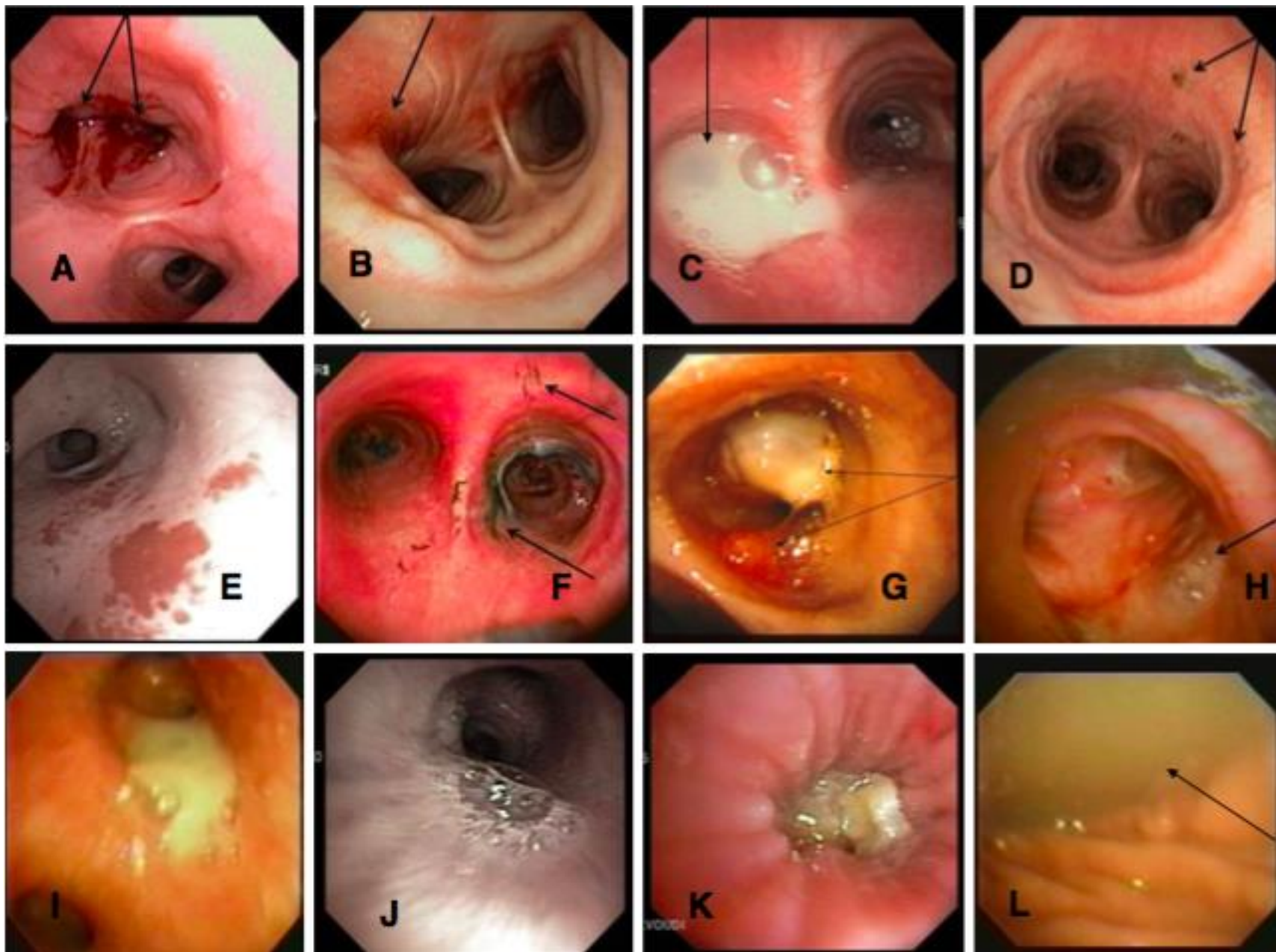
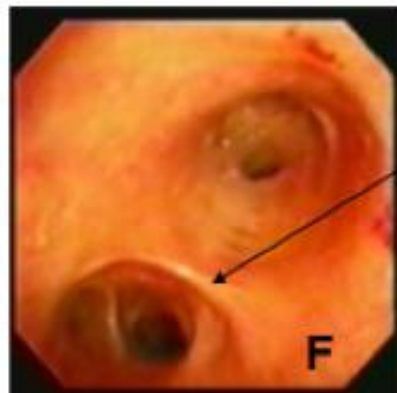
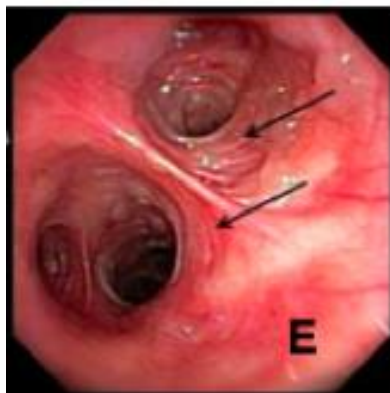
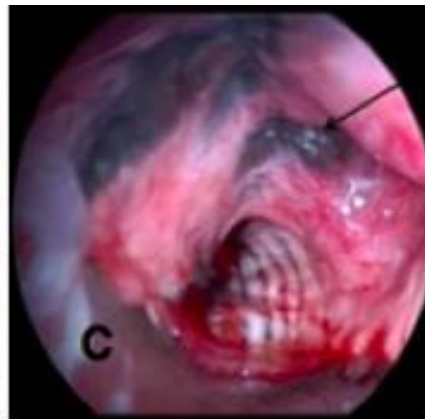
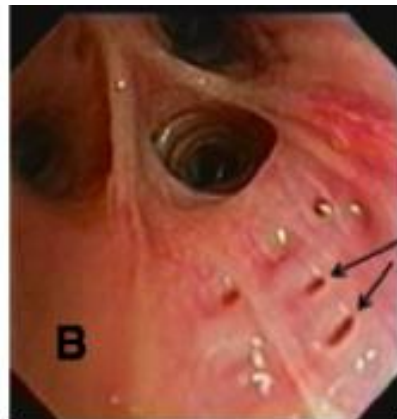
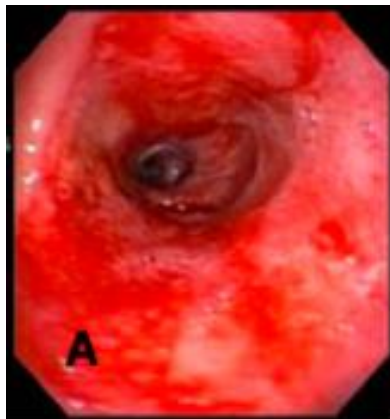
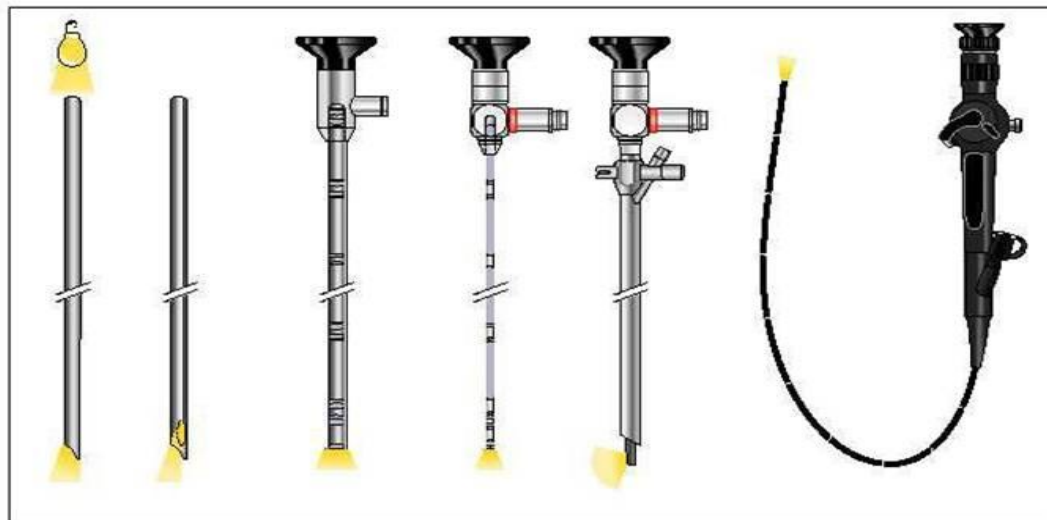
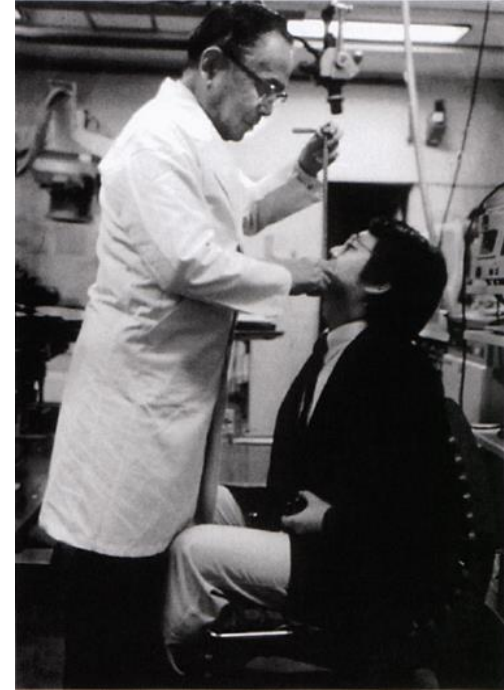


Ενδοσκόπηση

Νικόλαος Ζίας, MD, PhD
Πνευμονολόγος







In progress ...



- Από άκαμπτο σε εύκαμπτο βρογχοσκόπιο
- Από κεντρικές – άμεσα ορατές βλάβες στην πνευμονική περιφέρεια.
- Από τη μεσοθωρακοσκόπηση στην ενδοσκόπηση με υπέρηχο.
- Από τον χειρουργό στον πνευμονολόγο.
- Από το καρκίνος ή μη καρκίνος σε EGFR,ALK,PD-L1....
- Από τη Βιοψία στην Επαναβιοψία και στη Liquid Biospy













POULOS













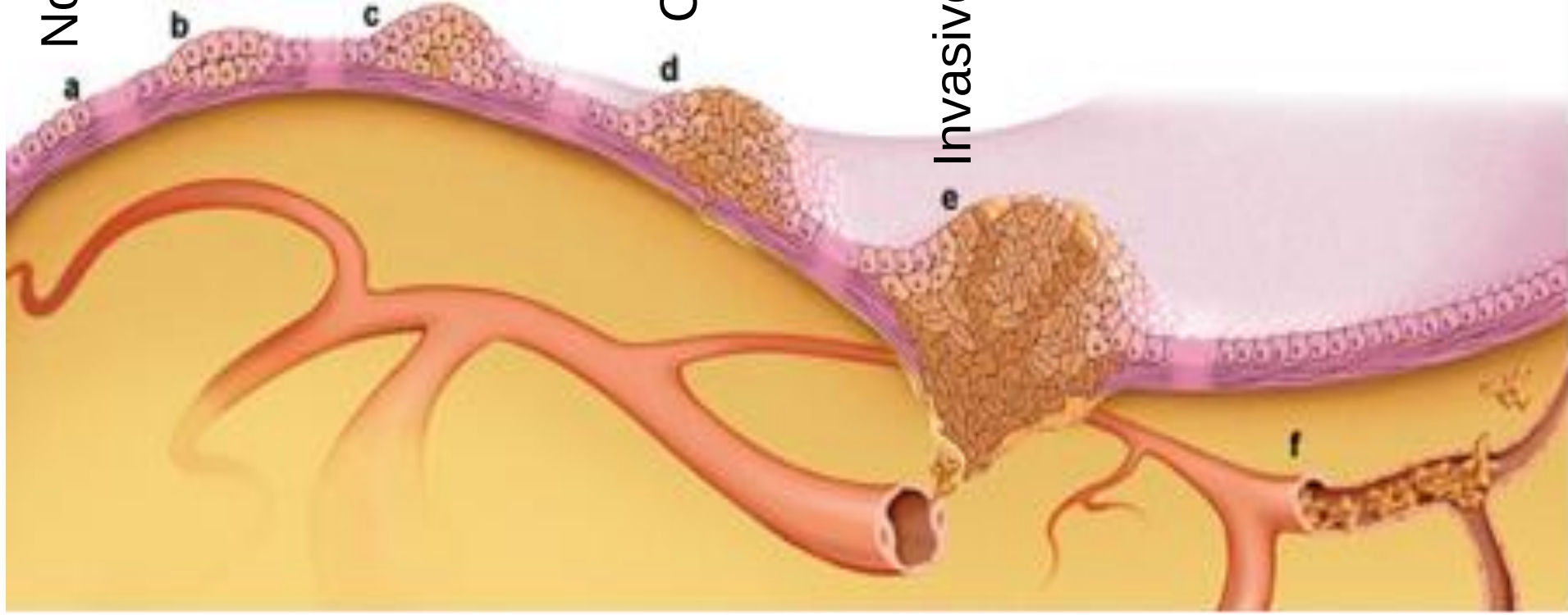
Normal

Hyperplasia

Dysplasia

Carcinoma In situ

Invasive carcinoma





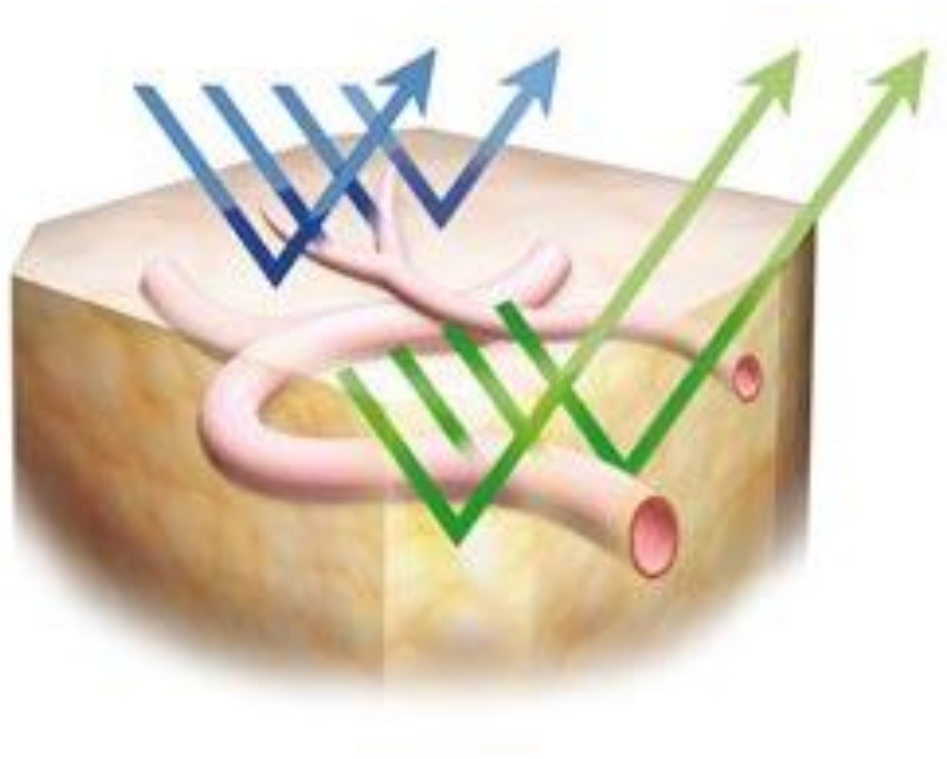
Αυτοφθορισμός

1. Ο αυτοφθορισμός ανιχνεύει το ηλεκτρονικό σήμα των «χρωμοφόρων». Αυτά είναι:
 - Ελαστίνη
 - Κολλαγόνο
 - Φλαβίνες
 - NAD, NADH
 - Πορφυρίνες
2. Η έκθεση των παραπάνω στο φως διεγείρει τα ηλεκτρόνια των μορίων τους και η επιστροφή στην πρότερη κατάσταση ηρεμίας αποδίδει τον ανιχνευόμενο φθορισμό

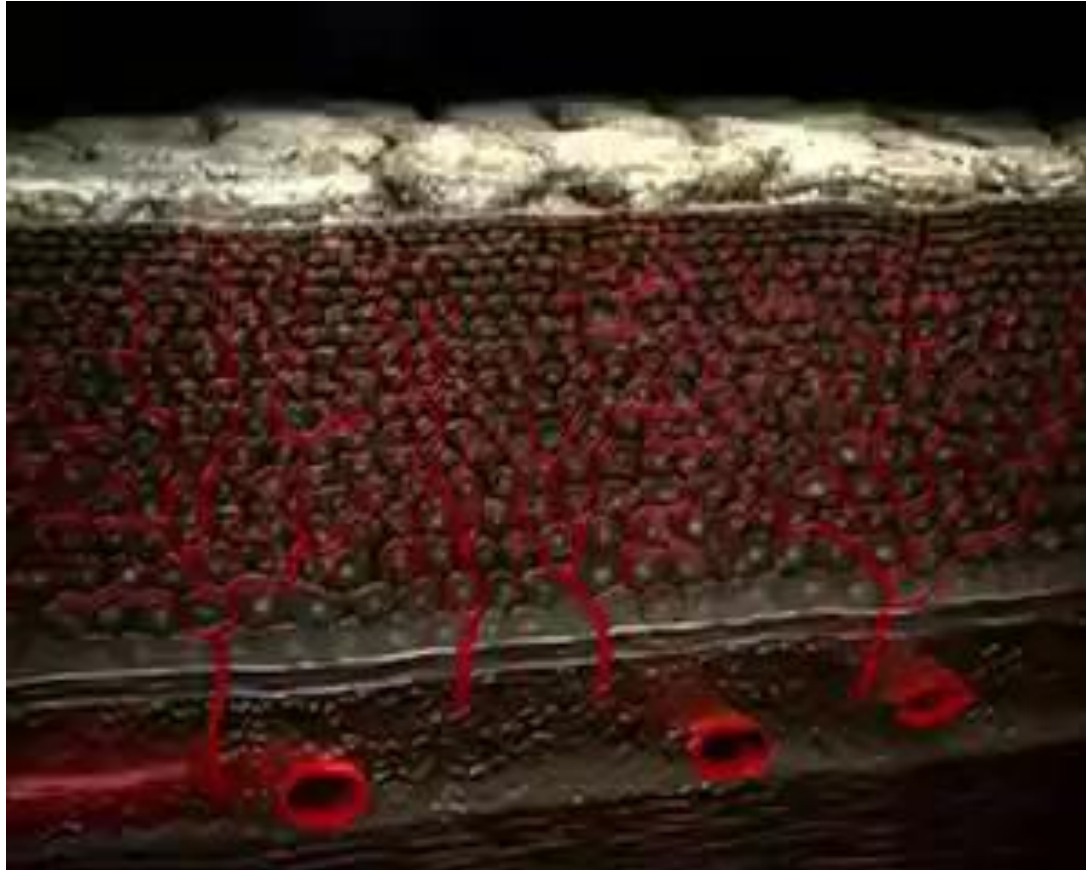
Richards-Kortum et.al., Annu.Rev.Phys.Chem. 1996; 47:555

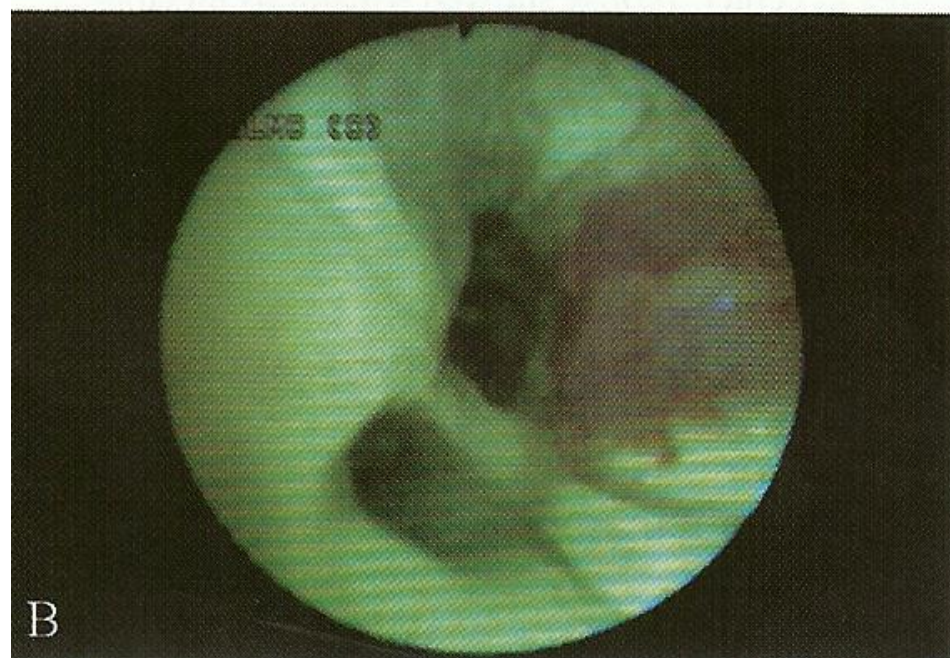
Hung et.al., Lasers Surg Med 1991; 11:99

- Μπλε φως με 415 nm
- Πράσινο φως με 540 nm



Autofluorescence

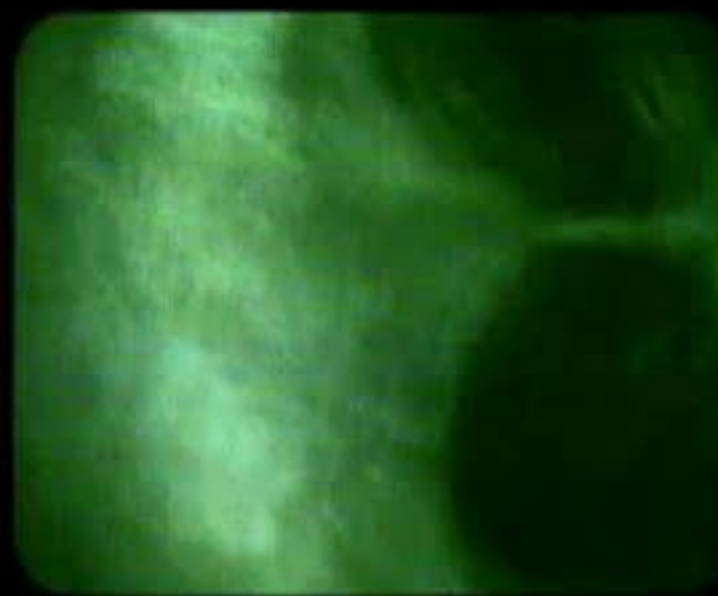




S

2007/02/05

11:21:14



EB-1970AK

PENTAX

NBI



High Definition Bronchoscopy



Tomophase OTIS [Optical Tomographic Imaging System]

The Tomophase imaging system is investigational and not available for sale in the U.S.



Console



Imaging Catheter

*Shown in working channel of
bronchoscope*

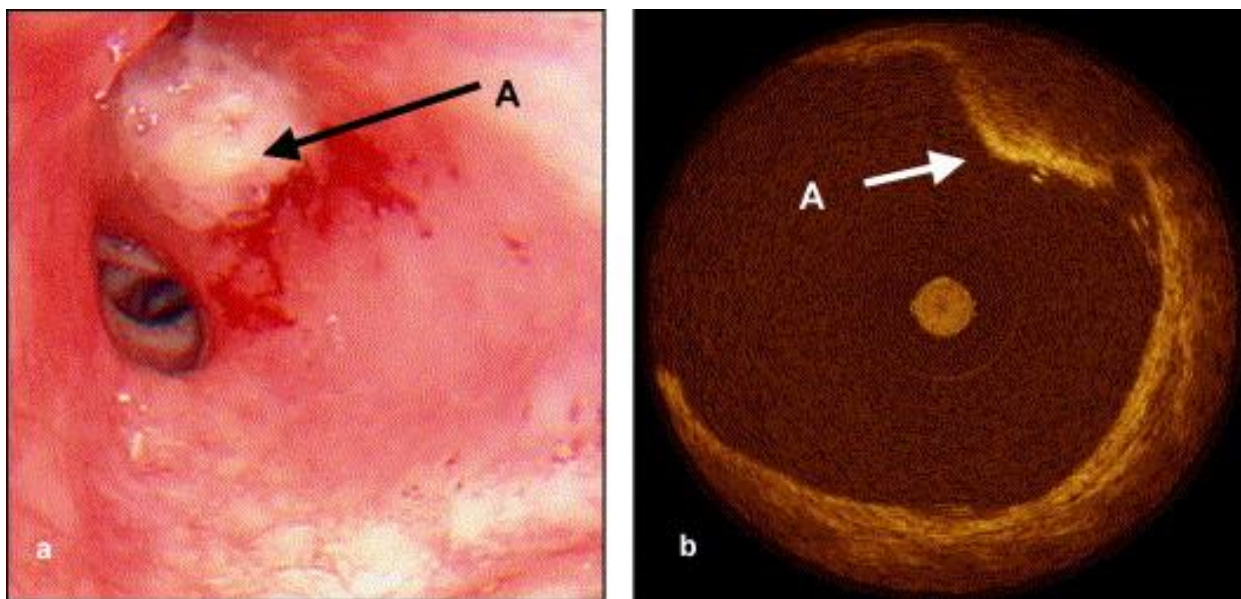
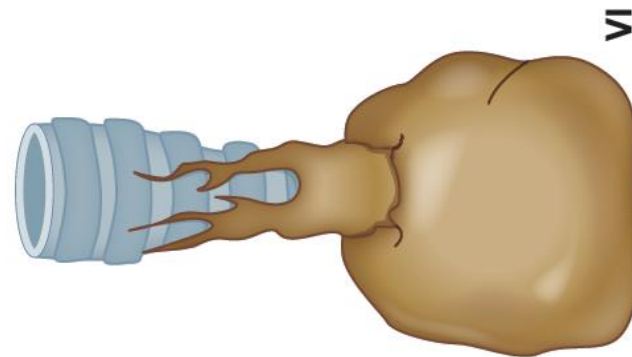
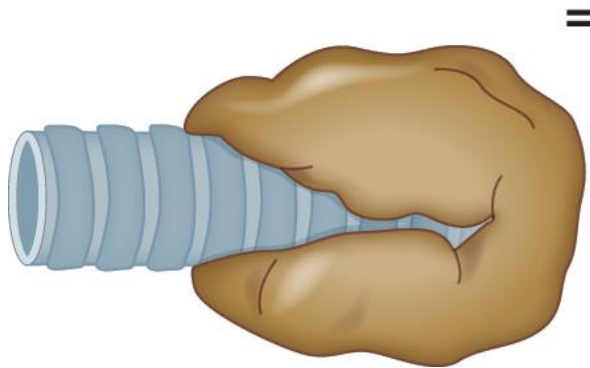
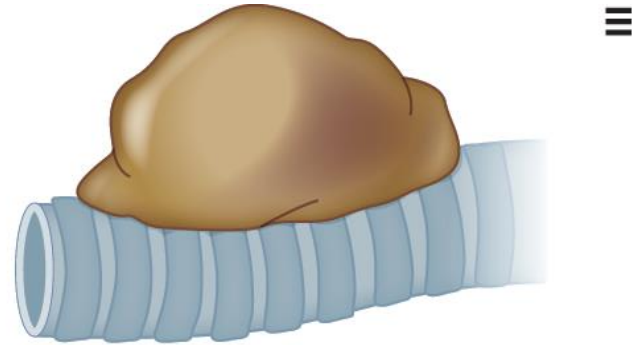
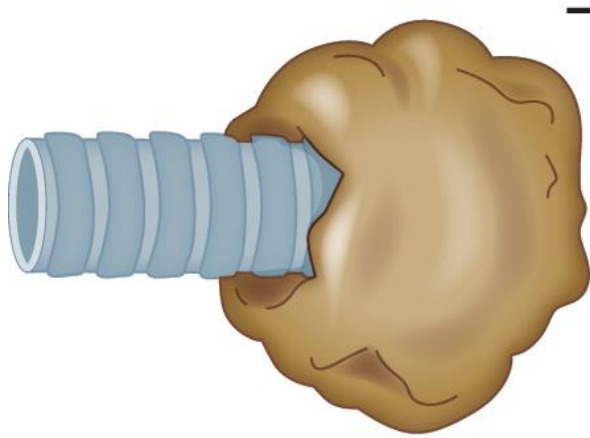
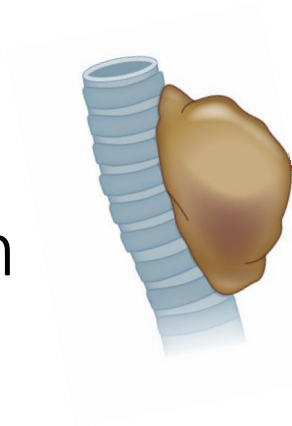


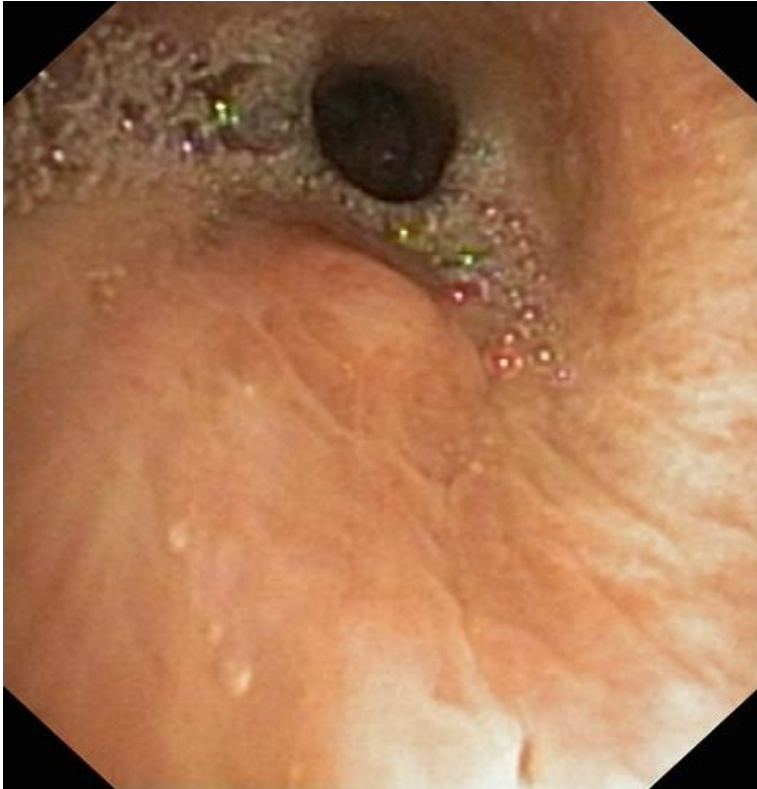
Fig. 4. Preliminary case: bronchoscopically nodular-infiltrative type squamous cell carcinoma is observed in left B1+2 (a). The tumor, A, is depicted by unevenly distributed high backscattering area and resultant loss of layer structure in the OCT image (b). (a) bronchoscopic findings, (b) OCT image, (A) tumor.

Tsuboi Classification

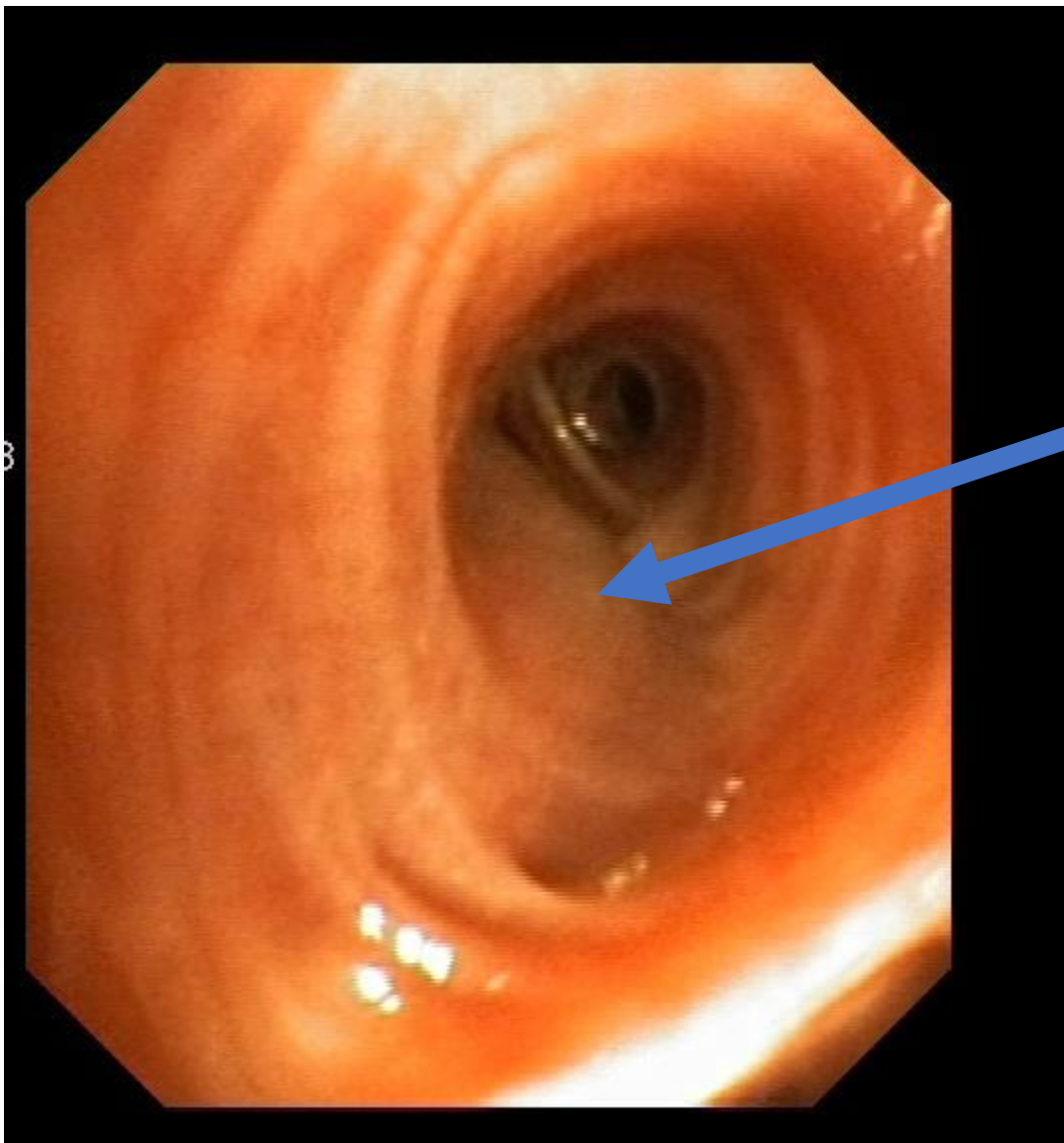


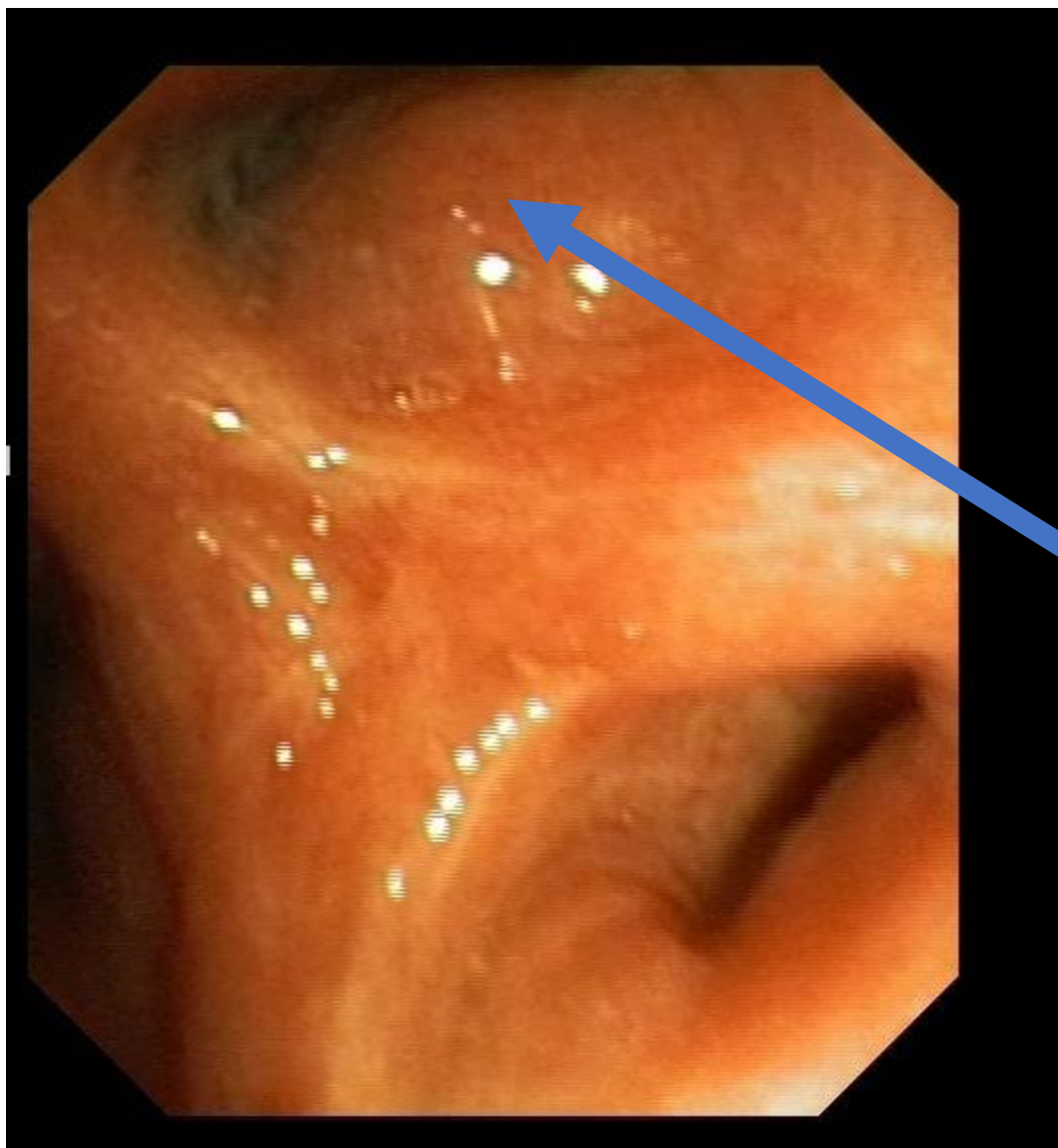
External Compression



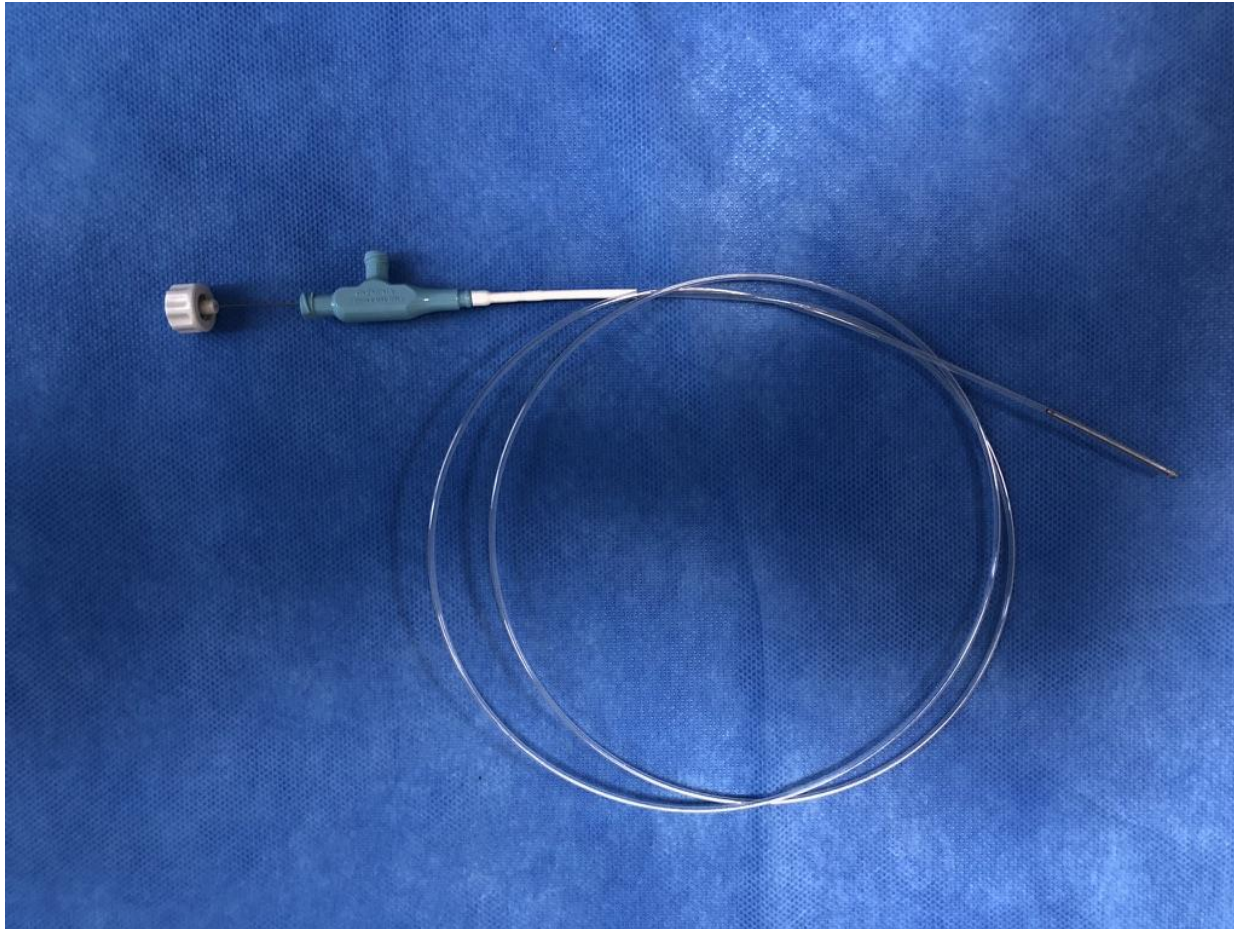


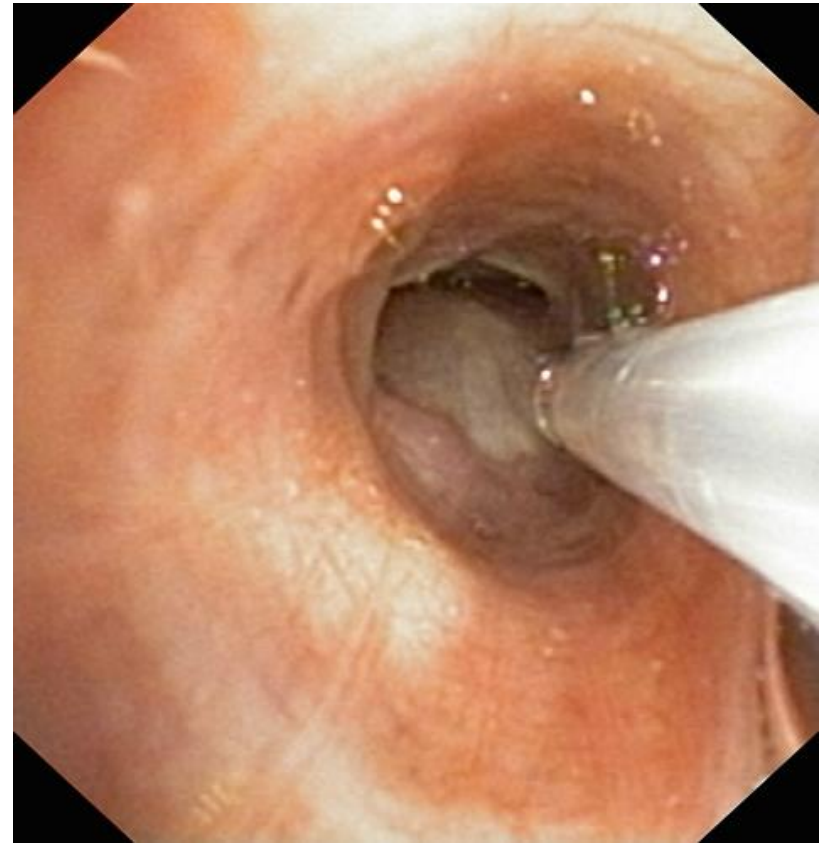
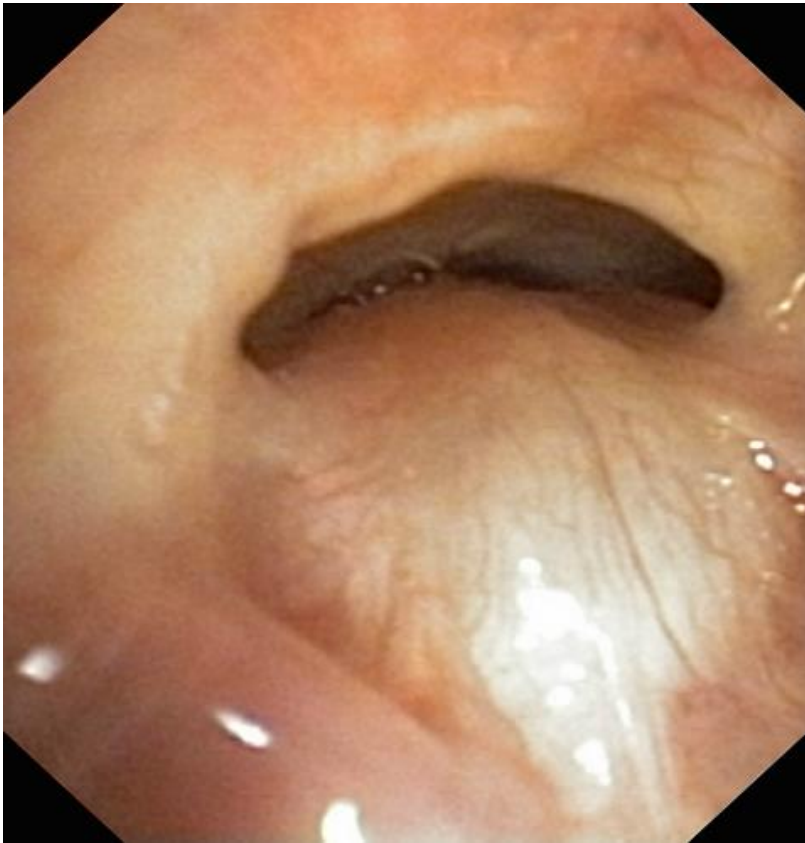
Subepithelial
lesion





TBNA needle





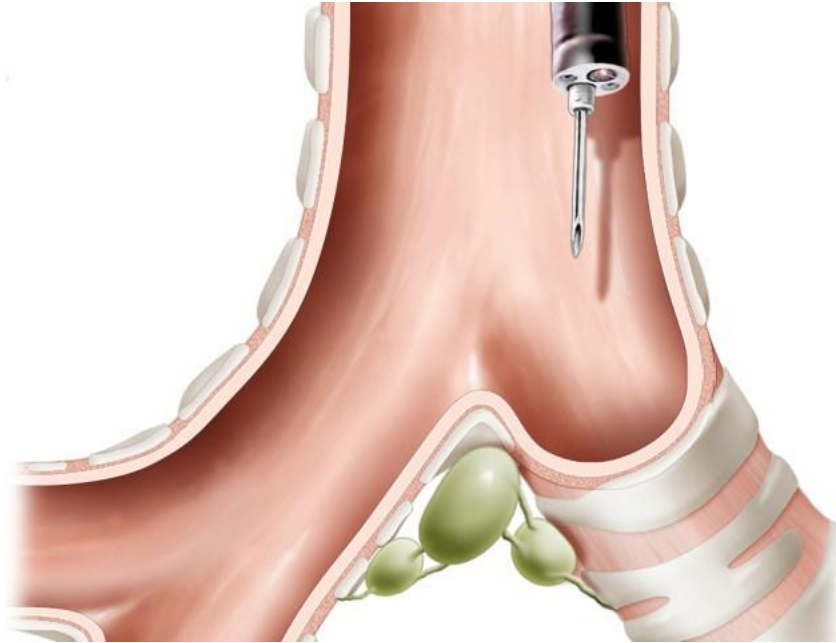
Flexible needles and SPN

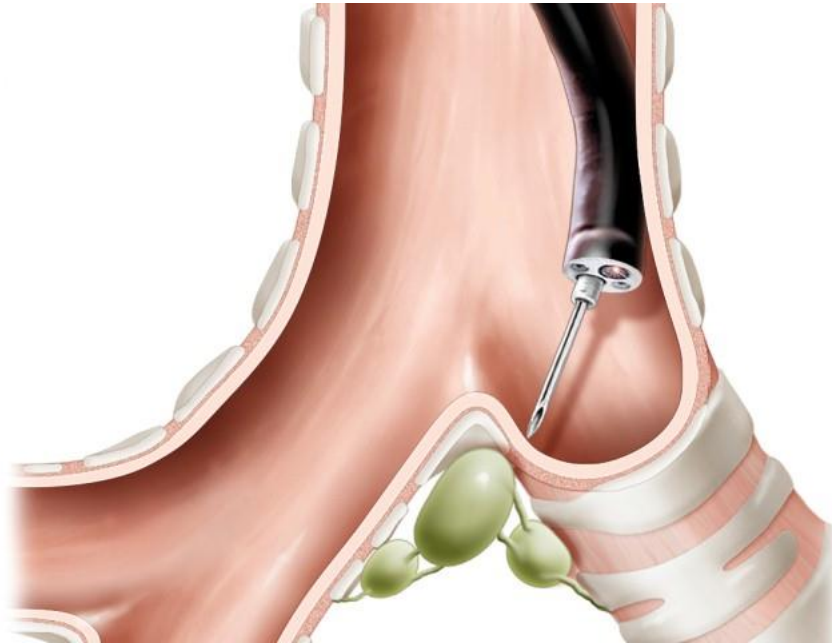


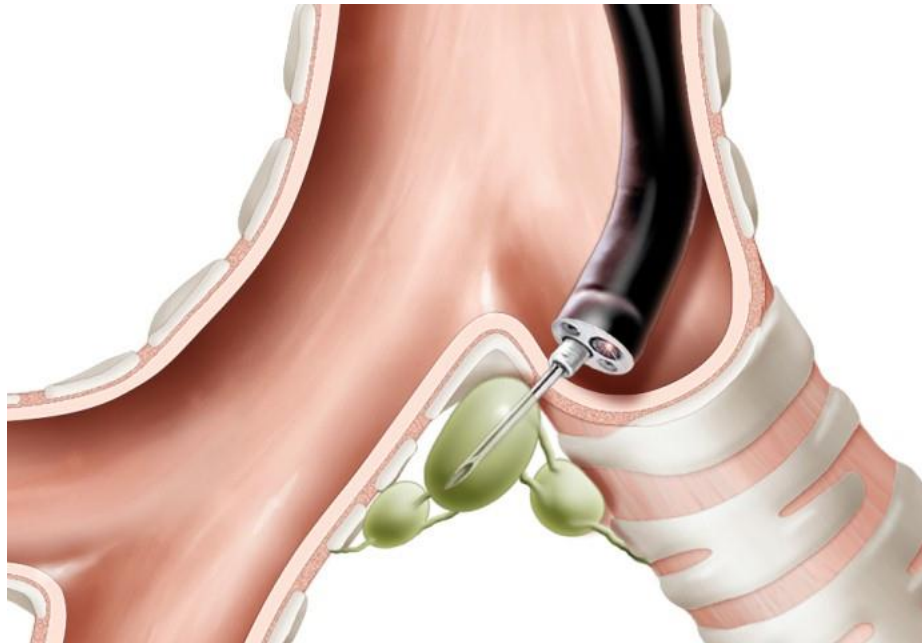
Recap





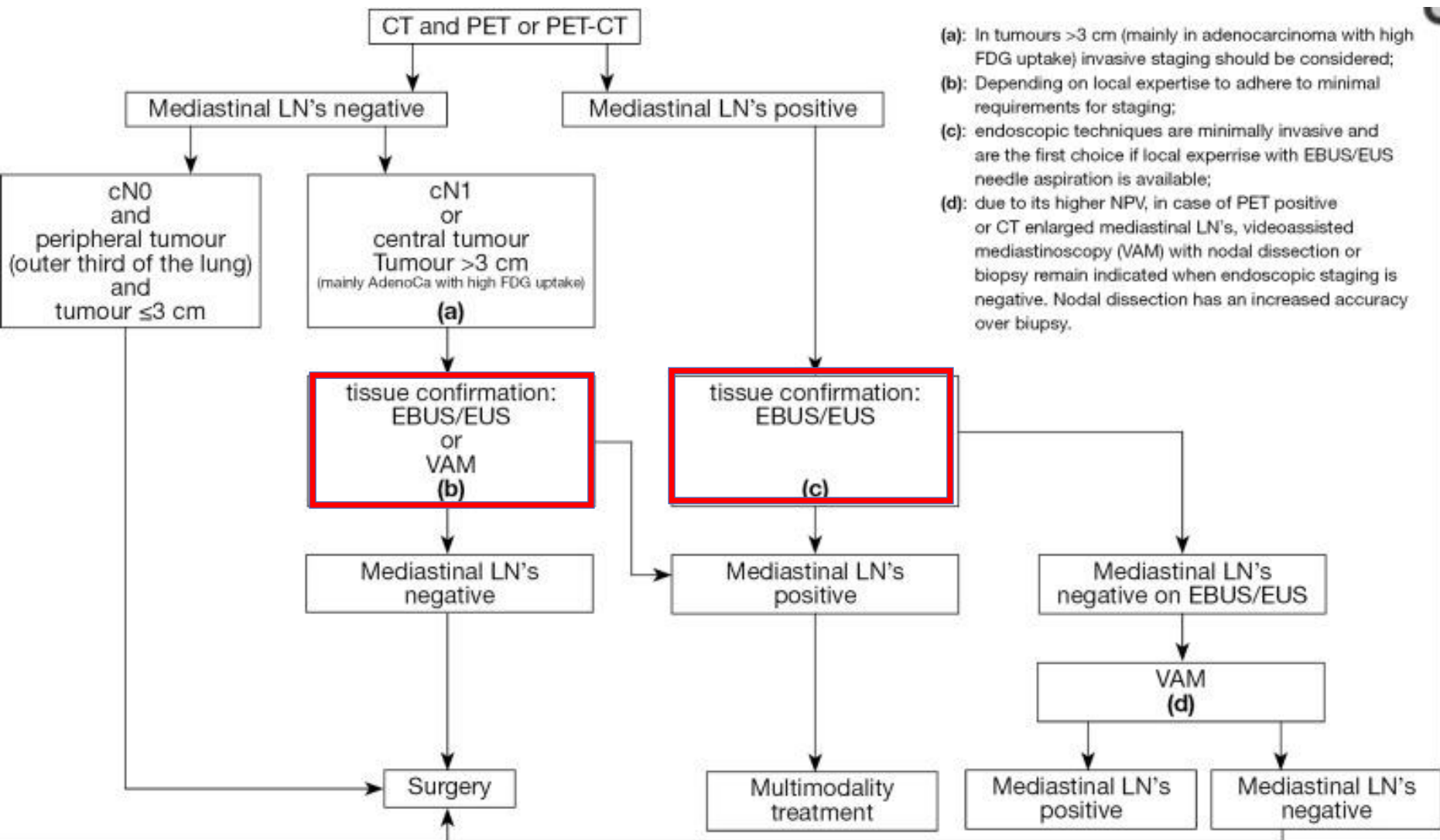






LN-7





European Society of Thoracic Surgeons!!!

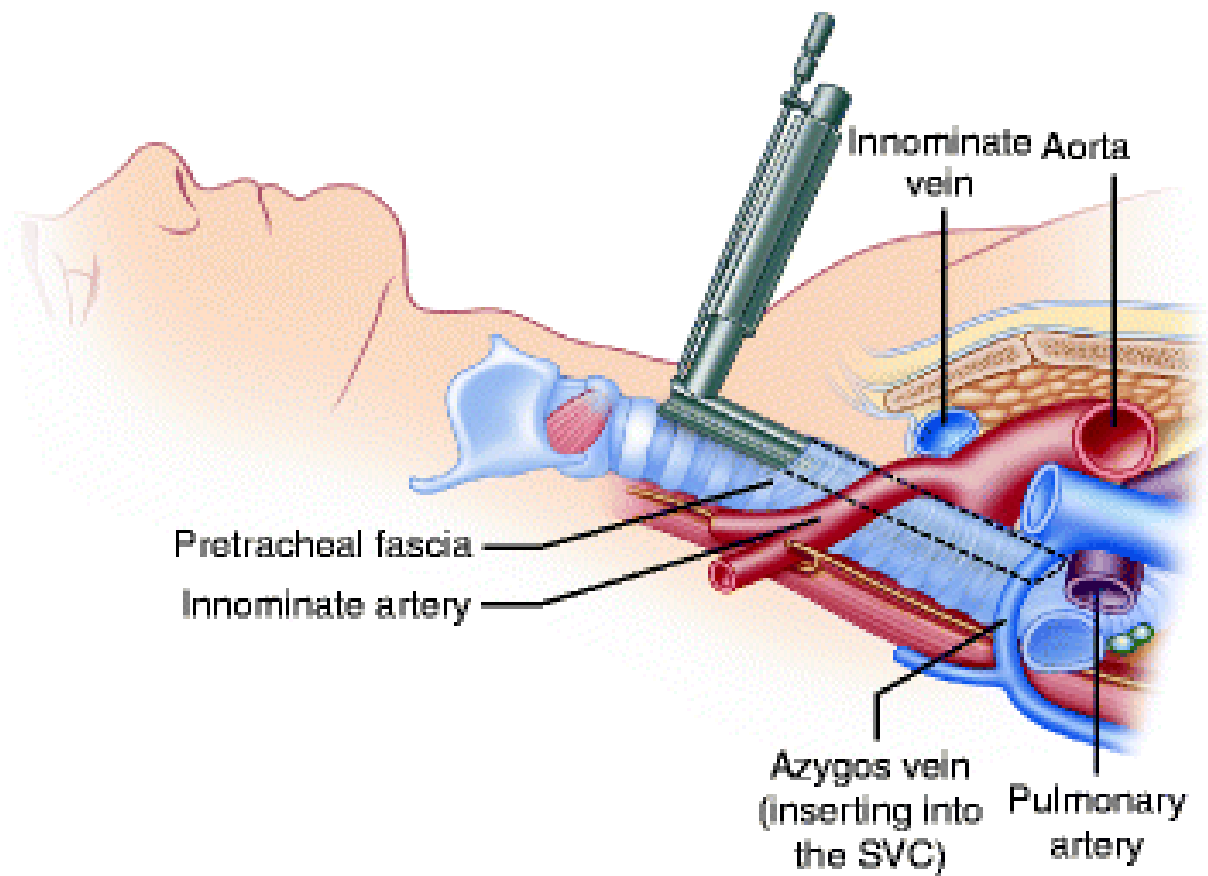


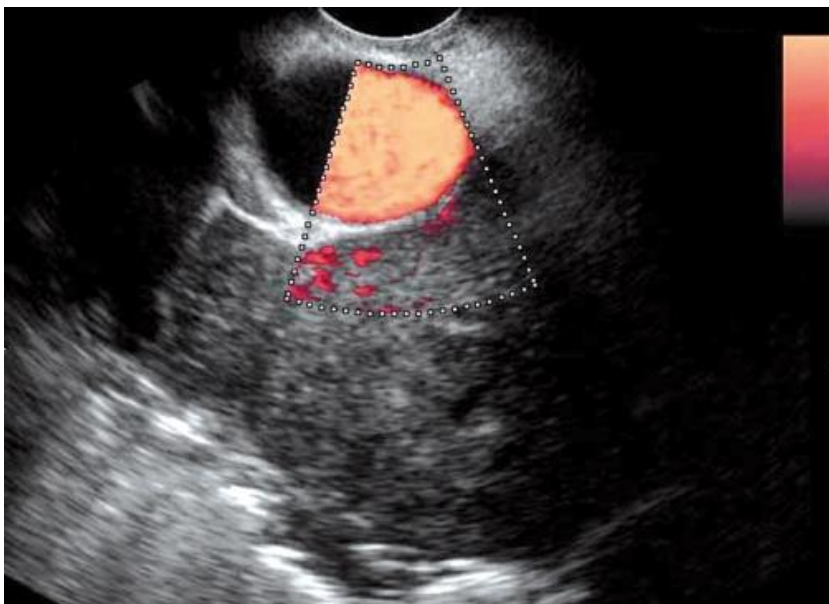
Methods for Staging Non-small Cell Lung Cancer

Diagnosis and Management of Lung Cancer,
3rd ed: American College of Chest Physicians
Evidence-Based Clinical Practice Guidelines

CHEST 2013; 143(5)(Suppl):e211S–e250S

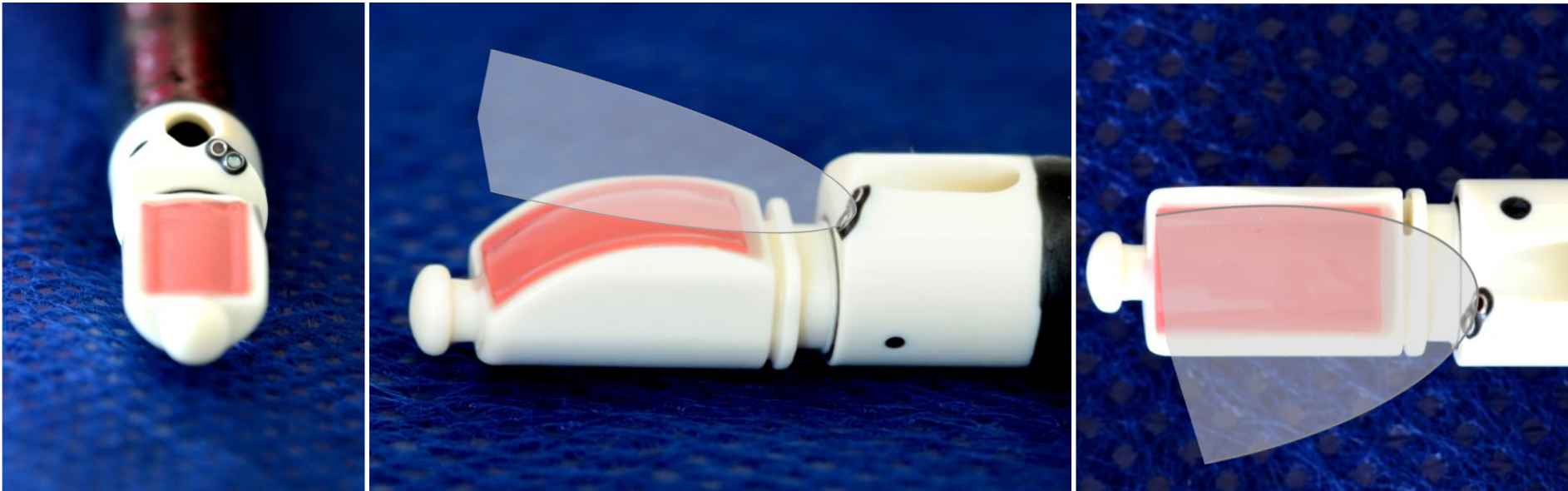
Mediastinal staging in NSCLC	n	Sen (%)	Spe (%)	PPV (%)	NPV (%)
Thorax CT	7368	55	81	58	83
PET-CT	2014	62	90	63	90
PET	4105	80	88	75	91
TBNA	2408	78	100	100	77
Mediastinoscopy	10648	81	100	100	91
EUS-TBNA	2443	89	100	100	86
EBUS-TBNA	2756	89	100	100	91
EBUS+EUS-FNA	811	91	100	100	96

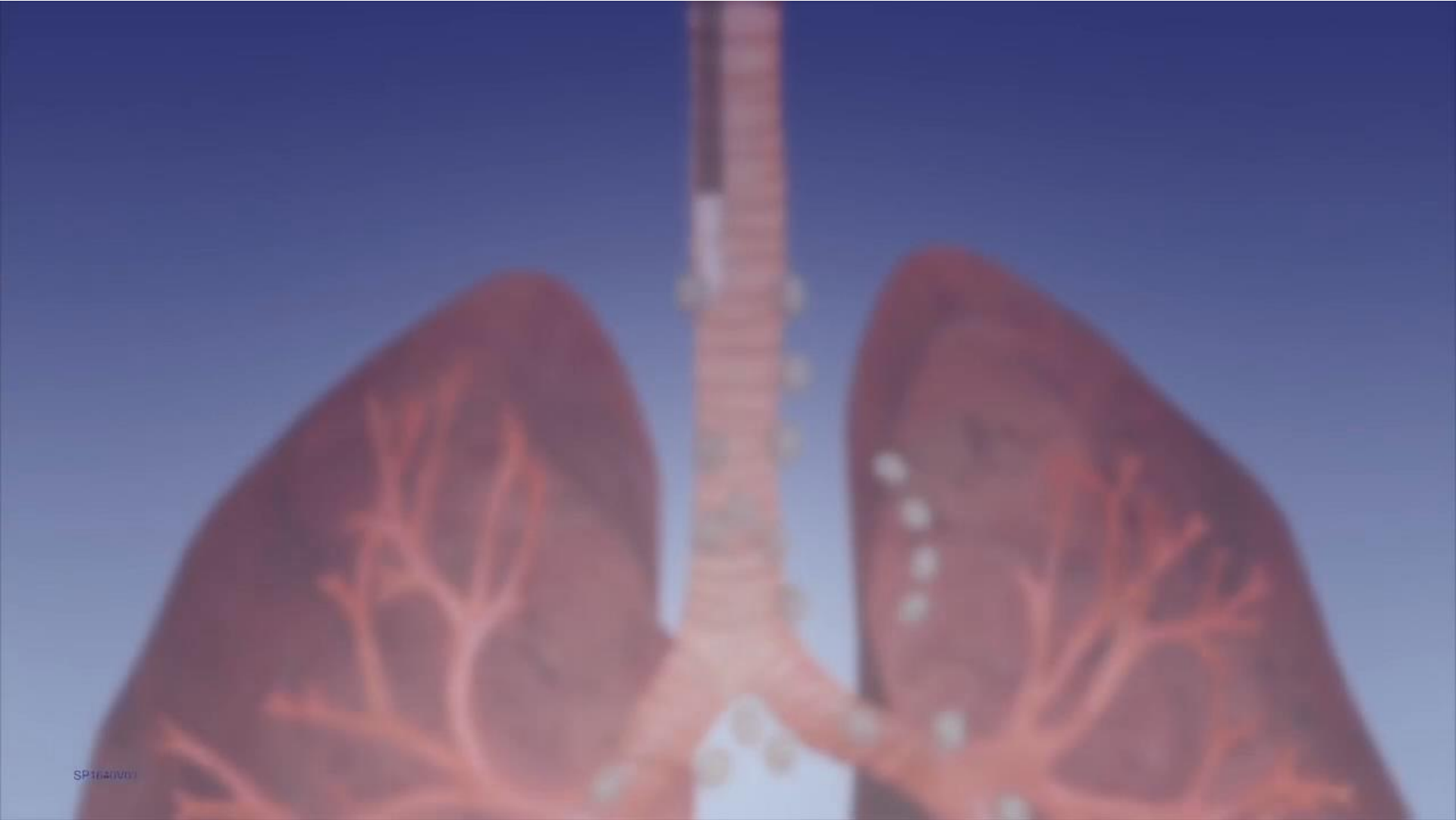


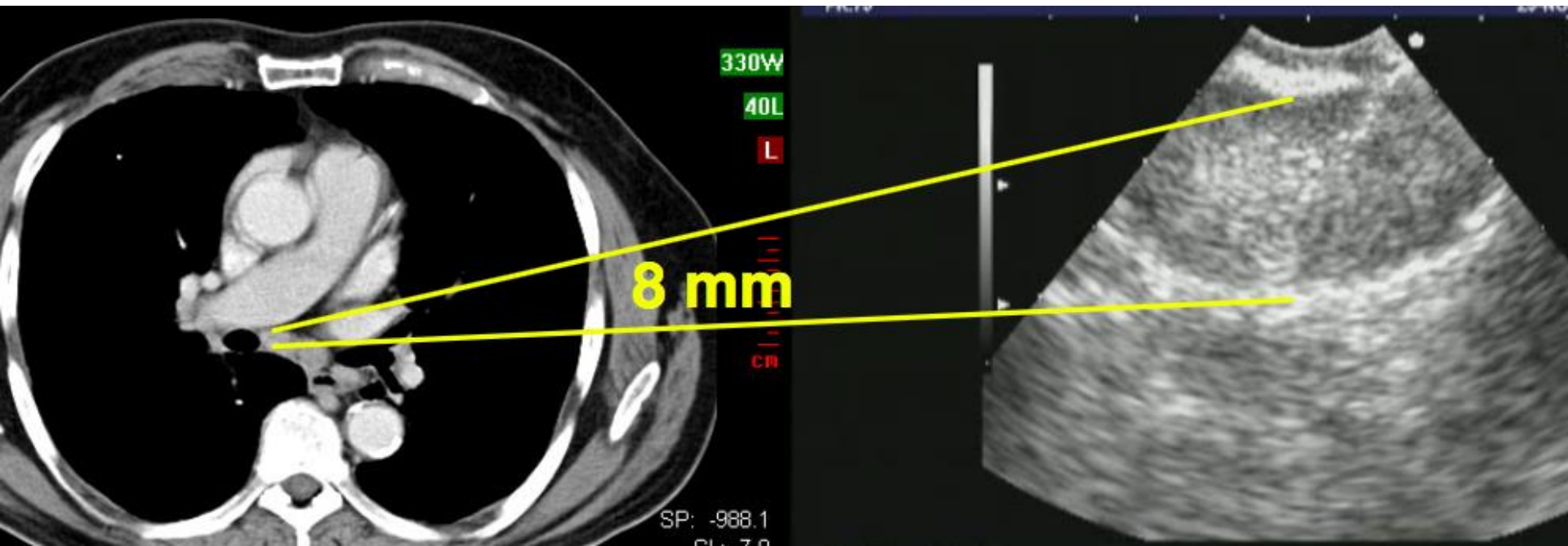


EBUS-TBNA scope

- 7.5 MHz convex transducer (6.9mm)
- View angle 80°
- Direction forward oblique 30° (straight view = flex down slightly)

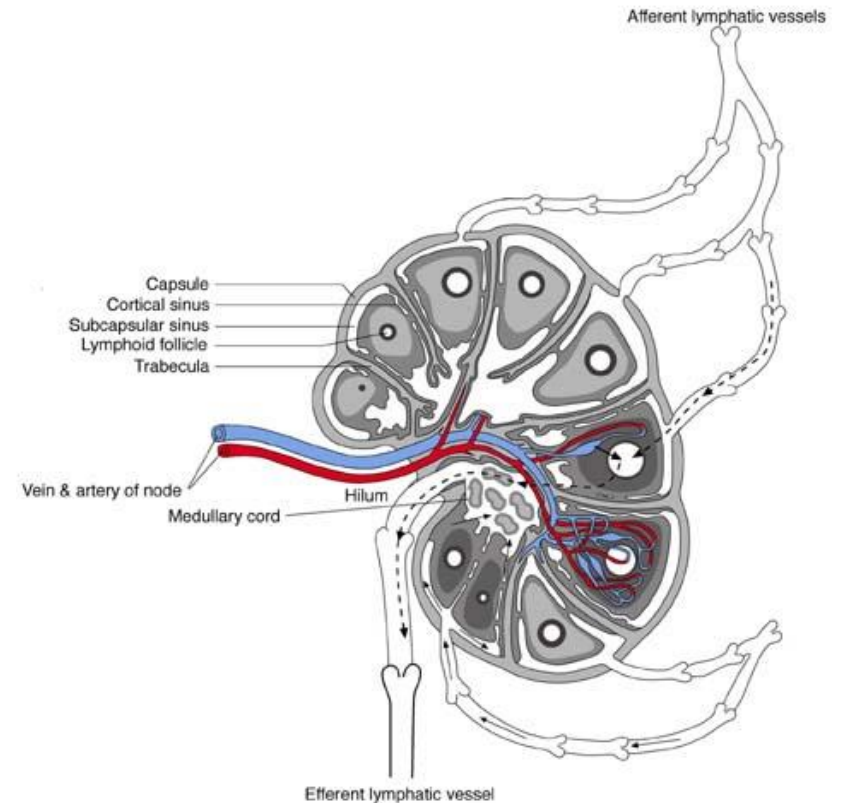




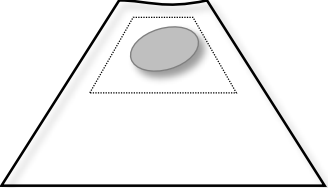
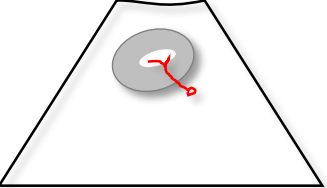
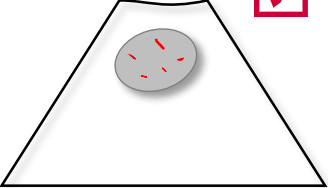
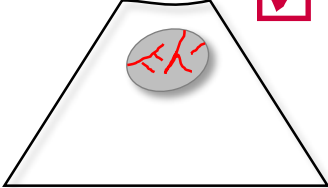
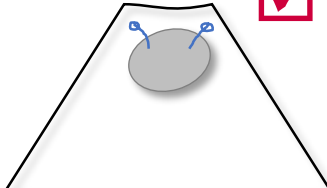
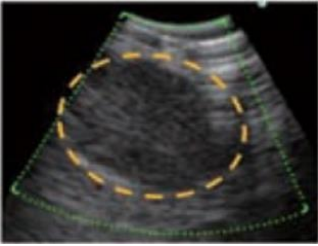
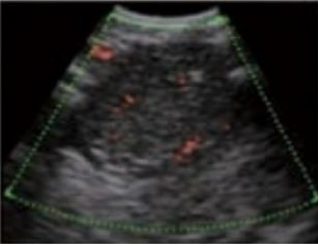
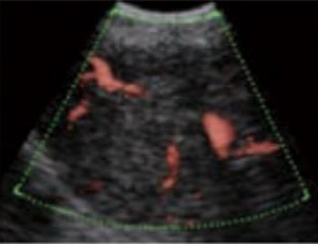
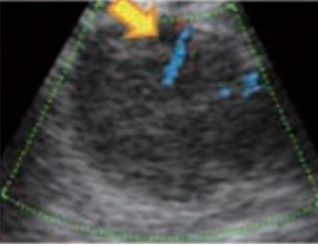


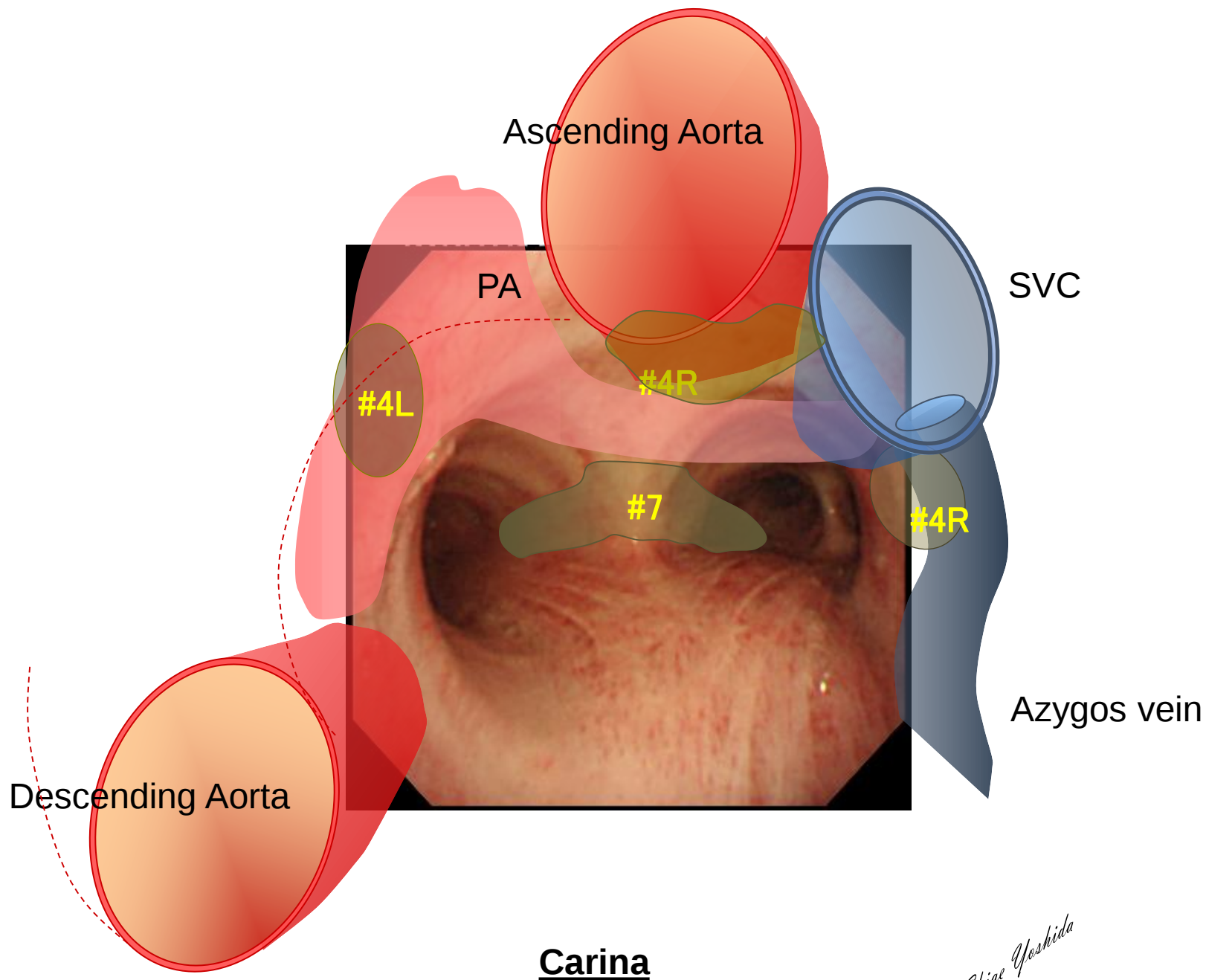
Lymph node ultrasound Characteristics

- Position
- Size (mm)
- Shape (Round – Oval...)
- Ultrasound density
- Boundaries (Visible or not)
- Blood flow, Hilum...



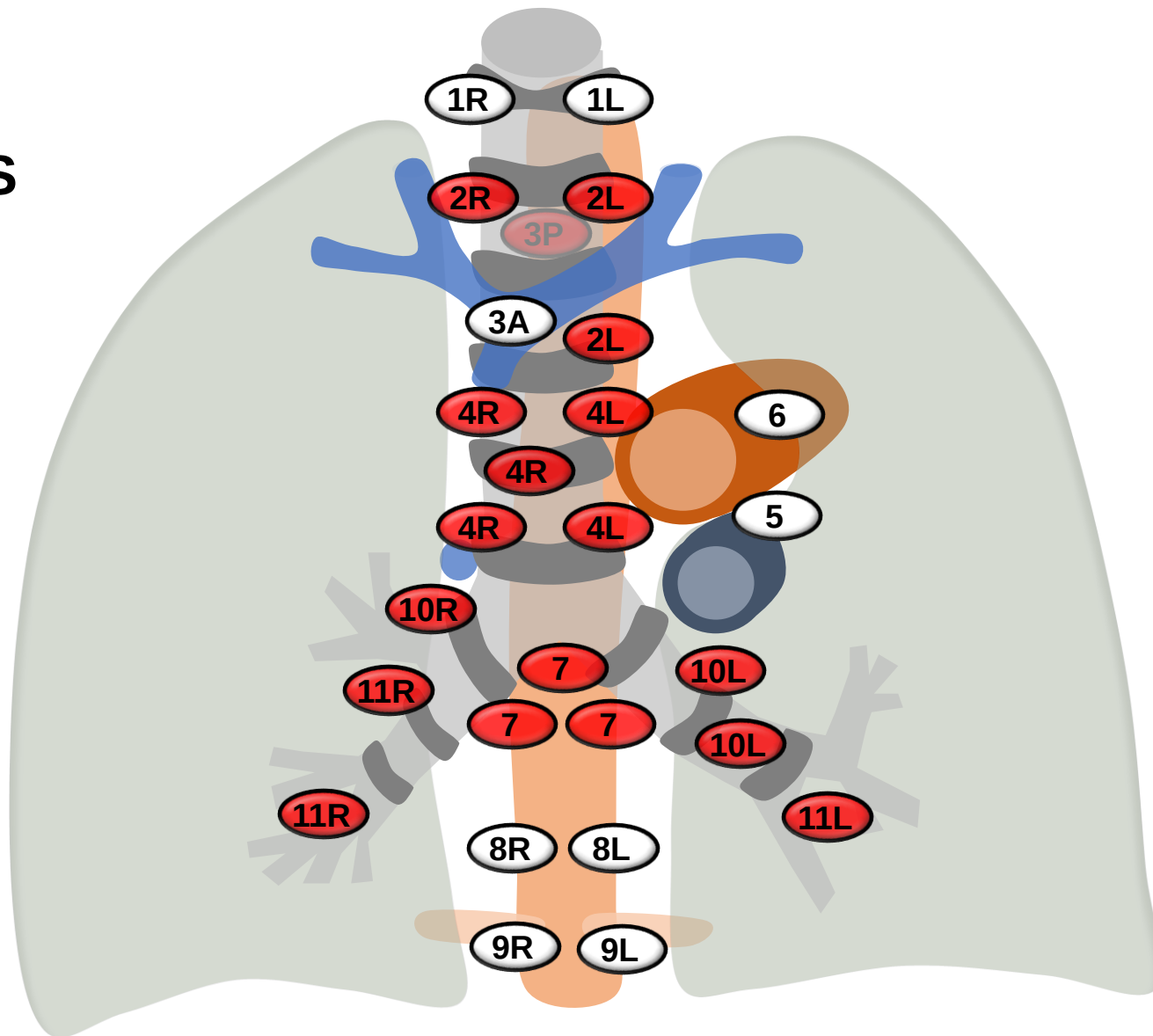
EBUS Doppler mode in cancer infiltrated LN

Grade 0	Grade I	Grade II	Grade III	BA inflow sign
				
				

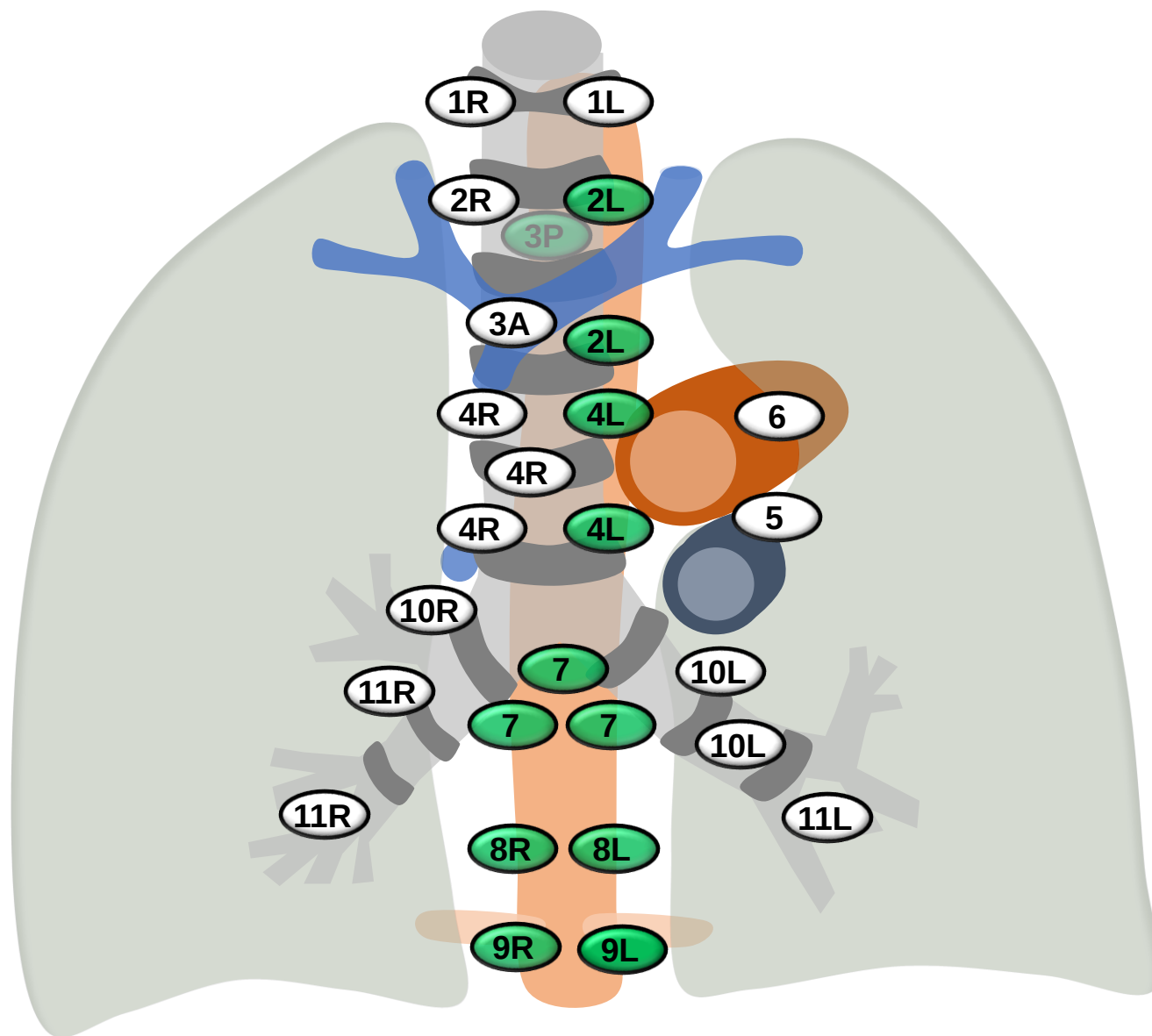


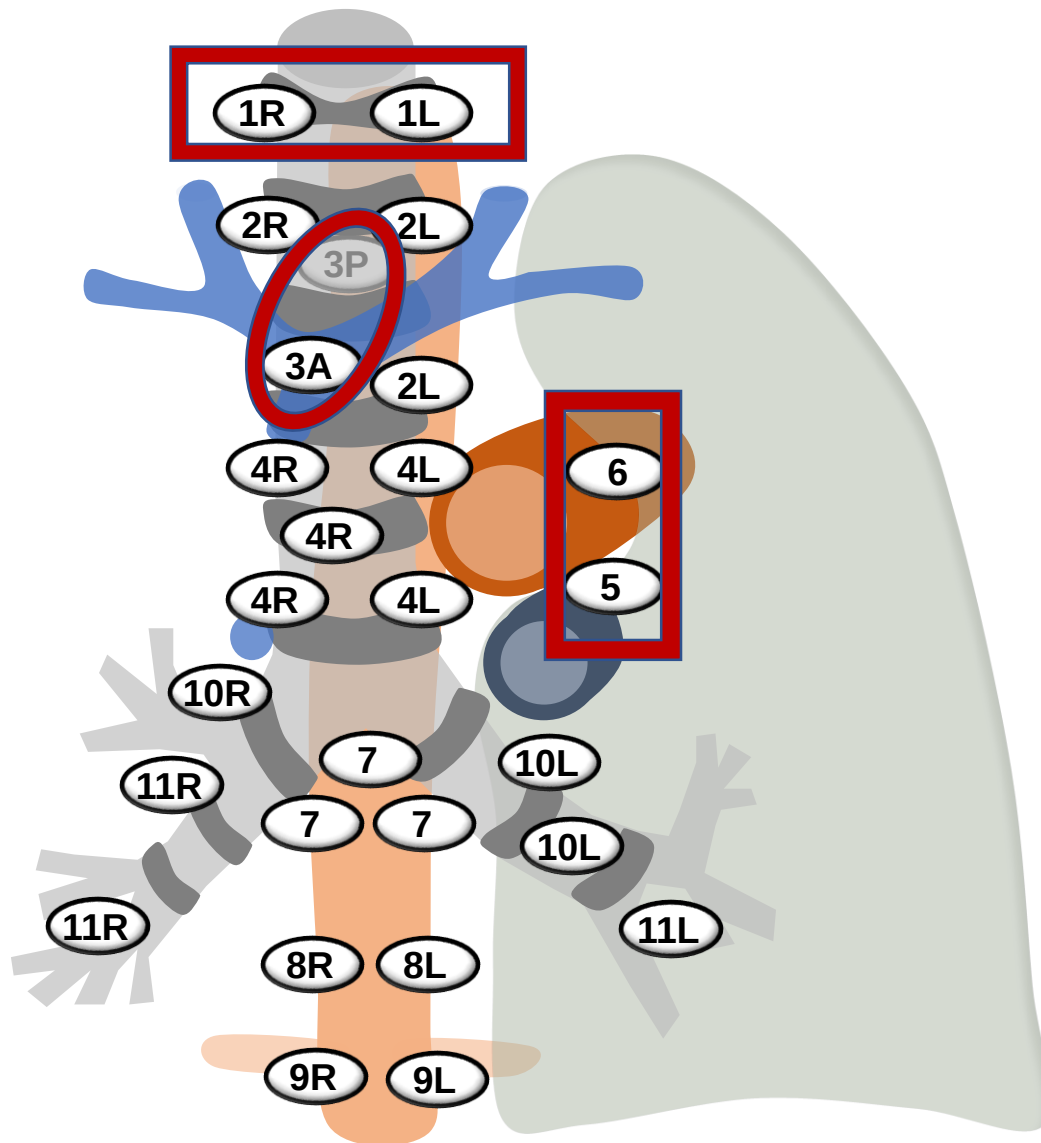
Shige Yoshida

EBUS



EUS





	Sensitivity	Specificity	PPV	NPV	Accuracy
PET-CT	93.1(27/29)	37.5 (3/8)	84.3 (27/32)	60.0 (3/5)	81.0 (30/37)
EBUS	79.3 (23/29)	100 (8/8)	100 (23/23)	57.1 (8/14)	83.7 (31/37)
EBUS+EUS	100 (29/29)	100 (8/8)	100 (29/29)	100 (8/8)	100 (37/37)
p-value*	0.083	0.025	0.039	0.205	0.004
p-value**	0.008	NA	NA	0.053	0.004

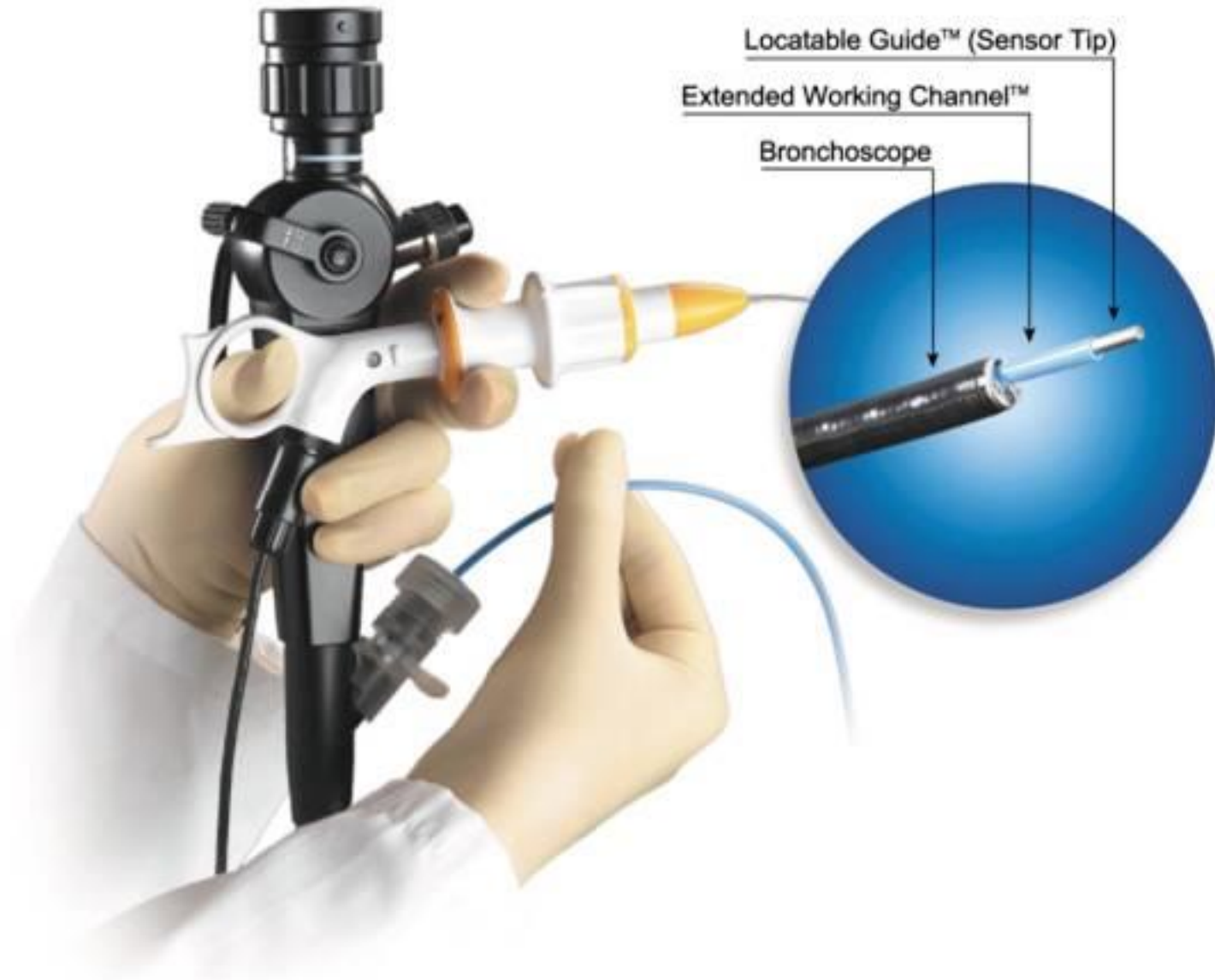




BF-UC180F: Your Reliable Partner for EBUS

Radial EBUS







Super dimension Bronchoscopy

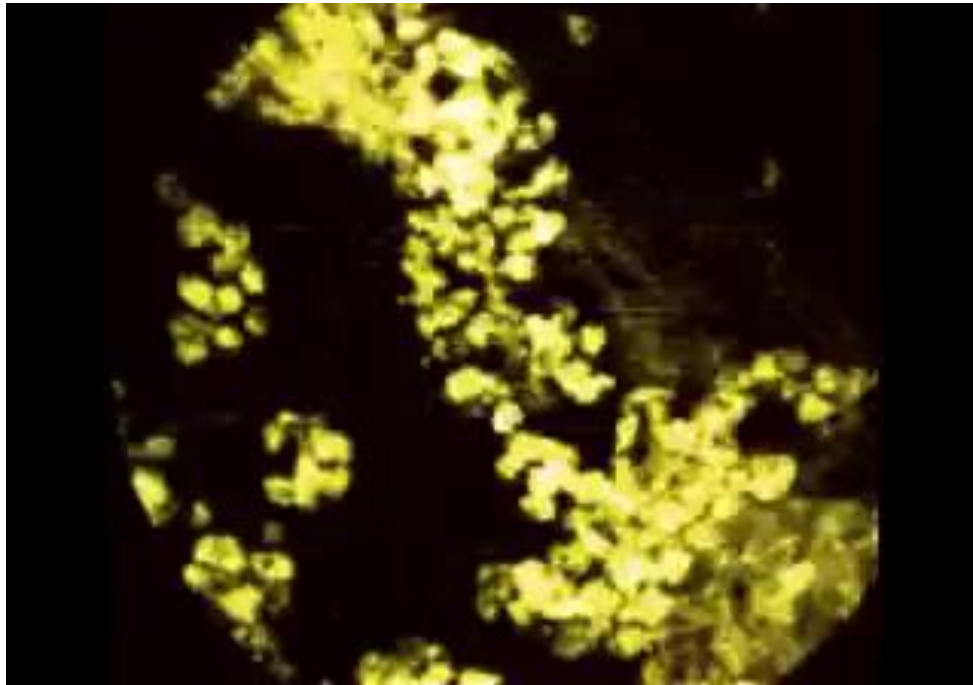






Healthy alveoli. Field
of view 600 x 500 μm
Courtesy of Pr. Luc Thiberville,
Clinique pneumologique,
CHU Charles Nicolle,
Rouen, France.

Confocal microscopy



Platinum based
regimens

Anti-angiogenesis
Regimens

TKI's

Immunotherapy

Advanced NSCLC: Evolution of Treatment

