



Figure S1 Overall survival curves in 548 patients among the 4 different groups according to the absolute pulmonary function values of PEF (L/s), FVC (L), and FEV1 (L). FEV1, forced expiratory volume in 1 s; FVC, forced vital capacity; PEF, peak expiratory flow; Q1–Q4, quartiles 1 to 4.

Table S1 Clinical characteristics of patients based on PEF%

Characteristic	PEF%					P value
	Total (n=548)	Quartile 1 (n=139), ≤49.0%	Quartile 2 (n=135), >49.0–65.6%	Quartile 3 (n=146), >65.6–84.0%	Quartile 4 (n=128), >84.0%	
ASA score						0.084
I	459 (83.8%)	110 (79.1%)	118 (87.4%)	126 (86.3%)	105 (82.0%)	
II	66 (12.0%)	18 (12.9%)	11 (8.1%)	17(11.6%)	20 (15.6%)	
III	23 (4.2%)	11 (7.9%)	6 (4.4%)	3 (2.1%)	3 (2.3%)	
Age	63.0±10.6	65.0±9.7	63.5±10.4	63.5±10.3	59.6±11.4	0.000
Gender (female/male)	331/217	71/68	85/50	92/54	83/45	0.075
Weight, kg	61.4±9.8	62.8±10.4	61.4±9.8	61.5±9.6	59.7±9.1	0.081
BMI, kg/m ²	23.2±2.8	23.5±2.7	23.3±3.2	23.2±2.9	22.6±2.5	0.043
Smoking	146 (26.6%)	56 (40.3%)	30 (22.2%)	33 (22.6%)	27 (21.1%)	0.000
Diabetes mellitus	48 (8.8%)	17 (12.2%)	7 (5.2%)	12 (8.2%)	12 (9.4%)	0.224
Coronary heart disease	9 (1.6%)	4 (2.9%)	2 (1.5%)	2 (1.4%)	1 (0.8%)	0.594
FEV1, L	2.3±0.6	2.0±0.5	2.2±0.6	2.4±0.6	2.6±0.6	0.000
FVC, L	2.9±0.7	2.7±0.7	2.8±0.7	3.0±0.8	3.2±0.7	0.000
PEF, L/s	4.7 ±1.9	2.7 ±0.7	3.9 ±0.8	5.2 ±1.1	7.0 ±1.5	0.000
FEV1%	(91.1±17.2)%	(76.5±12.8)%	(87.4±14.7)%	(97.3±15.7)%	(103.6±11.9)%	0.000
FVC%	(91.3±15.7)%	(83.1±13.2)%	(87.5±15.0)%	(94.8±15.6)%	(100.1±13.2)%	0.000
PEF%	(67.6±24.0)%	(39.8±6.4)%	(57.2±4.9)%	(74.5±5.4)%	(101.1±15.0)%	0.000
Intraoperative bleeding, mL	47.2±32.0	53.6±43.3	42.7±25.8	50.0±32.2	41.7±19.4	0.097
Intraoperative blood transfusion, mL	0	0	0	0	0	–
Length of operation, min	132.6±35.6	131.3±38.6	130.5±33.2	135.8±36.4	132.5±33.9	0.618
NSCLC staging						0.042
IA	447 (81.6%)	115 (82.7%)	103 (76.3%)	120 (82.2%)	109 (85.2%)	
IB	37 (6.8%)	6 (4.3%)	13 (9.6%)	12 (8.2%)	6 (4.7%)	
IIA	29 (5.3%)	10 (7.2%)	7 (5.2%)	10 (6.8%)	2 (1.6%)	
IIB	2 (0.4%)	0 (0.0%)	2 (1.5%)	0 (0.0%)	0 (0.0%)	
IIIA	33 (6.0%)	8(5.8%)	10 (7.4%)	4 (2.7%)	11 (8.6%)	
Postoperative pathology						0.009
Adenocarcinoma	504 (92.0%)	122 (87.8%)	128 (94.8%)	132 (90.4%)	122 (95.3%)	
Squamous cell carcinoma	37 (6.8%)	17 (12.2%)	4 (3.0%)	12 (8.2%)	4 (3.1%)	
Adenosquamous carcinoma	7 (1.3%)	0 (0.0%)	3 (2.2%)	2 (1.4%)	2 (1.6%)	
Postoperative length of stay, days	5.8±2.1	5.7±1.7	5.5±1.7	6.3±2.8	5.8±1.9	0.093
Total hospital care costs (Renminbi)	58351.3±9687.7	60533.3±10223.6	57968.9±8391.9	58067.5±11048.8	56708.7±8294.2	0.006

Values are presented as mean ± standard deviation, n or n (%). ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S2 Univariate results of postoperative outcomes based on PEF%

Postoperative outcome	PEF%					P value
	Total (n=548)	Quartile 1 (n=139), ≤49.0%	Quartile 2 (n=135), >49.0–65.6%	Quartile 3 (n=146), >65.6–84.0%	Quartile 4 (n=128), >84.0%	
Postoperative pulmonary complications						
Acute respiratory distress syndrome	4 (0.7%)	1 (0.7%)	0 (0.0%)	2 (1.4%)	1 (0.8%)	0.451
Reintubation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Pulmonary embolism	3 (0.5%)	1 (0.7%)	0 (0.0%)	2 (1.4%)	0 (0.0%)	0.237
Need for bedside bronchoscopy	4 (0.7%)	0 (0.0%)	2 (1.5%)	1 (0.7%)	1 (0.8%)	0.414
Prolonged air leak	10 (1.8%)	1 (0.7%)	3 (2.2%)	4 (2.7%)	2 (1.6%)	0.576
Failure to expand	13 (2.4%)	5 (3.6%)	5 (3.7%)	1 (0.7%)	2 (1.6%)	0.207
Atelectasis	13 (2.4%)	0 (0.0%)	6 (4.4%)	4 (2.7%)	3 (2.3%)	0.033
Pneumonia	206 (37.6%)	64 (46.0%)	41 (30.4%)	49 (33.6%)	52 (40.6%)	0.033
Acute kidney injury	12 (2.2%)	2 (1.4%)	4 (3.0%)	0 (0.0%)	6 (4.7%)	0.018
In-hospital mortality, n	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Readmission within 30 days	6 (1.1%)	2 (1.4%)	0 (0.0%)	3 (2.1%)	1 (0.8%)	0.238

Values are presented as n (%).

Table S3 Assignment of variables in multivariate analysis

Variables	Assignment instruction
ASA score	ASA I =1, ASA II =2, ASA III =3
Age	<60 =1, 60– =2
Gender	Male =1, Female =2
BMI, kg/m ²	<24.0 kg/m ² =1, ≥24.0 kg/m ² =2
Smoking	No=0, Yes=1
Diabetes mellitus	No=0, Yes=1
Coronary heart disease	No=0, Yes=1
Intraoperative bleeding, mL	<50 mL =1, 50 mL=2
Length of operation, h	<2 h=1, 2 h=2
NSCLC staging	IA =1, IB =2, IIA =3, IIB =4, IIIA =5
Postoperative pathology	Adenocarcinoma =1; Squamous cell carcinoma =2; Adenosquamous carcinoma =3
PEF%	≤49.0%=1, >49.0–65.6%=2, >65.6–84.0%=3, >84.0%=4
FVC%	≤80.0%=1, >80.0–92.0%=2, >92.0–101.0%=3, >101.0%=4
FEV1%	≤78.4%=1, >78.4–92.0%=2, >92.0–103.0%=3, >103.0%=4
PEF, L/s	≤3.3 L/s =1, >3.3–4.4 L/s =2, >4.4–5.8 L/s =3, >5.8 L/s =4
FVC, L	≤2.3 L =1, >2.3–2.9 L =2, >2.9–3.4 L =3, >3.4 L =4
FEV1, L	≤1.8 L =1, >1.8–2.3 L =2, >2.3–2.7 L =3, >2.7 L =4

ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S4 Clinical characteristics of patients based on FVC%

Characteristic	FVC %				P value
	Quartile 1 (n=145), ≤80.0%	Quartile 2 (n=136), >80.0–92.0%	Quartile 3 (n=133), >92.0–101.0%	Quartile 4 (n=134), >101.0%	
ASA score					0.343
I	115 (79.3%)	113 (83.1%)	113 (85.0%)	118 (88.1%)	
II	20 (13.8%)	18 (13.2%)	17 (12.8%)	11 (8.2%)	
III	10 (6.9%)	5 (3.7%)	3 (2.3%)	5 (3.7%)	
Age	66.7±9.5	63.2±10.8	61.2±10.5	60.4±10.5	0.000
Gender (female/male)	81/64	96/40	74/59	80/54	0.038
Weight, kg	64.6±9.7	60.7±10.3	61.0±8.8	58.9±9.5	0.000
BMI, kg/m ²	24.2±2.9	23.1±2.9	22.9±2.4	22.4±2.8	0.000
Smoking	45 (31.0%)	28 (20.6%)	36 (27.1%)	37 (27.6%)	0.255
Diabetes mellitus	17 (11.7%)	10 (7.4%)	11 (8.3%)	10 (7.5%)	0.522
Coronary heart disease	6 (4.1%)	0 (0.0%)	1 (0.8%)	2 (1.5%)	0.026
FEV1, L	1.9±0.4	2.2±0.5	2.5±0.5	2.8±0.5	0.000
FVC, L	2.3±0.5	2.7±0.6	3.2±0.6	3.5±0.7	0.000
PEF, L/s	3.9±1.5	4.1±1.6	5.0±1.8	5.8±1.9	0.000
FEV1%	(73.8±10.9) %	(86.7±10.2) %	(95.9±10.6) %	(109.3±13.1) %	0.000
FVC%	(72.0±6.4) %	(86.7±3.2) %	(96.5±2.7) %	(111.6±9.0) %	0.000
PEF%	(55.9±20.0) %	(62.1±20.9) %	(71.4±24.0) %	(82.2±22.5) %	0.000
Intraoperative bleeding, mL	53.8±45.1	45.7±23.8	48.0±25.6	40.8±26.1	0.021
Intraoperative blood transfusion, mL	0	0	0	0	–
Length of operation, min	136.0±42.8	135.0±34.8	127.6±30.0	131.4±32.6	0.259
NSCLC staging					0.003
IA	124 (85.5%)	105 (77.2%)	111 (83.5%)	107 (79.9%)	
IB	15 (10.3%)	12 (8.8%)	6 (4.5%)	4 (3.0%)	
IIA	4 (2.8%)	7 (5.1%)	7 (5.3%)	11 (8.2%)	
IIB	1 (0.7%)	0 (0.0%)	1 (0.8%)	0 (0.0%)	
IIIA	1 (0.7%)	12 (8.8%)	8 (6.0%)	12 (9.0%)	
Postoperative pathology					0.577
Adenocarcinoma, n	130 (89.7%)	125 (91.9%)	122 (91.7%)	127 (94.8%)	
Squamous cell carcinoma, n	14 (9.7%)	8 (5.9%)	9 (6.8%)	6 (4.5%)	
Adenosquamous carcinoma, n	1 (0.7%)	3 (2.2%)	2 (1.5%)	1 (0.7%)	
Postoperative length of stay, days	5.9±2.4	5.7±1.9	5.8±2.2	5.9±2.0	0.735
Total hospital care costs (Renminbi)	59940.6±10768.4	58222.5±9788.9	58621.0±9679.4	56494.4±7992.4	0.120

Values are presented as mean ± standard deviation, n or n (%). ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S5 Univariate results of postoperative outcomes based on FVC%

Postoperative outcome	FVC %				P value
	Quartile 1 (n=145), ≤80.0%	Quartile 2 (n=136), >80.0–92.0%	Quartile 3 (n=133), >92.0–101.0%	Quartile 4 (n=134), >101.0%	
Postoperative pulmonary complications					
Acute respiratory distress syndrome	2 (1.4%)	0 (0.0%)	1 (0.8%)	1 (0.7%)	0.447
Reintubation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Pulmonary embolism	2 (1.4%)	0 (0.0%)	1 (0.8%)	0 (0.0%)	0.226
Need for bedside bronchoscopy	0 (0.0%)	2 (1.5%)	2 (1.5%)	0 (0.0%)	0.126
Prolonged air leak	2 (1.4%)	1 (0.7%)	3(2.3%)	4 (3.0%)	0.510
Failure to expand	2 (1.4%)	6(4.4%)	0 (0.0%)	5 (3.7%)	0.019
Atelectasis	4 (2.8%)	4 (2.9%)	2 (1.5%)	3 (2.2%)	0.856
Pneumonia	64 (44.1%)	62 (45.6%)	36 (27.1%)	44 (32.8%)	0.003
Acute kidney injury	4 (2.8%)	3 (2.2%)	0 (0.0%)	5 (3.7%)	0.062
In-hospital mortality, n	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Readmission within 30 days	1 (0.7%)	0 (0.0%)	2 (1.5%)	3 (2.2%)	0.197

Values are presented as n (%).

Table S6 Clinical characteristics of patients based on FEV1%

Characteristic	FEV1%				P value
	Quartile 1 (n=138), ≤78.4%	Quartile 2 (n=148), >78.4–92.0%	Quartile 3 (n=130), >92.0–103.0%	Quartile 4 (n=132), >103.0%	
ASA score					0.228
I	111(80.4%)	125 (84.5%)	107(82.3%)	116 (87.9%)	
II	16 (11.6%)	19 (12.8%)	18 (13.8%)	13 (9.8%)	
III	11 (8.0%)	4 (2.7%)	5 (3.8%)	3 (2.3%)	
Age	66.0±9.3	63.1±10.9	61.3±11.4	61.3±10.0	0.000
Gender (female/male)	81/57	92/56	71/59	87/45	0.278
Weight, kg	63.6±11.1	61.7±8.8	61.1±10.2	59.0±8.5	0.004
BMI, kg/m ²	23.8±3.1	23.1±2.8	22.9±2.7	22.7±2.6	0.006
Smoking	49 (35.5%)	39 (26.4%)	34 (26.2%)	24 (18.2%)	0.015
Diabetes mellitus	16 (11.6%)	10 (6.8%)	11 (8.5%)	11 (8.3%)	0.537
Coronary heart disease	6 (4.3%)	0(0.0%)	3(2.3%)	0(0.0%)	0.003
FEV1, L	1.8±0.4	2.2±0.4	2.6±0.5	2.8±0.5	0.000
FVC, L	2.5±0.6	2.8±0.7	3.2±0.7	3.3±0.7	0.000
PEF, L/s	3.3±1.3	4.2±1.6	5.4±1.7	5.9±1.8	0.000
FEV1%	(69.0±7.4) %	(86.1±4.1) %	(97.7±3.2) %	(113.1±9.0) %	0.000
FVC%	(76.0±11.9) %	(86.7±9.4) %	(96.3±9.7) %	(107.5±11.4) %	0.000
PEF%	(47.9±14.9) %	(62.2±19.8) %	(76.6±20.6) %	(85.4±21.4) %	0.000
Intraoperative bleeding, mL	51.0±42.8	49.3±32.5	45.4±21.5	42.7±25.7	0.475
Intraoperative blood transfusion, mL	0	0	0	0	-
Length of operation, min	133.4±40.7	133.2±35.2	134.9±33.3	128.9±32.5	0.613
NSCLC staging					0.030
IA	107(77.5%)	127 (85.8%)	105(80.8%)	108 (81.8%)	
IB	18 (13.0%)	8 (5.4%)	8 (6.2%)	3 (2.3%)	
IIA	6 (4.3%)	4 (2.7%)	11 (8.5%)	8 (6.1%)	
IIB	0 (0.0%)	1 (0.7%)	0 (0.0%)	1 (0.8%)	
IIIA	7 (5.1%)	8 (5.4%)	6 (4.6%)	12 (9.1%)	
Postoperative pathology					0.034
Adenocarcinoma, n	121 (87.7%)	138 (93.2%)	117 (90.0%)	128 (97.0%)	
Squamous cell carcinoma, n	16 (11.6%)	9 (6.1%)	9 (6.9%)	3 (2.3%)	
Adenosquamous carcinoma, n	1 (0.7%)	1 (0.7%)	4 (3.1%)	1 (0.8%)	
Postoperative length of stay, days	5.6±1.6	6.0±2.6	5.9±2.2	5.9±2.0	0.394
Total hospital care costs (Renminbi)	59089.3±9764.3	59150.7±10326.5	59378.5±9167.6	55671.8±8954.3	0.004

Values are presented as mean ± standard deviation, n or n (%). ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S7 Univariate results of postoperative outcomes based on FEV1%

Postoperative outcome	FEV1%				P value
	Quartile 1 (n=138), ≤78.4%	Quartile 2 (n=148), >78.4–92.0%	Quartile 3 (n=130), >92.0–103.0%	Quartile 4 (n=132), >103.0%	
Postoperative pulmonary complications					
Acute respiratory distress syndrome	0 (0.0%)	2 (1.4%)	1 (0.8%)	1 (0.8%)	0.448
Reintubation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	0 (0.0%)	2 (1.4%)	1 (0.8%)	0 (0.0%)	0.230
Need for bedside bronchoscopy	0 (0.0%)	2 (1.4%)	2 (1.5%)	0 (0.0%)	0.140
Prolonged air leak	0 (0.0%)	6 (4.1%)	2 (1.5%)	2 (1.5%)	0.041
Failure to expand	4 (2.9%)	4 (2.7%)	4 (3.1%)	1 (0.8%)	0.477
Atelectasis	2 (1.4%)	3 (2.0%)	3 (2.3%)	5 (3.8%)	0.650
Pneumonia	56 (40.6%)	64 (43.2%)	43 (33.1%)	43 (32.6%)	0.166
Acute kidney injury	2 (1.4%)	6 (4.1%)	0 (0.0%)	4 (3.0%)	0.037
In-hospital mortality, n	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	0 (0.0%)	1 (0.7%)	2 (1.5%)	3 (2.3%)	0.186

Values are presented as n (%).

Table S8 Full-model multivariate results of 4 groups of different PEF%

Variables	Postoperative pneumonia		
	OR	95% CI	P value
ASA score			0.022
I	1.000		
II	3.124	1.325–7.366	0.009
III	2.813	0.730–10.847	0.133
Age			
<60	1.000		
60–	1.527	1.012–2.303	0.044
Gender			
Male	1.000		
Female	1.322	0.750–2.332	0.335
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	1.642	1.103–2.444	0.015
Smoking			
No	1.000		
Yes	0.912	0.471–1.765	0.784
Diabetes mellitus			
No	1.000		
Yes	0.101	0.035–0.292	0.000
Coronary heart disease			
No	1.000		
Yes	0.468	0.069–3.188	0.438
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	0.967	0.647–1.446	0.870
Length of operation			
<2 h	1.000		
2 h–	1.547	1.030–2.326	0.036
NSCLC staging			0.479
IA	1.000		
IB	0.989	0.461–2.124	0.978
IIA	2.077	0.895–4.821	0.089
IIB	3.117	0.179–54.389	0.436
IIIA	1.014	0.460–2.239	0.972
Postoperative pathology			0.223
Adenocarcinoma	1.000		
Squamous cell carcinoma	2.052	0.910–4.627	0.083
Adenosquamous carcinoma	0.000	0.000	0.999
PEF%			0.013
≤49.0%	2.076	1.211–3.558	0.008
>49.0–65.6%	1.000		
>65.6–84.0%	1.157	0.677–1.978	0.595
>84.0%	1.962	1.129–3.411	0.017

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; NSCLC, non-small cell lung cancer; OR, odds ratio; PEF%, peak expiratory flow as a percentage of predicted.

Table S9 Full-model multivariate results of 4 groups of different FVC%

Variables	Postoperative pneumonia		
	OR	95% CI	P value
ASA score			0.021
I	1.000		
II	3.188	1.339–7.587	0.009
III	2.821	0.740–10.757	0.129
Age			
<60	1.000		
60–	1.297	0.862–1.952	0.213
Gender			
Male	1.000		
Female	1.209	0.686–2.131	0.512
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	1.461	0.977–2.185	0.065
Smoking			
No	1.000		
Yes	0.937	0.487–1.801	0.844
Diabetes mellitus			
No	1.000		
Yes	0.108	0.037–0.315	0.000
Coronary heart disease			
No	1.000		
Yes	0.470	0.069–3.187	0.439
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	0.982	0.654–1.474	0.930
Length of operation			
<2 h	1.000		
2 h–	1.514	1.009–2.270	0.045
NSCLC staging			0.385
IA	1.000		
IB	0.782	0.363–1.686	0.530
IIA	2.237	0.946–5.289	0.067
IIB	2.043	0.116–35.835	0.625
IIIA	1.145	0.514–2.550	0.741
Postoperative pathology			0.157
Adenocarcinoma	1.000		
Squamous cell carcinoma	2.208	0.985–4.949	0.054
Adenosquamous carcinoma	0.000	0.000	0.999
FVC %			0.012
≤80.0%	2.125	1.226–3.683	0.007
>80.0–92.0%	2.230	1.298–3.832	0.004
>92.0–101.0%	1.000		
>101.0%	1.399	0.802–2.440	0.237

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FVC%, forced vital capacity as percentage of predicted; NSCLC, non-small cell lung cancer; OR, odds ratio.

Table S10 Full-model multivariate results of 4 groups of different FEV1%

Variables	Postoperative pneumonia		
	OR	95% CI	P value
ASA score			0.022
I	1.000		
II	3.121	1.325–7.354	0.009
III	2.813	0.745–10.623	0.127
Age			
<60	1.000		
60–	1.344	0.898–2.012	0.151
Gender			
Male	1.000		
Female	1.266	0.716–2.239	0.417
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	1.532	1.029–2.282	0.036
Smoking			
No	1.000		
Yes	0.932	0.482–1.801	0.834
Diabetes mellitus			
No	1.000		
Yes	0.114	0.040–0.330	0.000
Coronary heart disease			
No	1.000		
Yes	0.500	0.074–3.363	0.476
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	0.983	0.659–1.466	0.934
Length of operation			
<2 h	1.000		
2 h–	1.522	1.016–2.279	0.042
NSCLC staging			0.457
IA	1.000		
IB	0.826	0.382–1.786	0.627
IIA	2.145	0.920–5.001	0.077
IIB	1.833	0.107–31.433	0.676
IIIA	1.120	0.513–2.441	0.776
Postoperative pathology			0.151
Adenocarcinoma	1.000		
Squamous cell carcinoma	2.214	0.994–4.933	0.052
Adenosquamous carcinoma	0.000	0.000	0.999
FEV1%			0.349
≤78.4%	1.309	0.755–2.269	0.338
>78.4–92.0%	1.465	0.876–2.448	0.146
>92.0–103.0%	0.979	0.564–1.700	0.940
>103.0%	1.000		

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FEV1%, forced expiratory volume in 1 s as percentage of predicted; NSCLC, non-small cell lung cancer; OR, odds ratio.

Table S11 Mortality following video-assisted thoracic surgery lobectomy for lung cancer based on FVC%

Variables	FVC %				P value
	Quartile 1 (n=145), ≤80.0%	Quartile 2 (n=136), >80.0–92.0%	Quartile 3 (n=133), >92.0–101.0%	Quartile 4 (n=134), >101.0%	
Number of deaths	1 (0.7%)	3 (2.2%)	1 (0.8%)	4 (3.0%)	0.351
Cause of death					0.256
Postoperative complication	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Cancer related	0 (0.0%)	2 (66.7%)	0 (0.0%)	3 (75.0%)	
Non-cancer related	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Uncertain	1 (100.0%)	1 (33.3%)	1 (100.0%)	1 (25.0%)	

Values are presented as n (%). FVC%, forced vital capacity as percentage of predicted.

Table S12 Mortality following video-assisted thoracic surgery lobectomy for lung cancer based on FEV1%

Variables	FEV1%				P value
	Quartile 1 (n=138), ≤78.4%	Quartile 2 (n=148), >78.4–92.0%	Quartile 3 (n=130), >92.0–103.0%	Quartile 4 (n=132), >103.0%	
Number of deaths	2 (1.5%)	1 (0.7%)	2 (1.5%)	4 (3.0%)	0.498
Cause of death					0.022
Postoperative complication	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Cancer related	1 (50.0%)	0 (0.0%)	0 (0.0%)	4 (100.0%)	
Non-cancer related	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Uncertain	1 (50.0%)	1 (100.0%)	2(100.0%)	0 (0.0%)	

Values are presented as n (%). FEV1%, forced expiratory volume in 1 s as percentage of predicted.

Table S13 Multivariate Cox regression results for overall survival based on PEF%

Variables	HR	95% CI	P value
ASA score			0.999
I	1.000		
II	0.000	0.000	0.963
III	0.000	0.000	0.972
Age			
<60	1.000		
60–	0.772	0.184–3.241	0.724
Gender			
Male	1.000		
Female	0.648	0.062–6.740	0.717
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	0.695	0.131–3.695	0.669
Smoking			
No	1.000		
Yes	5.083	0.616–41.916	0.131
Diabetes mellitus			
No	1.000		
Yes	0.000	0.000	0.959
Coronary heart disease			
No	1.000		
Yes	0.000	0.000	0.996
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	6.692	0.632–70.866	0.114
Length of operation			
<2 h	1.000		
2 h–	1.620	0.300–8.755	0.575
NSCLC staging			0.121
IA	1.000		
IB	0.000	0.000	0.969
IIA	0.000	0.000	0.971
IIB	0.000	0.000	0.998
IIIA	13.667	2.047–91.264	0.007
Postoperative pathology			0.999
Adenocarcinoma	1.000		
Squamous cell carcinoma	0.000	0.000	0.960
Adenosquamous carcinoma	0.000	0.000	0.985
PEF%			0.533
≤49.0%	0.737	0.107–5.076	0.757
>49.0–65.6%	0.279	0.029–2.678	0.269
>65.6–84.0%	0.263	0.028–2.510	0.246
>84.0%	1.000		

Results of binary logistics regression are presented as adjusted HR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; HR, hazard ratio; NSCLC, non-small cell lung cancer; PEF%, peak expiratory flow as a percentage of predicted.

Table S14 Multivariate Cox regression results for overall survival based on FVC%

Variables	HR	95% CI	P value
ASA score			0.998
I	1.000		
II	0.000	0.000	0.956
III	0.000	0.000	0.974
Age			
<60	1.000		
60–	0.859	0.199–3.709	0.839
Gender			
Male	1.000		
Female	0.425	0.045–4.036	0.456
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	0.518	0.093–2.893	0.454
Smoking			
No	1.000		
Yes	4.045	0.577–28.338	0.159
Diabetes mellitus			
No	1.000		
Yes	0.000	0.000	0.951
Coronary heart disease			
No	1.000		
Yes	0.000	0.000	0.995
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	11.069	0.995–123.208	0.051
Length of operation			
<2 h	1.000		
2 h–	1.272	0.226–7.149	0.785
NSCLC staging			0.137
IA	1.000		
IB	0.000	0.000	0.983
IIA	0.000	0.000	0.978
IIB	0.000	0.000	0.998
IIIA	14.556	1.997–106.085	0.008
Postoperative pathology			0.998
Adenocarcinoma	1.000		
Squamous cell carcinoma	0.000	0.000	0.956
Adenosquamous carcinoma	0.000	0.000	0.988
FVC %			0.559
≤80.0%	0.400	0.036–4.445	0.455
>80.0–92.0%	1.268	0.247–6.520	0.776
>92.0–101.0%	0.271	0.026–2.870	0.278
>101.0%	1.000		

Results of binary logistics regression are presented as adjusted HR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FVC%, forced vital capacity as percentage of predicted; HR, hazard ratio; NSCLC, non-small cell lung cancer.

Table S15 Multivariate Cox regression results for overall survival based on FEV1%

Variables	HR	95% CI	P value
ASA score			0.999
I	1.000		
II	0.000	0.000	0.971
III	0.000	0.000	0.977
Age			
<60	1.000		
60–	0.756	0.181–3.152	0.701
Gender			
Male	1.000		
Female	0.496	0.049–4.991	0.552
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	0.623	0.120–3.227	0.573
Smoking			
No	1.000		
Yes	3.867	0.509–29.355	0.191
Diabetes mellitus			
No	1.000		
Yes	0.000	0.000	0.968
Coronary heart disease			
No	1.000		
Yes	0.000	0.000	0.998
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	9.052	0.823–99.550	0.072
Length of operation			
<2 h	1.000		
2 h–	1.618	0.298–8.768	0.577
NSCLC staging			0.090
IA	1.000		
IB	0.000	0.000	0.981
IIA	0.000	0.000	0.981
IIB	0.000	0.000	0.997
IIIA	15.354	2.321–101.557	0.005
Postoperative pathology			0.998
Adenocarcinoma	1.000		
Squamous cell carcinoma	0.000	0.000	0.950
Adenosquamous carcinoma	0.000	0.000	0.987
FEV1%			0.762
≤78.4%	0.860	0.125–5.917	0.878
>78.4–92.0%	0.318	0.033–3.091	0.324
>92.0–103.0%	0.555	0.091–3.404	0.525
>103.0%	1.000		

Results of binary logistics regression are presented as adjusted HR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FEV1%, forced expiratory volume in 1 s as percentage of predicted; HR, hazard ratio; NSCLC, non-small cell lung cancer.

Table S16 Clinical characteristics of patients based on PEF

Characteristic	PEF				P value
	Quartile 1 (n=142), ≤3.3 L/s	Quartile 2 (n=136), >3.3–4.4 L/s	Quartile 3 (n=136), >4.4–5.8 L/s	Quartile 4 (n=134), >5.8 L/s	
ASA score					0.035
I	114 (80.3%)	113 (83.1%)	123 (90.4%)	109 (81.3%)	
II	16 (11.3%)	18 (13.2%)	11 (8.1%)	21 (15.7%)	
III	12 (8.5%)	5 (3.7%)	2 (1.5%)	4 (3.0%)	
Age	64.8±9.7	64.6±10.5	62.0±11.1	60.4±10.6	0.001
Gender (female/male)	103/39	86/50	98/38	44/90	0.000
Weight, kg	59.6±8.5	62.2±10.8	59.4±9.4	64.4±9.5	0.000
BMI, kg/m ²	23.3±2.6	23.3±3.3	22.7±2.9	23.3±2.6	0.125
Smoking	33 (23.2%)	36 (26.5%)	26 (19.1%)	51 (38.1%)	0.003
Diabetes mellitus	15 (10.6%)	12 (8.8%)	6(4.4%)	15 (11.2%)	0.188
Coronary heart disease	4 (2.8%)	2 (1.5%)	1 (0.7%)	2 (1.5%)	0.590
FEV1, L	1.8±0.4	2.2±0.5	2.4±0.4	2.9±0.5	0.000
FVC, L	2.5±0.6	2.8±0.7	2.9±0.5	3.5±0.7	0.000
PEF, L/s	2.6 ±0.4	3.9 ±0.3	5.0 ±0.4	7.3±1.2	0.000
FEV1%	(78.5±13.6) %	(87.3±15.3) %	(97.7±17.1) %	(101.5±12.4) %	0.000
FVC%	(84.1±14.2) %	(87.1±15.4) %	(95.6±15.1) %	(98.7±13.4) %	0.000
PEF%	(42.2±9.0) %	(58.5±10.4) %	(76.4±13.1) %	(94.9±19.7) %	0.000
Intraoperative bleeding, mL	49.4±41.4	51.4±34.6	45.3±27.5	42.6±19.1	0.682
Intraoperative blood transfusion, mL	0	0	0	0	-
Length of operation, min	124.8±37.0	141.0±32.6	131.0±35.9	133.8±35.2	0.002
NSCLC staging					0.002
IA	122 (85.9%)	99 (72.8%)	110 (80.9%)	116 (86.6%)	
IB	4 (2.8%)	14 (10.3%)	12 (8.2%)	7 (5.2%)	
IIA	4 (2.8%)	17 (12.5%)	6 (4.4%)	2 (1.5%)	
IIB	1 (0.7%)	1 (0.7%)	0 (0.0%)	0 (0.0%)	
IIIA	11(7.7%)	5 (3.7%)	8 (5.9%)	9 (6.7%)	
Postoperative pathology					0.891
Adenocarcinoma, n	134 (94.4%)	123 (90.4%)	123 (90.4%)	124 (92.5%)	
Squamous cell carcinoma, n	7 (4.9%)	11 (8.1%)	11 (8.1%)	8 (6.0%)	
Adenosquamous carcinoma, n	1 (0.7%)	2 (1.5%)	2 (1.5%)	2 (1.5%)	
Postoperative length of stay, days	5.4±1.7	6.0±2.2	5.9±1.8	6.1±2.7	0.032
Total hospital care costs (Renminbi)	59532.8±10549.5	59312.3±10203.7	57275.2±8749.6	57216.0±8927.6	0.072

Values are presented as mean ± standard deviation, n or n (%). ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S17 Univariate results of postoperative outcomes based on PEF

Postoperative outcome	PEF				P value
	Quartile 1 (n=142), ≤3.3 L/s	Quartile 2 (n=136), >3.3–4.4 L/s	Quartile 3 (n=136), >4.4–5.8 L/s	Quartile 4 (n=134), >5.8 L/s	
Postoperative pulmonary complications					
Acute respiratory distress syndrome	1 (0.7%)	2 (1.5%)	0 (0.0%)	1 (0.7%)	0.425
Reintubation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	1 (0.7%)	2 (1.5%)	0 (0.0%)	0 (0.0%)	0.214
Need for bedside bronchoscopy	0 (0.0%)	2 (1.5%)	0 (0.0%)	2 (1.5%)	0.128
Prolonged air leak	1 (0.7%)	0 (0.0%)	3 (2.2%)	6 (4.5%)	0.017
Failure to expand	4 (2.8%)	6 (4.4%)	0 (0.0%)	3(2.2%)	0.035
Atelectasis	0 (0.0%)	5 (3.7%)	7 (5.1%)	1 (0.7%)	0.004
Pneumonia	62 (43.7%)	49 (36.0%)	54 (39.7%)	41 (30.6%)	0.143
Acute kidney injury	2 (1.4%)	2 (1.5%)	2 (1.5%)	6 (4.5%)	0.292
In-hospital mortality, n	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	0 (0.0%)	2 (1.5%)	2 (1.5%)	2 (1.5%)	0.305

Values are presented as n (%).

Table S18 Clinical characteristics of patients based on FVC

Characteristic	FVC				P value
	Quartile 1 (n=122), ≤2.3 L	Quartile 2 (n=170), >2.3–2.9 L	Quartile 3 (n=115), >2.9–3.4 L	Quartile 4 (n=141), >3.4 L	
ASA score					0.004
I	89 (73.0%)	146 (85.9%)	102 (88.7%)	122 (86.5%)	
II	24 (19.7%)	14 (8.2%)	11 (9.6%)	17 (12.1%)	
III	9 (7.4%)	10 (5.9%)	2 (1.7%)	2 (1.4%)	
Age	68.2±8.1	62.7±10.9	60.6±10.9	60.8±10.4	0.000
Gender (female/male)	113/9	137/33	62/53	19/122	0.000
Weight, kg	59.0±8.6	58.3±8.9	61.5±9.0	66.9±10.0	0.000
BMI, kg/m ²	23.7±3.0	22.8±2.8	22.9±2.6	23.3±2.8	0.032
Smoking	7 (5.7%)	28 (16.5%)	35 (30.4%)	76 (53.9%)	0.000
Diabetes mellitus	15(12.3%)	12 (7.1%)	10 (8.7%)	11 (7.8%)	0.443
Coronary heart disease	4(3.3%)	3 (1.8%)	0 (0.0%)	2 (1.4%)	0.142
FEV1, L	1.7±0.2	2.1±0.3	2.4±0.3	3.0±0.4	0.000
FVC, L	2.0±0.2	2.6±0.2	3.1±0.1	3.9±0.4	0.000
PEF, L/s	3.5±1.2	4.3±1.5	4.7±1.5	6.1±2.1	0.000
FEV1%	(78.4±11.6) %	(90.0±16.9) %	(95.6±18.3) %	(99.6±13.9) %	0.000
FVC%	(75.8±9.9) %	(89.7±12.9) %	(95.7±13.4) %	(103.0±12.8) %	0.000
PEF%	(59.7±21.5) %	(67.0±23.7) %	(68.7±23.6) %	(74.4±24.6) %	0.000
Intraoperative bleeding, mL	52.1±45.0	46.4±25.7	47.0±31.7	44.1±24.4	0.231
Intraoperative blood transfusion, mL	0	0	0	0	-
Length of operation, min	131.1±38.4	134.9±36.9	131.7±33.0	131.8±33.9	0.781
NSCLC staging					0.138
IA	100 (82.0%)	139 (81.8%)	95 (82.6%)	113 (80.1%)	
IB	11 (9.0%)	10 (5.9%)	9 (7.8%)	7 (5.0%)	
IIA	6 (4.9%)	6 (3.5%)	9 (7.8%)	8(5.7%)	
IIB	1 (0.8%)	0 (0.0%)	0 (0.0%)	1 (0.7%)	
IIIA	4 (3.3%)	15 (8.8%)	2 (1.7%)	12 (8.5%)	
Postoperative pathology					0.101
Adenocarcinoma, n	116 (95.1%)	156 (91.8%)	107 (93.0%)	125 (88.7%)	
Squamous cell carcinoma, n	4 (3.3%)	10 (5.9%)	8 (7.0%)	15 (10.6%)	
Adenosquamous carcinoma, n	2 (1.6%)	4 (2.4%)	0 (0.0%)	1 (0.7%)	
Postoperative length of stay, days	5.8±2.5	5.5±1.5	5.9±2.0	6.3±2.5	0.027
Total hospital care costs (Renminbi)	58689.2±11611.1	57742.1±9218.8	57714.8±8762.0	59312.5±9124.4	0.440

Values are presented as mean ± standard deviation, n or n (%). ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S19 Univariate results of postoperative outcomes based on FVC

Postoperative outcome	FVC				P value
	Quartile 1 (n=122), ≤2.3 L	Quartile 2 (n=170), >2.3–2.9 L	Quartile 3 (n=115), >2.9–3.4 L	Quartile 4 (n=141), >3.4 L	
Postoperative pulmonary complications					
Acute respiratory distress syndrome	2 (1.6%)	0 (0.0%)	0 (0.0%)	2 (1.4%)	0.115
Reintubation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	2 (1.6%)	0 (0.0%)	0 (0.0%)	1 (0.7%)	0.177
Need for bedside bronchoscopy	0 (0.0%)	0 (0.0%)	1 (0.9%)	3 (2.1%)	0.078
Prolonged air leak	0 (0.0%)	2 (1.2%)	1(0.9%)	7 (5.0%)	0.012
Failure to expand	2 (1.6%)	3(1.8%)	4 (3.5%)	4 (2.8%)	0.736
Atelectasis	5 (4.1%)	4 (2.4%)	2 (1.7%)	2 (1.4%)	0.540
Pneumonia	61 (50.0%)	51 (30.0%)	53 (46.1%)	41 (29.1%)	0.000
Acute kidney injury	2 (1.6%)	2 (1.2%)	3 (2.6%)	5 (3.5%)	0.517
In-hospital mortality, n	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	0 (0.0%)	1 (0.6%)	1 (0.9%)	4 (2.8%)	0.113

Values are presented as n (%).

Table S20 Clinical characteristics of patients based on FEV1

Characteristic	FEV1				P value
	Quartile 1 (n=122), ≤1.8 L	Quartile 2 (n=167), >1.8–2.3 L	Quartile 3 (n=127), >2.3–2.7 L	Quartile 4 (n=132), >2.7 L	
ASA score					0.006
I	90 (73.8%)	138 (82.6%)	111(87.4%)	120 (90.9%)	
II	21 (17.2%)	23 (13.8%)	12 (9.4%)	10 (7.6%)	
III	11 (9.0%)	6 (3.6%)	4(3.1%)	2 (1.5%)	
Age	68.4±8.4	64.5±9.3	59.6±11.7	59.3±10.4	0.000
Gender (female/male)	98/24	128/39	85/42	20/112	0.000
Weight, kg	59.2±9.9	59.5±8.7	60.2±8.6	66.9±10.0	0.000
BMI, kg/m ²	23.4±3.2	23.1±2.7	22.8±2.7	23.3±2.8	0.301
Smoking	19 (15.6%)	35 (21.0%)	27 (21.3%)	65 (49.2%)	0.000
Diabetes mellitus	13 (10.7%)	17 (10.2%)	10 (7.9%)	8 (6.1%)	0.513
Coronary heart disease	6 (4.9%)	1(0.6%)	0(0.0%)	2(1.5%)	0.012
FEV1, L	1.6±0.2	2.0±0.1	2.5±0.1	3.1±0.3	0.000
FVC, L	2.2±0.4	2.6±0.4	3.1±0.4	3.9±0.5	0.000
PEF, L/s	3.2±1.1	4.0±1.3	5.2±1.6	6.4±1.9	0.000
FEV1%	(72.0±10.7) %	(89.3±13.4) %	(99.9±14.4) %	(102.4±12.6) %	0.000
FVC%	(77.0±12.4) %	(89.0±12.1) %	(97.7±14.1) %	(101.2±13.1) %	0.000
PEF%	(51.9±16.6) %	(64.0±22.3) %	(76.7±23.7) %	(78.0±23.1) %	0.000
Intraoperative bleeding, mL	50.3±45.5	50.9±29.3	43.5±26.4	43.2±23.2	0.067
Intraoperative blood transfusion, mL	0	0	0	0	-
Length of operation, min	130.6±38.1	133.4±35.9	134.5±32.0	131.5±36.4	0.818
NSCLC staging					0.000
IA	89 (73.0%)	144 (86.2%)	113(89.0%)	101 (76.5%)	
IB	18 (14.8%)	9 (5.4%)	2 (1.6%)	8 (6.1%)	
IIA	6 (4.9%)	5 (3.0%)	10 (7.9%)	8 (6.1%)	
IIB	0 (0.0%)	1 (0.6%)	0 (0.0%)	1 (0.8%)	
IIIA	9 (7.4%)	8 (4.8%)	2 (1.6%)	14 (10.6%)	
Postoperative pathology					0.369
Adenocarcinoma, n	111 (91.0%)	154 (92.2%)	120 (94.5%)	119 (90.2%)	
Squamous cell carcinoma, n	8 (6.6%)	10 (6.0%)	7 (5.5%)	12 (9.1%)	
Adenosquamous carcinoma, n	3 (2.5%)	3 (1.8%)	0 (0.0%)	1 (0.8%)	
Postoperative length of stay, days	5.5±2.3	5.8±1.6	5.8±2.0	6.2±2.6	0.035
Total hospital care costs (Renminbi)	58686.9±11793.0	58427.9±9387.9	56796.9±7115.5	59439.7±9970.1	0.267

Values are presented as mean ± standard deviation, n or n (%). ASA, American Society of Anaesthesiologists; BMI, body mass index; FEV1, forced expiratory volume in 1 s; FEV1%, FEV1 as percentage of predicted; FVC, forced vital capacity; FVC%, FVC as percentage of predicted; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow; PEF%, PEF as percentage of predicted.

Table S21 Univariate results of postoperative outcomes based on FEV1

Postoperative outcome	FEV1				P value
	Quartile 1 (n=122), ≤1.8 L	Quartile 2 (n=167), >1.8–2.3 L	Quartile 3 (n=127), >2.3–2.7 L	Quartile 4 (n=132), >2.7 L	
Postoperative pulmonary complications					
Acute respiratory distress syndrome	0 (0.0%)	2 (1.2%)	0(0.0%)	2 (1.5%)	0.177
Reintubation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	0 (0.0%)	2 (1.2%)	0 (0.0%)	1 (0.8%)	0.284
Need for bedside bronchoscopy	0 (0.0%)	2 (1.2%)	1 (0.8%)	1 (0.8%)	0.529
Prolonged air leak	0 (0.0%)	0 (0.0%)	6 (4.7%)	4 (3.0%)	0.001
Failure to expand	2 (1.6%)	6(3.6%)	0 (0.0%)	5 (3.8%)	0.040
Atelectasis	2 (1.6%)	5 (3.0%)	5 (3.9%)	1 (0.8%)	0.294
Pneumonia	52 (42.6%)	61 (36.5%)	46 (36.2%)	47 (35.6%)	0.632
Acute kidney injury	2 (1.6%)	2 (1.2%)	4 (3.1%)	4 (3.0%)	0.577
In-hospital mortality, n	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	0 (0.0%)	0 (0.0%)	1 (0.8%)	5(3.8%)	0.008

Values are presented as n (%).

Table S22 Effect of PEF on postoperative outcomes

Postoperative outcome		PEF				Total P value
		Quartile 1 (n=142), ≤3.3 L/s	Quartile 2 (n=136), >3.3–4.4 L/s	Quartile 3 (n=136), >4.4–5.8 L/s	Quartile 4 (n=134), >5.8 L/s	
Postoperative pulmonary complications						
Acute respiratory distress syndrome	N (%)	1 (0.7%)	2 (1.5%)	0 (0.0%)	1 (0.7%)	0.966
Reintubation	N (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	N (%)	1 (0.7%)	2 (1.5%)	0 (0.0%)	0 (0.0%)	1.000
Need for bedside bronchoscopy	N (%)	0 (0.0%)	2 (1.5%)	0 (0.0%)	2 (1.5%)	1.000
Prolonged air leak	N (%)	1 (0.7%)	0 (0.0%)	3 (2.2%)	6 (4.5%)	0.756
Failure to expand	N (%)	4 (2.8%)	6 (4.4%)	0 (0.0%)	3(2.2%)	0.822
Atelectasis	N (%)	0 (0.0%)	5 (3.7%)	7 (5.1%)	1 (0.7%)	0.581
Pneumonia	N (%), OR (95% CI), P value	62 (43.7%), 1.661 (0.939–2.939), P=0.081	49 (36.0%), 0.940 (0.527–1.675), P=0.833	54 (39.7%), 1.391 (0.793–2.442), P=0.250	41 (30.6%), 1	0.130
Acute kidney injury	N (%)	2 (1.4%)	2 (1.5%)	2 (1.5%)	6 (4.5%)	0.521
In-hospital mortality	N (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	N (%)	0 (0.0%)	2 (1.5%)	2 (1.5%)	2 (1.5%)	0.905

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. The best-performing quartile 4 served as the reference group. CI, confidence interval; OR, odds ratio; PEF, peak expiratory flow.

Table S23 Full-model multivariate results of 4 groups of different PEF

Variables	Postoperative pneumonia		
	OR	95% CI	P value
ASA score			0.014
I	1.000		
II	3.373	1.437–7.917	0.005
III	2.838	0.743–10.838	0.127
Age			
<60	1.000		
60–	1.339	0.889–2.016	0.162
Gender			
Male	1.000		
Female	1.175	0.648–2.130	0.596
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	1.620	1.089–2.410	0.017
Smoking			
No	1.000		
Yes	0.953	0.495–1.837	0.886
Diabetes mellitus			
No	1.000		
Yes	0.105	0.037–0.304	0.000
Coronary heart disease			
No	1.000		
Yes	0.467	0.068–3.196	0.438
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	0.982	0.659–1.463	0.928
Length of operation			
<2 h	1.000		
2 h–	1.652	1.095–2.490	0.017
NSCLC staging			0.450
IA	1.000		
IB	0.917	0.428–1.966	0.824
IIA	2.219	0.946–5.209	0.067
IIB	1.932	0.111–33.650	0.651
IIIA	1.080	0.494–2.363	0.847
Postoperative pathology			0.177
Adenocarcinoma	1.000		
Squamous cell carcinoma	2.134	0.961–4.740	0.063
Adenosquamous carcinoma	0.000	0.000	0.999
PEF, L/s			0.130
≤3.3 L/s	1.661	0.939–2.939	0.081
>3.3–4.4 L/s	0.940	0.527–1.675	0.833
>4.4–5.8 L/s	1.391	0.793–2.442	0.250
>5.8 L/s	1.000		

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; NSCLC, non-small cell lung cancer; OR, odds ratio; PEF, peak expiratory flow.

Table S24 Effect of FVC on postoperative outcomes

Postoperative outcome		FVC				Total P value
		Quartile 1 (n=122), ≤2.3 L	Quartile 2 (n=170), >2.3–2.9 L	Quartile 3 (n=115), >2.9–3.4 L	Quartile 4 (n=141), >3.4 L	
Postoperative pulmonary complications						
Acute respiratory distress syndrome	N (%)	2 (1.6%)	0 (0.0%)	0 (0.0%)	2 (1.4%)	0.817
Reintubation	N (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	N (%)	2 (1.6%)	0 (0.0%)	0 (0.0%)	1 (0.7%)	1.000
Need for bedside bronchoscopy	N (%)	0 (0.0%)	0 (0.0%)	1 (0.9%)	3 (2.1%)	0.996
Prolonged air leak	N (%)	0 (0.0%)	2 (1.2%)	1(0.9%)	7 (5.0%)	0.714
Failure to expand	N (%)	2 (1.6%)	3(1.8%)	4 (3.5%)	4 (2.8%)	0.572
Atelectasis	N (%)	5 (4.1%)	4 (2.4%)	2 (1.7%)	2 (1.4%)	0.363
Pneumonia	N (%), OR (95% CI), P value	61 (50.0%), 2.904 (1.397–6.035), P=0.004	51 (30.0%), 1.173 (0.619–2.225), P=0.625	53 (46.1%), 2.582 (1.432–4.659), P=0.002	41 (29.1%), 1	0.000
Acute kidney injury	N (%)	2 (1.6%)	2 (1.2%)	3 (2.6%)	5 (3.5%)	0.838
In-hospital mortality	N (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	N (%)	0 (0.0%)	1 (0.6%)	1 (0.9%)	4 (2.8%)	0.913

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. The best-performing quartile 4 served as the reference group. CI, confidence interval; FVC, forced vital capacity; OR, odds ratio.

Table S25 Full-model multivariate results of 4 groups of different FVC

Variables	Postoperative pneumonia		
	OR	95% CI	P value
ASA score			0.022
I	1.000		
II	3.017	1.269–7.174	0.012
III	3.282	0.865–12.459	0.081
Age			
<60	1.000		
60–	1.262	0.822–1.937	0.288
Gender			
Male	1.000		
Female	0.947	0.475–1.888	0.878
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	1.497	1.000–2.243	0.050
Smoking			
No	1.000		
Yes	0.981	0.507–1.897	0.954
Diabetes mellitus			
No	1.000		
Yes	0.094	0.032–0.275	0.000
Coronary heart disease			
No	1.000		
Yes	0.452	0.069–2.975	0.409
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	0.957	0.638–1.436	0.833
Length of operation			
<2 h	1.000		
2 h–	1.618	1.072–2.442	0.022
NSCLC staging			0.431
IA	1.000		
IB	0.783	0.362–1.695	0.535
IIA	1.991	0.856–4.635	0.110
IIB	1.735	0.098–30.758	0.707
IIIA	1.413	0.636–3.141	0.396
Postoperative pathology			0.156
Adenocarcinoma	1.000		
Squamous cell carcinoma	2.220	0.986–4.999	0.054
Adenosquamous carcinoma	0.000	0.000	0.999
FVC, L			0.000
≤2.3 L	2.904	1.397–6.035	0.004
>2.3–2.9 L	1.173	0.619–2.225	0.625
>2.9–3.4 L	2.582	1.432–4.659	0.002
>3.4 L	1.000		

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FVC, forced vital capacity; NSCLC, non-small cell lung cancer; OR, odds ratio.

Table S26 Effect of FEV1 on postoperative outcomes

Postoperative outcome		FEV1				Total P value
		Quartile 1 (n=122), ≤1.8 L	Quartile 2 (n=167), >1.8–2.3 L	Quartile 3 (n=127), >2.3–2.7 L	Quartile 4 (n=132), >2.7 L	
Postoperative pulmonary complications						
Acute respiratory distress syndrome	N (%)	0 (0.0%)	2 (1.2%)	0(0.0%)	2 (1.5%)	0.773
Reintubation	N (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Pulmonary embolism	N (%)	0 (0.0%)	2 (1.2%)	0 (0.0%)	1 (0.8%)	0.962
Need for bedside bronchoscopy	N (%)	0 (0.0%)	2 (1.2%)	1 (0.8%)	1 (0.8%)	0.452
Prolonged air leak	N (%)	0 (0.0%)	0 (0.0%)	6 (4.7%)	4 (3.0%)	0.308
Failure to expand	N (%)	2 (1.6%)	6(3.6%)	0 (0.0%)	5 (3.8%)	0.545
Atelectasis	N (%)	2 (1.6%)	5 (3.0%)	5 (3.9%)	1 (0.8%)	0.331
Pneumonia	N (%), OR (95% CI), P value	52 (42.6%), 1.027 (0.523–2.016), P=0.938	61 (36.5%), 0.878 (0.475–1.622), P=0.677	46 (36.2%), 0.954 (0.524–1.736), P=0.876	47 (35.6%), 1	0.939
Acute kidney injury	N (%)	2(1.6%)	2 (1.2%)	4 (3.1%)	4 (3.0%)	0.328
In-hospital mortality	N (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	-
Readmission within 30 days	N (%)	0 (0.0%)	0 (0.0%)	1 (0.8%)	5(3.8%)	0.666

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. The best-performing quartile 4 served as the reference group. CI, confidence interval; FEV1, forced expiratory volume in 1 s; OR, odds ratio.

Table S27 Full-model multivariate results of 4 groups of different FEV1

Variables	Postoperative pneumonia		
	OR	95% CI	P value
ASA score			0.019
I	1.000		
II	3.173	1.345–7.487	0.008
III	2.917	0.769–11.060	0.116
Age			
<60	1.000		
60–	1.405	0.920–2.147	0.116
Gender			
Male	1.000		
Female	1.404	0.724–2.722	0.315
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	1.565	1.050–2.331	0.028
Smoking			
No	1.000		
Yes	1.024	0.532–1.972	0.944
Diabetes mellitus			
No	1.000		
Yes	0.112	0.039–0.324	0.000
Coronary heart disease			
No	1.000		
Yes	0.454	0.067–3.077	0.418
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	0.993	0.666–1.481	0.973
Length of operation			
<2 h	1.000		
2 h–	1.525	1.020–2.280	0.040
NSCLC staging			0.604
IA	1.000		
IB	0.849	0.393–1.837	0.678
IIA	1.915	0.825–4.444	0.130
IIB	1.926	0.113–32.741	0.650
IIIA	1.071	0.490–2.340	0.863
Postoperative pathology			0.147
Adenocarcinoma	1.000		
Squamous cell carcinoma	2.222	0.999–4.940	0.050
Adenosquamous carcinoma	0.000	0.000	0.999
FEV1, L			0.939
≤1.8 L	1.027	0.523–2.016	0.938
>1.8–2.3 L	0.878	0.475–1.622	0.677
>2.3–2.7 L	0.954	0.524–1.736	0.876
>2.7 L	1.000		

Results of binary logistics regression are presented as adjusted OR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FEV1, forced expiratory volume in 1 s; NSCLC, non-small cell lung cancer; OR, odds ratio.

Table S28 Mortality following video-assisted thoracic surgery lobectomy for lung cancer based on PEF

Variables	PEF				P value
	Quartile 1 (n=142), ≤3.3 L/s	Quartile 2 (n=136), >3.3–4.4 L/s	Quartile 3 (n=136), >4.4–5.8 L/s	Quartile 4 (n=134), >5.8 L/s	
Number of deaths	2 (1.4%)	0 (0.0%)	1 (0.7%)	6 (4.5%)	0.019
Cause of death					0.376
Postoperative complication	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Cancer related	1 (50.0%)	0 (0.0%)	0 (0.0%)	4 (66.7%)	
Non-cancer related	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Uncertain	1 (50.0%)	0 (0.0%)	1 (100.0%)	2(33.3%)	

Values are presented as n (%). PEF, peak expiratory flow.

Table S29 Mortality following video-assisted thoracic surgery lobectomy for lung cancer based on FVC

Variables	FVC				P value
	Quartile 1 (n=122), ≤2.3 L	Quartile 2 (n=170), >2.3 L–2.9 L	Quartile 3 (n=115), >2.9 L–3.4 L	Quartile 4 (n=141), >3.4 L	
Number of deaths	1 (0.8%)	1 (0.6%)	2 (1.8%)	5 (3.6%)	0.203
Cause of death					0.413
Postoperative complication	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Cancer related	0 (0.0%)	1 (100.0%)	1 (50.0%)	3 (60.0%)	
Non-cancer related	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Uncertain	1 (100.0%)	0 (0.0%)	1 (50.0%)	2 (40.0%)	

Values are presented as n (%). FVC, forced vital capacity.

Table S30 Mortality following video-assisted thoracic surgery lobectomy for lung cancer based on FEV1

Variables	FEV1				P value
	Quartile 1 (n=122), ≤1.8 L	Quartile 2 (n=167), >1.8–2.3 L	Quartile 3 (n=127), >2.3–2.7 L	Quartile 4 (n=132), >2.7 L	
Number of deaths	1 (0.8%)	1 (0.6%)	1 (0.8%)	6 (4.6%)	0.057
Cause of death					0.193
Postoperative complication	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Cancer related	1 (100.0%)	0 (0.0%)	0 (0.0%)	4 (66.7%)	
Non-cancer related	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Uncertain	0 (0.0%)	1 (100.0%)	1 (100.0%)	2 (33.3%)	

Values are presented as n (%). FEV1, forced expiratory volume in 1 s.

Table S31 Multivariate Cox regression results for overall survival based on PEF

Variables	HR	95% CI	P value
ASA score			0.999
I	1.000		
II	0.000	0.000	0.960
III	0.000	0.000	0.976
Age			
<60	1.000		
60–	0.720	0.159–3.262	0.670
Gender			
Male	1.000		
Female	0.857	0.072–10.229	0.903
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	0.972	0.179–5.277	0.974
Smoking			
No	1.000		
Yes	5.820	0.684–49.509	0.107
Diabetes mellitus			
No	1.000		
Yes	0.000	0.000	0.955
Coronary heart disease			
No	1.000		
Yes	0.000	0.000	0.995
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	8.747	0.852–89.843	0.068
Length of operation			
<2 h	1.000		
2 h–	1.447	0.254–8.249	0.677
NSCLC staging			0.121
IA	1.000		
IB	0.000	0.000	0.981
IIA	0.000	0.000	0.980
IIB	0.000	0.000	0.997
IIIA	12.589	2.004–79.074	0.007
Postoperative pathology			0.999
Adenocarcinoma	1.000		
Squamous cell carcinoma	0.000	0.000	0.961
Adenosquamous carcinoma	0.000	0.000	0.990
PEF, L/s			0.920
≤3.3 L/s	0.000	0.000	0.926
>3.3–4.4 L/s	0.451	0.037–5.503	0.533
>4.4–5.8 L/s	0.936	0.115–7.636	0.951
>5.8 L/s	1.000		

Results of binary logistics regression are presented as adjusted HR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; HR, hazard ratio; NSCLC, non-small cell lung cancer; PEF, peak expiratory flow.

Table S32 Multivariate Cox regression results for overall survival based on FVC

Variables	HR	95% CI	P value
ASA score			0.999
I	1.000		
II	0.000	0.000	0.963
III	0.000	0.000	0.975
Age			
<60	1.000		
60–	0.605	0.140–2.608	0.500
Gender			
Male	1.000		
Female	0.481	0.032–7.282	0.598
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	0.611	0.118–3.155	0.556
Smoking			
No	1.000		
Yes	4.829	0.625–37.325	0.131
Diabetes mellitus			
No	1.000		
Yes	0.000	0.000	0.959
Coronary heart disease			
No	1.000		
Yes	0.000	0.000	0.997
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	11.595	0.986–136.357	0.051
Length of operation			
<2 h	1.000		
2 h–	1.598	0.284–9.000	0.595
NSCLC staging			0.072
IA	1.000		
IB	0.000	0.000	0.975
IIA	0.000	0.000	0.974
IIB	0.000	0.000	0.997
IIIA	22.032	2.784–174.356	0.003
Postoperative pathology			0.998
Adenocarcinoma	1.000		
Squamous cell carcinoma	0.000	0.000	0.957
Adenosquamous carcinoma	0.000	0.000	0.988
FVC, L			0.825
≤2.3 L	0.257	0.014–4.837	0.364
>2.3–2.9 L	0.481	0.023–9.868	0.635
>2.9–3.4 L	0.339	0.014–7.990	0.502
>3.4 L	1.000		

Results of binary logistics regression are presented as adjusted HR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FVC, forced vital capacity; HR, hazard ratio; NSCLC, non-small cell lung cancer.

Table S33 Multivariate Cox regression results for overall survival based on FEV1

Variables	HR	95% CI	P value
ASA score			0.999
I	1.000		
II	0.000	0.000	0.968
III	0.000	0.000	0.977
Age			
<60	1.000		
60–	0.835	0.193–3.604	0.809
Gender			
Male	1.000		
Female	1.092	0.064–18.546	0.952
BMI			
<24.0 kg/m ²	1.000		
≥24.0 kg/m ²	0.703	0.129–3.837	0.684
Smoking			
No	1.000		
Yes	4.917	0.640–37.806	0.126
Diabetes mellitus			
No	1.000		
Yes	0.000	0.000	0.964
Coronary heart disease			
No	1.000		
Yes	0.000	0.000	0.996
Intraoperative bleeding			
<50 mL	1.000		
50 mL–	9.980	0.936–106.453	0.057
Length of operation			
<2 h	1.000		
2 h–	1.745	0.307–9.922	0.530
NSCLC staging			0.170
IA	1.000		
IB	0.000	0.000	0.973
IIA	0.000	0.000	0.977
IIB	0.000	0.000	0.997
IIIA	11.694	1.743–78.475	0.011
Postoperative pathology			0.999
Adenocarcinoma	1.000		
Squamous cell carcinoma	0.000	0.000	0.961
Adenosquamous carcinoma	0.000	0.000	0.989
FEV1, L			0.611
≤1.8 L	0.327	0.018–5.818	0.446
>1.8–2.3 L	0.374	0.015–9.076	0.546
>2.3–2.7 L	1.283	0.060–27.572	0.873
>2.7 L	1.000		

Results of binary logistics regression are presented as adjusted HR, 95% CI and P value. ASA, American Society of Anaesthesiologists; BMI, body mass index; CI, confidence interval; FEV1, forced expiratory volume in 1 s; HR, hazard ratio; NSCLC, non-small cell lung cancer.