

Table S1 Histopathological diagnosis for clinically conclusive cases (n=434)

Histopathological finding	N (%)
Malignant	272 (62.7)
Primary lung	223 (51.4)
Adenocarcinoma lung	184 (42.4)
Squamous cell carcinoma lung	30 (6.9)
Small cell carcinoma lung	5 (1.2)
Adeno-squamous lung	2 (0.5)
Lymphoepithelioma like carcinoma	1 (0.2)
Mucoepidermoid carcinoma of lung	1 (0.2)
Metastatic lung	49 (11.3)
Metastatic adenocarcinoma of gastrointestinal tract	17 (3.9)
Metastatic adenocarcinoma breast	7 (1.6)
Metastatic clear cell renal cell carcinoma	5 (1.2)
Metastatic adenocarcinoma	5 (1.2)
Metastatic squamous cell carcinoma of head and neck cancer	3 (0.7)
Metastatic adenoid cystic carcinoma	2 (0.5)
Metastatic melanoma	2 (0.5)
Metastatic sarcoma	2 (0.5)
Metastatic diffuse large B cell lymphoma	1 (0.2)
Metastatic mucoepidermoid carcinoma	1 (0.2)
Metastatic adenocarcinoma endometrial	1 (0.2)
Metastatic adenocarcinoma cervix	1 (0.2)
Metastatic adenocarcinoma pancreas	1 (0.2)
Metastatic adenocarcinoma prostate	1 (0.2)
Benign	162 (37.3)
Tuberculosis	107 (24.7)
Chronic granulomatous inflammation	36 (8.3)
Chronic granulomatous inflammation with caseation necrosis	33 (7.6)
Chronic inflammation with treatment response to anti-tuberculous drugs	15 (3.5)
Chronic inflammation with positive Xpert MTB/RIF	11 (2.5)
Chronic inflammation with culture positive of Mycobacterium tuberculosis complex	4 (0.9)
Necrotic tissue with treatment response to anti-tuberculous drugs	3 (0.7)
Atypia with positive Xpert MTB/RIF	2 (0.5)
Necrotic tissue with positive Xpert MTB/RIF	2 (0.5)
Necrotic tissue with culture positive of Mycobacterium tuberculosis complex	1 (0.2)
Infection or inflammatory	50 (11.5)
Inflammatory lesion resolved or stable on radiological surveillance	24 (5.5)
Inflammatory lesion with response to antimicrobial therapy	6 (1.4)
Focal organizing pneumonia	6 (1.4)
Fungal infection (fungal hyphae on histology)	5 (1.2)
Radiation pneumonitis	3 (0.7)
Aspergillus infection	3 (0.7)
Penicillium infection	2 (0.5)
Cryptococcal infection	1 (0.2)
Benign tumor	5 (1.1)
Sclerosing pneumocytoma	2 (0.5)
Nodular lymphoid hyperplasia	1 (0.2)
Pulmonary paraganglioma	1 (0.2)
Pulmonary hamartoma	1 (0.2)

Table S2 Histopathological diagnosis for clinically inconclusive cases (n=117)

Histology finding	N (%)
Bronchial epithelium	45 (38.5)
Chronic inflammation	28 (23.9)
Collapse alveolar tissue	18 (15.4)
Non-representative tissue	10 (8.5)
Fibrotic alveolar septa	8 (6.8)
Atypical cells	4 (3.4)
Necrotic tissue	4 (3.4)

Table S3 rEBUS diagnosis compared to final diagnosis of malignant disease[†]

rEBUS diagnosis	Final diagnosis		
	Final diagnosis malignant	Final diagnosis not malignant	Total
rEBUS malignant	272	0	272
rEBUS not malignant	47	183	230
Total	319	183	502

Data are presented as number. [†], patient without follow up data excluded, hence n=502. rEBUS, radial endobronchial ultrasound.

Table S4 Performance of rEBUS in diagnosis of malignant PPLs

Diagnostic performance	Diagnostic performance threshold		
	Liberal [†]	Minimum [‡]	Maximum [§]
Diagnostic accuracy (%)	90.64 (87.74–93.04)	82.58 (79.15–85.65)	91.47 (88.82–93.67)
Sensitivity (%)	85.27 (80.89–88.97)	73.91 (69.11–78.33)	85.27 (80.89–88.97)
Specificity (%)	100.00	100.00	100.00
PPV (%)	100.00	100.00	100.00
NPV (%)	79.57 (74.94–83.53)	65.59 (61.61–69.36)	83.15 (79.13–86.54)

Data are presented as % (95% CI). [†], patient without follow up data excluded, hence n=502; [‡], minimum sensitivity was based on the assumption that all patients without follow up data (n=49) actually had malignancy (i.e., were false negative), hence n=551; [§], maximum sensitivity was based on the assumption that all patients without follow up data (n=49) actually did not have malignancy (i.e., were true negative), hence n=551. rEBUS, radial endobronchial ultrasound; PPLs, peripheral pulmonary lesions; PPV, positive predictive value; NPV, negative predictive value; CI, confidence interval.

Table S5 rEBUS diagnosis compared to final diagnosis of tuberculous disease[†]

rEBUS diagnosis	Final diagnosis		
	Final diagnosis tuberculosis	Final diagnosis not tuberculosis	Total
rEBUS tuberculosis	89	0	89
rEBUS not tuberculosis	35	378	413
Total	124	378	502

Data are presented as number. [†], patient without follow up data excluded, hence n=502. rEBUS, radial endobronchial ultrasound.

Table S6 Performance of rEBUS in diagnosis of tuberculous PPLs

Diagnostic performance	Diagnostic performance threshold		
	Liberal [†]	Minimum [‡]	Maximum [§]
Diagnostic accuracy (%)	93.03 (90.44–95.10)	84.75 (81.48–87.65)	93.65 (91.28–95.54)
Sensitivity (%)	71.77 (62.99–79.49)	51.45 (43.74–59.10)	71.77 (62.99–79.49)
Specificity (%)	100.00	100.00	100.00
PPV (%)	100.00	100.00	100.00
NPV (%)	91.53 (89.08–93.46)	81.82 (79.42–83.99)	92.42 (90.21–94.17)

Data are presented as % (95% CI). [†], patient without follow up data excluded, hence n=502; [‡], minimum sensitivity was based on the assumption that all patients without follow up data (n=49) actually had tuberculosis (i.e., were false negative), hence n=551; [§], maximum sensitivity was based on the assumption that all patients without follow up data (n=49) actually did not have tuberculosis (i.e., were true negative), hence n=551. rEBUS, radial endobronchial ultrasound; PPLs, peripheral pulmonary lesions; PPV, positive predictive value; NPV, negative predictive value; CI, confidence interval.

Table S7 Factors associated with better diagnostic yield

Variables	Conclusive (%)	P value
Gender		0.029
Male	76.0	
Female	83.9	
Airway generation		0.348
Less than 5 airway generation	84.9	
5 airway generation or more	80.9	
Target location		0.340
Upper lobe	80.2	
Non upper lobe	76.8	
Target size (cm)		0.473
Less than 2 cm	76.2	
2 cm or more	79.4	
Bronchus sign		<0.001
Bronchus sign A	82.3	
Non bronchus sign A	59.8	
Target nature		0.694
Solid	78.4	
Non-solid	80.0	
Target orientation		<0.001
Concentric	89.8	
Non-concentric	69.3	
Access		0.541
Natural airway	77.9	
Artificial airway	80.1	
Sedation		0.765
Conscious sedation	78.3	
Total intravenous anesthesia	79.4	
Fluoroscopy		0.549
With fluoroscopy	78.3	
Without fluoroscopy	81.1	
Biopsy methods		0.170
Conventional sampling	77.4	
Cryobiopsy	83.0	
Bronchoscope		0.063
Conventional bronchoscope	77.6	
Thin bronchoscope	88.1	
Guide sheath		0.114
With guide sheath	77.5	
Without guide sheath	84.5	