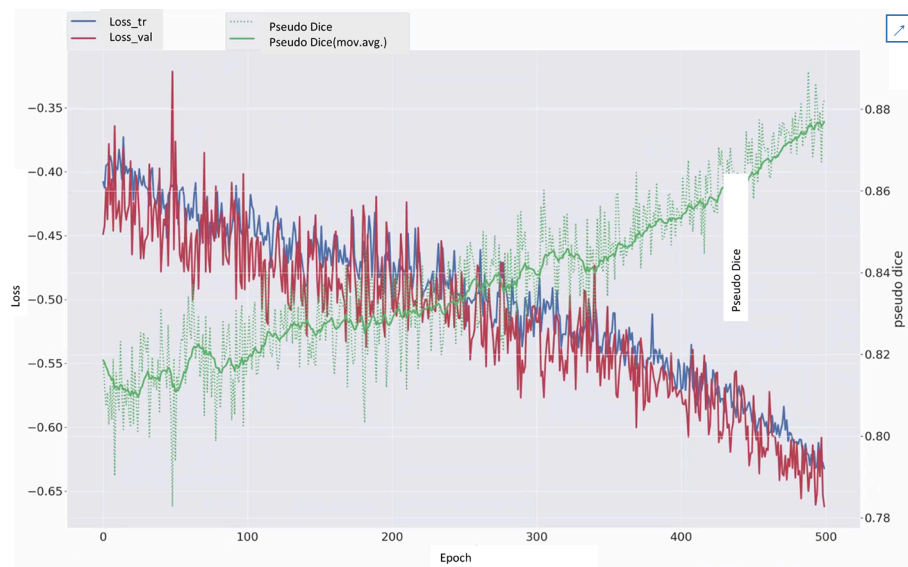


Figure S1 Curves of loss function and Dice coefficient variations across training epochs. The blue line represents training loss (loss_tr), the red line represents validation loss (loss_val), and the green dashed line represents the Pseudo Dice similarity coefficient (pseudo dice); the green solid line represents its moving average [pseudo dice (mov. avg.)].

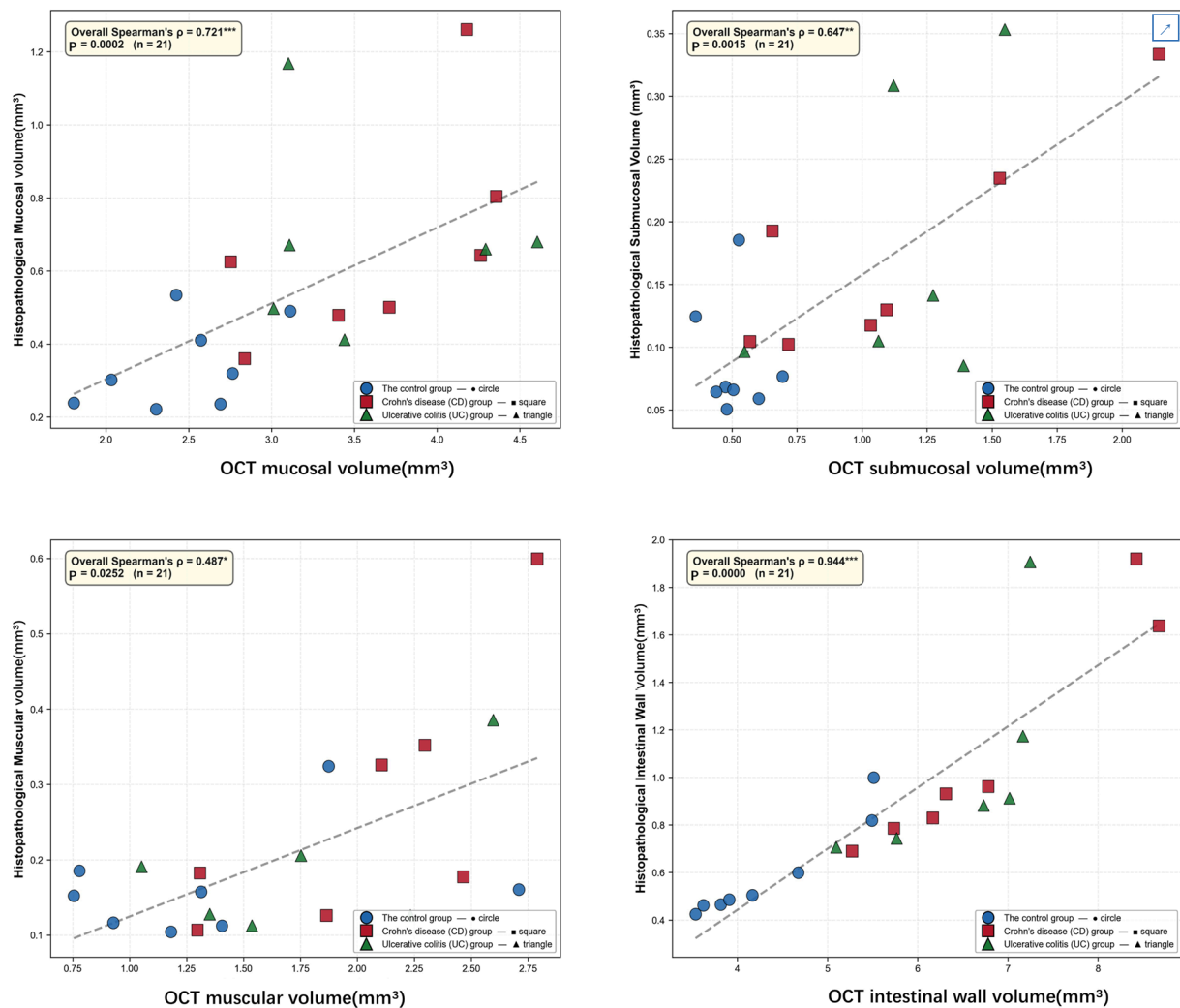


Figure S2 Pearson and Spearman correlation between OCT-derived and histopathological volumetric measurements of the mucosal layer, submucosal layer, muscular layer, and total intestinal wall (N=21). Control samples (n=8) are indicated by blue circles, CD samples (n=7) by orange squares, and UC samples (n=6) by green triangles. The black dashed line denotes the ordinary least-squares linear regression. Pearson correlation coefficient (r) and Spearman's rank correlation coefficient (ρ) with corresponding two-tailed P values are reported in the lower right inset of each panel. OCT, optical coherence tomography; CD, Crohn disease; UC, ulcerative colitis.

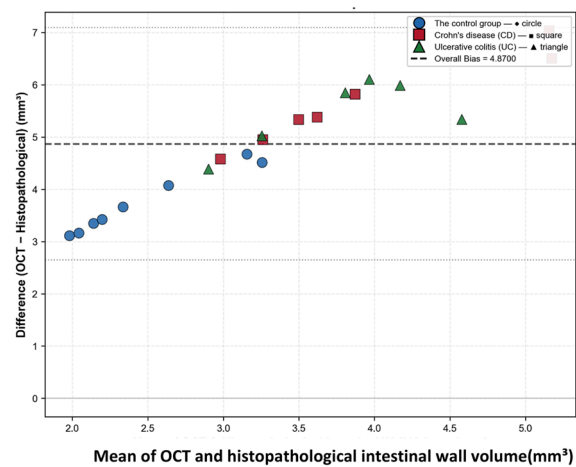
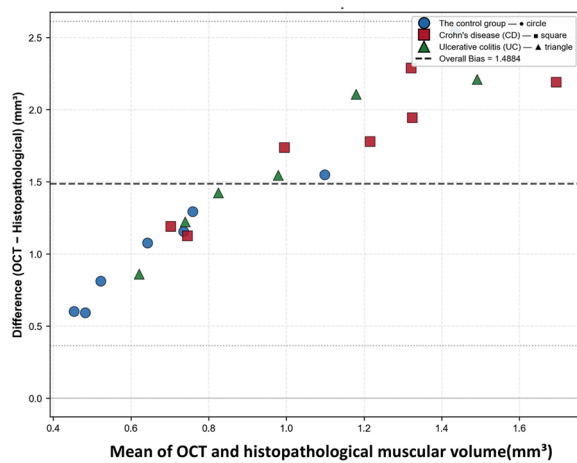
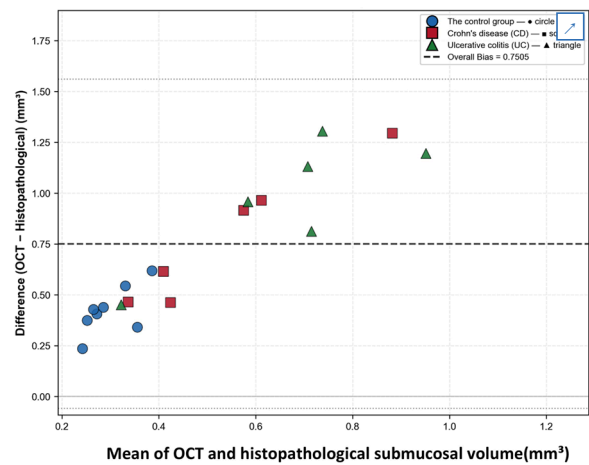
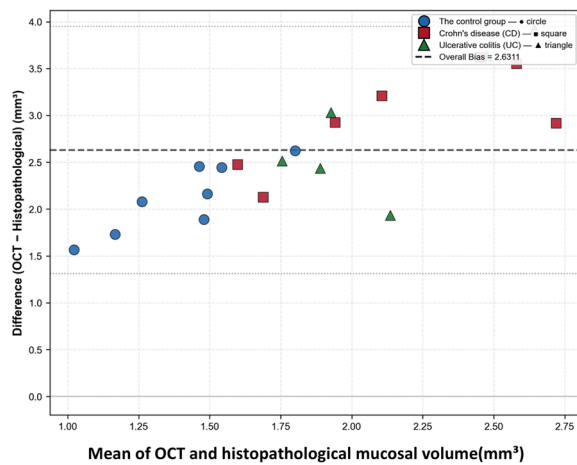


Figure S3 Bland-Altman plots assessing the agreement between OCT-derived and histopathological volumetric measurements of the mucosal layer, submucosal layer, muscular layer, and total intestinal wall. Differences (OCT – histopathology) are plotted against the mean of the two methods. The solid horizontal line indicates the mean difference (bias), while the dashed red lines represent the 95% limits of agreement (mean difference $\pm$ 1.96 SD). The shaded area represents the 95% confidence region. Control samples are indicated by blue circles, CD samples by orange squares, and UC samples by green triangles. OCT, optical coherence tomography; CD, Crohn disease; UC, ulcerative colitis.

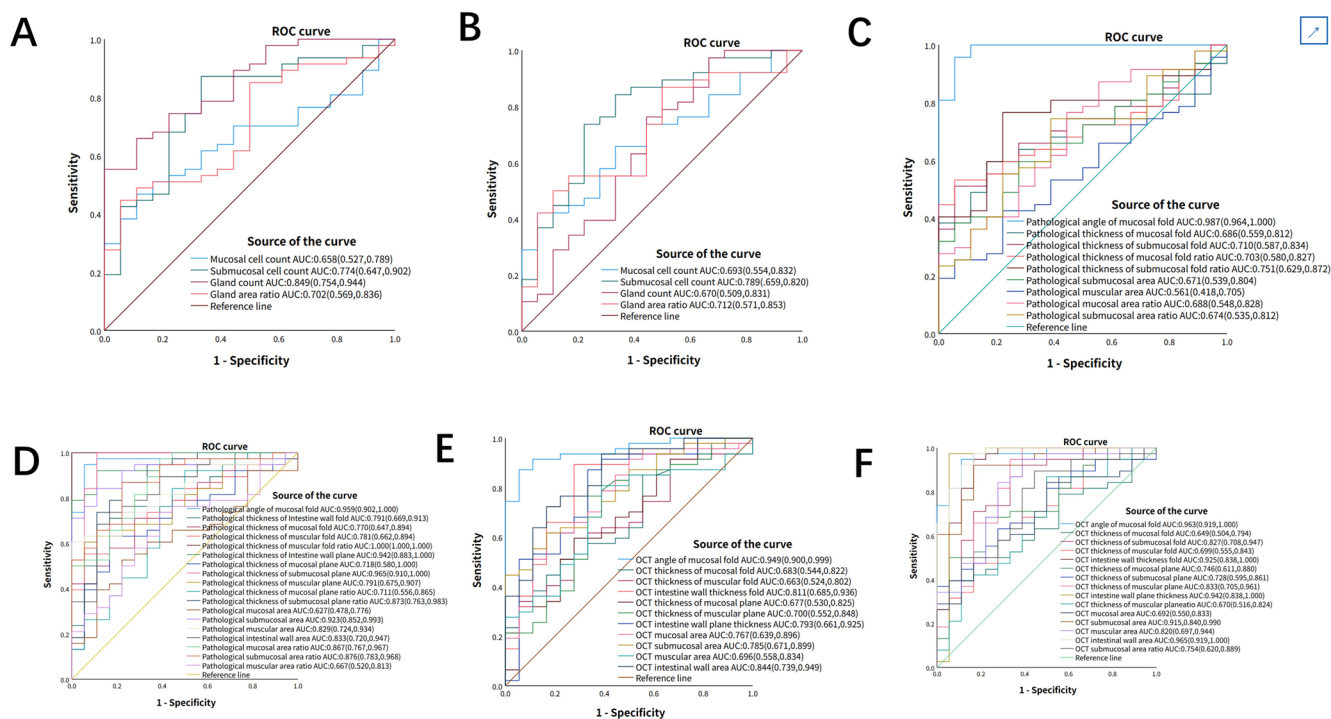


Figure S4 ROC curves for planar parameters. (A) UC mouse pathological cell count and glandular duct numbers. (B) CD mouse pathological cell count and glandular duct numbers. (C) UC mouse pathological planar parameters. (D) CD mouse pathological planar parameters. (E) OCT planar parameters of UC mice. (F) OCT planar parameters of CD mice. ROC, receiver operating characteristic; AUC, area under the curve; UC, ulcerative colitis; CD, Crohn disease; OCT, optical coherence tomography.

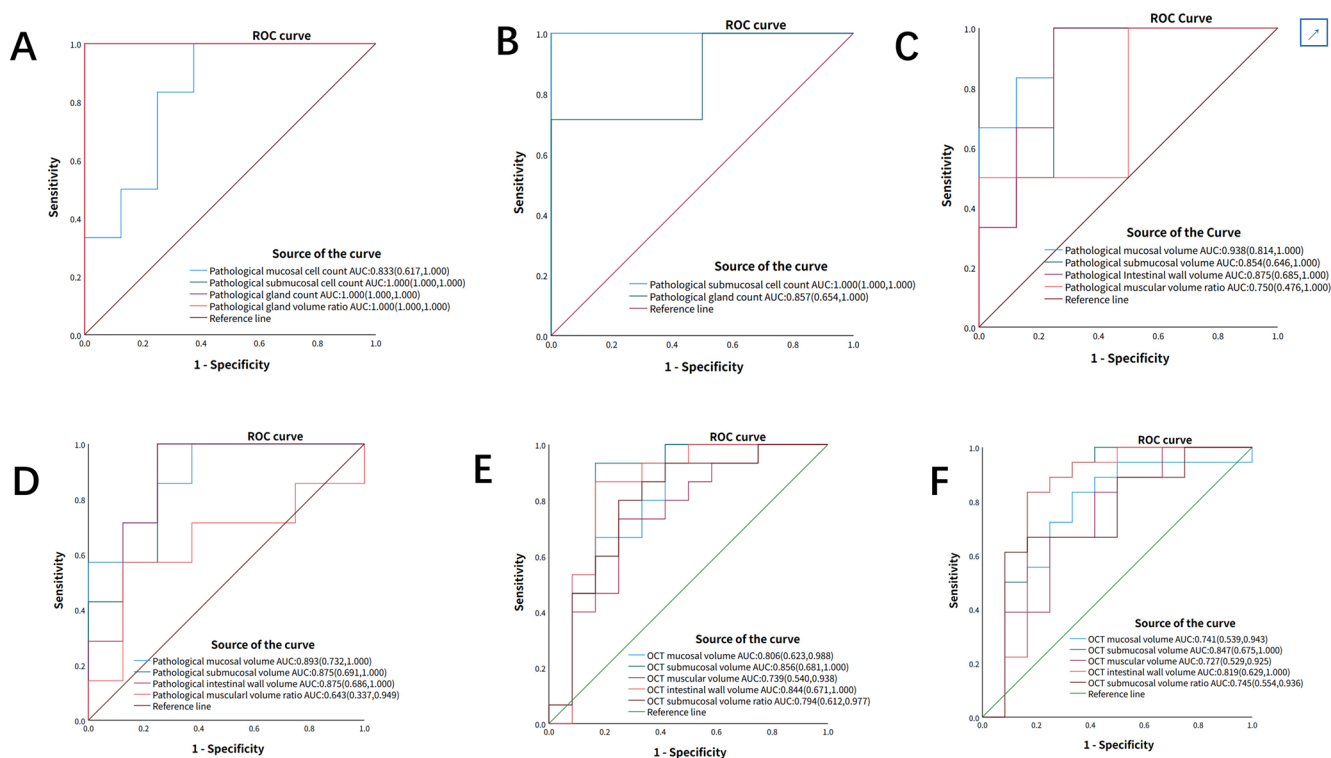


Figure S5 ROC curves for three-dimensional stereoscopic parameters. (A) UC mouse cell count and glandular duct number. (B) CD mouse cell count and glandular duct number. (C) Volume and ratio of each layer in UC mouse pathology. (D) Volume and ratio of each layer in CD mouse pathology. (E) Volume and ratio of each layer in UC mouse OCT. (F) volume and ratio of each layer in mouse OCT. ROC, receiver operating characteristic; AUC, area under the curve; UC, ulcerative colitis; CD, Crohn disease; OCT, optical coherence tomography.

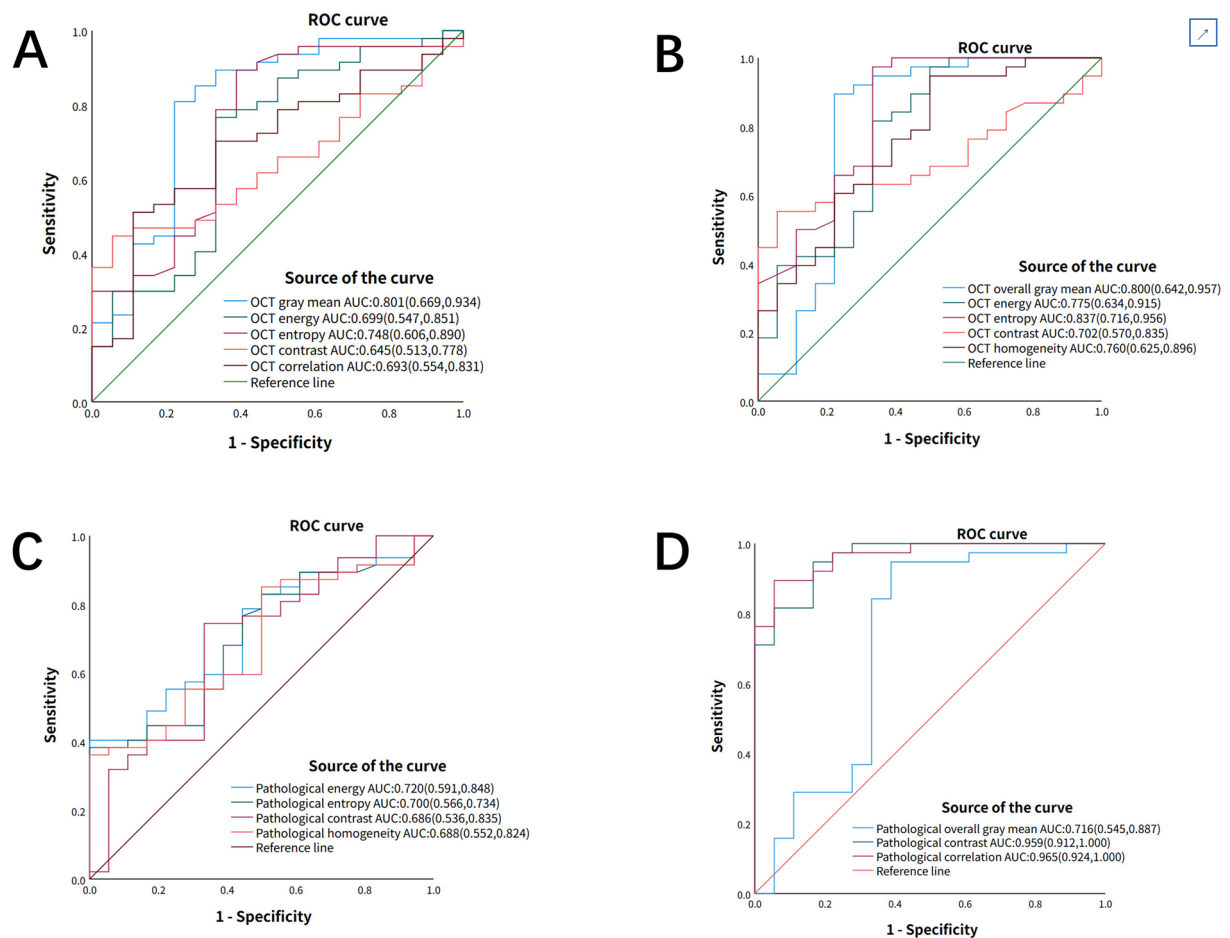


Figure S6 ROC curves for image texture parameters. (A) UC mouse OCT. (B) CD mouse OCT. (C) UC mouse pathological mucosal layer. (D) CD mouse pathological mucosal layer. ROC, receiver operating characteristic; AUC, area under the curve; UC, ulcerative colitis; CD, Crohn disease; OCT, optical coherence tomography.

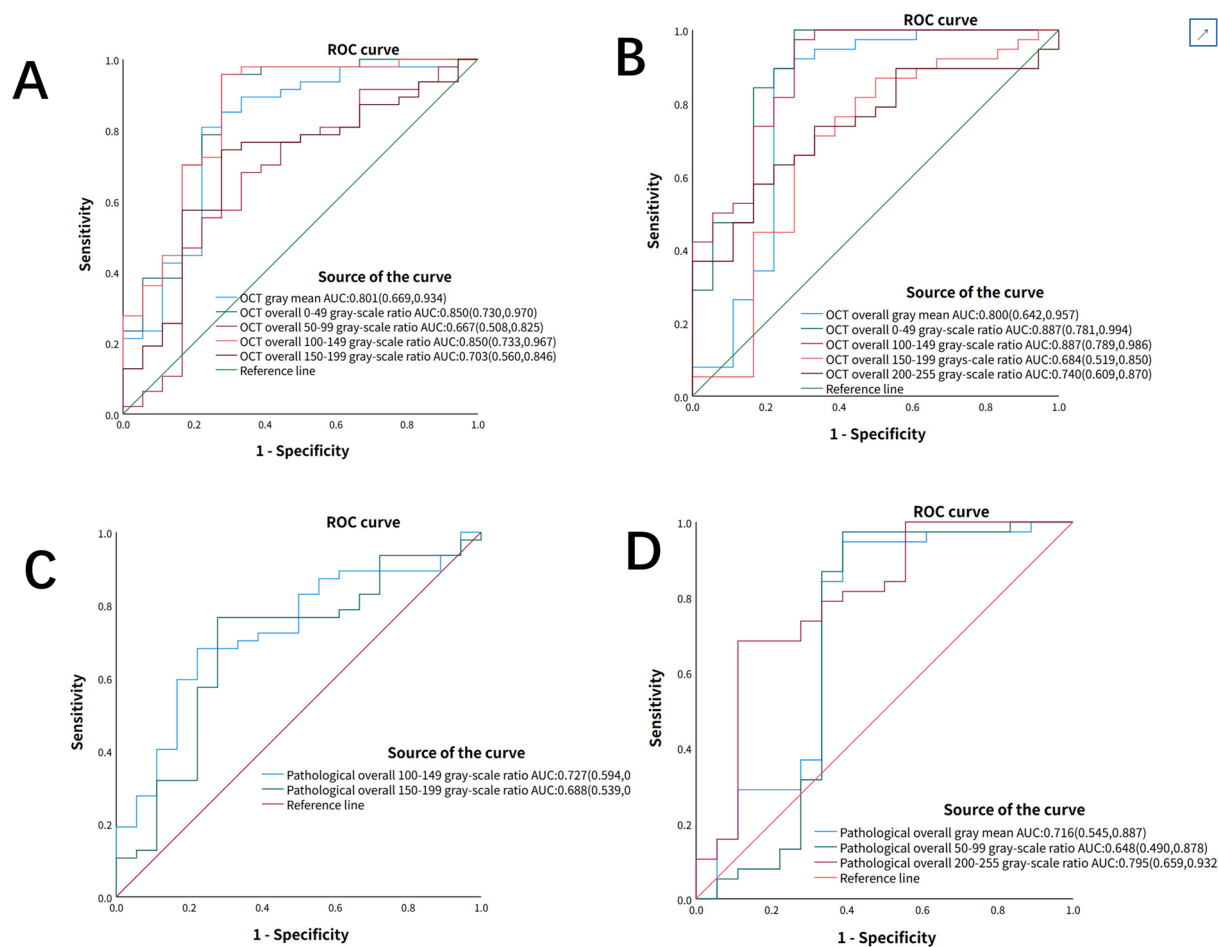


Figure S7 Gray-scale histogram ROC curve. (A) UC mouse OCT. (B) CD mouse OCT. (C) UC mouse histopathology. (D) CD Mouse histopathology. ROC, receiver operating characteristic; AUC, area under the curve; UC, ulcerative colitis; CD, Crohn disease; OCT, optical coherence tomography.

Table S1 Comparison of pathological plane parameters between the UC, CD, and control groups

Category	Parameter	Group			Z/T for control vs. UC	P for control vs. UC	Z/X²for control vs. CD	P for control vs. CD	Z/X²for UC vs. CD	P for UC vs. CD
		Control group (n=18)	UC group (n=47)	CD group (n=38)						
Pathological plane geometry parameters	Thickness of intestinal wall fold (um)	662.301 (603.408, 698.463)	613.149 (546.012, 707.332)	799.660 (689.040, 890.850)	−0.777	0.437	−3.491	0.001	−4.623	<0.001
	Thickness of submucosal fold (um)	285.676 (232.080, 330.727)	216.692 (176.544, 286.171)	353.065 (226.280, 447.530)	−2.61	0.009	−1.035	0.301	−3.076	0.002
	Thickness of muscularis fold (um)	130.444 (111.544, 156.239)	132.297 (105.094, 159.055)	181.495 (145.600, 212.140)	−0.323	0.747	−3.369	<0.001	−3.995	<0.001
	Thickness of mucosal fold ratio (um)	34.310 (32.640, 38.067)	42.567 (33.128, 48.349)	32.133 (27.219, 43.219)	−2.522	0.012	−0.175	0.861	−2.422	0.015
	Thickness of submucosal fold ratio (%)	44.275 (42.058, 48.222)	37.528 (30.928, 41.561)	44.321 (32.032, 50.321)	−3.108	0.002	−0.667	0.505	−1.803	0.071
	Thickness of muscularis fold ratio (%)	20.792 (18.158, 23.590)	20.308 (18.350, 22.543)	50.708 (35.218, 67.923)	−0.029	0.977	−6	<0.001	−7.893	<0.001
	Thickness of plane intestinal wall (um)	285.102 (236.621, 310.818)	300.529 (229.895, 371.837)	454.455 (402.070, 490.850)	−0.836	0.403	−5.298	<0.001	−4.976	<0.001
	Thickness of plane mucosa (um)	152.450 (108.787, 199.065)	152.121 (119.771, 207.642)	209.405 (166.870, 233.590)	−0.425	0.671	−2.614	0.009	−2.325	0.02
	Thickness of plane submucosa (um)	22.513 (17.775, 30.851)	25.699 (12.492, 39.647)	79.150 (59.040, 98.540)	−0.037	0.971	−5.579	<0.001	−6.002	<0.001
	Thickness of plane muscularis (um)	98.257 (77.073, 121.906)	92.211 (69.566, 139.721)	155.665 (100.790, 180.850)	−0.498	0.618	−3.491	<0.001	−3.854	<0.001
	Thickness of plane mucosal ratio (%)	57.584 (45.578, 65.673)	55.328 (45.049, 62.041)	46.054 (35.974, 53.076)	−0.337	0.736	−2.526	0.012	−3.129	0.002
	Thickness of plane submucosal ratio (%)	8.151(6.155,12.724)	8.901(5.386,12.009)	19.784 (13.219, 22.725)	−0.522	0.604	−4.615	<0.001	−3.862	<0.001
	Thickness of plane muscularis ratio (%)	33.584 (26.490, 42.264)	32.881 (26.270, 40.018)	34.026 (26.815, 41.541)	−0.235	0.815	−0.088	0.93	−0.009	0.993
	Mucosal area (um²)	1235300.545 (1137511.874, 1374098.022)	1219735.756 (1003266.807, 1342249.872)	1383464.292 (1141667.2233, 1575204.315)	−0.953	0.341	−1.526	0.127	−2.537	0.011
	Muscularis area (um²)	380319.319 (297663.716, 420104.5499)	392205.863 (297593.376, 497518.667)	601680.8261 (409011.6577, 754007.892)	−0.762	0.044	−3.947	<0.001	−4.11	<0.001
	Intestinal wall area (um²)	1753763.394 (1609906.148, 1949181.075)	1718346.999 (1562397.280, 2333713.220)	2285398.962 (1963412.772, 2967035.182)	−0.205	0.837	−4	<0.001	−3.907	<0.001
	Muscularis area ratio (%)	19.430 (17.895, 23.806)	19.556 (17.568, 26.023)	23.951 (19.711, 28.570)	−0.396	0.692	−2	0.046	−1.662	0.097
Glandular tube counts in pathological planes	Mucosal cell count/10⁶ (um²)	12740.361 (11715.646, 14012.501)	14168.142 (11851.418, 15652.080)	13592.708 (12587.713, 16812.364)	−1.964	0.049	−2.316	0.021	−0.619	0.536

Table S1 (continued)

Category	Parameter	Group			Z/T for control vs. UC	P for control vs. UC	Z/X²for control vs. CD	P for control vs. CD	Z/X²for UC vs. CD	P for UC vs. CD
		Control group (n=18)	UC group (n=47)	CD group (n=38)						
OCT plane geometry parameters	Thickness of submucosal fold (um)	332.565 (287.150)	374.920 (331.775, 486.250)	477.080 (385.570, 536.670)	−1.789	0.074	−3.93	<0.001	−3.147	0.002
	Thickness of muscularis fold (um)	154.940 (123.340, 175.810)	169.070 (145.895, 221.755)	174.780 (151.670, 216.830)	−2.023	0.043	−2.386	0.017	−0.415	0.678
	Thickness of mucosal fold ratio (um)	25.568 (21.883, 29.490)	26.198 (19.676, 32.738)	22.616 (17.467, 28.735)	−0.601	0.548	−0.895	0.371	−1.83	0.067
	Thickness of submucosal fold ratio (%)	52.462±7.291	49.828±11.385	54.805±9.816	0.91#	0.366	−0.9#	0.372	−2.129#	0.036
	Thickness of muscularis fold ratio (%)	23.004 (20.217, 25.284)	21.933 (19.748, 27.359)	154.585 (131.190, 201.750)	−0.117	0.907	−1.333	0.182	−1.379	0.168
	Thickness of plane intestinal wall (um)	454.405 (401.880, 559.170)	588.300 (521.620, 645.030)	684.420 (641.110, 720.040)	−3.636	<0.001	−5.298	<0.001	−4.526	<0.001
	Thickness of mucosal plane (um)	322.940 (238.480, 350.040)	360.750 (307.410, 420.840)	404.355 (308.550, 496.120)	−2.199	0.028	−2.947	0.003	−1.45	0.147
	Thickness of submucosal plane (um)	60.480 (45.280, 71.690)	69.670 (54.480, 102.220)	73.875 (60.650, 131.760)	−0.192	0.055	−2.737	0.006	−1.45	0.147
	Thickness of muscularis plane (um)	81.265 (66.750, 144.150)	126.710 (100.115, 177.325)	154.585 (131.190, 201.75)	−2.478	0.013	−4	<0.001	−2.877	0.004
	Thickness of mucosal plane ratio (%)	67.948 (60.385, 70.635)	66.411 (53.303, 72.602)	59.869 (46.140, 70.972)	−0.425	0.571	−1.439	0.15	−1.467	0.142
	Thickness of submucosal plane ratio (%)	12.752 (9.873, 16.811)	12.649 (9.172, 17.811)	11.637 (9.192, 19.642)	−0.059	0.953	−0.193	0.847	−0.053	0.958
	Thickness of muscularis plane ratio (%)	19.201 (16.664, 24.341)	21.584 (16.406, 27.925)	22.001 (198.076, 29.793)	−0.953	0.341	−2.035	0.042	−1.229	0.219
	Mucosal area (um²)	864034.154 (788320.829, 1010285.436)	1067904.944 (952672.005, 1154529.820)	1013139.501 (891546.855, 1226675.542)	−3.313	<0.001	−2.298	0.022	−0.689	0.491
	Intestinal wall area (um²)	1554340.830 (1432511.868, 1810562.939)	2021841.216 (1825007.793, 2251827.758)	2164197.910 (2111981, 2253395.065)	−4.266	<0.001	−5.579	<0.001	−2.307	0.021
	Muscularis area (um²)	351030.663 (314529.455, 449350.508)	447704.526 (377834.840, 598238.317)	492375.845 (446492.488, 557979.031)	−2.434	0.015	−3.842	<0.001	−1.777	0.076
	Mucosa area ratio (%)	54.714±6.581	51.856±7.412	47.574±8.847	1.433#	0.157	3.043#	0.004	2.428#	0.017
	Submucosal area ratio (%)	21.924±4.623	24.558±5.881	28.390±8.379	−1.706#	0.093	−3.051#	0.004	−2.472#	0.015
	Muscularis area ratio (%)	22.987 (20.442, 25.669)	22.012 (18.779, 28.736)	22.873 (20.204, 26.943)	−0.22	0.826	−0.158	0.875	−0.424	0.671

Data following a normal distribution (marked with #) are presented as the mean±SD (analyzed via the *t* test); nonnormally distributed data (unmarked) are presented as the median (25th, 75th percentiles) (analyzed via Mann-Whitney U test). UC, ulcerative colitis; CD, Crohn disease; OCT, optical coherence tomography.

Table S2 Spearman rank correlation analysis results for UC pathological image planes in mice

Parameter	N	Correlation coefficient (r)	P
Angle of mucosal fold (°)	65	0.755**	<0.001
Thickness of mucosal fold (°)	65	0.288*	0.02
Thickness of submucosal fold (°)	65	-0.326**	0.008
Thickness of mucosal plane ratio (%)	65	0.315*	0.011
Thickness of submucosal plane ratio (%)	65	-0.388**	0.001
Submucosal area(μm^2)	65	0.266*	0.032
Mucosal area ratio (%)	65	-0.291*	0.019
Submucosal area ratio (%)	65	0.269*	0.03

**Correlation significant at the 0.01 level (two-tailed). *Correlation significant at the 0.05 level (two-tailed). UC, ulcerative colitis.

Table S3 Spearman rank correlation analysis for the OCT image plane of the UC mouse intestinal wall

Parameter	N	Correlation coefficient(r)	P
Angle of mucosal fold (°)	65	0.696**	<0.001
Thickness of mucosal fold (°)	65	0.283*	0.022
Thickness of muscularis fold (°)	65	0.253*	0.042
Intestinal wall thickness fold (°)	65	0.482**	<0.001
Thickness of mucosal plane (μm)	65	0.275*	0.027
Thickness of muscularis plane (μm)	65	0.310*	0.012
Intestinal wall plane thickness (μm)	65	0.454**	<0.001
Mucosal area(μm^2)	65	0.414**	<0.001
Submucosal area(μm^2)	65	0.442**	<0.001
Muscularis area(μm^2)	65	0.304*	0.014
Intestinal wall area(μm^2)	65	0.533**	<0.001

**Correlation significant at the 0.01 level (two-tailed). *Correlation significant at the 0.05 level (two-tailed). UC, ulcerative colitis; OCT, optical coherence tomography.

Table S4 Spearman rank correlation analysis results for CD pathological image planes in mice

Parameter	N	Correlation coefficient (r)	P
Angle of mucosal fold (°)	56	0.743**	<0.001
Thickness of intestinal wall fold (μm)	56	0.471**	<0.001
Thickness of mucosal fold (μm)	56	-0.438**	<0.001

Parameter	N	Correlation coefficient (r)	P
Thickness of muscularis fold (um)	56	-0.454**	<0.001
Thickness of muscularis fold ratio (%)	56	0.809**	<0.001
Thickness of intestinal wall plane (um)	56	0.714**	<0.001
Thickness of mucosal plane (um)	56	0.352**	0.008
Thickness of submucosal plane (um)	56	0.752**	<0.001
Thickness of muscularis plane (um)	56	0.471**	<0.001
Thickness of mucosal plane ratio (%)	56	-0.341*	0.01
Thickness of submucosal plane ratio (%)	56	0.603**	<0.001
Submucosal area (um ²)	56	0.684**	<0.001
Muscularis area (um ²)	56	0.532**	<0.001
Intestinal wall area (um ²)	56	0.539**	<0.001
Mucosal area ratio (%)	56	-0.594**	<0.001
Submucosal area ratio (%)	56	0.608**	<0.001
Muscularis area ratio (%)	56	0.270**	0.044

CD, Crohn disease.

Table S5 Spearman rank correlation analysis for the OCT image plane of the CD mouse intestinal wall

Parameter	N	Correlation coefficient (r)	P
Angle of mucosal fold (°)	56	0.750**	<0.001
Thickness of submucosal fold (um)	56	0.530**	<0.001
Thickness of muscularis fold (um)	56	0.322*	0.016
Intestinal wall thickness fold (um)	56	0.688**	<0.001
Thickness of mucosal plane (um)	56	0.397**	0.002
Thickness of submucosal plane (um)	56	0.369**	0.005
Thickness of muscularis plane (um)	56	0.539**	<0.001
Intestinal wall plane thickness (um)	56	0.714**	<0.001

Parameter	N	Correlation coefficient (r)	P
Thickness of muscularis plane ratio (%)	56	0.274*	0.041
Mucosal area (μm^2)	56	0.310*	0.020
Submucosal area (μm^2)	56	0.672**	<0.001
Muscularis area (μm^2)	56	0.518**	<0.001
Intestinal wall area(μm^2)	56	0.752**	<0.001
Mucosal area ratio (%)	56	-0.400**	0.002
Submucosal area ratio	56	0.412**	0.002

**Correlation significant at the 0.01 level (two-tailed). *Correlation significant at the 0.05 level (two-tailed). CD, Crohn's disease; OCT, optical coherence tomography.

Table S6 Three-dimensional comparison of pathological and OCT between the UC, CD, and control groups

Category	Parameter	Group			Z for control vs. UC	P for control vs. UC	Z for control vs. CD	P for control vs. CD	Z for UC vs. CD	P for UC vs. CD
		Control group (n=8)	UC group (n=6)	CD group (n=7)						
Pathological cell and glandular duct count	Mucosal cell count ($10^6/\text{mm}^3$)	12.133 (10.625, 15.892)	16.269 (15.723, 17.626)	15.688 (14.020, 17.020)	-2.066	0.039	-1.504	0.132	-1	0.317
	Gland volume ratio (%)	47.764 (38.577, 51.850)	16.967 (15.662, 23727)	35.481 (29.722, 49.108)	-3.098	0.002	0.298	0.336	-2	0.046
Three-dimensional pathological cell and glandular parameter	Muscular volume (mm^3)	0.155 (0.114, 0.173)	0.159 (0.126, 0.206)	0.183 (0.152, 0.339)	-0.775	0.439	-1.389	0.165	-0.286	0.775
	Mucosal volume ratio (%)	57.773 (50.320, 65.055)	65.869 (56.196, 74.483)	65.667 (56.414, 66.944)	-1.549	0.142	-0.926	0.355	-0.857	0.391
	Submucosal volume ratio (%)	13.428 (12.725, 14.740)	16.086 (11.493, 18.994)	14.334 (14.051, 16.257)	-0.516	0.606	-1.389	0.165	-0.143	0.886
	Muscular volume ratio (%)	27.762 (21.015, 34.975)	16.734(14.292)	19.037 (16.214, 29.914)	-2.324	0.02	-0.926	0.355	-0.714	0.475
Three-dimensional OCT parameter	Mucosal volume ratio (%)	55.765 (10.383, 15.327)	53.038 (46.873, 59.389)	51.973 (47.174, 60.352)	-1.355	0.176	-0.732	0.464	-0.072	0.942
	Muscular volume ratio (%)	3.112 (24.986, 35.1192)	30.155 (25.689, 33.875)	27.873 (24.498, 35.870)	-0.042	0.966	-0.293	0.77	-0.036	0.971

All data (nonnormally distributed) are presented as the median (25th, 75th percentiles). Between-group comparisons were performed via the Mann-Whitney U test (nonparametric), and $P < 0.05$ was considered statistically significant. UC, ulcerative colitis; CD, Crohn's disease; OCT, optical coherence tomography.

Table S7 Bland-Altman agreement analysis between OCT- and histopathology-derived volumetric parameters (N=21)

Variable pair	N	Bias (mean diff.) mm ³	SD of diff.	Lower LoA (-1.96 SD)	Upper LoA (+1.96 SD)	95% CI of bias (lower)	95% CI of bias (upper)	% within LoA	Proportional bias r	Proportional bias P
Mucosal volume	21	2.6311	0.6730	1.3120	3.9502	2.3432	2.9189	100.0	0.8501	< 0.001
Submucosal volume	21	0.7505	0.4130	-0.0589	1.5600	0.5739	0.9272	95.2	0.9620	< 0.001
Muscular volume	21	1.4884	0.5732	0.3650	2.6119	1.2433	1.7336	100.0	0.9516	< 0.001
Intestinal wall volume	21	4.8700	1.1339	2.6475	7.0926	4.3850	5.3550	100.0	0.9572	< 0.001

Bias = mean difference (OCT – histopathology). 95% LoA = bias $\pm$ 1.96 $\times$ SD of differences. 95% CI of bias = bias $\pm$ 1.96 $\times$ (SD/ $\sqrt{n}$). Proportional bias was assessed according to the Pearson correlation between the mean and difference of paired measurements. All proportional bias P values were <0.001, indicating that the magnitude of discrepancy increased significantly with increasing tissue volume. LoA, limits of agreement; CI, confidence interval; SD, standard deviation; OCT, optical coherence tomography.

Table S8 Spearman rank correlation between OCT- and histopathology-derived volumetric parameters (overall analysis)

Variable pair	Total, n	Control, n	CD, n	UC, n	Spearman ρ (overall)	P value	Significance
Mucosal volume	21	8	7	6	0.721	< 0.001	***
Submucosal volume	21	8	7	6	0.647	0.002	**
Muscular volume	21	8	7	6	0.487	0.025	*
Intestinal wall volume	21	8	7	6	0.944	< 0.001	***

Spearman rank correlation was performed across all 21 specimens (control group: n=8; CD group: n=7; UC group: n=6) without grouping. Significance levels: *** P<0.001; ** P<0.01; * P<0.05. ρ = Spearman rank correlation coefficient.

Table S9 Comparative analysis of pathological and OCT image texture parameters and gray-scale distribution ratio between the UC, CD, and control groups

Category	Parameter	Group			T/Z for control vs. UC	P for control vs. UC	T/Z for control vs. CD	P for control vs. CD	T/Z for UC vs. CD	P for UC vs. CD
		Control group (n=18)	UC group (n=47)	CD group (n=38)						
OCT image	Correlation	0.9985±0.0003	0.9982±0.0004	0.9983±0.0003	2.403 #	0.019	1.942 #	0.057	−0.783 #	0.436
	Homogeneity	0.662±0.039	0.645±0.033	0.633 (0.587, 0.655)	1.775 #	0.081	3.549 #	<.001	2.962 #	0.005
Pathological image	Gray mean	131.175 (121.700, 156.990)	124.750 (118.570, 135.045)	143.370 (138.820, 161.15)	−1.319	0.187	−2.597	0.009	−1.131	<0.001
	Energy	0.549 (0.501, 0.569)	0.488 (0.337, 0.543)	0.567 (0.482, 0.609)	−2.727	0.006	−0.789	0.43	−3.73	<0.001
	Entropy	4.205 (4.020, 4.630)	4.550 (4.250, 5.535)	4.085 (3.780, 4.760)	−2.478	0.013	−0.526	0.599	−3.386	<0.001
	Correlation	0.993 (0.992, 0.994)	0.993 (0.992, 0.994)	0.987 (0.986, 0.988)	−0.806	0.42	−5.579	<0.001	−2.971	<0.001
	Homogeneity	0.645 (0.601, 0.677)	0.616 (0.509, 0.648)	0.627 (0.551, 0.669)	−2.331	0.02	−1.158	0.247	−1.494	0.135
OCT image	Gray mean	119.840 (109.030, 121.450)	100.480 (89.665, 105.470)	100.565 (95.750, 103.920)	−3.738	<0.001	−3.596	<0.001	−0.557	0.578
	Overall 0 to 49-gray-scale ratio (%)	5.799 (4.783, 15.431)	21.827 (15.936, 26.182)	22.762 (19.285, 27.773)	−4.339	<0.001	−4.649	<0.001	−0.849	0.396
	Overall 50 to 99-gray-scale ratio (%)	24.564 (23.330, 27.117)	28.599 (24.823, 30.426)	25.960 (23.889, 26.988)	−2.067	0.039	−0.719	0.472	−2.881	0.004
	Overall 100 to 149-gray-scale ratio (%)	43.777 (33.396, 46.665)	31.070(25.862,33.808)	29.129 (24.661, 32.967)	−4.339	<0.001	−4.649	<0.001	−1.352	0.176
	Overall 150 to 199-gray-scale ratio (%)	22.088 (18.685, 23.965)	17.201(12.683,20.994)	19.361 (16.892, 21.322)	−2.522	0.012	−2.211	0.027	−1.625	0.104
	Overall 200 to 255-gray-scale ratio	1.765 (14.428, 2.403)	1.603(0.960,3.184)	3.213 (1.916, 4.243)	−0.366	0.714	−2.877	<0.004	−2.89	0.004

Table S9 (continued)

Category	Parameter	Group			T/Z for control vs. UC	P for control vs. UC	T/Z for control vs. CD	P for control vs. CD	T/Z for UC vs. CD	P for UC vs. CD
		Control group (n=18)	UC group (n=47)	CD group (n=38)						
Pathological image	Gray mean	131.175 (121.700, 156.990)	124.750 (118.570, 135.045)	143.370 (138.820, 161.15)	−1.319	0.187	−2.597	0.009	−1.131	<0.001
	Overall 0 to 49-gray-scale ratio (%)	0.269 (0.001, 0.963)	0.312 (0.097, 0.573)	0.323 (0.058, 0.731)	−0.103	0.918	−0.632	0.528	−0.592	0.554
	Overall 50 to 99-gray-scale ratio (%)	25.866 (3.117, 30.321)	28.254 (20.783, 31.845)	13.157 (5.879, 17.561)	−1.129	0.259	−2.211	0.027	−4.499	<0.001
	Overall 100 to 149-gray-scale ratio (%)	38.954 (36.347, 42.786)	46.155 (39.236, 48.731)	40.397 (30.185, 46.504)	−2.815	0.005	−0.175	0.861	−2.607	0.009
	Overall 150 to 199-gray-scale ratio (%)	28.646 (22.406, 46.722)	20.675 (16.780, 25.460)	28.791 (24.743, 41.114)	−2.331	0.02	−0.14	0.888	−4.039	<0.001
	Overall 200 to 255-gray-scale ratio (%)	6.109 (0.919, 10.714)	3.002 (0.573, 8.897)	13.315 (8.279, 18.928)	−0.689	0.491	−3.544	<0.001	−5.516	<0.001
	Mucosa									
	Mucosal gray mean	124.525 (113.860, 146.340)	117.900 (113.170, 129.20)	137.470 (129.810, 153.170)	−1.4	0.161	−2.649	0.008	−5.533	<0.001
	Mucosa 0 to 50-gray-scale ratio (%)	0.344 (0.004, 1.138)	0.406 (0.154, 0.674)	1.369 (0.343, 2.499)	−0.404	0.687	−2.842	0.004	−3.439	<0.001
	Mucosal 50 to 100-gray-scale ratio (%)	33.041 (4.411, 39.357)	37.506 (28.068, 40.949)	21.096 (11.388, 24.475)	−1.554	0.12	−2.035	0.042	−4.95	<0.001
	Mucosal 100 to 150-gray-scale ratio (%)	38.716 (32.749, 44.859)	41.077 (37.982, 44.695)	37.007 (31.670, 41.526)	−1.041	0.298	−1.175	0.24	−2.89	0.004
	Mucosal 150 to 200-gray-scale ratio (%)	27.194(22.552,33.544)	19.246(15.553,21.908)	26.157 (23.108, 32.648)	−2.844	0.004	−0.333	0.739	−4.685	<0.001
	Mucosal 200 to 255-gray-scale ratio (%)	3.717 (0.175, 7.087)	1.415 (0.380, 5.684)	12.785 (9.164, 17.539)	−0.381	0.703	−4.719	<0.001	−6.612	<0.001
	Submucosa									
	Submucosal gray mean	16.290 (159.100, 177.040)	161.700 (142.370, 178.890)	185.205 (173.650, 94.110)	−1.378	0.168	−2.246	0.025	−3.969	<0.001
	Submucosal 0 to 50-gray-scale ratio (%)	0.007 (0, 0.038)	0.004(0,0.034)	0.227 (0.056, 0.687)	−0.38	0.704	−4.373	<0.001	−6.068	<0.001
	Submucosal 50 to 100-gray-scale ratio (%)	4.516 (0.599, 7.387)	4.613 (1.764, 9.429)	3.059 (1.579, 6.068)	−0.894	0.371	−0.14	0.888	−0.822	0.411
	Submucosal 100 to 150-gray-scale ratio (%)	19.489 (14.401, 31.937)	27.241 (15.234, 38.989)	14.025 (10.540, 21.586)	−1.1701	0.089	−1.281	0.2	−3.438	<0.001
	Submucosal 150 to 200-gray-scale ratio (%)	54.828 (41.709, 67.187)	47.327 (39.146, 58.627)	27.115 (24.806, 33.430)	−1.144	0.253	−4.614	<0.001	−5.878	<0.001
	Submucosal 200 to 255-gray-scale ratio (%)	17.508 (4.447, 28.613)	7.873 (0.231, 26.286)	49.645 (40.036, 59.467)	−1.305	0.192	−3.649	<0.001	−5.781	<0.001
	Muscularis									
	Muscularis gray mean	136.320 (131.000, 168.970)	133.09 (123.425, 139.385)	150.845 (146.860, 172.460)	−1.686	0.092	−2.982	0.003	−6.011	<0.001
	Muscularis 0 to 50-gray-scale ratio (%)	0.002 (0,0.008)	0.062 (0.047, 0.087)	0.049 (0.043, 0.077)	−4.624	<0.001	−3.557	<0.001	−2.554	0.011
	Muscularis 50 to 100-gray-scale ratio (%)	3.958 (0.013, 7.145)	6.648 (1941, 11.939)	1.843 (0.939,2.627)	−1.642	0.101	−1.632	0.103	−4.119	<0.001
	Muscularis 100 to 150-gray-scale ratio (%)	69.257 (10.290, 83.311)	74.429 (59.679, 81.018)	54.287 (12.095, 59.984)	−1.012	0.312	−2.193	0.028	−4.932	<0.001
	Muscularis 150 to 200-gray-scale ratio (%)	22.867 (8.631, 84.697)	12.056 (8.492, 28.622)	37.585 (27.960, 61.335)	−1.451	0.147	−1.193	0.233	−4.49	<0.001
	Muscularis 200 to 255-gray-scale ratio (%)	2.881 (0.409, 4.193)	1.308 (0.198, 2.339)	8.514 (4.919, 17.123)	−1.642	0.101	−4.421	<0.001	−6.63	<0.001

Data following a normal distribution (marked with #) are presented as the mean±SD (analyzed via the *t* test); nonnormally distributed data (unmarked) are presented as the median (25th, 75th percentiles) (analyzed via the Mann-Whitney U test). P<0.05 indicates a statistically significant difference. UC, ulcerative colitis; CD, Crohn disease; OCT, optical coherence tomography.