

Table S1 the clinicopathological features of patients with or without splenomegaly after PSM

Clinical variables	Splenomegaly (n=140)	Non-Splenomegaly (n=140)	P
Age, year	48.0 (32.0–75.0)	49.0 (10.0–75.0)	0.791
Sex			1.000
Male	126 (90.0%)	125 (89.3%)	
Female	14 (10.0%)	15 (10.7%)	
Hepatitis B virus infection			1.000
No	33 (23.6%)	33 (23.6%)	
Yes	107 (76.4%)	107 (76.4%)	
HBsAg			0.675
No	14 (10%)	11 (7.9%)	
Yes	126 (90%)	129 (92.1%)	
Tumor diameter	8.0 (0.0–18.0)	8.0 (1.2–20.0)	0.440
No# of tumor			1.000
Single	122 (87.1%)	121 (86.4%)	
Multiple	18 (12.9%)	19 (13.6%)	
PVTT			0.615
I	46 (32.9%)	51 (36.4%)	
II	94 (67.1%)	89 (63.6%)	
Encapsulation			0.057
No	87 (62.1%)	87 (62.1%)	
Incomplete	9 (6.4%)	20 (14.3%)	
Complete	44 (31.5%)	33 (23.6%)	
Liver Cirrhosis			0.870
No	21 (15.0%)	23 (16.4%)	
Yes	119 (85.0%)	117 (83.6%)	
Ascites			1.000
No	120 (85.7%)	119 (85.0%)	
Yes	20 (14.3%)	21 (15.0%)	
Esophageal and gastric varices			0.770
No	109 (77.9%)	112 (80.0%)	
Yes	31 (22.1%)	28 (20.0%)	
Child-Pugh			0.684
A	138 (98.6%)	136 (97.1%)	
B	2 (1.4%)	4 (2.9%)	
Satellite lesions			0.951
None	11 (7.9%)	12 (8.6%)	
Same lobe	117 (83.6%)	115 (82.1%)	
Different lobe	12 (8.6%)	13 (9.4%)	
Thickness of splenic hilum	5.0 (4.1–15.0)	4.0 (4.0–4.0)	<0.001
TBIL	15.0 (5.3–32.0)	13.0 (4.0–34.0)	0.054
DBIL	6.0 (2.1–16.0)	5.0 (1.0–13.0)	0.139
ALB	41.50 (30.0–52.0)	42.2 (33.0–50.1)	0.170
ALT	47.0 (11.0–262.0)	39.0 (14.0–303.0)	0.291
PT	12.5 (0.0–112.0)	11.9 (0.0–15.5)	0.179
GGT	119.0 (0.0–1052.0)	121.5 (23.0–810.0)	0.324
ALP	107.5 (46.0–372.0)	107.5 (0.0–595.0)	0.274
AFP	1210.0 (0.0–1210.0)	940.1 (0.6–1210.0)	0.053
CA199	17.2 (0.0–235.6)	21.0 (0.0–114.0)	0.287
CEA	2.0 (0.0–12.0)	2.3 (0.0–14.9)	0.594
AST	47.0 (14.9–390.0)	51.0 (15.7–359.0)	0.602
PLT	141.0 (40.0–400.0)	139.0 (0.0–495.0)	0.460

Data were presented as n (%) or medians with interquartile range (IQR). PSM, propensity score matching; HBsAg, Hepatitis B surface antigen; PVTT, portal vein tumor thrombus; TBIL, Total Bilirubin; DBIL, Direct Bilirubin; ALB, Albumin; ALT, Alanine Aminotransferase; PT, Prothrombin time; GGT, γ -Glutamyltransferase; ALP, Alkaline phosphatase; AFP, α -fetoprotein; CA199, Carbohydrate Antigen 19-9; CEA, Carcinoembryonic antigen; AST, Aspartate Aminotransferase; PLT, Platelet.

Table S2 The clinicopathological features of patients with or without splenectomy after PSM

Clinical variables	Splenectomy (n=49)	Non-splenectomy (n=49)	P
Age, year	49.0 (33.0–69.0)	47.0 (32.0–75.0)	0.607
Sex			1.000
Male	46 (93.9%)	47 (95.9%)	
Female	3 (6.1%)	2 (4.1%)	
Hepatitis B virus infection			0.814
No	11 (22.4%)	13 (26.5%)	
Yes	38 (77.6%)	36 (73.5%)	
HBsAg			0.912
No	3 (6.1%)	3 (6.1%)	1.000
Yes	46 (93.9%)	46 (93.9%)	
Tumor diameter	8.0 (1.2–15.0)	7.3 (0.0–14.4)	0.855
No# of tumor			1.000
Single	42 (85.7%)	42 (86.5%)	
Multiple	7 (14.3%)	7 (13.5%)	
PVTT			0.827
I	16 (32.7%)	14 (28.6%)	
II	33 (67.3%)	35 (71.4%)	
Encapsulation			1.000
No	31 (63.3%)	30 (61.2%)	
Incomplete	3 (6.1%)	3 (6.1%)	
Complete	15 (30.6%)	16 (32.7%)	
Liver Cirrhosis			1.000
No	7 (14.3%)	8 (16.3%)	
Yes	42 (85.7%)	41 (83.7%)	
Ascites			0.715
No	44 (89.8%)	46 (93.9%)	
Yes	5 (10.2%)	3 (6.1%)	
Esophageal and gastric varices			1.000
No	40 (81.6%)	40 (81.6%)	
Yes	9 (18.4%)	9 (18.4%)	
Child-Pugh			0.495
A	47 (95.9%)	49 (100.0%)	
B	2 (4.1%)	0 (0.0%)	
Satellite lesions			1.000
None	4 (8.2%)	4 (8.2%)	
Same lobe	42 (85.7%)	41 (83.6%)	
Different lobe	3 (6.1%)	4 (8.2%)	
Thickness of splenic hilum	5.0 (4.1–10.0)	5 (4.1–15.0)	0.842
TBIL	15.6 (6.0–29.0)	15.0 (5.3–32.0)	0.458
DBIL	6.0 (3.0–16.0)	5.9 (2.1–14.0)	0.545
ALB	41.0 (30.0–52.0)	30.0 (30.0–49.0)	0.858
ALT	47.0 (18.0–262.0)	52.0 (13.3–138.0)	0.880
PT	12.5 (0.0–112.0)	12.4 (0.0–14.4)	0.316
GGT	122.0 (36.0–1052.0)	133.0 (43.0–584.0)	0.445
ALP	107.0 (60.0–372.0)	112.0 (62.0–255.0)	0.418
AFP	1000.0 (1.0–1210.0)	1210.0 (0.0–1210.0)	0.906
CA199	15.6 (0.0–91.6)	19.8 (0.0–193.3)	0.185
CEA	2.0 (0.0–7.2)	2.0 (0.0–5.0)	0.700
AST	41.0 (17.1–263.0)	42.0 (17.1–184.0)	0.740
PLT	141.0 (42.0–384.0)	145.0 (40.0–400.0)	0.336

Data were presented as n (%) or medians with interquartile range (IQR). PSM, propensity score matching; HBsAg, Hepatitis B surface antigen; PVTT, portal vein tumor thrombus; TBIL, Total Bilirubin; DBIL, Direct Bilirubin; ALB, Albumin; ALT, Alanine Aminotransferase; PT, Prothrombin time; GGT, γ -Glutamyltransferase; ALP, Alkaline phosphatase; AFP, α -fetoprotein; CA199, Carbohydrate Antigen 19-9; CEA, Carcinoembryonic antigen; AST, Aspartate Aminotransferase; PLT, Platelet.

Table S3 Comparison of RFS and OS rate among HCC patients with PVTT with or without splenomegaly before PSM

Indexes	n	1-year	2-year	3-year	Median survival time (95% CI)	Log-rank	P value
OS							
Non-splenomegaly	576	51.7 (47.8–56.0)	28.0 (24.5–31.9)	18.6 (15.5–22.4)	12.4 (11.7–13.5)	40.0	<0.001
Splenomegaly	140	25.7 (19.4–34.1)	10.2(6.1–17.2)	7.2 (3.7–13.9)	7.4 (6.7–9.6)		
RFS							
Non-Splenomegaly	576	32.3 (28.6- 36.4)	21.1 (17.9–24.8)	16.1 (13.1–19.7)	6.5 (6.3–7.8)	35.1	<0.001
Splenomegaly	140	17.6 (12.2–25.2)	6.8 (3.4–13.6)	5.4 (2.4–12.3)	4.3 (3.8–5.3)		

RFS, recurrence-free survival; OS, overall survival; HCC, hepatocellular carcinoma; PVTT, portal vein tumor thrombus; PSM, propensity score matching.

Table S4 Comparison of RFS and OS rate among HCC patients with PVTT with or without splenectomy before PSM

Indexes	n	1-year	2-year	3-year	Median survival time (95% CI)	Log-rank	P value
OS							
Non-splenomegaly	91	6.6 (3.0–14.2)	0.0 (0.0–0.0)	0.0 (0.0–0.0)	6.2(5.4–6.7)	66.4	<0.001
Splenomegaly	49	59.2 (46.9–74.7)	38.9 (36.8–56.2)	13.2(4.8–36.3)	14.0 (12.1–23.7)		
RFS							
Non-Splenomegaly	91	3.3 (1.1–10.0)	0.0 (0.0–0.0)	0.0 (0.0–0.0)	3.5 (2.9–4.2)	43.8	<0.001
Splenomegaly	49	42.9 (30.8–59.7)	18.3 (9.3–36.0)	14.6 (6.5–32.8)	11.1 (9.0–15.3)		

RFS, recurrence-free survival; OS, overall survival; HCC, hepatocellular carcinoma; PVTT, portal vein tumor thrombus; PSM, propensity score matching.

Table S5 Comparison of RFS and OS rate among HCC patients with PVTT with or without splenomegaly after PSM

Indexes	n	1-year	2-year	3-year	Median survival time (95% CI)	Log-rank	P value
OS							
Non-splenomegaly	140	51.4 (43.8–60.4)	21.4 (15.6–29.4)	10.1 (5.9–17.1)	12.4 (10.3–13.8)	12.1	<0.001
Splenomegaly	140	25.7 (19.4–34.1)	10.2(6.1–17.2)	7.2 (3.7–13.9)	7.4 (6.7–9.6)		
RFS							
Non-splenomegaly	140	22.8 (16.7- 31.0)	18.3 (8.6–20.6)	7.2 (3.6–14.2)	6.3 (5.4–7.3)	7.6	<0.001
Splenomegaly	140	17.6 (12.2–25.2)	6.8 (3.4–13.6)	5.4 (2.4–12.3)	4.3 (3.8–5.3)		

RFS, recurrence-free survival; OS, overall survival; HCC, hepatocellular carcinoma; PVTT, portal vein tumor thrombus; PSM, propensity score matching.

Table S6 Comparison of RFS and OS rate among HCC patients with PVTT with or without splenectomy after PSM

Indexes	n	1-year	2-year	3-year	Median survival time (95% CI)	Log-rank	P value
OS							
Non-splenectomy	49	4.1 (1.1–15.9)	0.0 (0.0–0.0)	0.0 (0.0–0.0)	6.3 (5.6–7.2)	58.5	<0.001
Splenectomy	49	59.2 (46.9–74.7)	38.9 (36.8–56.2)	13.2 (4.8–36.3)	14.0 (12.1–23.7)		
RFS							
Non-splenectomy	49	2.0 (0.3–14.2)	0.0 (0.0–0.0)	0.0 (0.0–0.0)	3.6 (2.7–4.6)	36.6	<0.001
Splenectomy	49	42.9 (30.8–59.7)	18.3 (9.3–36.0)	14.6 (6.5–32.8)	11.1 (9.0–15.3)		

RFS, recurrence-free survival; OS, overall survival; HCC, hepatocellular carcinoma; PVTT, portal vein tumor thrombus; PSM, propensity score matching.