Appendix 1

Semantic CT characteristics

Imaging features designation:

- ❖ Location was classified as inner, middle or peripheral region of the lung lobe.
- ❖ Size indicated maximal axial size (mm).
- ❖ CTR: CTR was defined as the ratio of the maximum size of solid component to the maximum tumor size on the TS-CT scan in the axial plane.
- ❖ Density: pulmonary nodules are classified into pure solid and subsolid pulmonary nodules depending on the density of the nodules. The subsolid nodules include pGGN and mGGN. For pGGNs, CTR =0; for mGGNs, 0< CTR <1; for pure solid tumors, CTR =1.
- ❖ Lobulation indicated the presence of lobulated or irregular contours in a pulmonary nodule.
- ❖ Speculation indicated the presence of fine, needle-like or spiky extensions that radiate outward from the nodule.
- ❖ Air bronchogram indicated the appearance of air-filled bronchial tubes that can be seen as dark or low attenuation structures surrounded by opacified lung tissue.
- ❖ Bubble-like lucency indicated the presence of air in the tumor.
- ❖ Pleural indentation sign was defined as the presence of a depressed or raised contour deformity on the surface of the pleura adjacent to the lung mass.

Table S1 *EGFR* mutation sites detected in this study

Exon	Mutation
Exon 18	G719A/G719C
Exon 19	19-del
Exon 20	T790M/S768I/20-ins
Exon 21	L858R/L861Q

EGFR, epidermal growth factor receptor.

Table S2 Heterogeneity test

Variables	EGFR WT (n=151)	EGFR mutate (n=287)	χ^2
Clinical variables			
Sex			<0.001
Male	95	121	
Female	56	166	
Age (years)			0.68
<60	83	165	
≥60	68	122	
Smoking status			<0.001
Never	107	255	
Ever/current	44	32	
Pathological variables			
IASLC grade			0.20
Grade I	30	77	
Grade II	61	193	
Grade III	60	17	
Pleural invasion			0.51
Yes	35	73	
No	116	214	
Nerve invasion			0.10
Yes	0	5	
No	151	282	
Vascular infiltration			0.57
Yes	10	15	
No	141	272	
Radiological variables			
T descriptor			0.33
T1	109	223	
T2	36	59	
T3	6	4	
T4	0	1	
Nodule type			<0.001
pGGN	5	17	
mGGN	32	105	
Solid	114	165	
CTR			<0.001
0< CTR ≤0.5	16	45	
0.5< CTR <1	21	77	
CTR =1	114	165	
Lobulation			0.14
Yes	144	280	
No	7	7	
Spiculation			0.002
Yes	47	148	
No	104	139	
Pleural indentation			0.25
None	35	57	
Pleural contact	17	23	
Pleural thickening	5	6	
Pleural retraction with 1 stripe	21	64	
≥2 stripes or pleural tags	73	137	
Air bubble sign or abnormal bronchial sign			0.18
None	99	164	
Air bubble sign	31	89	
Abnormal bronchial sign	21	34	

EGFR, epidermal growth factor receptor; WT, wild-type; IASLC, International Association for the Study of Lung Cancer; pGGN, pure ground-glass nodule; mGGN, mixed ground-glass nodule; CTR, consolidation-to-tumor ratio.
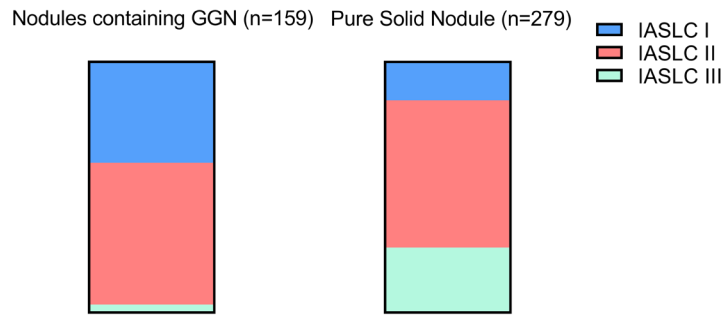
Nodules containing GGN (n=159)   Pure Solid Nodule (n=279)

■ IASLC I
■ IASLC II
■ IASLC III

Figure S1 In the distribution of IASLC grades for nodules with different solid components, it is observed that nodules containing GGNs tend to have lower IASLC grades, while solid nodules are more frequently classified as IASLC grade II and III. GGN, ground-glass nodule; IASLC, International Association for the Study of Lung Cancer.
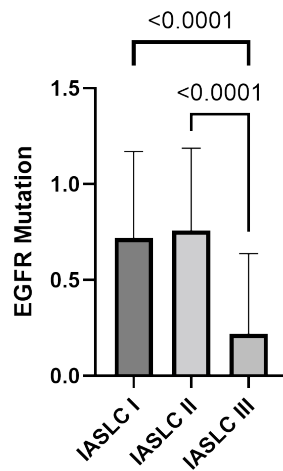

Figure S2 Frequency of *EGFR* mutations in nodes of different IASLC grades. *EGFR*, epidermal growth factor receptor; IASLC, International Association for the Study of Lung Cancer.