

Supplementary Table 1 Detailed information of exclusion samples in the initial stage

Exclusion sample	Number
Combined oophorectomy	2
Combined nephrectomy	1
Combined colectomy	5
Combined hepatectomy	2
Insufficient data for analysis	35
Diagnosed as alcoholic fatty liver disease	4
Hepatoid adenocarcinoma	1
Malignant lymphoma	1
Neuroendocrine tumor	4
Additional surgery after ESD	5
Para-aortic nodal dissection	1
Total	61

Supplementary Table 2 Comparison between preoperative clinical parameters of blood routine test category

Parameters (mean (SD))	Non-NAFLD	NAFLD	P-value	SMD
Hemoglobin (g/L)	131.27 (24.15)	134.73 (23.78)	0.399	0.144
Hematocrit (%)	39.39 (6.42)	40.20 (6.42)	0.59	0.127
Lymphocyte (10^9 /L)	1.78 (0.65)	1.85 (0.60)	0.26	0.108
Mean corpuscular hemoglobin (pg)	30.05 (2.79)	29.75 (2.18)	0.306	0.122
Mean corpuscular hemoglobin concentration (g/L)	332.14 (16.39)	334.31 (17.38)	0.224	0.128
Mean corpuscular volume (fL)	90.39 (6.26)	88.96 (4.17)	0.019	0.27
Monocyte (10^9 /L)	0.46 (0.17)	0.48 (0.16)	0.298	0.108
Mean platelet volume (fL)	10.80 (1.32)	10.86 (1.26)	0.962	0.045
Neutrophil (10^9 /L)	3.73 (1.64)	4.02 (1.67)	0.129	0.177
Platelet distribution width (fL)	13.51 (2.89)	13.23 (3.06)	0.37	0.093
Platelet (10^9 /L)	218.50 (75.02)	217.23 (66.43)	0.978	0.018
Red blood cell (10^{12} /L)	4.37 (0.71)	4.52 (0.70)	0.262	0.218
Red blood cell distribution width (%)	13.32 (1.94)	12.89 (1.18)	0.329	0.269
White blood cell (10^9 /L)	6.14 (2.09)	6.50 (2.05)	0.152	0.177
Platelet-to-lymphocyte ratios (%)	135.14 (63.44)	127.02 (51.48)	0.551	0.14
Neutrophil-to-lymphocyte ratios (%)	2.31 (1.29)	2.29 (0.87)	0.235	0.012

Supplementary Table 3 Comparison between preoperative clinical parameters of liver and renal function category

Parameters (mean (SD))	Non-NAFLD	NAFLD	P-value	SMD
α -Hydroxybutyrate dehydrogenase (U/L)	122.58 (50.78)	119.40 (18.78)	0.767	0.083
Adenosine deaminase (U/L)	10.47 (3.88)	10.04 (2.92)	0.613	0.126

Alkaline phosphatase (U/L)	79.21 (32.65)	80.57 (24.28)	0.658	0.047
Albumin (g/L)	39.00 (3.43)	39.57 (3.58)	0.298	0.163
Alanine aminotransferase (U/L)	19.74 (14.59)	31.88 (33.20)	0.004	0.473
Apolipoprotein A (mg/dl)	208.84 (224.88)	215.62 (257.03)	0.549	0.028
Aspartate transferase (mean (SD))	22.61 (11.46)	26.98 (16.57)	0.034	0.307
Blood urea nitrogen (mg/dl)	5.88 (2.20)	5.65 (2.68)	0.132	0.091
Direct bilirubin (μmol/L)	4.12 (2.16)	4.01 (1.78)	0.856	0.054
Glucose (mmol/L)	5.11 (1.46)	5.33 (1.09)	0.005	0.173
High density lipoprotein cholesterol (mmol/L)	1.07 (0.25)	1.04 (0.17)	0.622	0.142
Lactate dehydrogenase (U/L)	187.55 (63.69)	185.42 (28.87)	0.585	0.043
Low density lipoprotein cholesterol (mmol/L)	2.74 (0.70)	2.81 (0.63)	0.269	0.099
Retinol-binding protein (mg/L)	35.24 (12.50)	37.95 (13.39)	0.235	0.21
Serum creatinine (μmol/L)	76.27 (82.09)	71.62 (18.83)	0.628	0.078
Total bilirubin (μmol/L)	12.57 (6.18)	11.88 (4.59)	0.838	0.126
Total cholesterol (mmol/L)	4.41 (0.94)	4.50 (0.88)	0.265	0.107
Triglyceride (mmol/L)	1.61 (1.52)	1.74 (1.06)	0.1	0.097
Total protein (g/L)	64.82 (5.71)	65.92 (5.56)	0.205	0.196
Uric acid (μmol/L)	320.80 (96.45)	344.35 (93.73)	0.098	0.248
Triglyceride-glucose index	8.58 (0.64)	8.75 (0.60)	0.063	0.273
Fibrosis-4 score (FIB-4)	1.63 (0.86)	1.57 (0.78)	0.784	0.067
γ-glutamyl transpeptidase (U/L)	31.51 (67.02)	47.95 (121.28)	0.054	0.168

Supplementary Table 4 Uni- and multivariable Cox regression model for overall survival in the unmatched samples (original cohort)

Variables	Univariable		Multivariable	
	HR (95% CI)	P-value	HR (95% CI)	P-value
NAFLD Yes vs. No	0.76 (0.18-3.1)	0.669		
FIB-4 score	1.20 (0.99-1.44)	0.053		
Age	1.04 (1.01-1.06)	0.00766	1.03 (1.01-1.06)	0.013
Sex Male vs. Female	0.85 (0.49-1.47)	0.56		
BMI	0.92 (0.85-1.01)	0.0762		
T stage T1-T2 vs. T3-4	0.064 (0.028-0.15)	2.28×10⁻¹⁰	0.22 (0.075-0.65)	0.00602
N stage N0-1 vs. N2-3	0.11 (0.057-0.21)	1.05×10⁻¹¹	1.56 (0.34-7.12)	0.569
Stage I-II vs. III	0.082 (0.043-0.16)	1.3×10⁻¹³	0.84 (0.19-3.69)	0.82
Vascular invasion Yes vs. No	6.48 (3.58-11.7)	6.87×10⁻¹⁰	1.46 (0.75-2.83)	0.261
Neural invasion Yes vs. No	6.71 (3.71-12.2)	3.23×10⁻¹⁰	1.36 (0.69-2.71)	0.373

Total retrieved lymph nodes	0.99 (0.98-1.02)	0.928		
Positive lymph nodes	1.11 (1.09-1.13)	2.12×10⁻²⁷	1.06 (1.02-1.10)	0.00213
Positive lymph node rates	3.03 (2.35-3.9)	9.82×10⁻¹⁸	1.48 (0.81-2.70)	0.206

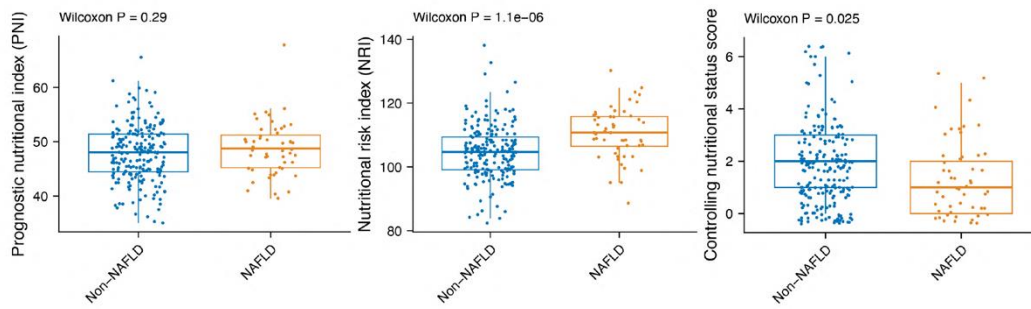
Supplementary Table 5 Uni- and multivariable Cox regression model for progression-free survival in the unmatched samples (original cohort)

Variables	Univariable		Multivariable	
	HR (95% CI)	P-value	HR (95% CI)	P-value
NAFLD Yes vs. No	2.87 (1.48-5.56)	0.00175	3.08 (1.49-6.36)	0.0024
FIB-4 score	1.18 (1.01-1.38)	0.04	1.12 (0.89-1.42)	0.319
Age	1.04 (1.01-1.06)	0.000907	1.03 (1.01-1.05)	0.016
Sex Male vs. Female	0.77 (0.50-1.19)	0.243		
BMI	1.00 (0.94-1.08)	0.894		
T stage T1-T2 vs. T3-4	0.084 (0.046-0.156)	2.25×10⁻¹⁵	0.25 (0.11-0.55)	6.24×10⁻⁴
N stage N0-1 vs. N2-3	0.15 (0.093-0.241)	4.25×10⁻¹⁵	2.29 (0.77-6.78)	0.135
Stage I-II vs. III	0.104 (0.063-0.17)	2.83×10⁻¹⁹	0.54 (0.19-1.55)	0.249
Vascular invasion Yes vs. No	4.00 (2.57-6.21)	6.98×10⁻¹⁰	0.96 (0.59-1.57)	0.869
Neural invasion Yes vs. No	5.4 (3.41-8.53)	5.51×10⁻¹³	1.31 (0.76-2.26)	0.328
Total retrieved lymph nodes	0.99 (0.98-1.01)	0.562		
Positive lymph nodes	1.1 (1.08-1.12)	2.74×10⁻³⁰	1.03 (0.99-1.07)	0.128
Positive lymph node rates	2.64 (2.17-3.2)	5.6×10⁻²³	1.75 (1.07-2.85)	0.025

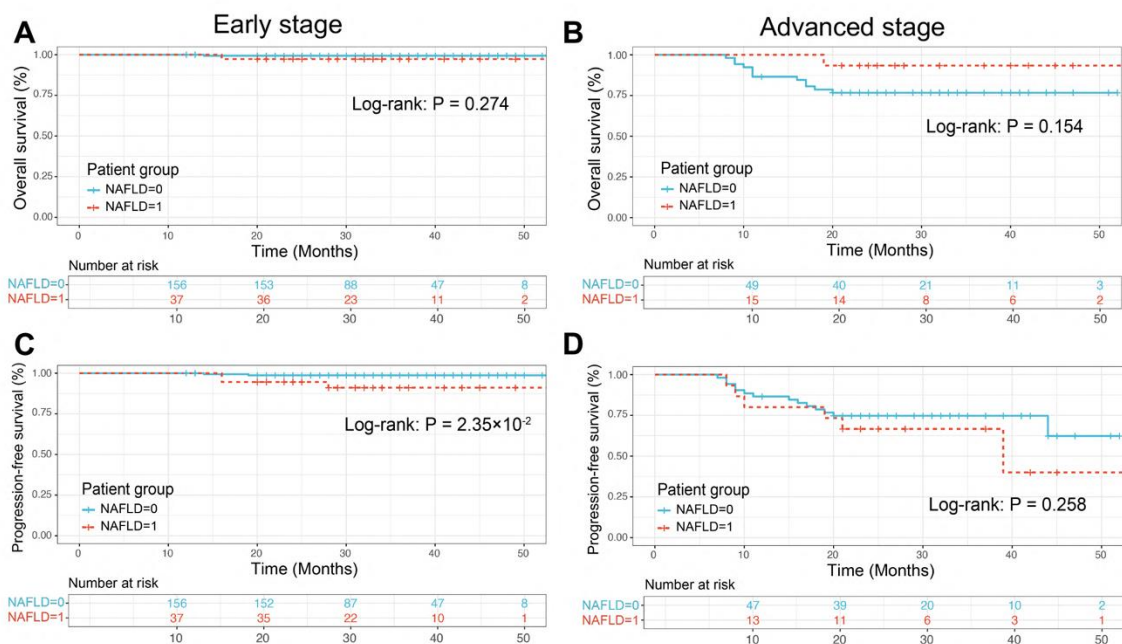
Supplementary Table 6 Multivariable Cox regression model for overall survival and progression-free survival in the propensity score matched samples

Variables	Overall survival		Progression-free survival	
	HR (95% CI)	P-value	HR (95% CI)	P-value
NAFLD Yes vs. No			1.79 (0.74-4.35)	0.197
FIB-4 score	1.2 (0.71-2.03)	0.506		
Age	1.07 (1.02-1.13)	4.5×10⁻³	1.05 (1.01-1.09)	1.24×10⁻²
Sex Male vs. Female			0.73 (0.30-1.79)	0.492
T stage T1-T2 vs. T3-4	0.13 (0.02-0.93)	4.23×10⁻²	0.14 (0.04-0.52)	3.53×10⁻³
N stage N0-1 vs. N2-3	2.62 (0.02-346.3)	0.699	1.90 (0.06-65.3)	0.723
Stage I-II vs. III	0.57 (0.01-53.95)	0.81	0.78 (0.03-20.6)	0.882
Vascular invasion Yes vs. No	1.15 (0.35-3.79)	0.824	0.48 (0.19-1.21)	0.122
Neural invasion Yes vs. No	0.90 (0.26-3.11)	0.863	0.92 (0.34-2.48)	0.873
Positive lymph nodes	1.04 (0.96-1.13)	0.324	1.01 (0.95-1.09)	0.681
Positive lymph node rates	1.64 (0.46-5.9)	0.447	1.82 (0.65-5.07)	0.251

Nutritional indices



Supplementary Figure 1 Comparison of three nutritional indices between patients with and without non-alcoholic fatty liver disease.



Supplementary Figure 2 Kaplan-Meier curves of overall survival in patients with and without non-alcoholic fatty liver disease pathologically diagnosed as (A) early stage and (B) advanced stage gastric cancer after propensity score matching. Kaplan-Meier curves of progression-free survival in patients with and without non-alcoholic fatty liver disease pathologically diagnosed as (C) early stage and (D) advanced stage gastric cancer after propensity score matching.