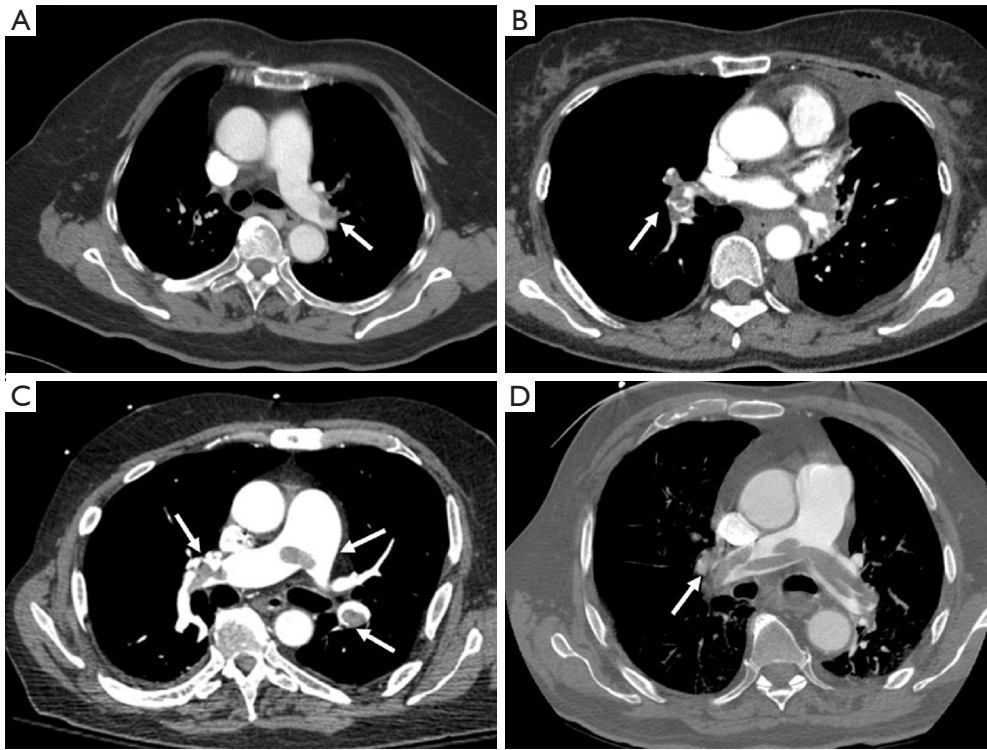


Table S1 Univariate analyses of risk factors for PTE in patients undergoing lung cancer surgery

Variables	Derivation group (n=475)			Validation group (n=205)		
	Patients with PTE (n=95)	Control (n=380)	P value	Patients with PTE (n=41)	Control (n=164)	P value
Age, years	65±7	59±11	<0.001*	66±8	61±11	0.004*
BMI, kg/m <sup>2</sup>	25.41±2.80	23.48±3.03	<0.001*	25.04±2.67	23.49±3.42	0.002*
Operation time, min	163±61	120±48	<0.001*	149±66	120±51	0.011*
Blood loss during surgery, mL	173±228	75±97	<0.001*	192±314	75±120	<0.001*
length of stay, days	21±10	9±4	<0.001*	22±9	9±4	<0.001*
D-dimer before surgery, µg/L	463±846	254±813	<0.001*	375±766	188±323	0.011*
Blood routine						
Hemoglobin, g/L	133±14	132±14	0.253	129±16	131±15	0.624
Red blood cells, ×10 <sup>12</sup> g/L	4.45±0.44	4.49±0.43	0.610	4.30±0.56	4.47±0.45	0.108
Leukocyte, ×10 <sup>9</sup> g/L	6.34±1.68	6.44±2.08	0.933	6.08±1.93	6.36±1.88	0.345
Neutrophil, %	59.0±9.6	61.4±10.0	0.056	56.2±9.2	59.0±9.7	0.097
Platelet, ×10 <sup>9</sup> g/L	219±51	210±62	0.044*	218±62	207±56	0.374
Hematocrit, L/L	40.7±3.8	40.0±3.8	0.037*	39.4±4.7	39.9±3.9	0.693
Biochemical routine						
γ-glutamyl aminotransferase, U/L	34±30	31±36	0.038*	38±52	31±26	0.630
Glutamic-pyruvic transaminase, IU/L	21±12	23±16	0.996	31±59	23±13	0.925
Aspartate aminotransferase, IU/L	21±8	22±9	0.423	30±50	22±10	0.212
Total Protein, g/L	68±5	69±5	0.024*	68±6	69±5	0.189
Albumin, g/L	40±4	42±3	<0.001*	40±4	42±3	0.005*
Globulin, g/L	28±3	27±4	0.100	27±5	27±4	0.672
Prealbumin, mg/L	250±54	269±48	0.005*	246±38	275±52	0.002*
Uric acid, µmol/L	314±77	321±114	0.900	326±88	324±82	0.918
Urea nitrogen, mmol/L	5.6±1.6	5.5±2.0	0.462	5.7±1.2	5.6±1.4	0.390
Creatinine, µmol/L	67±17	63±14	0.071	61±14	62±13	0.953
Glucose, mmol/L	5.9±1.9	5.9±1.8	0.411	6.1±1.6	5.7±1.4	0.323
Potassium, mmol/L	4.0±0.4	4.0±0.4	0.193	4.0±0.4	4.0±0.4	0.908
Sodium, mmol/L	142±3	141±2	0.113	142±3	141±2	0.308
Chlorine, mmol/L	103±3	106±2	<0.001*	103±4	106±2	<0.001*
Calcium, mmol/L	2.30±0.13	2.28±0.10	0.08	2.31±0.11	2.28±0.10	0.177
Tumor biomarkers						
Alpha fetoprotein, µg/mL	5.87±2.84	4.81±3.39	0.001*	6.48±4.05	5.06±3.33	0.020*
Carcinoembryonic antigen, µg/L	7.59±16.46	3.74±8.62	0.016*	6.40±18.74	4.01±13.16	0.320
Neuron-specific enolase, ng/L	13.94±4.73	13.44±2.70	0.783	13.24±2.86	13.30±1.97	0.428
Gastrin-releasing peptide precursor, pg/mL	19.35±4.44	20.24±10.20	0.550	18.67±4.91	19.71±4.93	0.181
β2-microglobulin, µg/mL	1.25±0.45	1.09±0.38	0.001*	1.20±0.50	1.05±0.33	0.088
Ferritin, ng/mL	77.59±56.04	88.26±59.29	0.080	77.15±45.15	99.00±61.11	0.055
Carbohydrate antigen CA242, U/mL	8.29±5.27	8.29±1.95	0.016*	8.55±4.30	8.34±2.22	0.422
Carbohydrate antigen CA153, U/mL	14.39±9.39	10.80±5.52	0.001*	13.95±6.46	11.44±6.65	0.008*
CYFRA21-1, ng/mL	3.25±6.67	2.45±5.28	0.041*	2.24±3.79	2.31±2.59	0.213
CA50, U/mL	8.76±8.13	6.98±5.23	0.111	11.53±20.12	7.77±8.66	0.374
Carbohydrate antigen CA199, U/mL	11.91±22.36	7.86±7.31	0.508	12.8±22.21	9.10±14.23	0.218
Carbohydrate antigen CA72-4, U/mL	1.57±0.48	1.51±0.44	0.111	1.63±0.73	1.50±0.37	0.164
Squamous cell carcinoma antigen, ng/mL	1.12±0.22	1.11±0.17	0.247	1.12±0.16	1.10±0.16	0.873
Categorical variables						
Gender						
Male	49 (51.6%)	195 (51.3%)	0.963	18 (43.9%)	81 (49.4%)	0.529
Female	46 (48.4%)	185 (48.7%)		23 (56.1%)	83 (50.6%)	
Compression venous ultrasonography						
Abnormal results	13 (19.7%)	11 (3.4%)	<0.001*	6 (19.4%)	7 (5.0%)	0.019*
Venous valve insufficiency	13 (13.7%)	10 (2.6%)	<0.001*	5 (12.2%)	7 (4.3%)	
Venous stasis	0 (0%)	1 (0.3%)		0 (0%)	0 (0%)	0.025*
DVT	0 (0%)	0 (0%)		0 (0%)	0 (0%)	
Not checked	29 (30.5%)	60 (15.8%)		10 (24.2%)	25 (15.2%)	
Treatment history						
Hormone therapy	2 (2.1%)	8 (2.1%)	1.000	1 (2.4%)	2 (1.2%)	1.000
Chemotherapy	2 (2.1%)	14 (3.7%)	0.656	0 (0%)	7 (4.3%)	0.387
History of disease						
Other tumors	5 (5.3%)	20 (5.3%)	1.000	2 (4.9%)	10 (6.1%)	1.000
Fracture	1 (1.1%)	3 (0.8%)	1.000	1 (2.4%)	3 (1.8%)	1.000
PTE or DVT	1 (1.1%)	0 (0%)	0.453	0 (0%)	0 (0%)	/
Varicose veins	4 (4.2%)	23 (6.1%)	0.485	1 (2.4%)	4 (2.5%)	1.000
Hypertension	18 (86%)	86 (22.6%)	0.437	10 (24.4%)	36 (22.0%)	0.900
Diabetes	9 (9.5%)	33 (8.7%)	0.808	3 (7.3%)	11 (6.7%)	1.000
Heart disease	1 (1.1%)	5 (1.3%)	1.000	1 (2.4%)	2 (1.2%)	1.000
Cerebral infarction	1 (1.1%)	8 (2.1%)	0.801	0 (0%)	3 (1.8%)	0.884
Abnormal electrocardiogram	18 (22.0%)	47 (12.5%)	0.026*	8 (20.0%)	22 (13.5%)	0.299
Pulmonary dysfunction	27 (28.4%)	76 (20.8%)	0.110	16 (39.0%)	28 (17.9%)	0.004*
Chemoprophylaxis	35 (36.8%)	339 (89.2%)	<0.001*	21 (51.2%)	145 (88.4%)	<0.001*
Mortality	14 (14.7%)	0 (0%)	<0.001*	3 (7.3%)	0 (0%)	0.006*
Surgical data						
Type of procedure						
Thoracotomy	20 (21.2%)	41 (10.8%)	0.007*	8 (19.5%)	16 (9.8%)	0.143
Video-assisted thoracoscopic surgery	75 (78.9%)	339 (89.2%)		33 (80.5%)	148 (90.2%)	
Sublobectomy	15 (15.8%)	85 (22.4%)	0.084	5 (12.2%)	36 (22.0%)	
Lobectomy	50 (52.6%)	213 (56.1%)		23 (56.1%)	98 (59.8%)	0.113
Extended pulmonary resection	30 (31.6%)	82 (21.6%)		13 (31.7%)	30 (18.3%)	
Blood type						
A	33 (34.7%)	120 (31.7%)	0.574	14 (34.1%)	45 (27.4%)	0.754
B	26 (27.4%)	106 (28.0%)		11 (26.8%)	43 (26.2%)	
O	24 (25.3%)	118 (31.1%)		13 (31.7%)	57 (34.8%)	
AB	12 (12.6%)	35 (9.2%)		3 (7.3%)	19 (11.6%)	
Pathology						
Adenocarcinoma	70 (73.7%)	308 (81.1%)	0.111	34 (82.9%)	138 (84.1%)	0.849
Non-adenocarcinoma	25 (26.3%)	72 (18.9%)		7 (17.1%)	26 (15.9%)	
Multiple primary lung cancer	11 (11.6%)	46 (12.1%)	0.888	3 (7.3%)	16 (9.8%)	0.857
TNM stage (UICC and AJCC, version 7)	2 (2.1%)	13 (3.4%)	<0.001*	1 (2.4%)	11 (6.7%)	0.009*
0						
Ia	45 (47.4%)	265 (69.7%)		19 (46.3%)	118 (72.0%)	
Ib	26 (27.4%)	34 (8.9%)		9 (22.0%)	11 (6.7%)	
IIa	5 (5.3%)	23 (6.1%)		1 (2.4%)	6 (3.7%)	
IIb	1 (1.1%)	9 (2.4%)		3 (7.3%)	5 (3.0%)	
IIIa	15 (15.8%)	34 (8.9%)		8 (19.5%)	12 (7.3%)	
IV	1 (1.1%)	2 (0.5%)		0 (%)	1 (0.6%)	
Blood transfusion	17 (17.9%)	12 (3.2%)	<0.001*	8 (19.5%)	6 (3.7%)	0.001*
Central venous catheter	83 (87.4%)	357 (93.9%)	0.028*	37 (90.2%)	152 (92.7%)	0.845

\*, P≤0.05. BMI, body mass index; PTE, pulmonary thromboembolism; DVT, deep vein thrombosis.



**Figure S1** Representative CTPA images in patients with PTE. Panel (A) highlights an embolism in the left pulmonary artery on CTPA (white arrow, axial view). Panel (B) highlights multi embolisms in the right pulmonary artery and lobar arteries on CTPA (white arrow, axial view). Panel (C) highlights bilateral embolisms in both main pulmonary artery and an embolism in main pulmonary artery (white arrows, axial view). Panel (D) shows axial view of the main pulmonary artery. A long thrombus riddled across the pulmonary trunk.