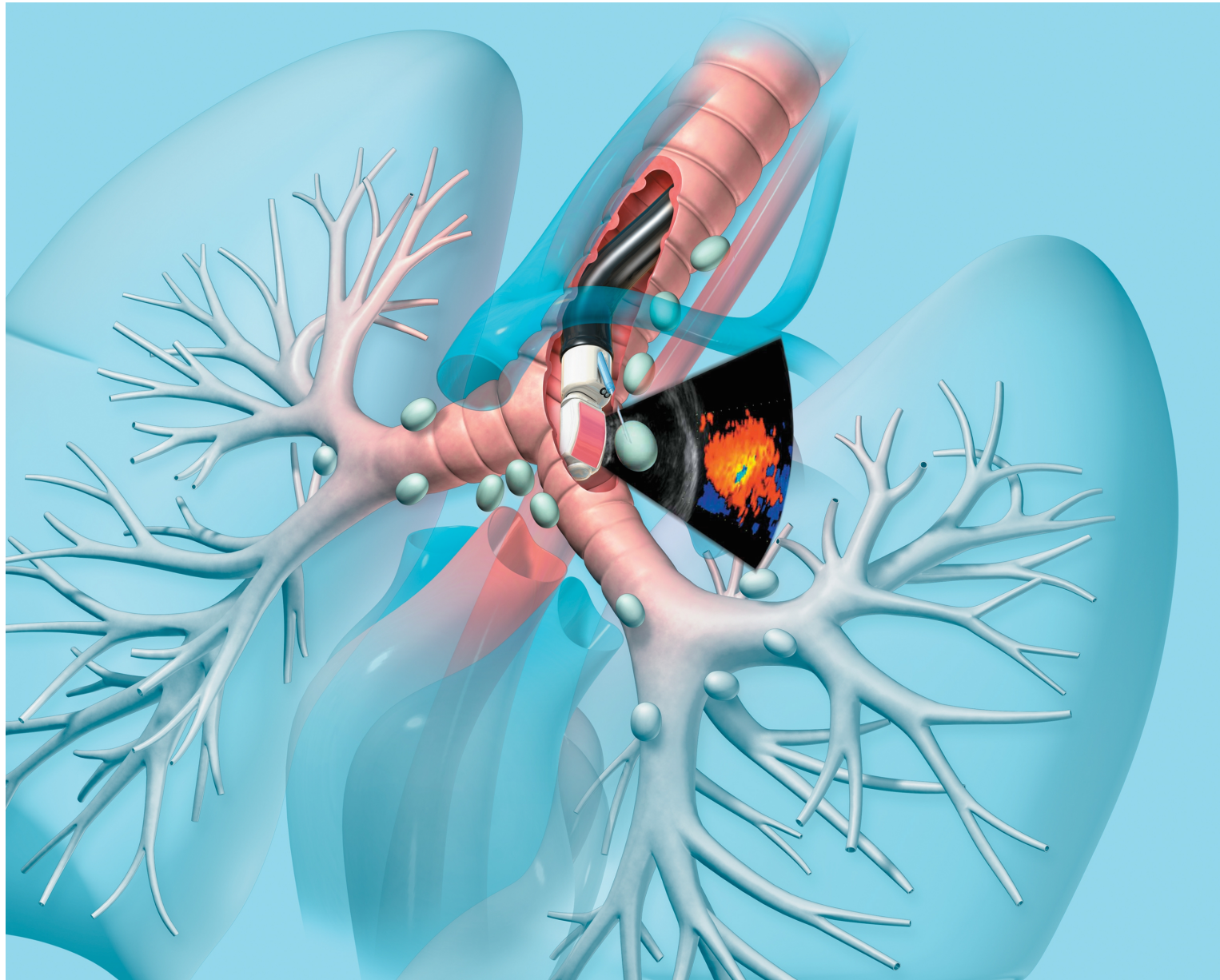
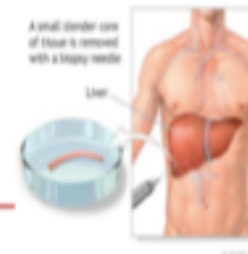
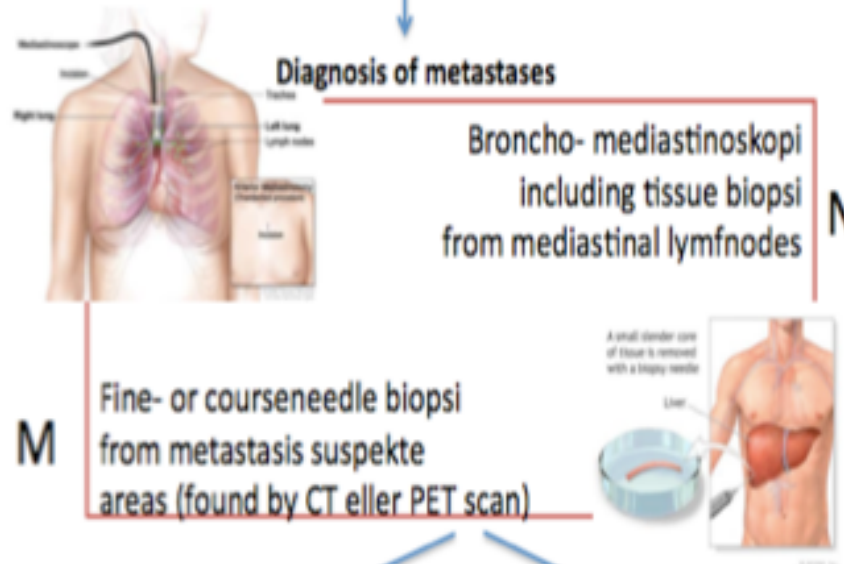
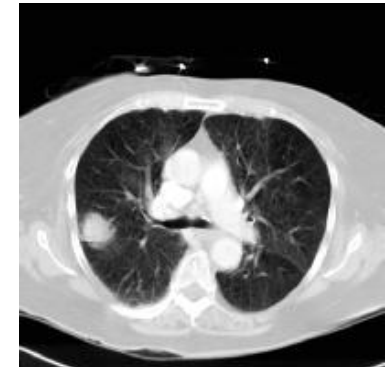
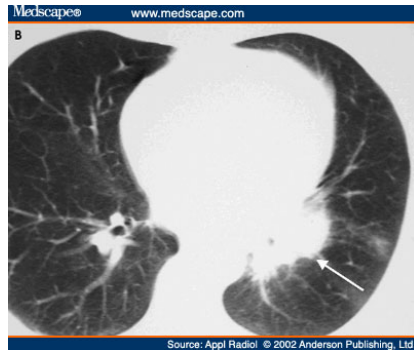
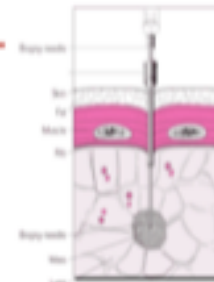
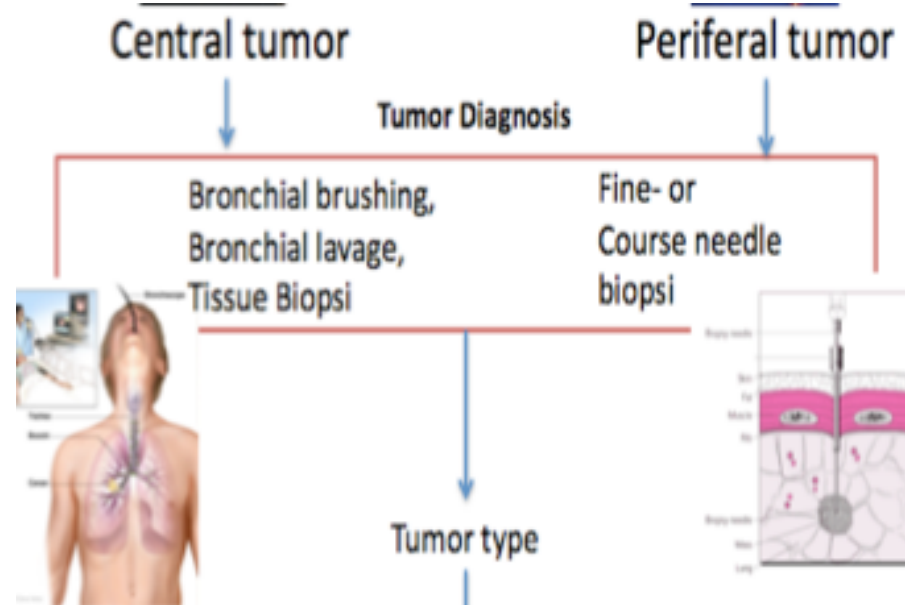


# EndoBronchial ultrasound EBUS



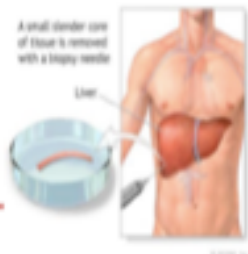
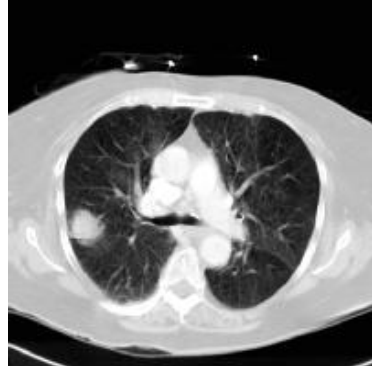
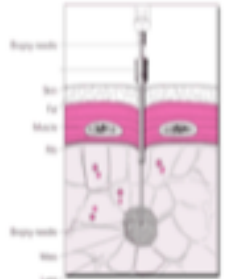
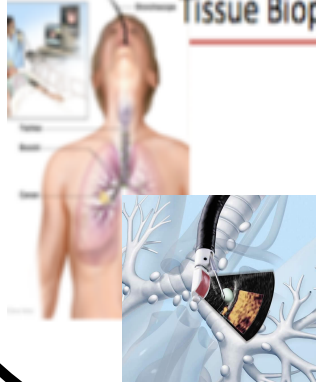
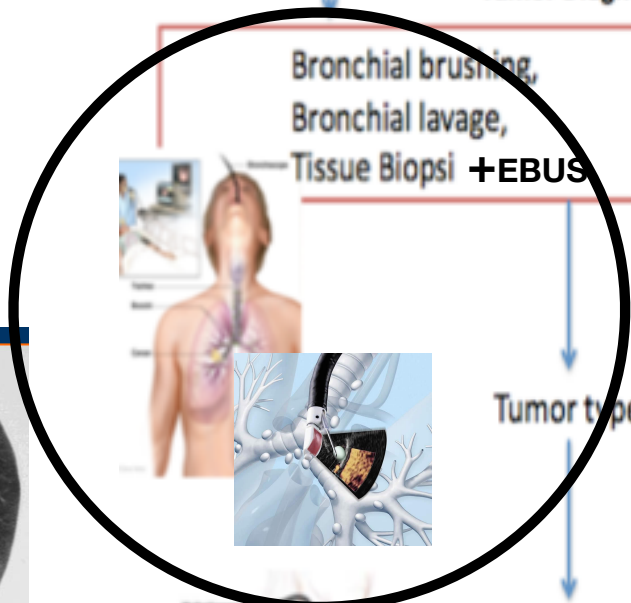
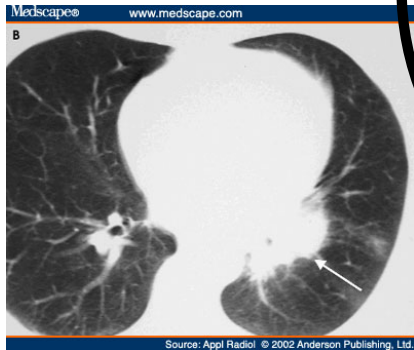
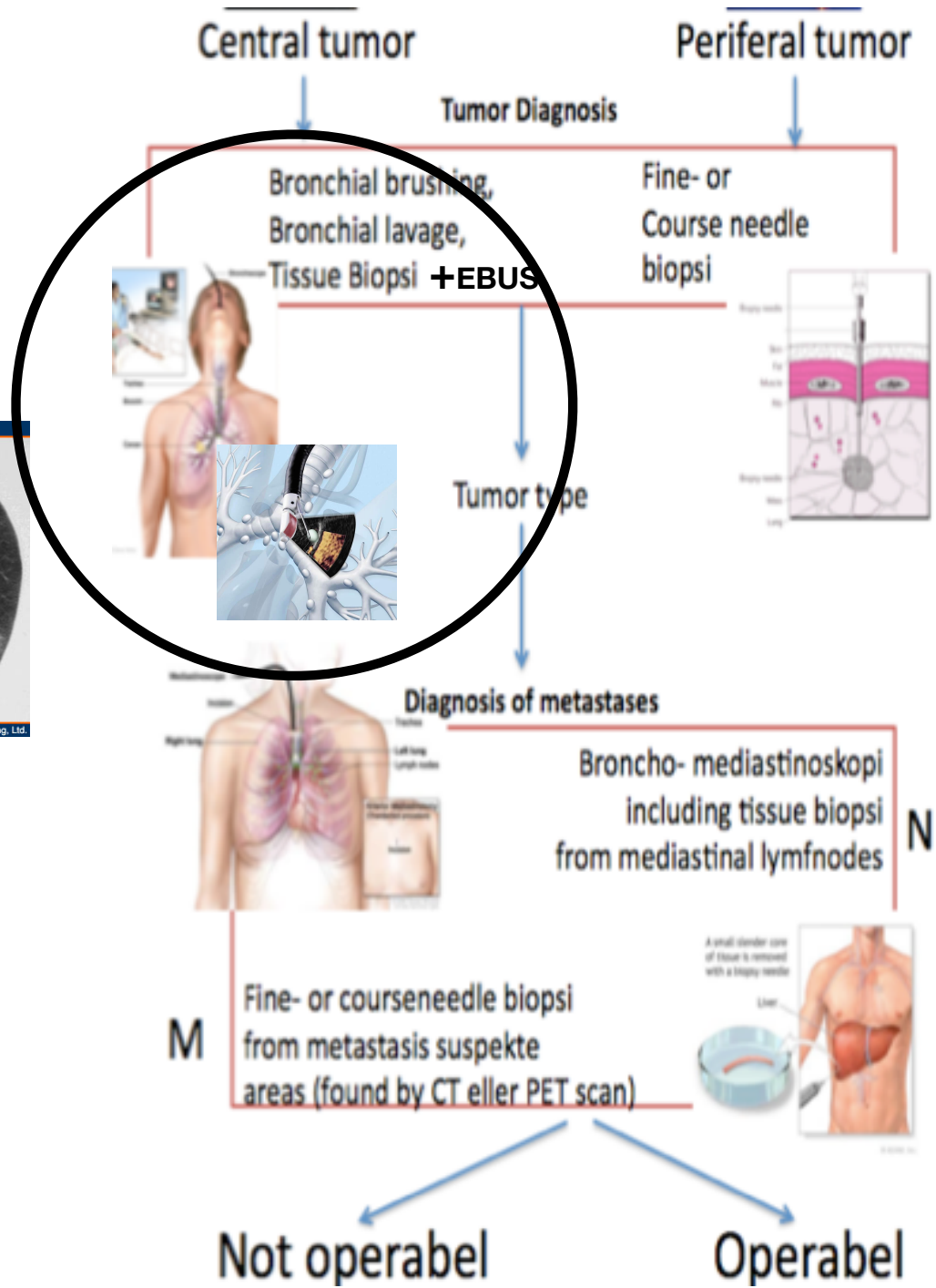
# EndoBronchial ultrasound EBUS



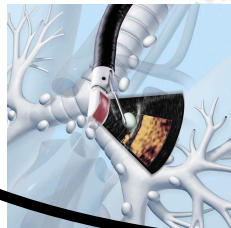
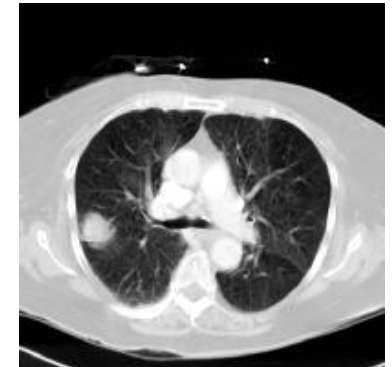
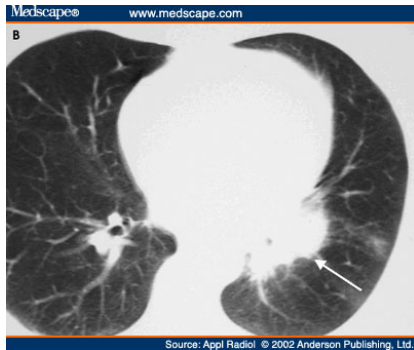
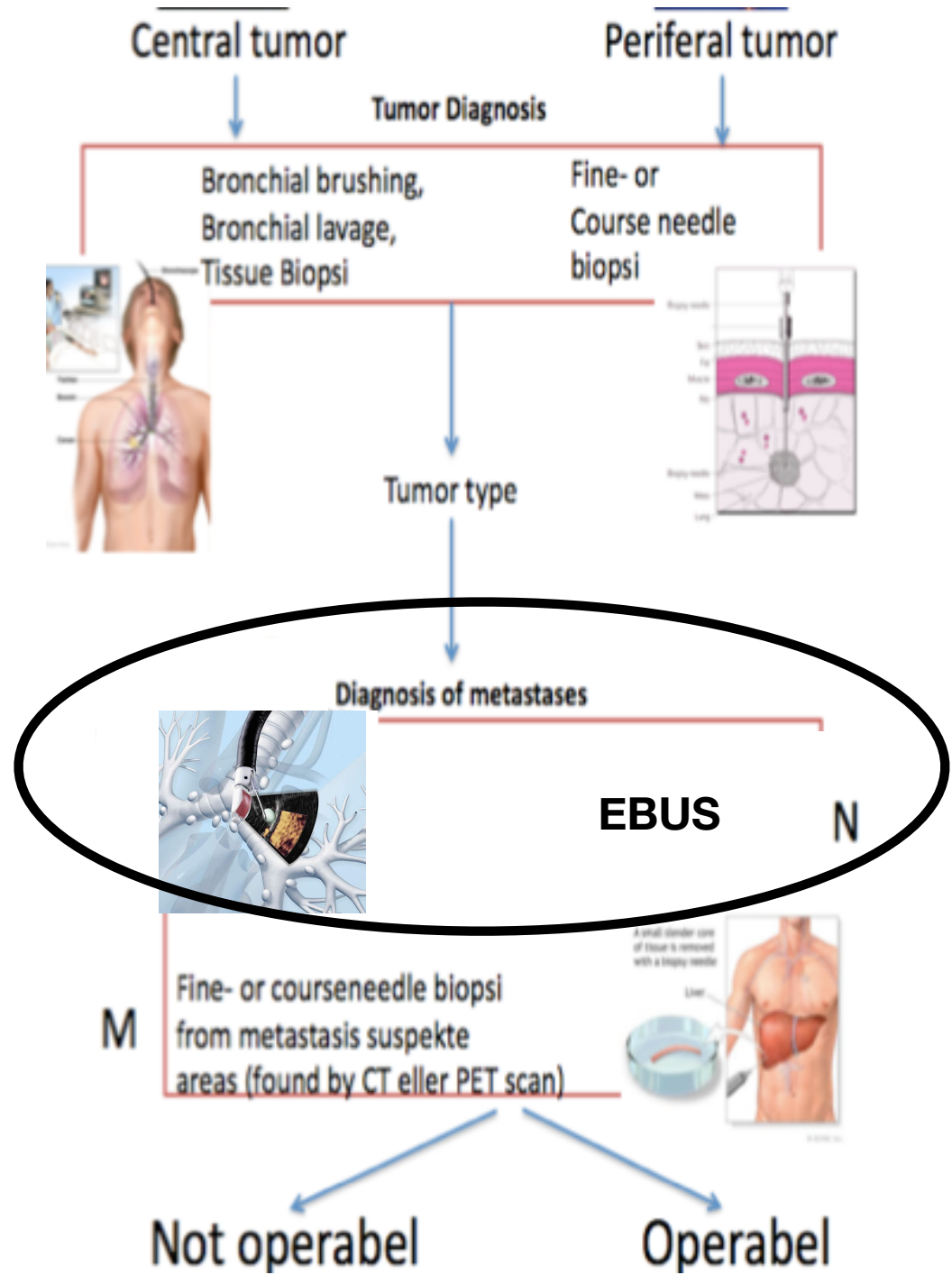
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Operabel

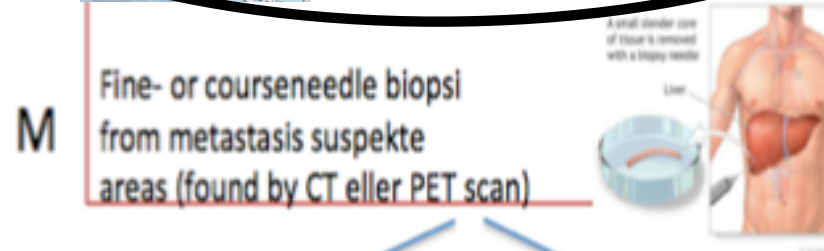
# EndoBronchial ultrasound EBUS



# EndoBronchial ultrasound EBUS



**EBUS** **N**



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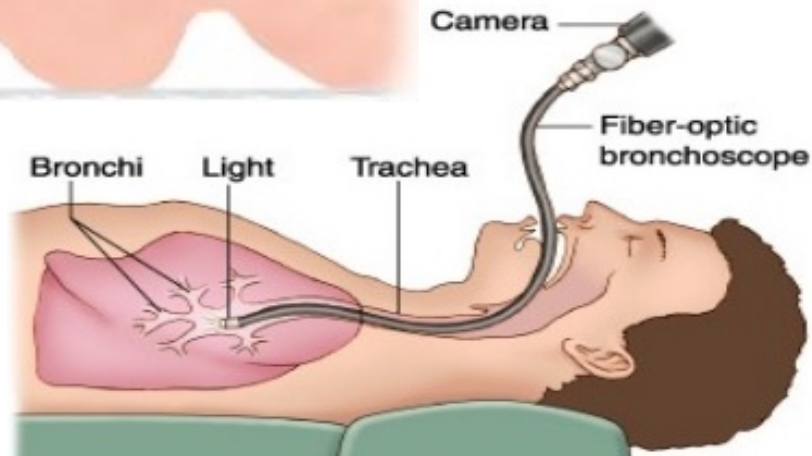
**Operabel**

# EndoBronchial ultrasound EBUS

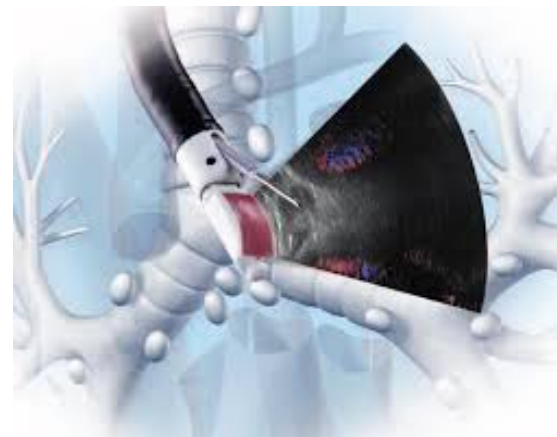
## Historie



**Fiber-optic Bronchoscopy**  
**Shigeto Ikeda**  
**1966**



**EBUS**  
**1992**

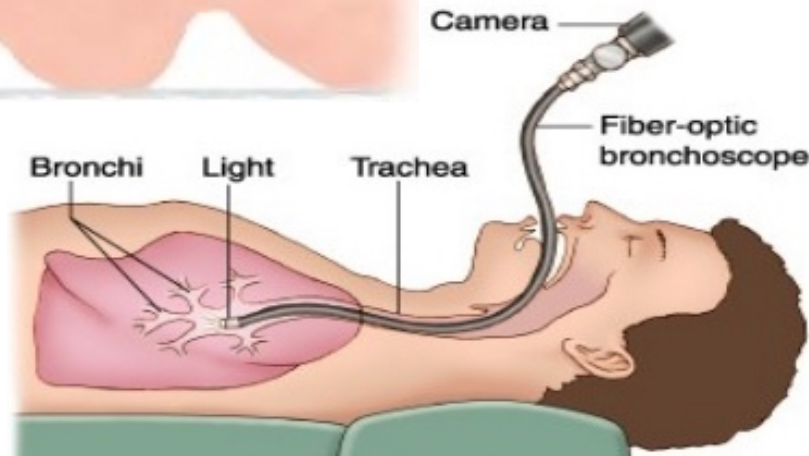
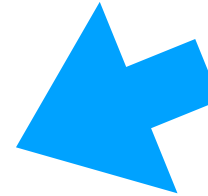


# EndoBronchial ultrasound EBUS

## Historie

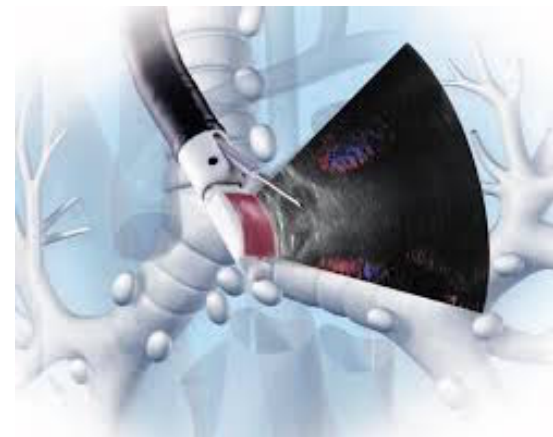


**Rigid Bronchoscopy**  
**Gustav Killian**  
**1897**



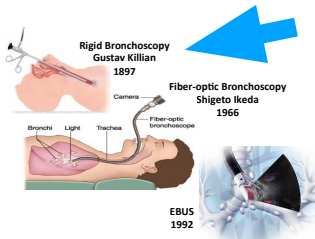
**Fiber-optic Bronchoscopy**  
**Shigeto Ikeda**  
**1966**

**EBUS**  
**1992**



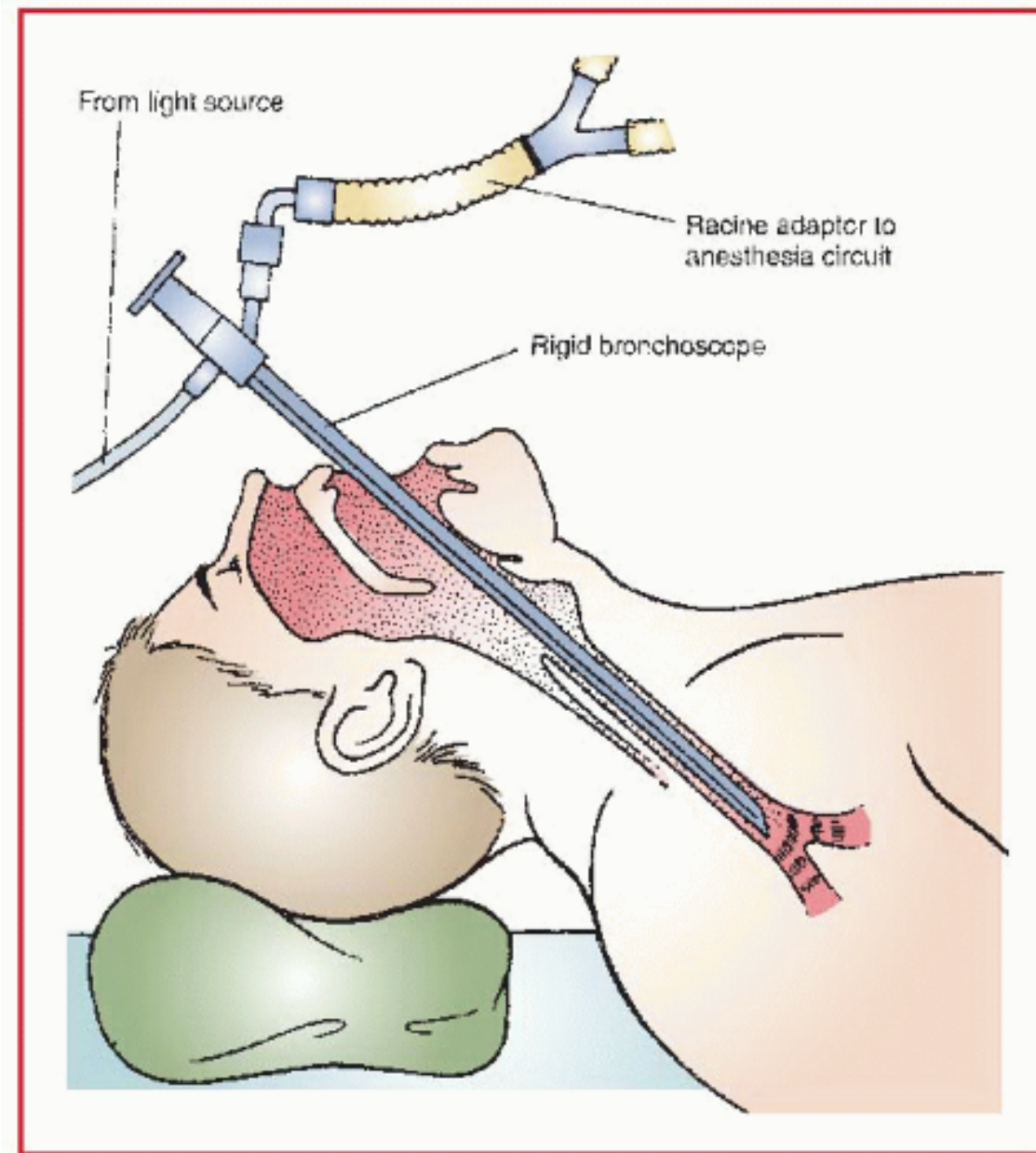
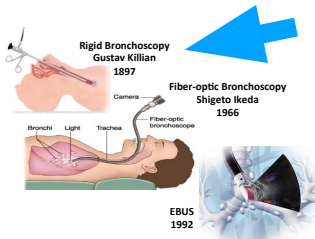
# EndoBronchial ultrasound EBUS

## Historie



# EndoBronchial ultrasound EBUS

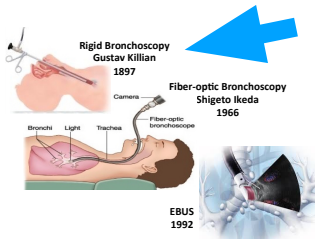
## Historie



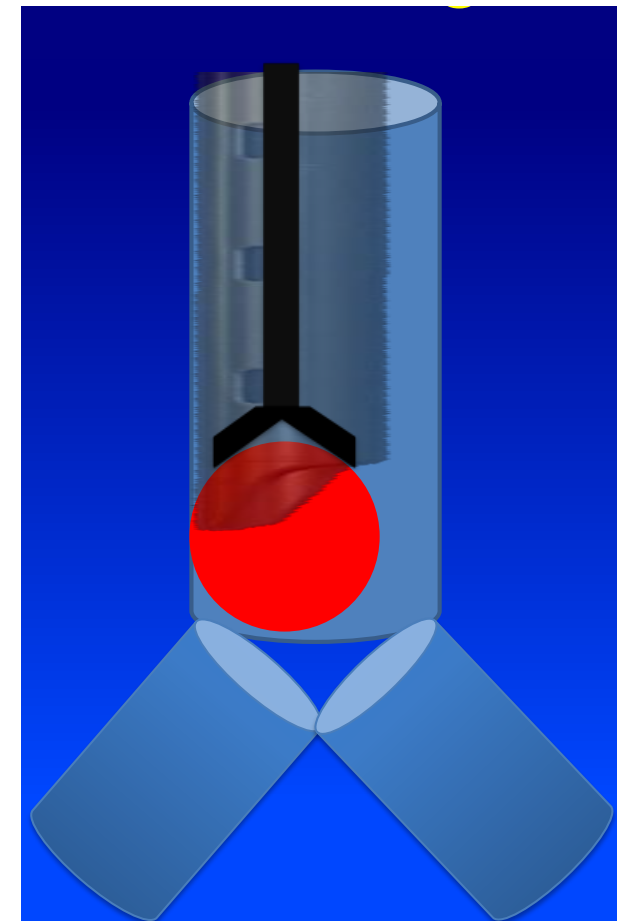


# EndoBronchial ultrasound EBUS

## Historie



Optik muliggør undersøgelser,  
Værktøj muliggør bioptering

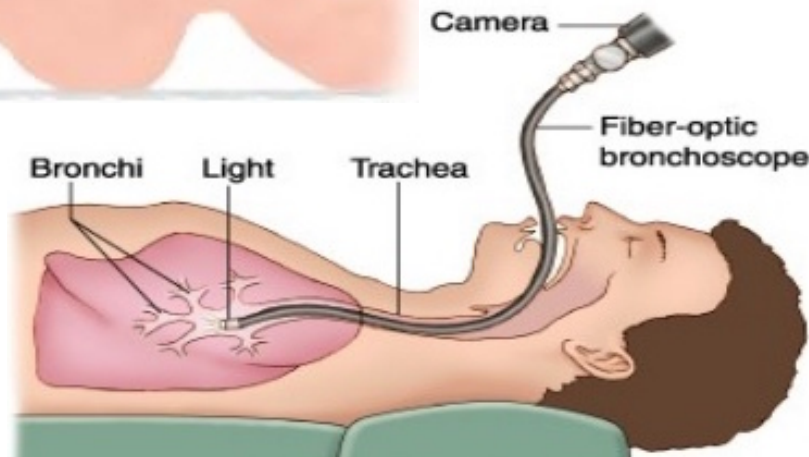


# EndoBronchial ultrasound EBUS

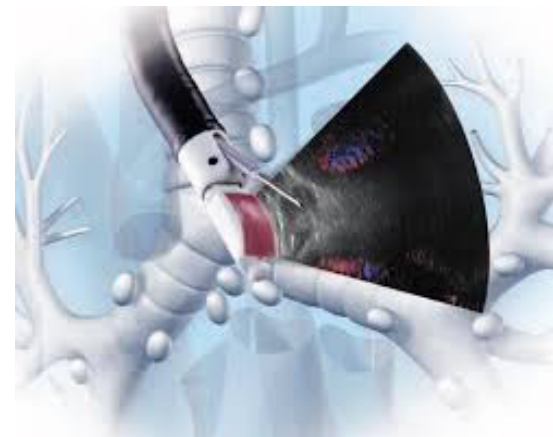
## Historie



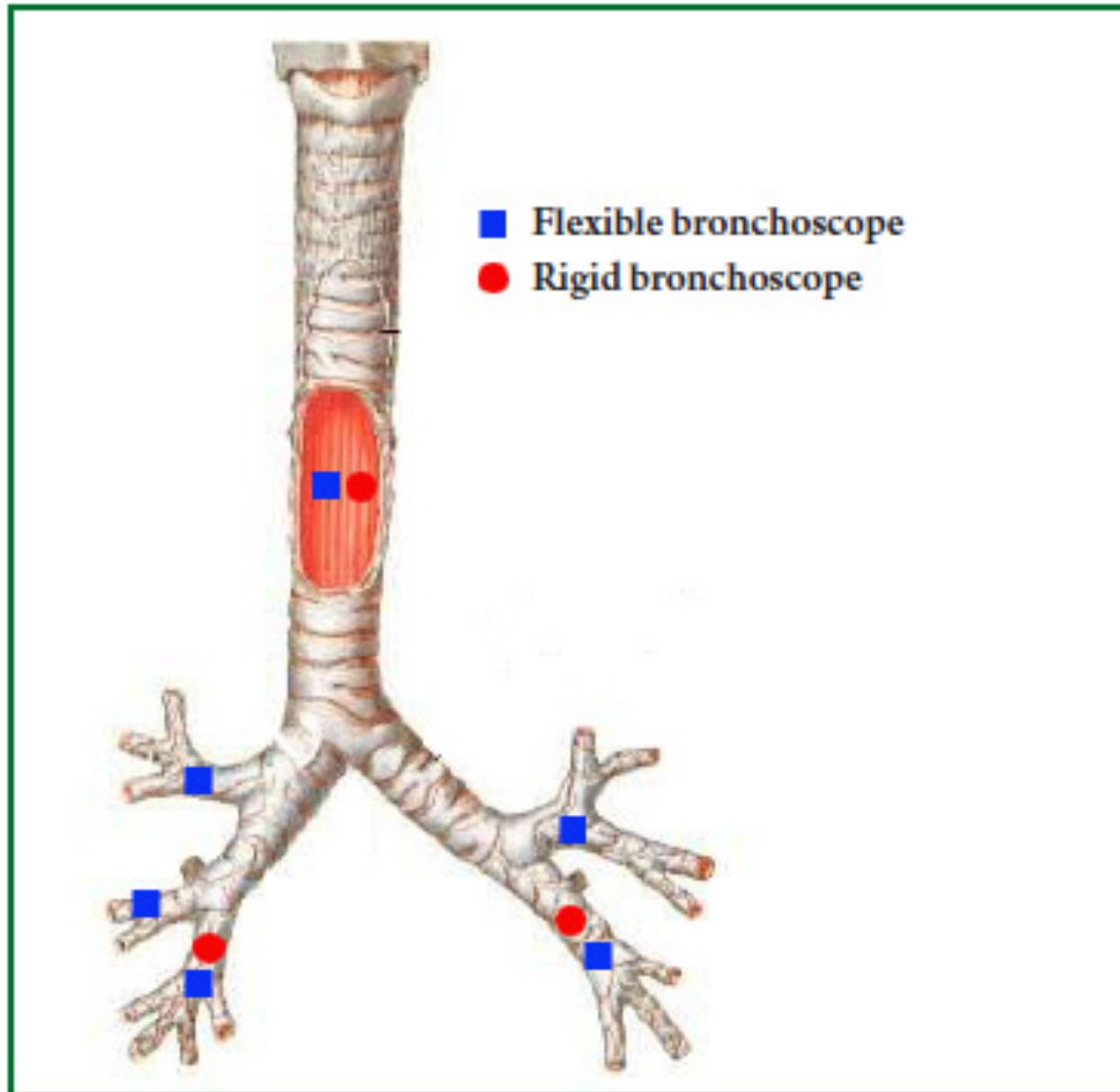
**Fiber-optic Bronchoscopy**  
**Shigeto Ikeda**  
**1966**



**EBUS**  
**1992**

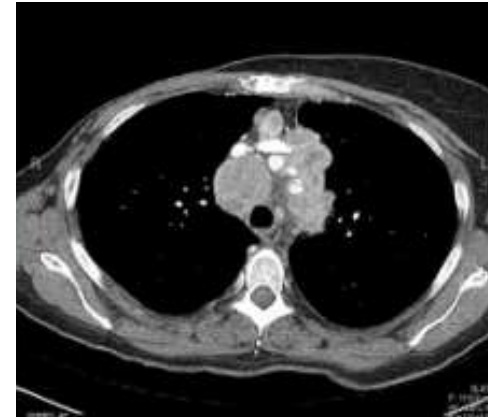


# EndoBronchial ultrasound EBUS



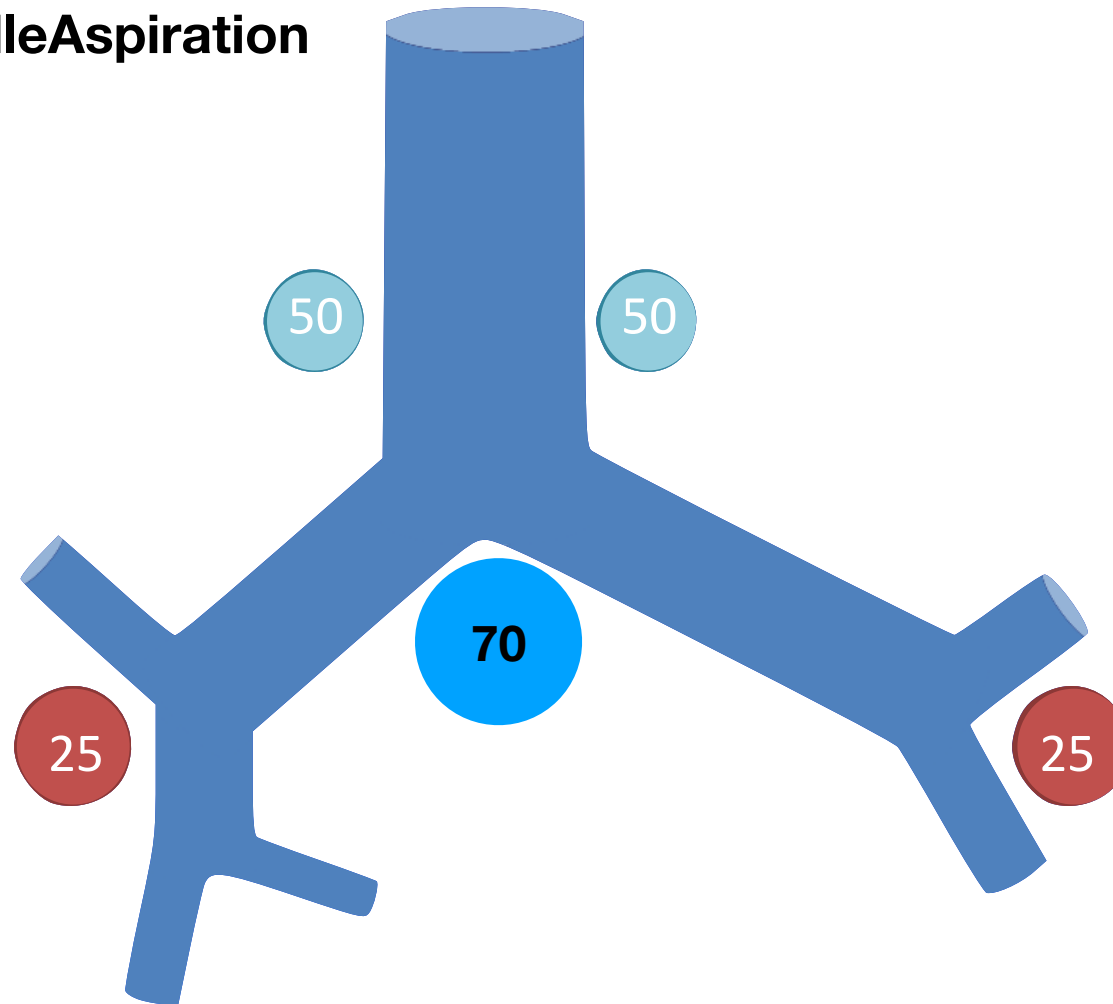
# EndoBronchial ultrasound EBUS

TBNA



# EndoBronchial ultrasound EBUS

TransBronchialNeedleAspiration  
TBNA



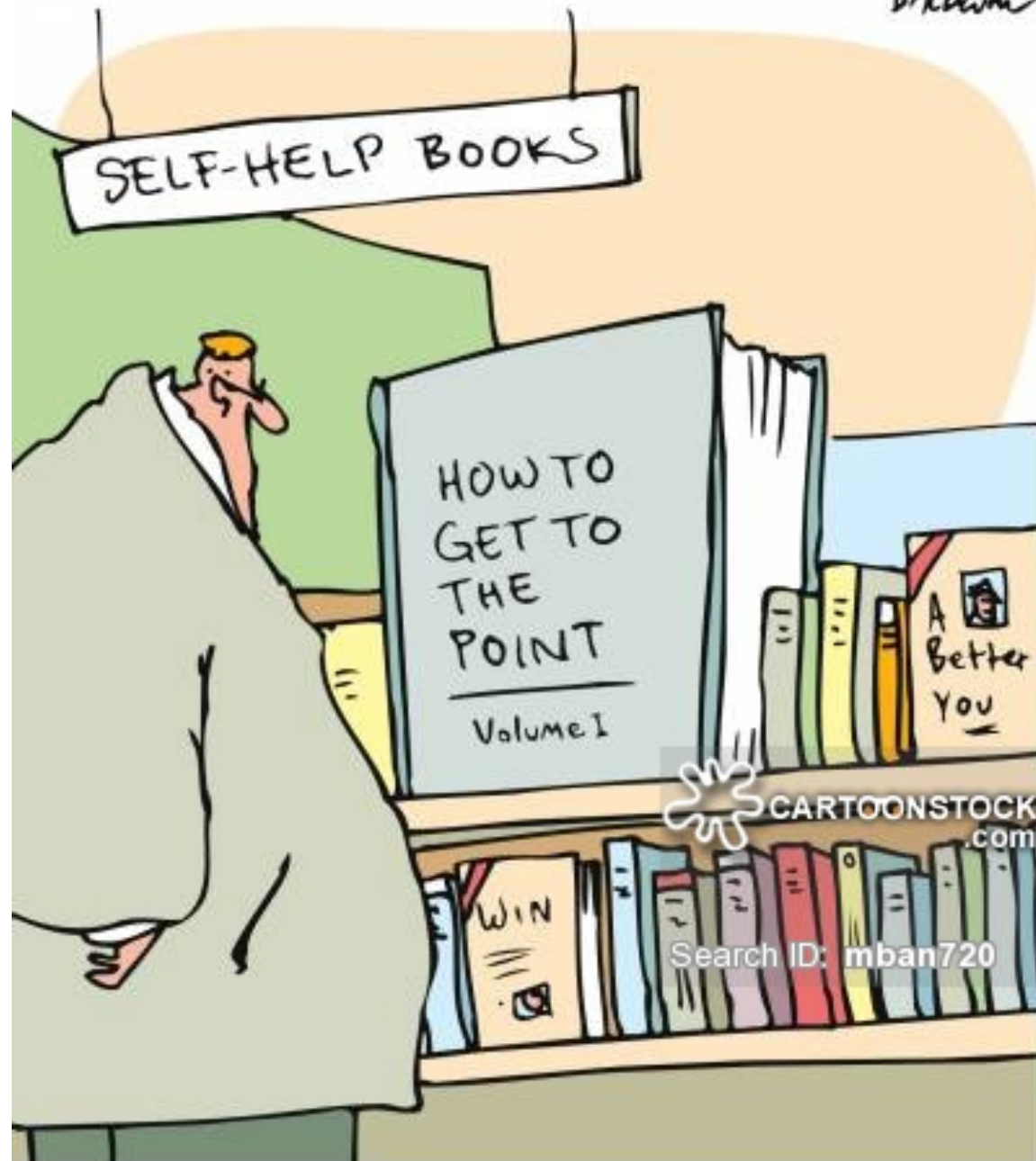
<sup>1</sup>Holty et al. Thorax 2005;60:949-955

<sup>2</sup>Detterbeck et al. Chest 2007;132:202S-220S

# EndoBronchial ultrasound EBUS

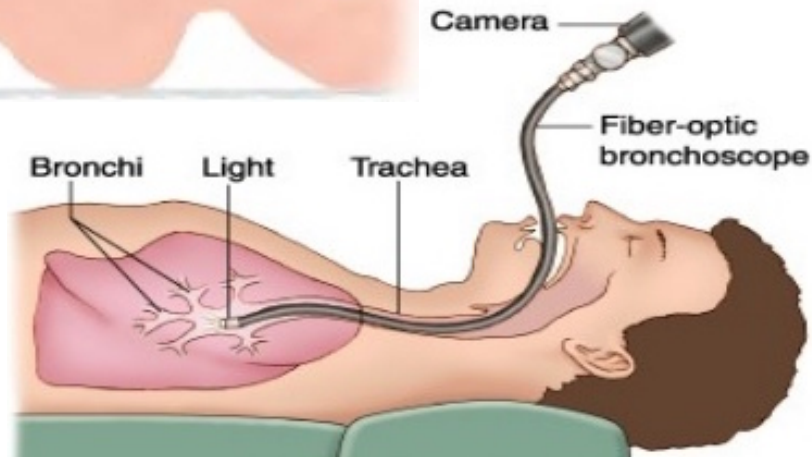
© Mike Baldwin / Corridor

Baldwin

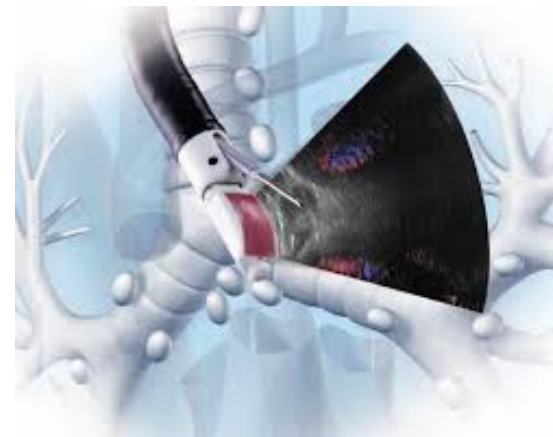


# EndoBronchial ultrasound EBUS

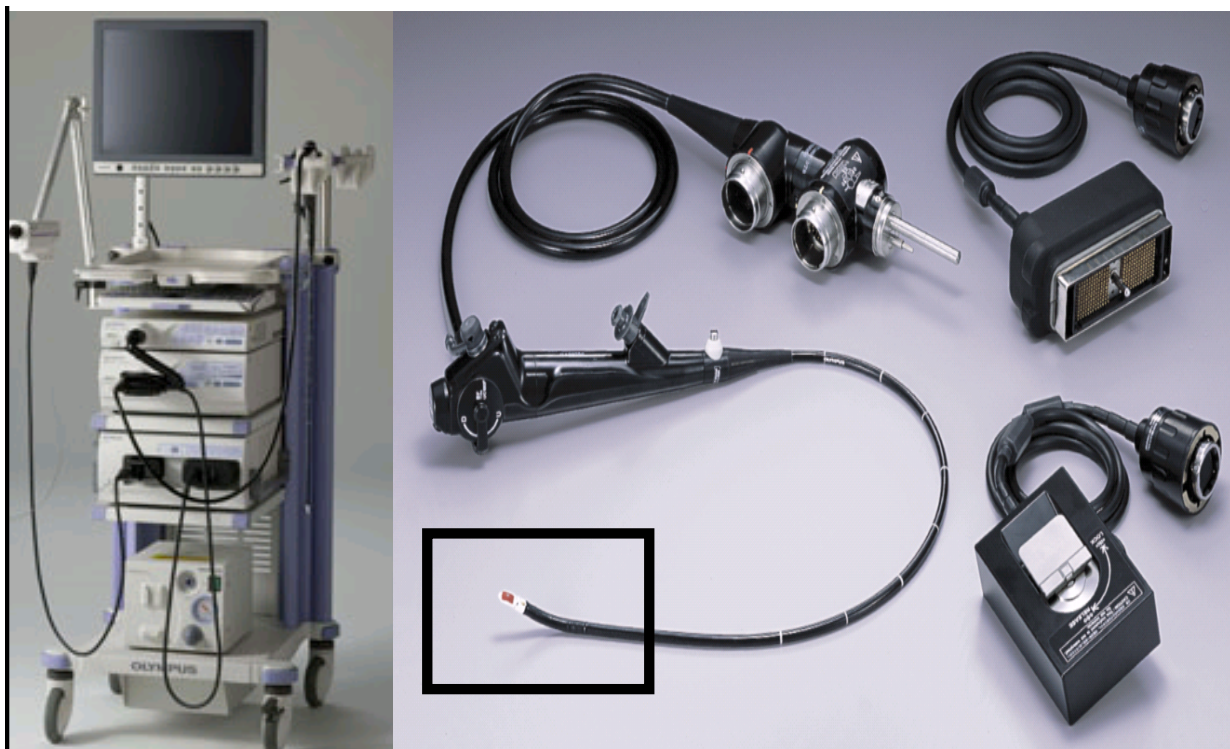
## Historie



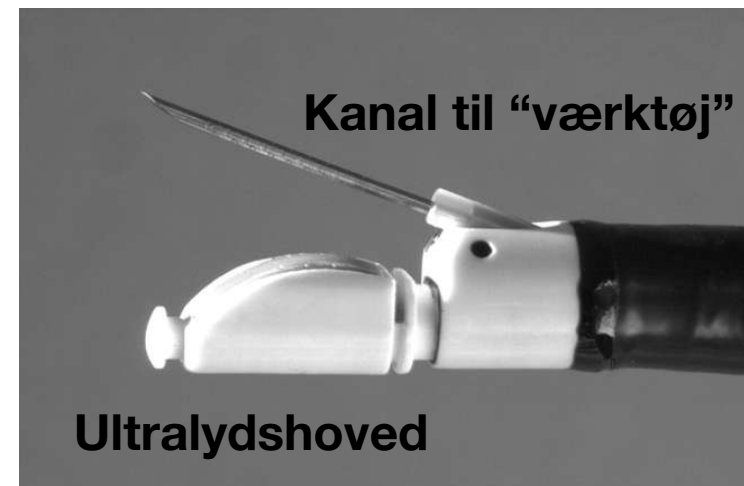
EBUS  
1992



# EndoBronchial ultrasound EBUS



**Lineær probe**

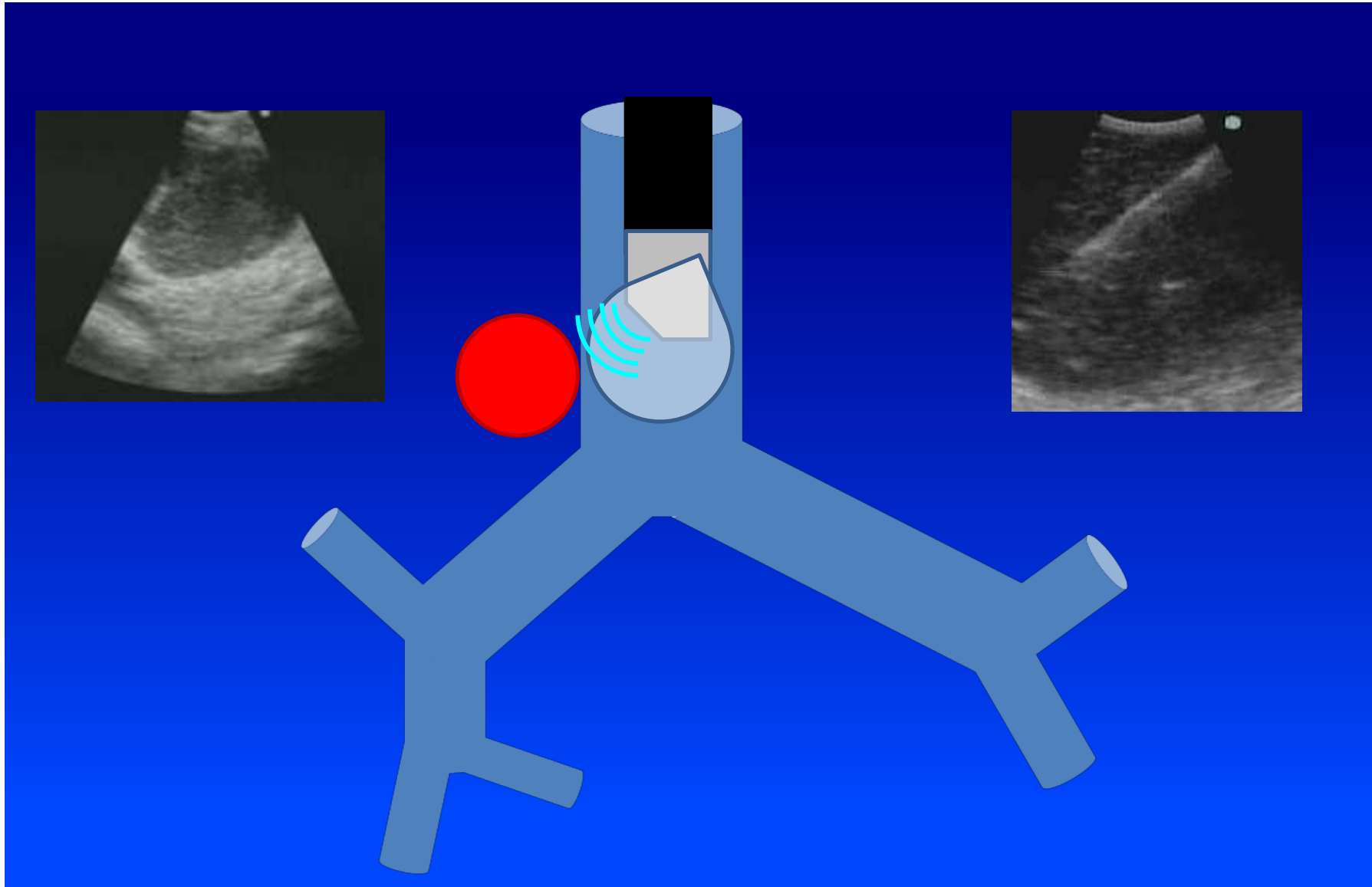


**Kanal til "værktøj"**

**Ultralydshoved**



# EndoBronchial ultrasound EBUS



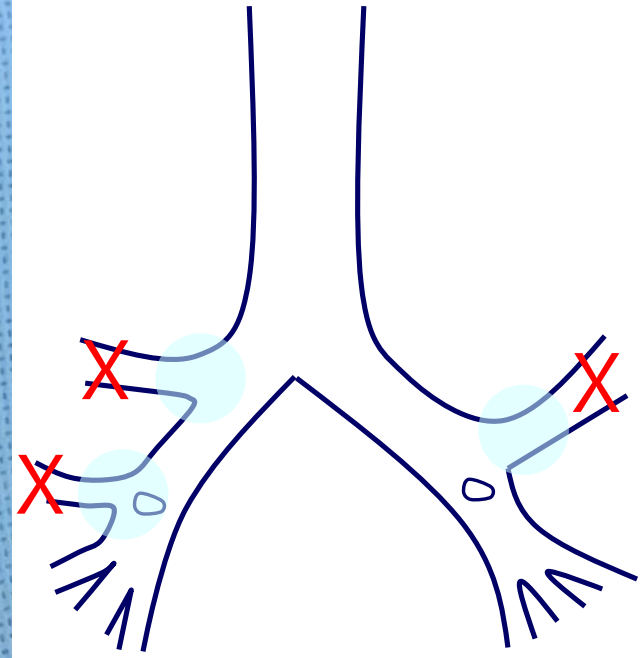
# EndoBronchial ultrasound EBUS



Without needle



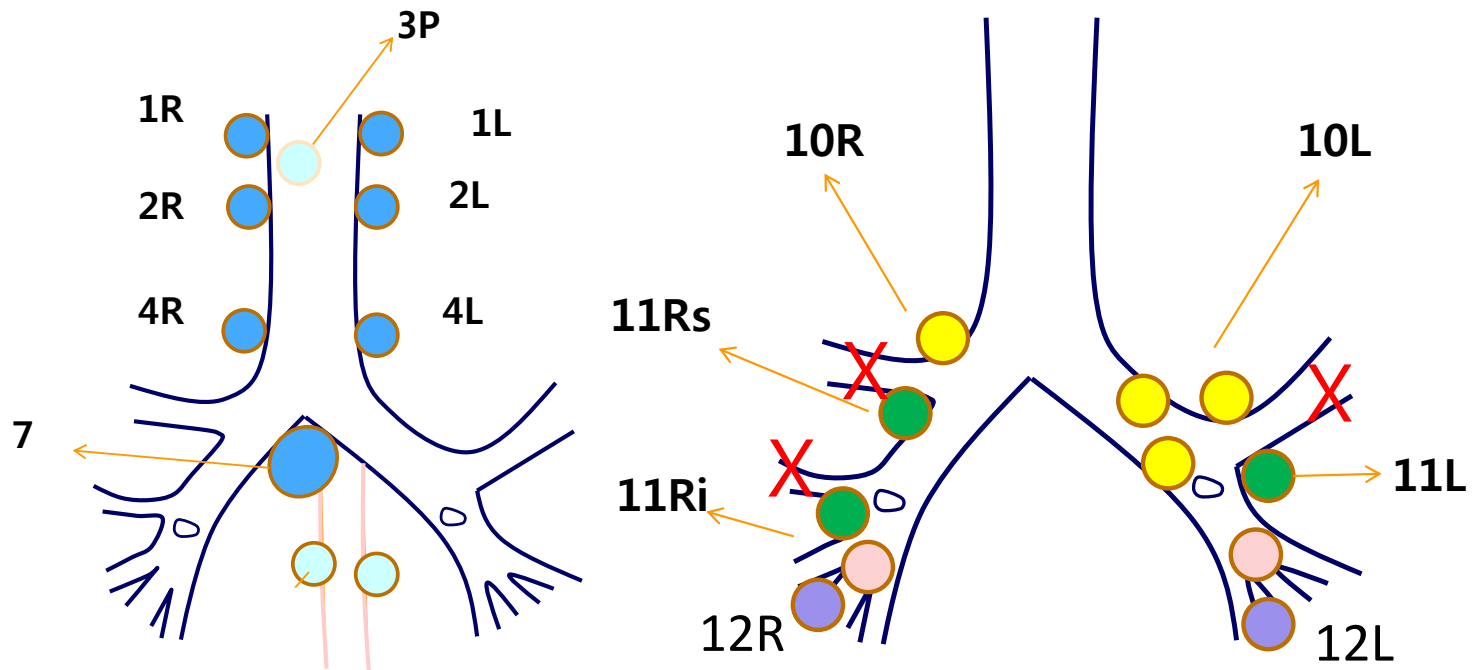
With needle



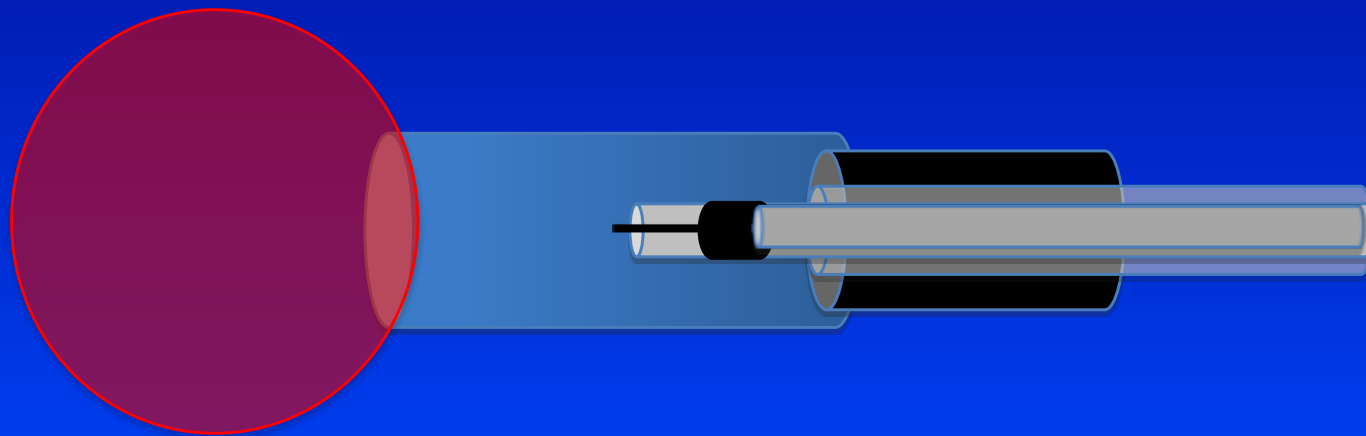
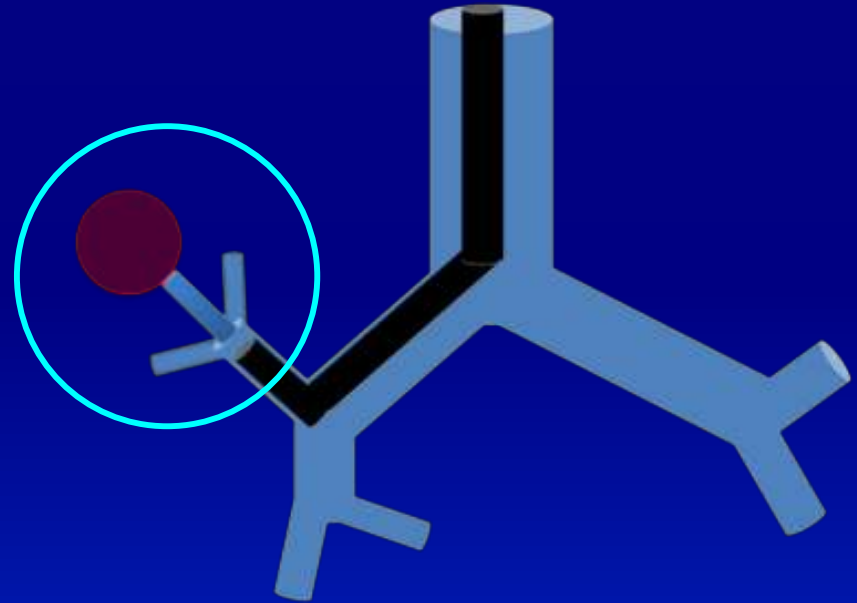
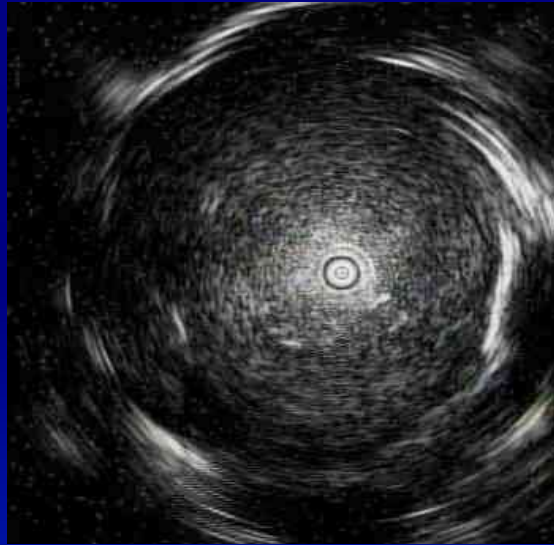
# EndoBronchial ultrasound EBUS

## Linear Probe EBUS

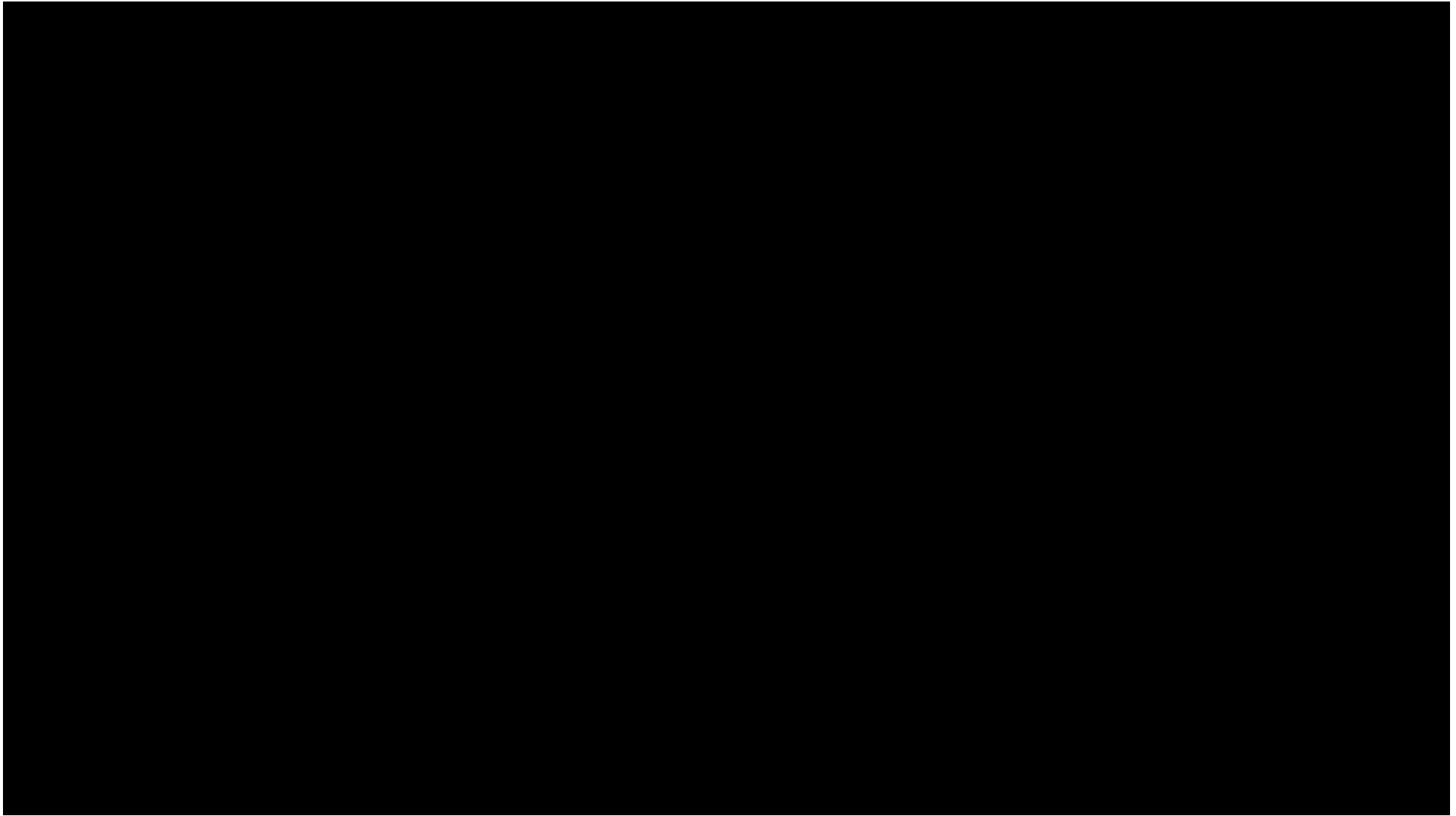
- Access to LN: 1, 2, 4, 7, 10, 11, 12



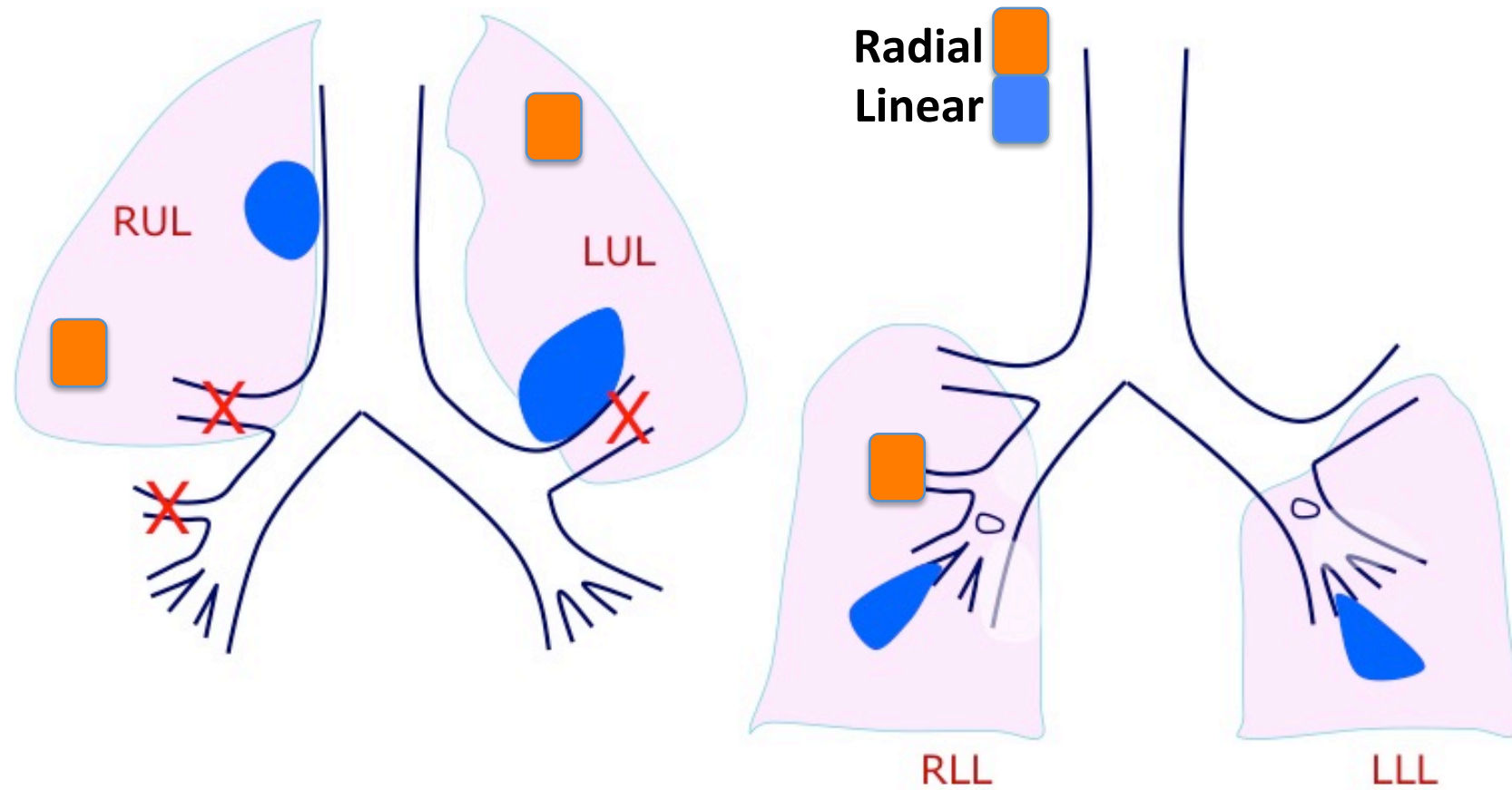
# EndoBronchial ultrasound EBUS



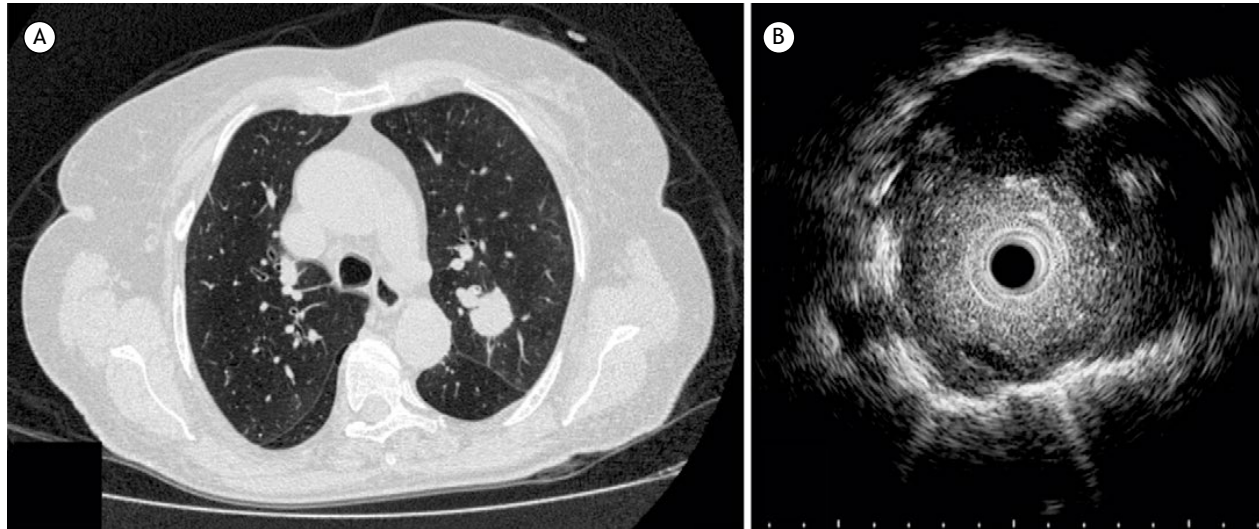
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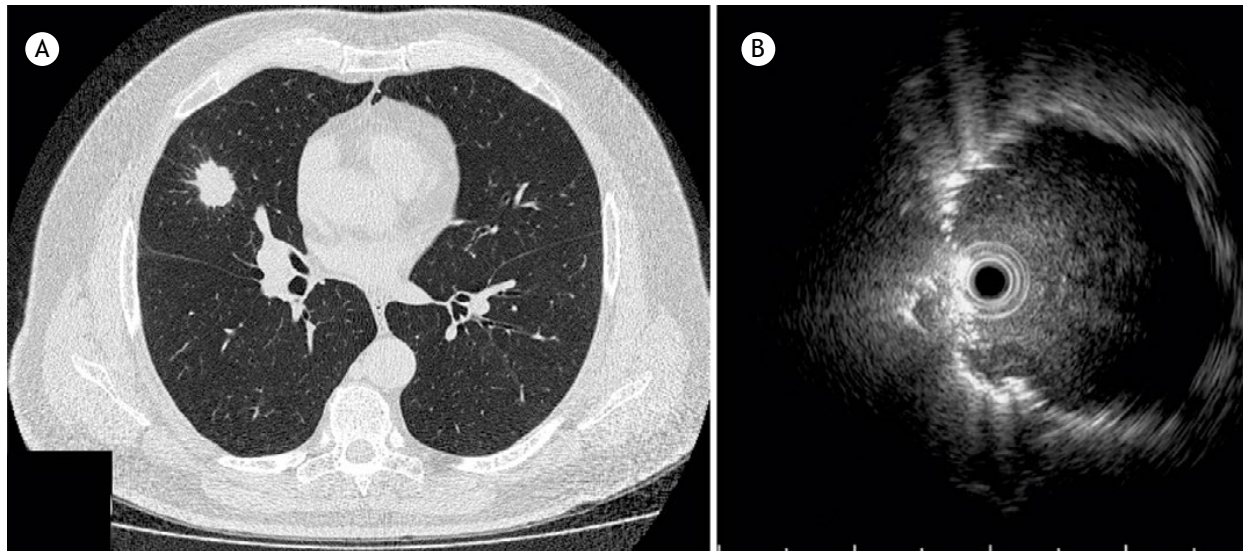
# EndoBronchial ultrasound EBUS



# EndoBronchial ultrasound EBUS

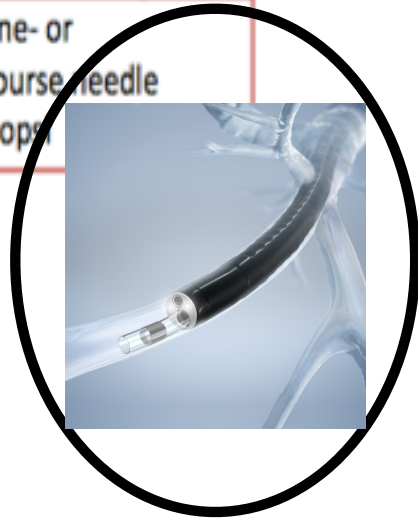
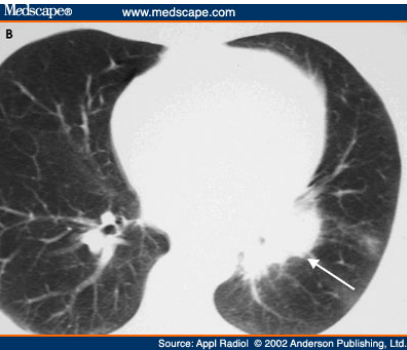
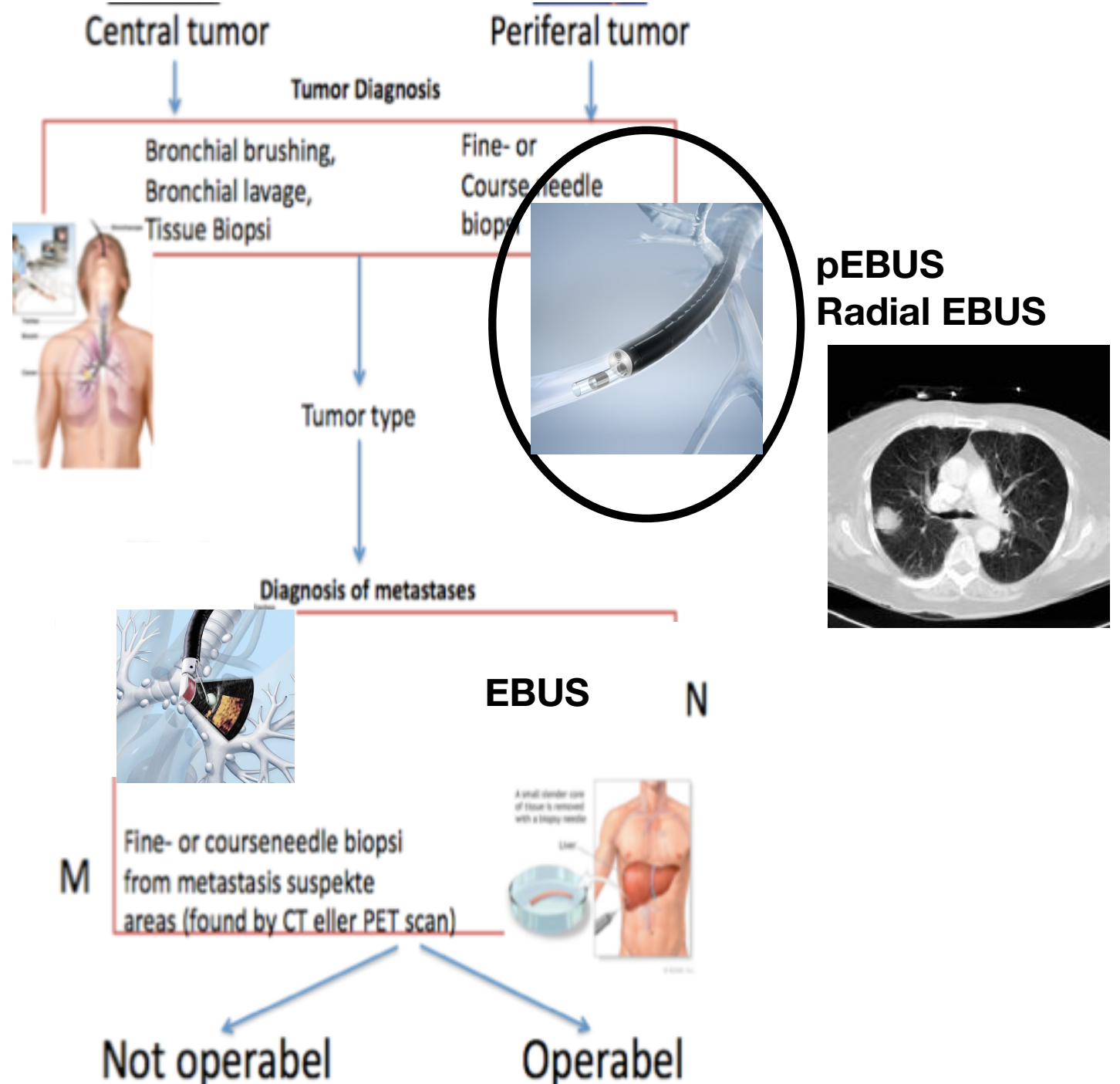


**Figure 2.** Comparison between CT and radial-probe EBUS: a) CT of the chest, showing a 2.4 cm nodule in the left upper lobe; and (b) radial-probe EBUS image with well-defined, echogenic borders (probe positioned within the lesion). The final diagnosis in this case was non-small cell lung cancer (squamous cell lung carcinoma).

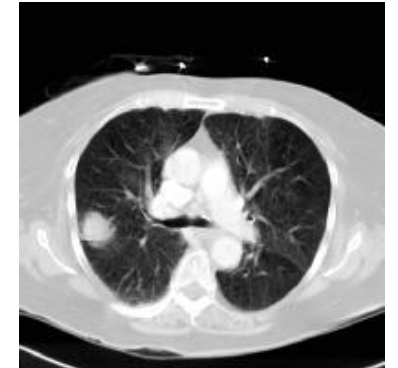


**Figure 3.** Comparison between CT and radial-probe EBUS: a) CT of the chest, showing a 2.5 cm nodule in the middle lobe; and (b) radial-probe EBUS image with the probe positioned adjacent to the lesion. The final diagnosis in this case was non-small cell lung cancer (adenocarcinoma).

# EndoBronchial ultrasound EBUS



pEBUS  
Radial EBUS



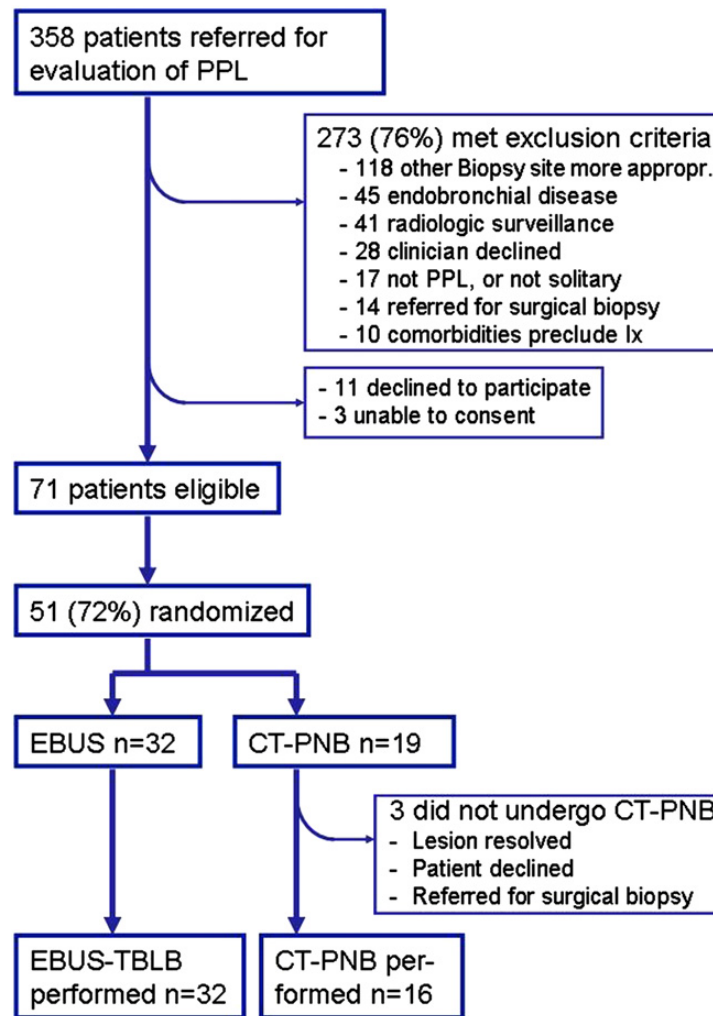


# EndoBronchial ultrasound EBUS

## Comparative effectiveness of radial probe endobronchial ultrasound versus CT-guided needle biopsy for evaluation of peripheral pulmonary lesions: A randomized pragmatic trial

Daniel P. Steinfort <sup>a,b,\*</sup>, Janette Vincent <sup>c</sup>, Stefan Heinze <sup>c</sup>, Phillip Antippa <sup>d</sup>,  
Louis B. Irving <sup>a</sup>

# EndoBronchial ultrasound EBUS



**Figure 1** Flow diagram illustrating progression of all patients referred for evaluation of PPL to our multidisciplinary service during the study period.

# EndoBronchial ultrasound EBUS

**Table 1** Demographic and clinicoradiologic data for randomized patients.

	EBUS-TBLB	CT-PNB	<i>p</i> -value
Subjects	32	19	
Age (mean + SD)	71 + 11	67 + 12	0.193
Gender (F/M)	16/16	7/12	0.36
Size <sup>a</sup> (cm)			
Mean	2.8 + 1.4	4.1 + 2.1	0.026
≤2 cm	12	4	
>2 cm	20	12	
Lobar position <sup>a</sup>			
RUL	9	6	NS
RML	2	0	
RLL	5	5	
LUL	10	2	
LLL	6	3	
Distance <sup>a</sup> (cm)			
from pleura	3.2 + 2.5	1.6 + 1.7	0.017
from hilum	4.5 + 2.5	4.9 + 2.5	0.536
pleural contact	4	5	0.138

<sup>a</sup> of patients undergoing biopsy (*n* = 16 for CT-PNB).

# EndoBronchial ultrasound EBUS

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<sup>a</sup> of patients undergoing biopsy (*n* = 16 for CT-PNB).

# EndoBronchial ultrasound EBUS

**Table 3** Diagnostic performance for detection of lung cancer, and complication rates for the two study groups.

	EBUS-TBLB	CT-PNB	<i>p</i> -value
Diagnostic accuracy % (95%CI)	87.5% (71–96)	93.3% (68–99)	1.0
Sensitivity <sup>a</sup> % (95%CI)	86% (68–95)	92% (62–99)	1.0
Complications			
Overall	1 (3%)	4 (27%)	0.03
pneumothorax	1 (3%)	3 (20%)	
admission	0 (0%)	1 (7%)	
ICC	0	0	
deaths	0	0	

<sup>a</sup> sensitivity for the detection of lung cancer.

# EndoBronchial ultrasound EBUS

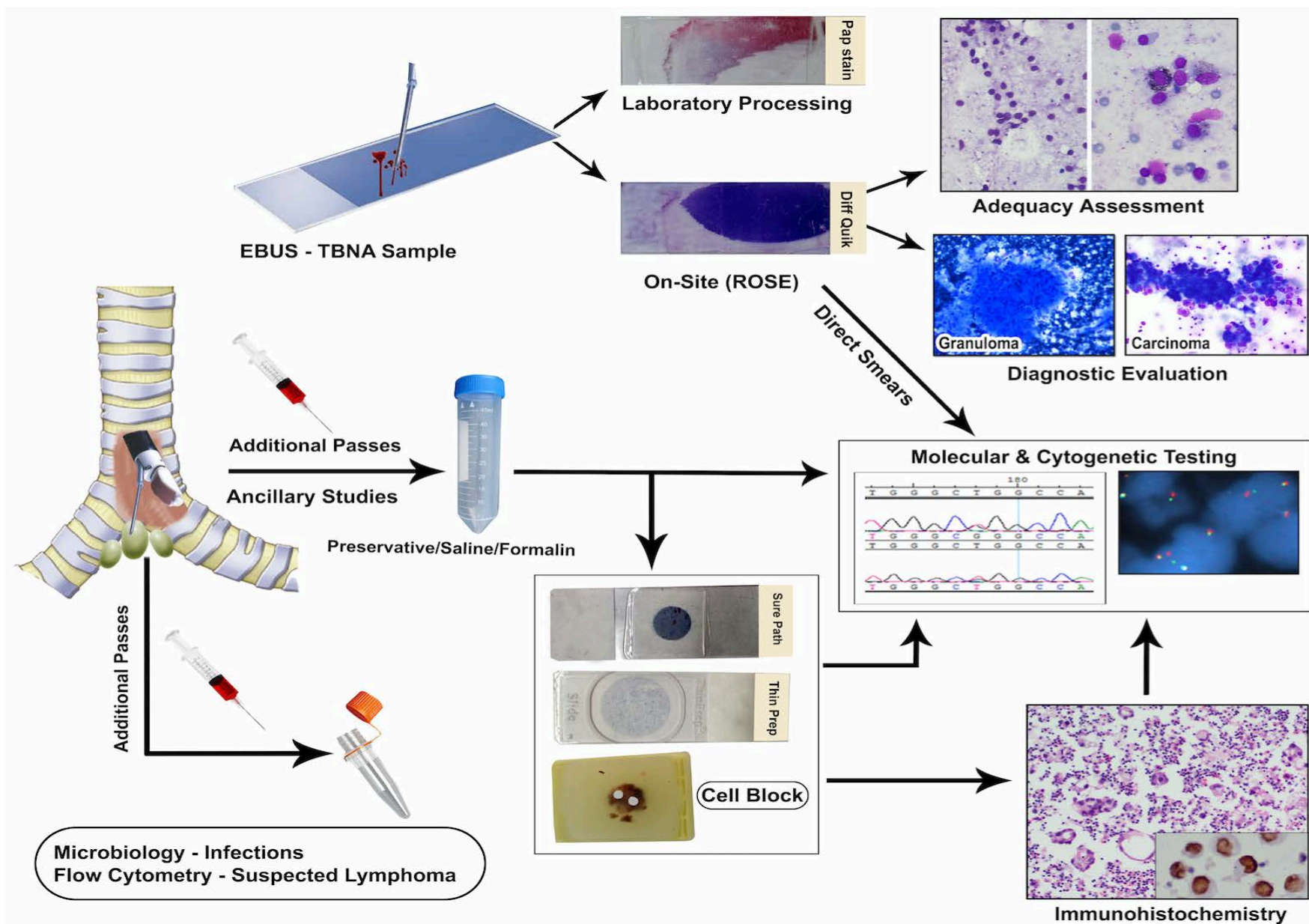
## **Vigtigt**

**Overflade eller dybt i tumor**

**Kvæstning (husk PD-L1)**

**Mængde af materiale (mol. Patologi)**

# EndoBronchial ultrasound EBUS



# EndoBronchial ultrasound EBUS

