

Table S1 Distribution of bleeding complications among patients by types of lung resections

Variable	Total population	Re-exploration, n (%)	Transfusion, n (%)
Number of patients	15617	192 (1.2)	585 (3.8)
Operation type			
Pneumonectomy	385	8 (2.1)	57 (14.8)
Bilobectomy	365	8 (2.2)	31 (8.5)
Lobectomy	6889	93 (1.4)	302 (4.4)
Segmentectomy	815	13 (1.6)	21 (2.6)
Wedge	6236	58 (0.9)	131 (2.1)
Other minor resection or biopsy	827	7 (0.9)	27 (3.3)
Other	40	2 (5)	9 (22.5)
Missing	60	3 (5)	7 (11.7)

Table S2 Baseline characteristics after matching

Variable	Before matching, %			After matching, %		
	No bleeding	Bleeding	Mean diff	No bleeding	Bleeding	Mean diff
Age, years, mean (SD)	63.7 (14.9)	62.9 (16.4)	-4.62	62.7 (15.3)	62.9 (16.4)	1.01
Female sex	51.2	44.1	-7.08	44.9	44.1	-0.82
BMI <18.5 kg/m ²	3.6	5.3	1.62	5.7	5.3	-0.41
BMI 18.5–25 kg/m ²	42.7	52	9.34	50.5	52	1.48
BMI >25–30 kg/m ²	35.3	30.7	-4.64	31.8	30.7	-1.15
BMI >30 kg/m ²	18.4	12.1	-6.31	12	12.1	0.08
Preoperative FEV ₁ , liter, mean (SD)	2.5 (0.8)	2.4 (0.7)	-13.11	2.4 (0.8)	2.4 (0.7)	2.54
Performance status 0	68.4	48.9	-19.46	48.7	48.9	0.23
Performance status 1	27.8	34.2	6.38	34.4	34.2	-0.16
Performance status 2–4	3.8	16.9	13.09	17	16.9	-0.08
Non-smoker	34.5	33.7	-0.74	34.8	33.7	-1.07
Previous smoker (>1 m)	44.4	38.9	-5.58	38.6	38.9	0.29
Smoker	17.7	21.5	3.78	21.3	21.5	0.17
Smoking status unknown	3.3	5.9	2.54	5.3	5.9	0.61
No comorbidity	56.9	53.9	-3.05	54.7	53.9	-0.79
Heart disease	15.2	20.6	5.37	20.5	20.6	0.11
Preoperative arrhythmia	7.3	8.7	1.35	9.1	8.7	-0.48
Diabetes	10	10.7	0.68	11.5	10.7	-0.77
Stroke/TIA	4	5.6	1.59	5.4	5.6	0.22
Chronic kidney disease	2.6	5.1	2.56	4.9	5.1	0.22
Hypertension	29.4	28.8	-0.61	28.8	28.8	0.01

Table S2 (continued)

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Variable	Before matching, %			After matching, %		
	No bleeding	Bleeding	Mean diff	No bleeding	Bleeding	Mean diff
Prior thoracic surgery	7.4	15.8	8.42	16.5	15.8	-0.74
Preoperative radiotherapy	2.3	2.2	-0.09	2.3	2.2	-0.11
Preoperative chemotherapy	5.3	7.9	2.63	8	7.9	-0.1
Preoperative PET	75.8	84.4	8.56	84.5	84.4	-0.16
Microscopic residual disease	2.7	6.2	3.46	5.7	6.2	0.5
Diagnosis: Lung cancer limited disease	37.7	32.2	-5.49	32.1	32.2	0.1
Diagnosis: Lung cancer advanced disease	14.2	22.9	8.67	21.5	22.9	1.44
Diagnosis: Metastasis	21.3	11	-10.28	11.5	11	-0.51
Diagnosis: Pneumothorax/emphysema	9.5	6.2	-3.31	6.4	6.2	-0.25
Diagnosis: Benign lung tumor	6.4	3.7	-2.69	3.8	3.7	-0.13
Diagnosis: Other malignant disease	1.6	5.1	3.47	5	5.1	0.14
Diagnosis: Other	9.3	18.9	9.63	19.7	18.9	-0.8
Incision: Anterolateral/Axillar/ Minithoracotomy	40.5	55.4	14.92	55.2	55.4	0.2
Incision: Posterior/Posterolateral thoracotomy	3.7	12.7	8.97	11.2	12.7	1.49
Incision: Minimally invasive VATS/RATS	54.9	28.2	-26.69	29.2	28.2	-1.06
Incision: Other	0.9	3.7	2.8	4.3	3.7	-0.63
Op type: Pneumonectomy	2.2	9.3	7.12	11	9.3	-1.67
Op type: Lobectomy/Bilobectomy	46	55.9	9.84	54.2	55.9	1.64
Op type: Segmentectomy	5.3	3.9	-1.41	3.9	3.9	-0.01
Op type: Wedge/biopsy/other minor	45.9	28.5	-17.47	28.7	28.5	-0.21
Op type: Other	0.6	2.5	1.92	2.2	2.5	0.25
Year of surgery: 2013–2015	30.9	35.3	4.43	34.5	35.3	0.8
Year of surgery: 2016–2018	34.9	36.1	1.18	37.3	36.1	-1.2
Year of surgery: 2019–2021	34.3	28.6	-5.62	28.2	28.6	0.39

SD, standard deviation; BMI, body mass index; FEV₁, forced expiratory volume in 1 second; TIA, transient ischemic attack; PET, positron emission tomography; VATS, video-assisted thoracic surgery; RATS, robot-assisted thoracic surgery.

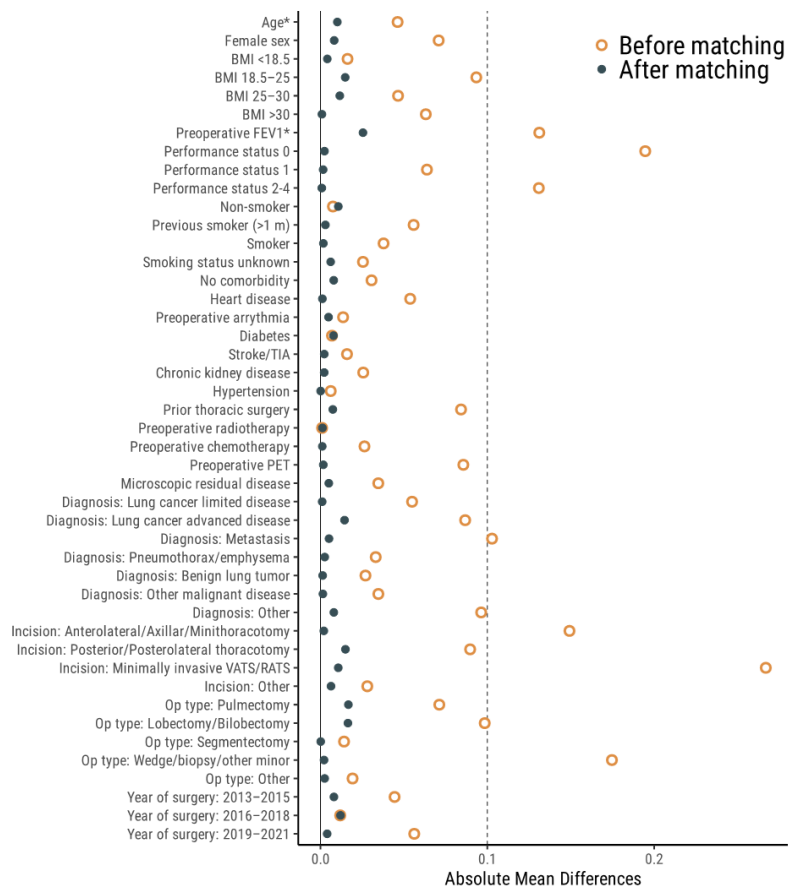


Figure S1 Absolute differences before (hollow circles) and after (filled circles) matching. *, standardized mean differences.

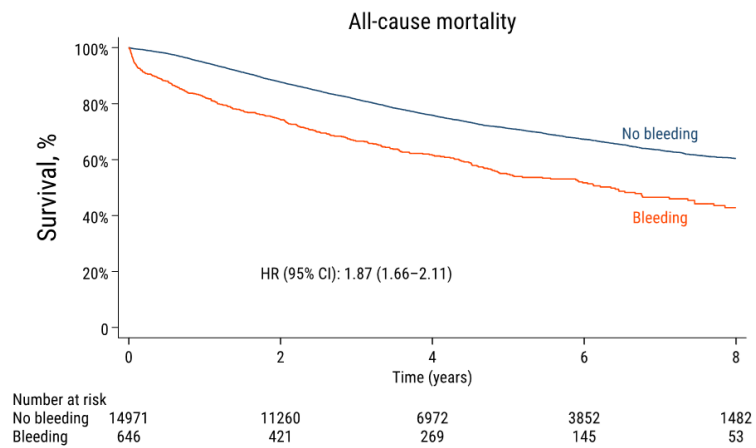


Figure S2 Crude survival.

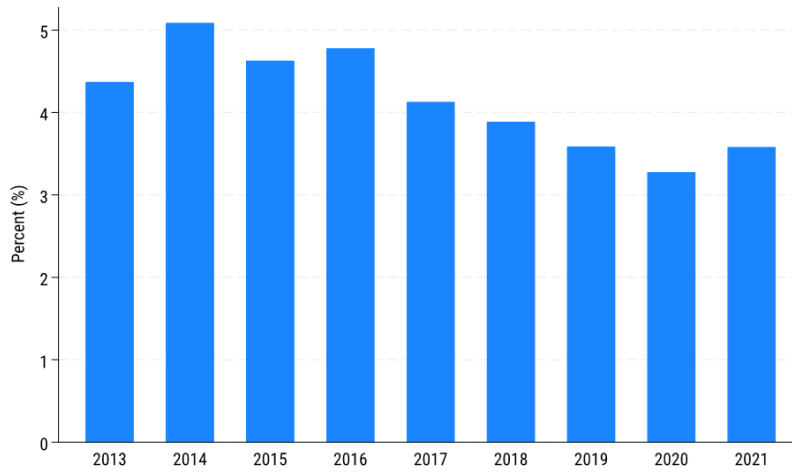


Figure S3 Percent bleeding per year.

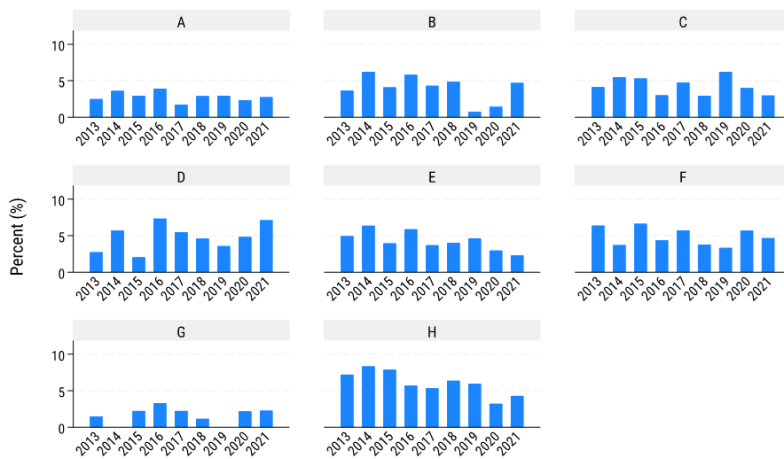
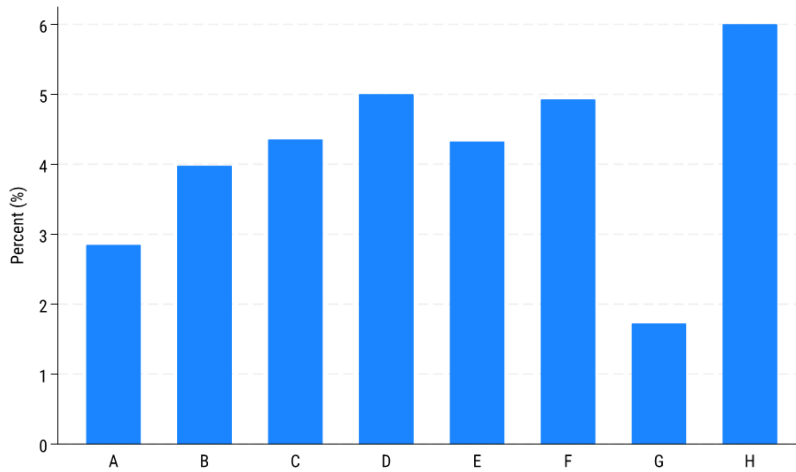


Figure S4 Percent bleeding per hospital (A-H) and per year.