Appendix 1

Computed tomography (CT) scanning protocol

Thoracic CT examinations of all patients were performed by using one of the following multidetector CT systems and their respective acquisition parameters:

(I) Somatom Definition AS (Siemens Medical Systems): tube energy as 120 kVp, tube current as 130 mA, rotation time as 0.5 seconds, detector collimation as 64×0.63 mm, CT reconstruction at 1.0 mm slice thickness with the standard soft kernel (Siemens B31 filter, Siemens Medical Solutions);

(II) Brilliance 40 (Philips Medical Systems): tube energy as 120 kV, tube current as 200 mA, rotation time as 0.75 seconds, detector collimation as 32×1.25 mm, CT reconstruction at 0.75 mm slice thickness with sharp reconstruction kernel (C filter, Philips). Contrast-enhanced CT was performed after intravenous injection of ioversol (350 mg of iodine per milliliter; Jiangsu Hengrui Medicine) at a dose of 1.3–1.5 mL per kilogram of body weight at a rate of 2.5 mL/second by using an automated injector.

(III) Discovery 750 (GE Healthcare): tube energy as 120 kV, tube current as 50–350 mA, rotation time as 0.5 seconds, detector collimation as 32×1.25 mm, pitch of 0.64, section thickness of 0.75 mm without overlap, matrix of 512×512 or 1,024×1,024, field of view (FOV) of 350–400 mm.

(IV) Somatom Definition Flash (Siemens Healthineers): tube energy as 120 kV, tube current as 120 mA, rotation time as 0.5 seconds, detector collimation as 32×1.25 mm, pitch of 0.64, section thickness of 0.6 mm without overlap, matrix of 512×512 or 1,024×1,024, FOV of 350–400 mm.

Table S1 Baseline characteristics of patients performing sublobar resection or lobectomy

Variables	Group A			Group B		
	Lobectomy (n=903)	Sublobar (n=444)	P	Lobectomy (n=1,349)	Sublobar (n=138)	P
Age (years)			0.007			<0.001
<65	668 (74.0)	297 (66.9)		871 (64.6)	60 (43.5)	
≥65	235 (26.0)	147 (33.1)		478 (35.4)	78 (56.5)	
Sex			0.237			0.323
Female	551 (61.0)	256 (57.7)		646 (47.9)	60 (43.5)	
Male	352 (39.0)	188 (42.3)		703 (52.1)	78 (56.5)	
Smoking history			0.918			0.953
Yes	803 (88.9)	394 (88.7)		306 (22.7)	31 (22.5)	
No	100 (11.1)	50 (11.3)		1,043 (77.3)	107 (77.5)	
Tumor size (cm)			<0.001			<0.001
0< size ≤1	110 (12.2)	114 (25.7)		0	0	
1< size ≤2	499 (55.3)	282 (63.5)		544 (40.3)	101 (73.2)	
2< size ≤3	294 (32.6)	48 (10.8)		805 (59.7)	37 (26.8)	
Tumor density			<0.001			0.003
Pure GGO	581 (64.3)	328 (73.9)		0	0	
Part-solid	273 (30.2)	87 (19.6)		219 (16.2)	36 (26.1)	
Pure-solid	49 (5.4)	29 (6.5)		1,130 (83.8)	102 (73.9)	
CEA level (ng/mL)			0.813			0.246
>5	60 (6.6)	28 (6.3)		303 (22.5)	37 (26.8)	
≤5	843 (93.4)	416 (93.7)		1,046 (77.5)	101 (73.2)	
Tumor location			<0.001			0.003
Upper lobes	514 (56.9)	330 (74.3)		750 (55.6)	95 (68.8)	
Non-upper lobes	389 (43.1)	114 (25.7)		599 (44.4)	43 (31.2)	
CCI			0.205			0.223
0	795 (88.0)	380 (85.6)		1,130 (83.8)	110 (79.7)	
1–3	108 (12.0)	64 (14.4)		219 (16.2)	28 (20.3)	
ECOG score			<0.001			<0.001
0	786 (87.0)	372 (83.8)		1,067 (79.1)	94 (68.1)	
1	75 (8.3)	26 (5.9)		180 (13.3)	13 (9.4)	
2	42 (4.7)	46 (10.4)		102 (7.6)	31 (22.5)	
Histologic type			0.083			0.492
Adenocarcinoma	875 (96.9)	427 (96.2)		1,118 (82.9)	114 (82.6)	
SCC	9 (1.0)	1 (0.2)		144 (10.7)	12 (8.7)	
Others	19 (2.1)	16 (3.6)		87 (6.4)	12 (8.7)	
VPI			0.321			0.975
Presence	2 (0.2)	0		138 (10.2)	14 (10.1)	
Absence	901 (99.8)	444 (100.0)		1,211 (89.8)	124 (89.9)	
STAS			0.395			0.144
Presence	5 (0.6)	1 (0.2)		68 (5.0)	11 (8.0)	
Absence	898 (99.4)	443 (99.8)		1,281 (95.0)	127 (92.0)	
Extent of lymphadenectomy			<0.001			<0.001
SND	757 (83.8)	198 (44.6)		1,114 (82.6)	57 (41.3)	
LML	146 (16.2)	246 (55.4)		235 (17.4)	81 (58.7)	
N stage			0.373			<0.001
N0	899 (99.6)	444 (100.0)		1,041 (77.2)	131 (94.9)	
N1	1 (0.1)	0		103 (7.6)	1 (0.8)	
N2	3 (0.3)	0		205 (15.2)	6 (4.3)	
No. resected N2 stations	3 [3–4]	3 [0–3]	<0.001	4 [3–4]	3 [2–4]	<0.001
No. resected nodes	9 [7–12]	6 [3–8]	<0.001	11 [9–14]	6 [4–9]	<0.001
Adjuvant therapy			0.004			0.002
Yes	67 (7.4)	15 (3.4)		521 (38.6)	33 (23.9)	
No	836 (92.6)	429 (96.6)		828 (61.4)	105 (76.1)	

Group A: patients with CTR >0.5 and tumor size ≤1 cm or CTR ≤0.5; group B: patients with CTR >0.5 and tumor size >1 cm. Categorical variables are presented as number (percentage). Continuous variables are presented as median [interquartile range]. CCI, Charlson Comorbidity Index; VPI, visceral pleural invasion; STAS, spread through air space; ECOG, Eastern Cooperative Oncology Group; GGN, ground-glass nodule; SND, systematic lymph node dissection; LML, limited mediastinal lymphadenectomy; GGO, ground-glass opacity; CTR, consolidation tumor ratio.
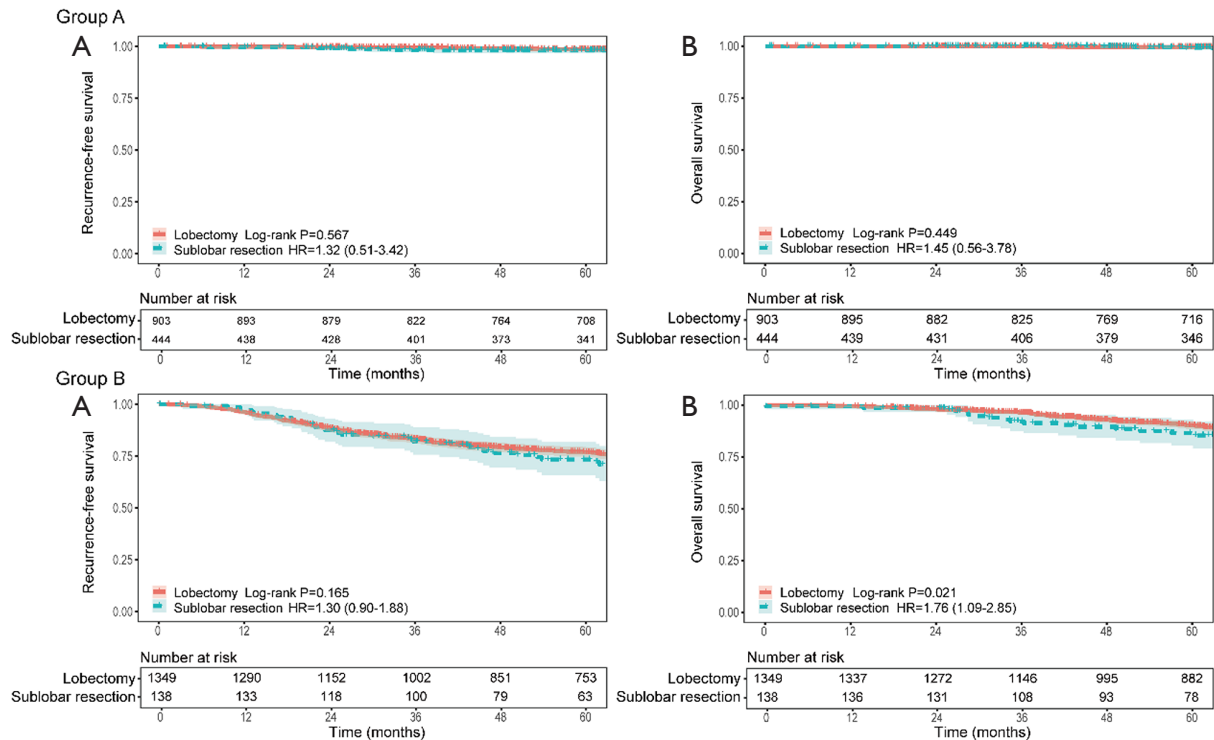
Figure S1 Prognosis comparison according to extent of surgery in group A and group B. (A) Recurrence-free survival according to extent of surgery in group A and group B; (B) overall survival according to extent of surgery in group A and group B. The survival was adjusted by age, sex, Charlson Comorbidity Index, smoking history, tumor size, tumor density, Eastern Cooperative Oncology Group performance status score, extent of lymphadenectomy using multivariate Cox regression model. Group A: patients with CTR >0.5 and tumor size ≤1 cm or CTR ≤0.5; group B: patients with CTR >0.5 and tumor size >1 cm. HR, hazard ratio; CTR, consolidation tumor ratio.
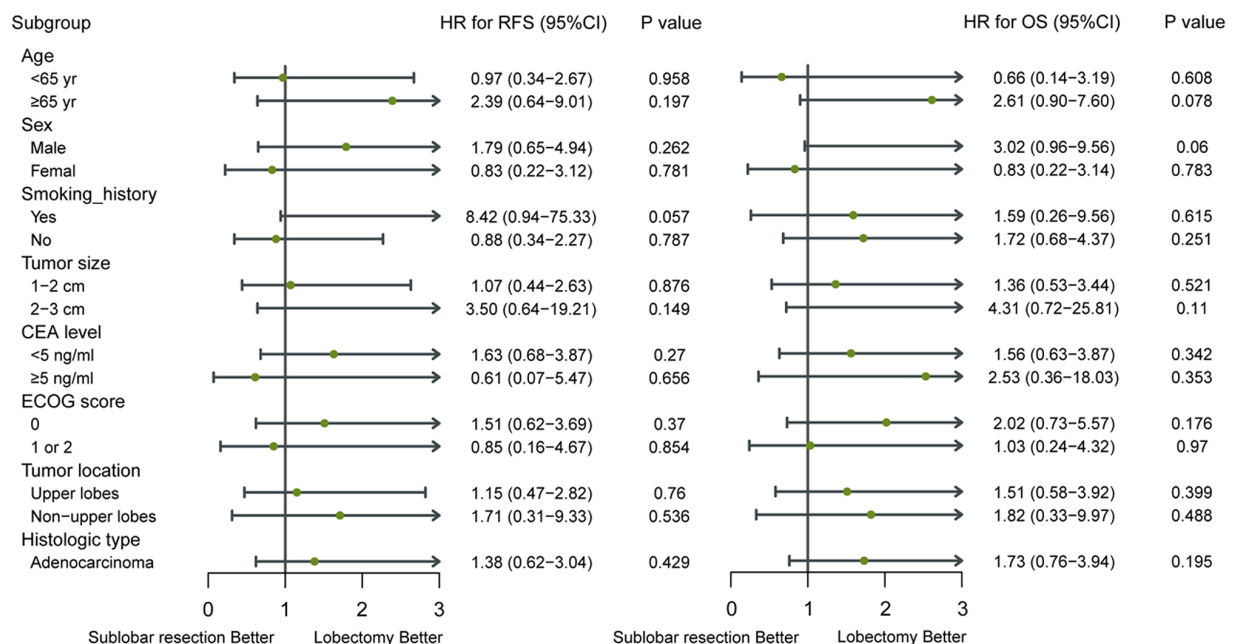

Figure S2 Subgroup analysis of RFS and OS in patients with group A. CEA, carcinoembryonic antigen; ECOG, Eastern Cooperative Oncology Group; HR, hazard ratio; RFS, recurrence-free survival; CI, confidence interval; OS, overall survival.