



La Diagnostica per Immagini
nella stadiazione
del carcinoma polmonare

G. Angelelli

Parametro T

Dimensione
Sede
Infiltrazioni

Parametro N

Presenza
Sede


Parametro M

Presenza
Assenza

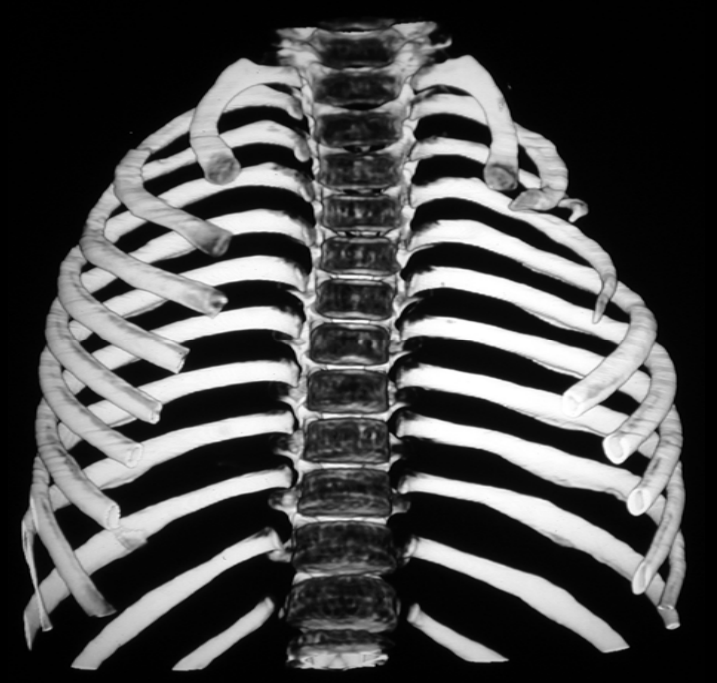
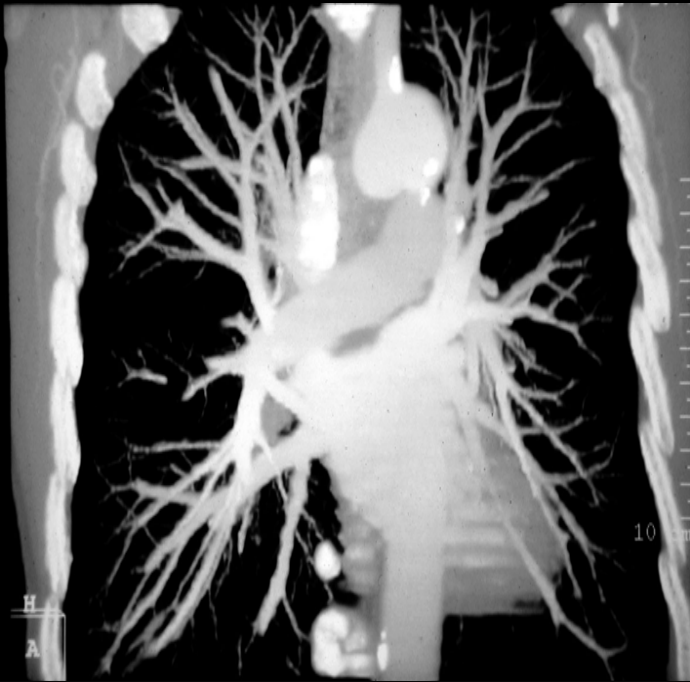
STADIO	TNM
0	Carcinoma in situ
IA	T1N0M0
IB	T2N0M0
IIA	T1N1M0
IIB	T2N1M0 T3N0M0
IIIA	T3N1M0 T1N2M1 T2N2M0 T3N2M0
IIIB	T4N0M0 T4N1M0 T4N2M0 T1N3M0 T2N3M0 T3N3M0 T4N3M0
IV	Qualsiasi T o N M1

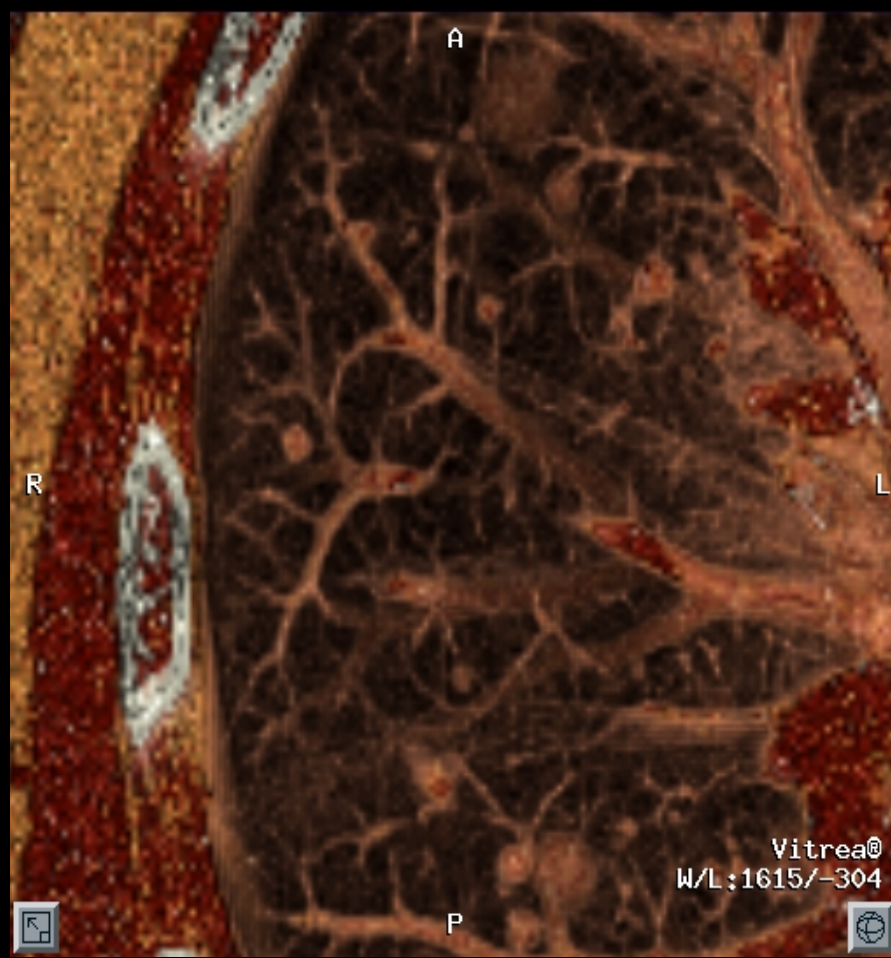
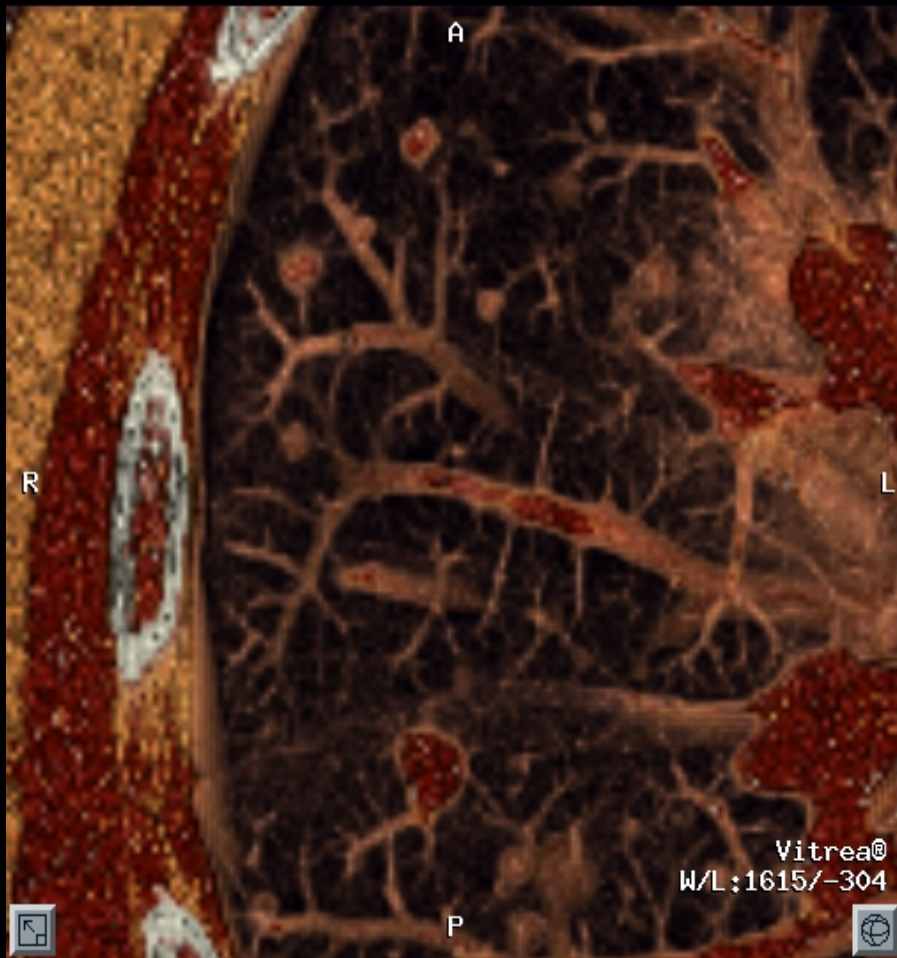
Montain CF
Chest 1997; 111:1710-1723

STADIAZIONE TUMORE POLMONARE

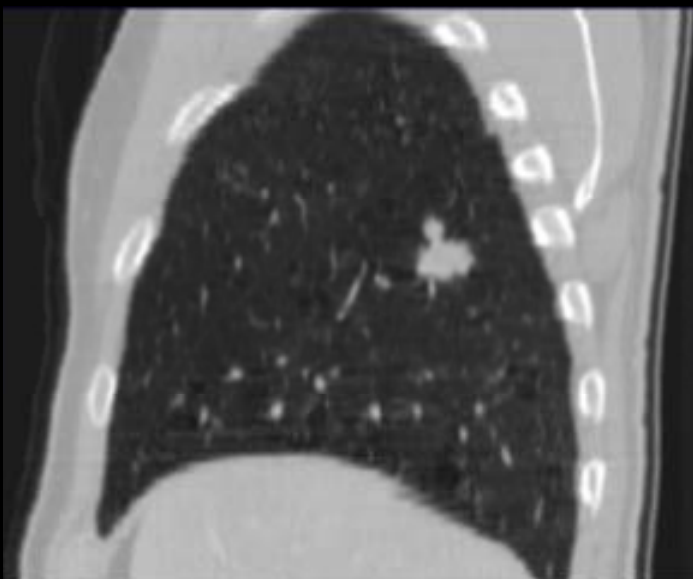
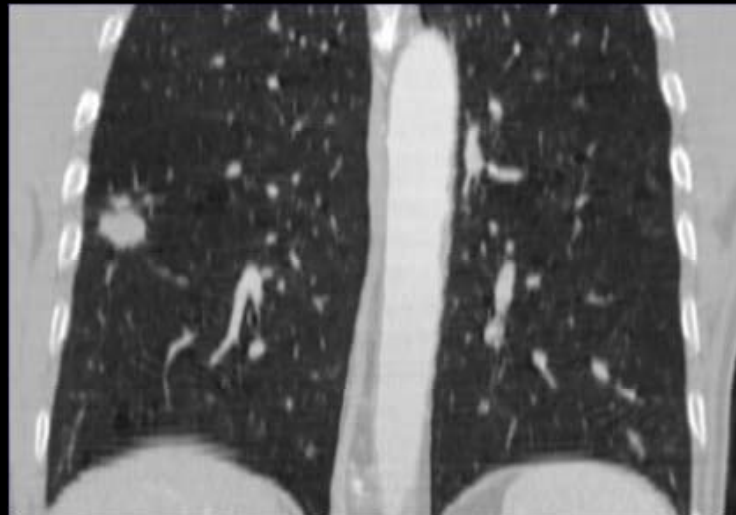


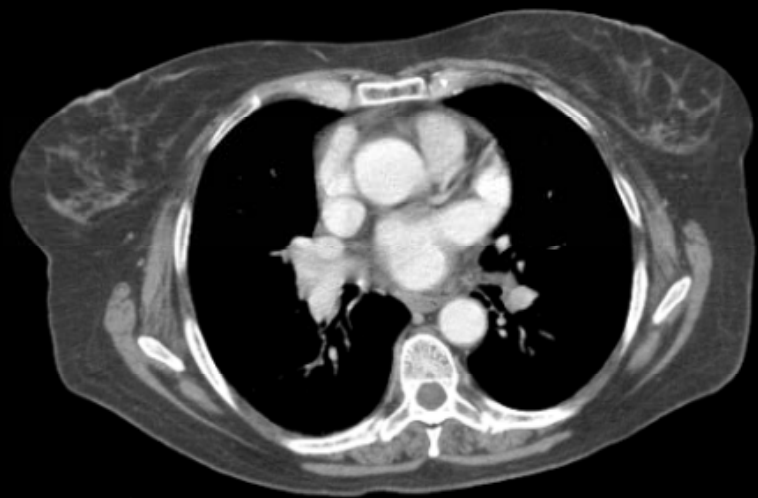
RX	Trascurabile
TC	La più utilizzata
US	Infiltrazioni della parete toracica
EUS	Utile per valutare il parametro N
RM	Riservata a casi selezionati (T. Apice)
SCINTIGRAFIA	Ricerca metastasi ossee
PET	La più promettente





T1 < 3 cm





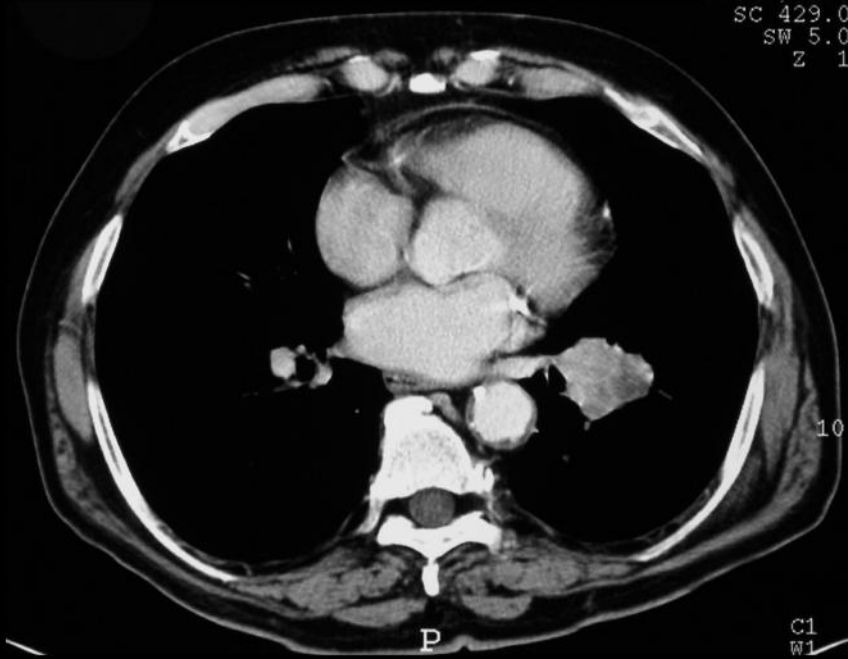
"In the staging of NSCLC, FDG PET is not recommended to determine the tumor size or the invasion into adjacent tissues".

Kostakoglu L. et Al
Radiographics 2003; 23:315-340

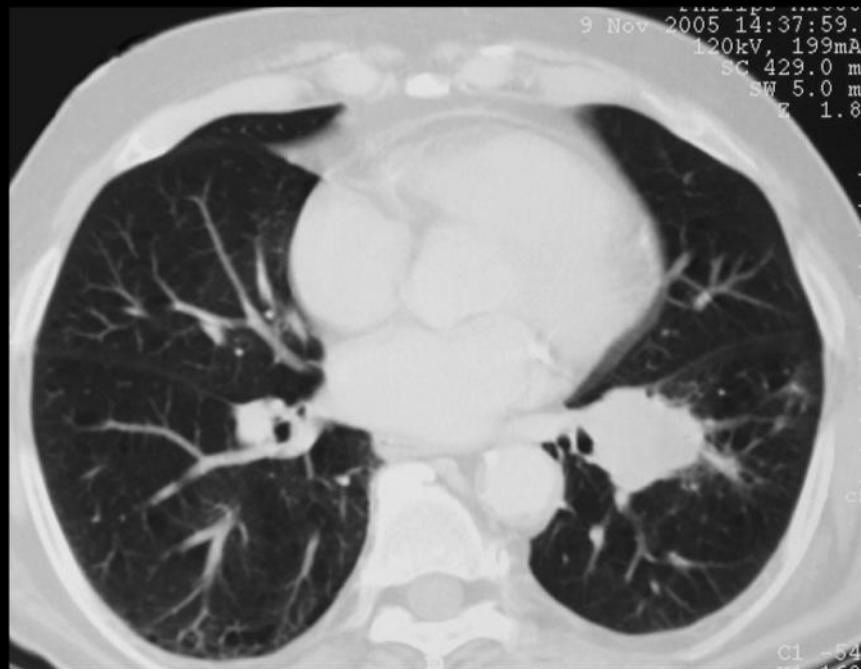
"Studies comparing gross tumor volumes as assessed by both CT and PET showed that FDG-PET significantly changed the measurement of gross tumor volume in to up 56% of patients..."

Mavi A. et Al
Radiol Clin. N. AM. 2005; 43:1-21

SC 429.0
SW 5.0
Z 1.



9 Nov 2005 14:37:59.
120kV, 199mA
SC 429.0 m
SW 5.0 m
Z 1.8





INFILTRAZIONE PARETE TORACICA

	TC	RM
Sensibilità	38 - 87%	63 - 90%
Specificità	40 - 90%	84 - 86%
Accuratezza	68%	

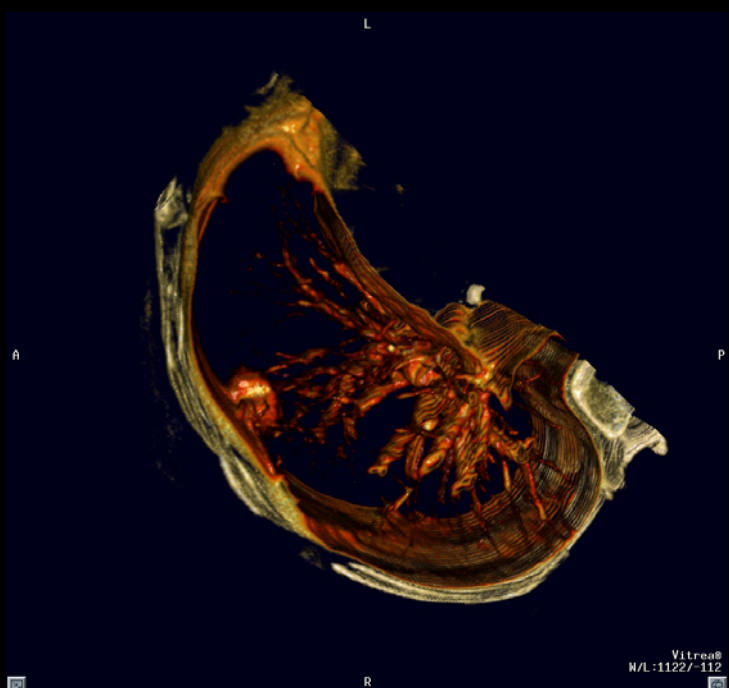
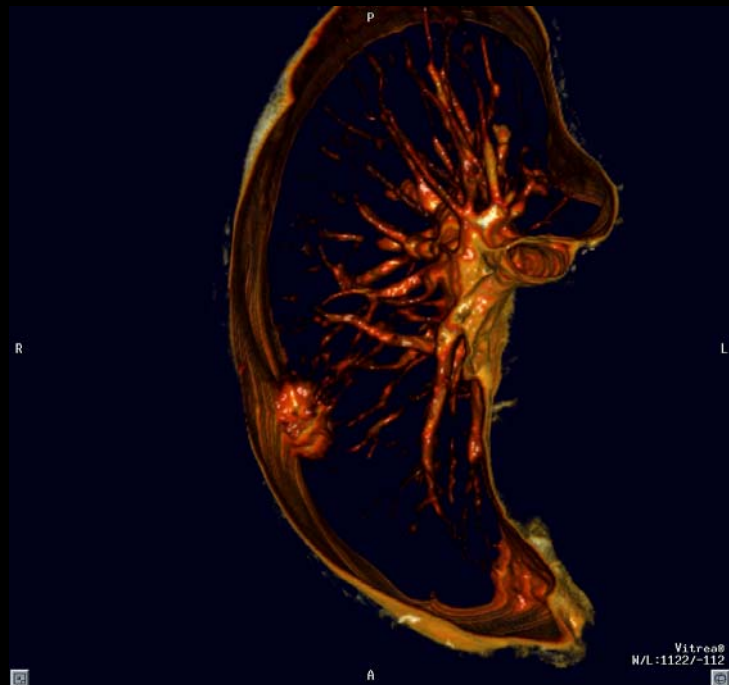
Glazer B et Al.
AJR 1985; 144:261-5

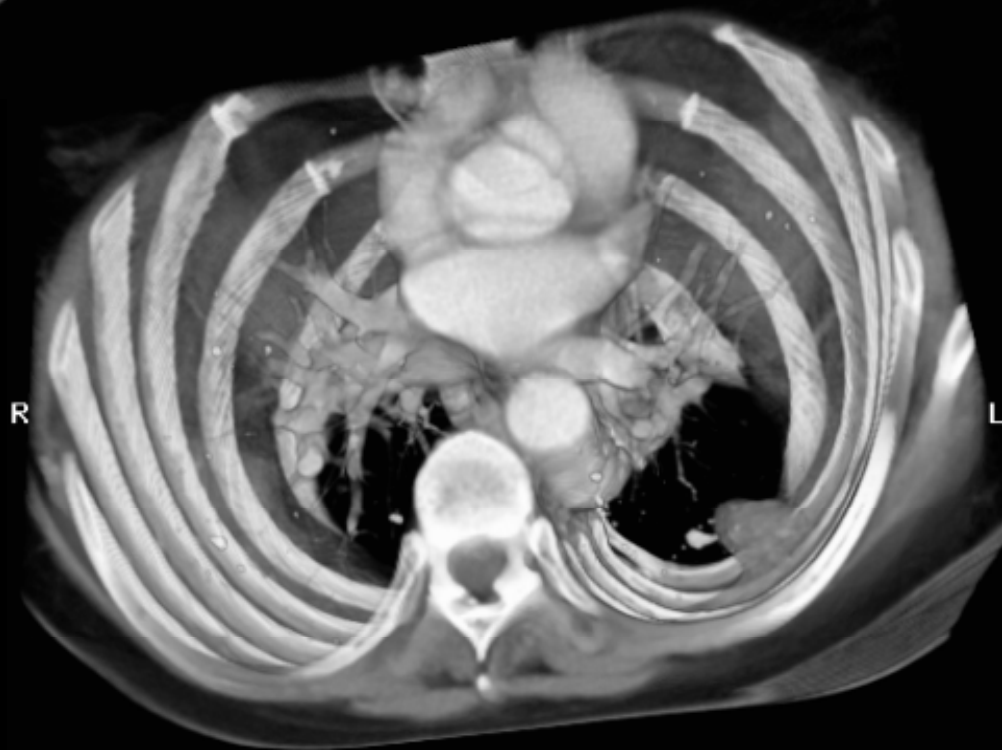
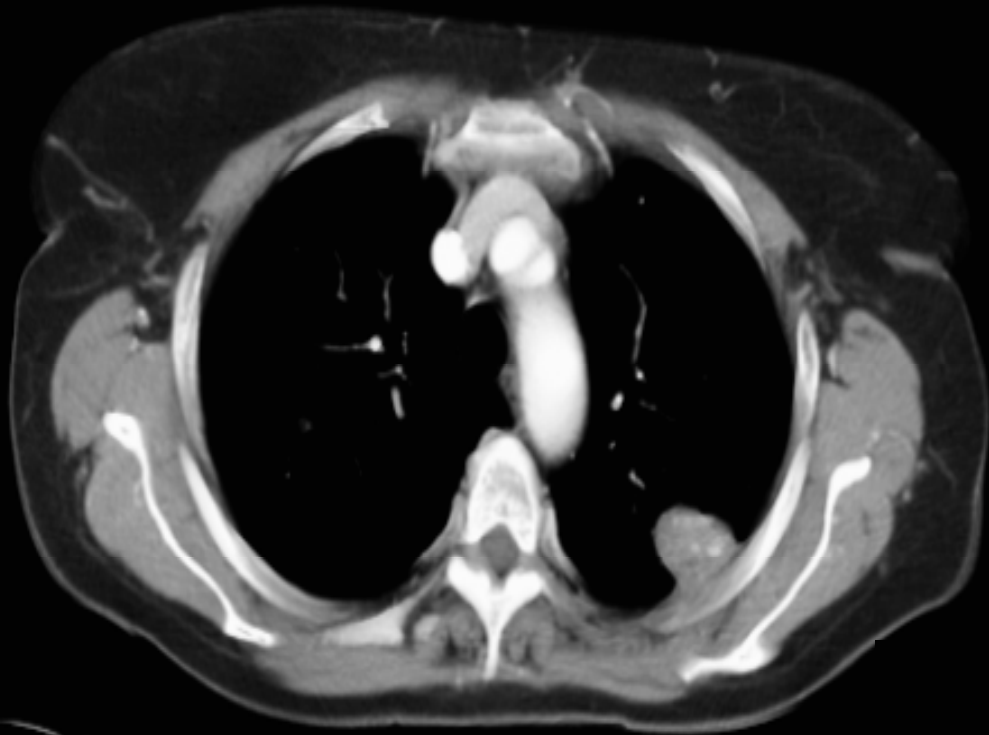
Padovani B et Al.
Radiology 1993; 197:33-38

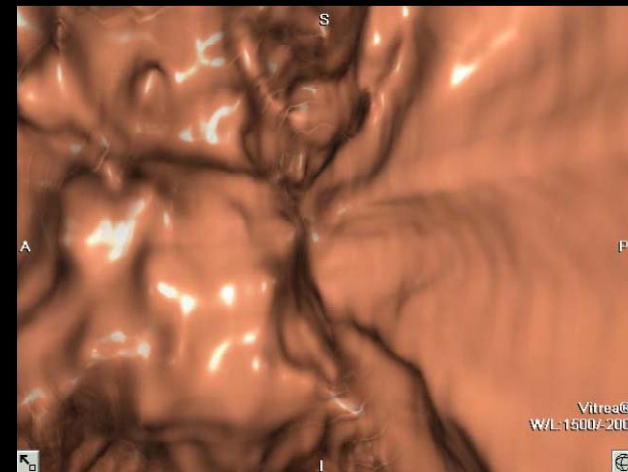
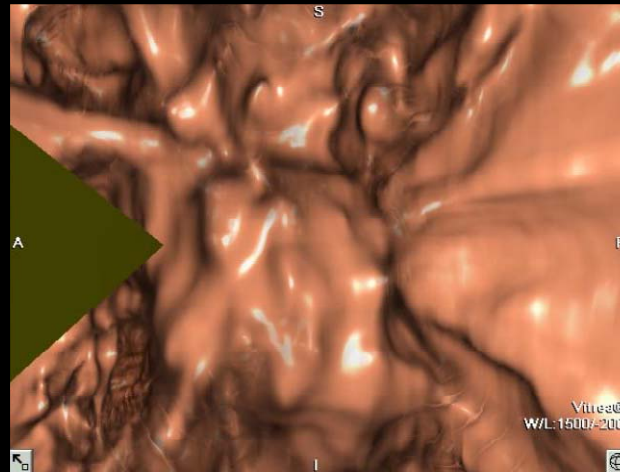
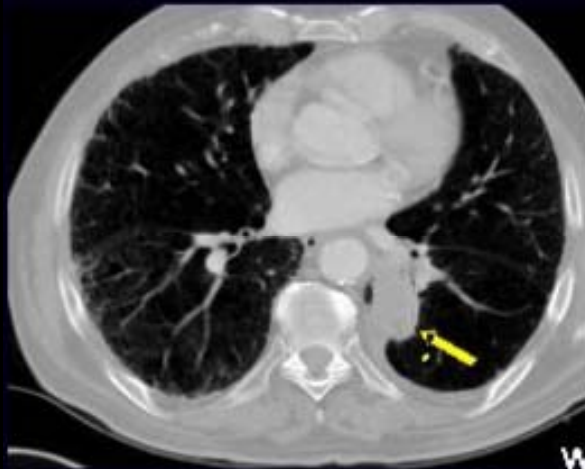
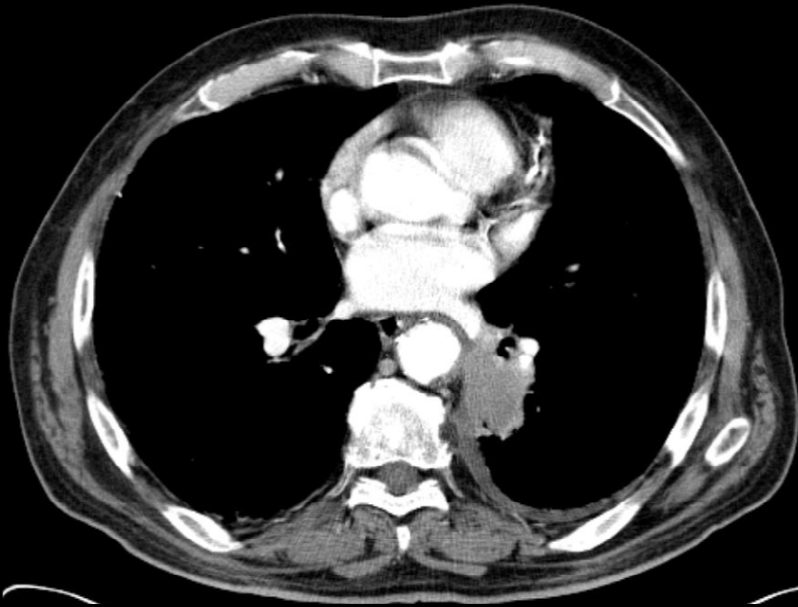
INFILTRAZIONE PARETE TORACICA IMPIEGANDO RICOSTRUZIONI 3D

Sensibilità	96%
Specificità	78%
V.P.P.	85%

Uhrmeister P. et Al.
Eur Radiol 1999; 9:1304-1309







INFILTRAZIONE STRUTTURE MEDIASTINICHE

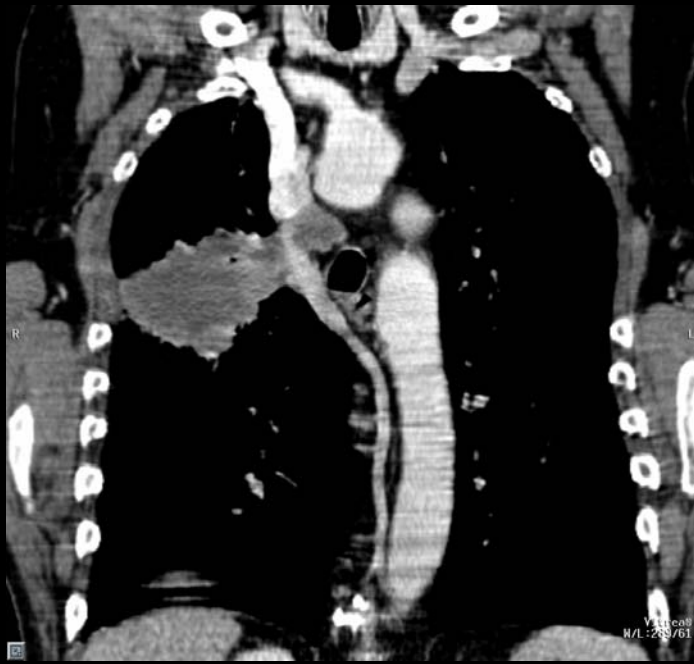
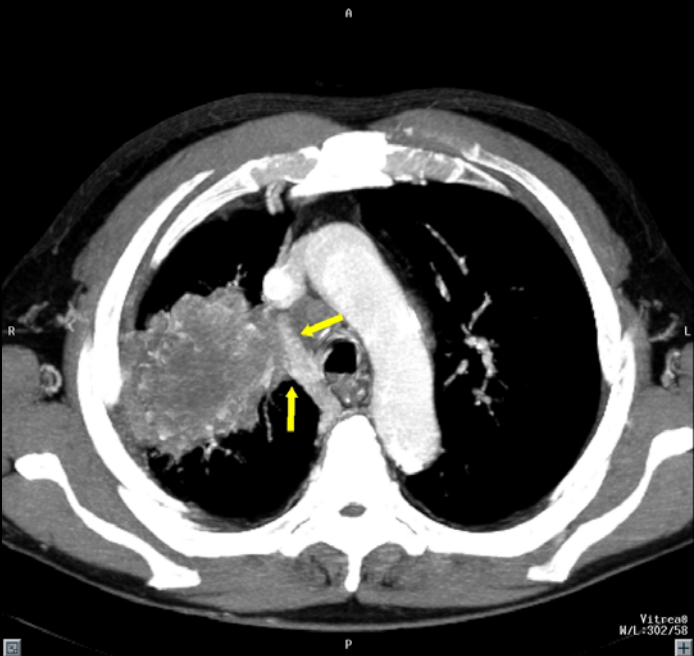
	TC	RM
Sensibilità	40-84%	59-90%
Specificità	57-94%	75-87%
Accuratezza	56-89%	50-93%

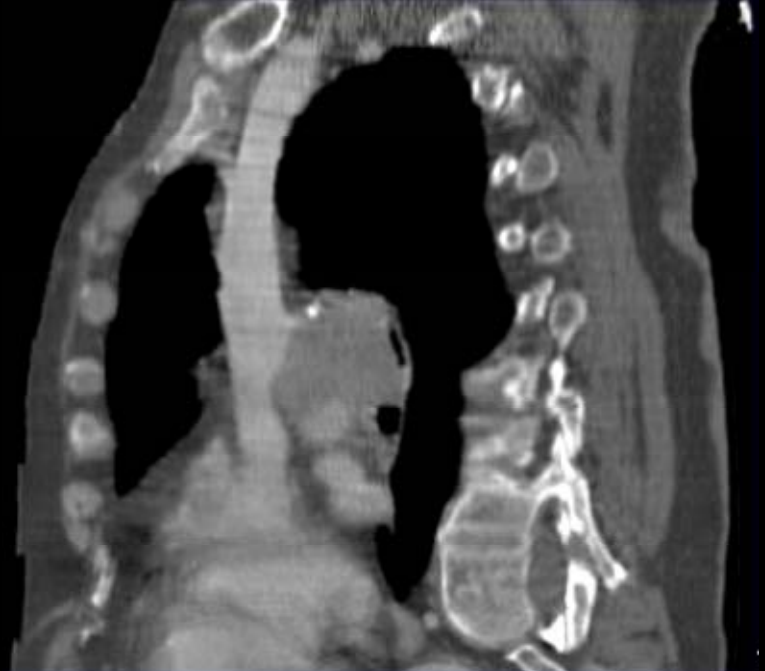
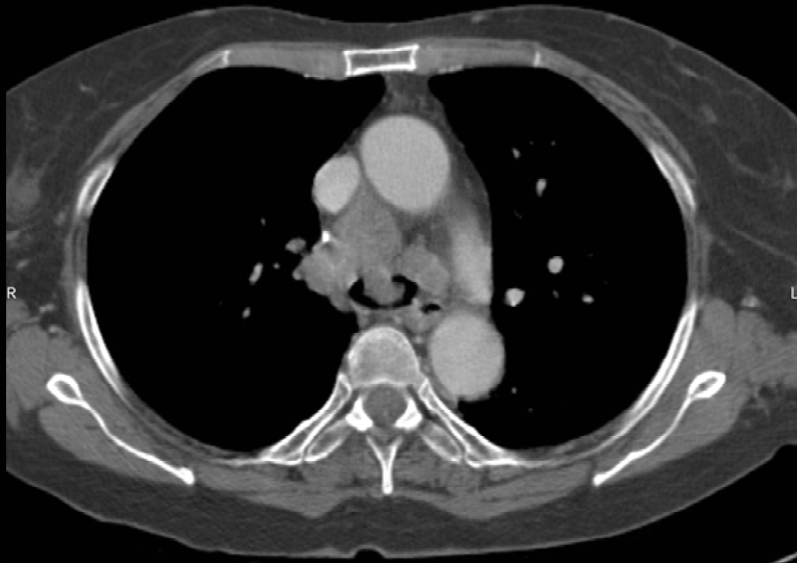
Webb WR et Al.
Radiology 1991; 178:705-713

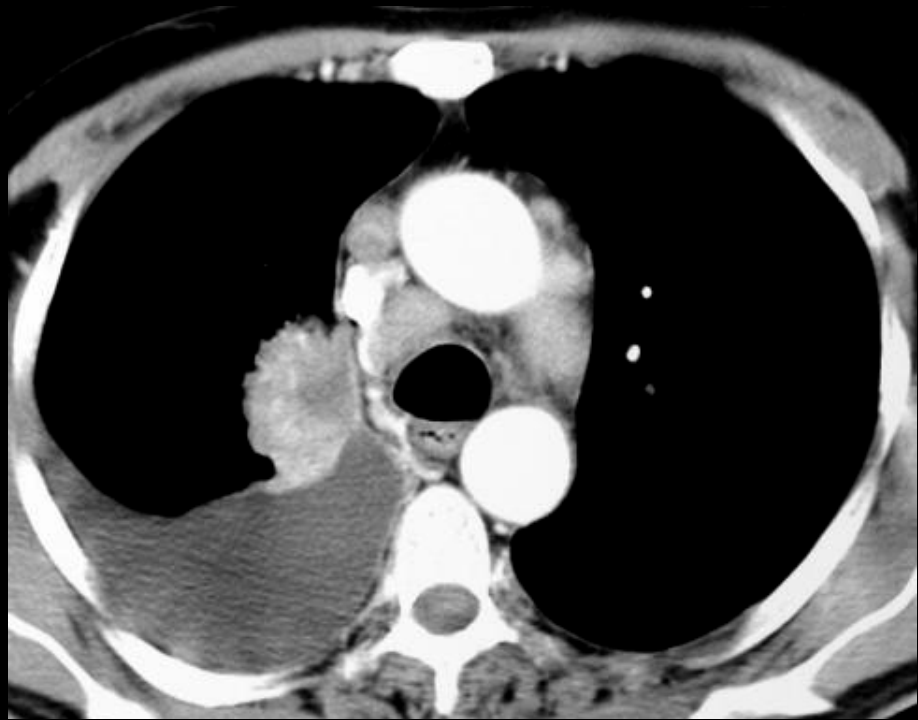
Ohno Y et Al.
EJR 2002; 44:172-181

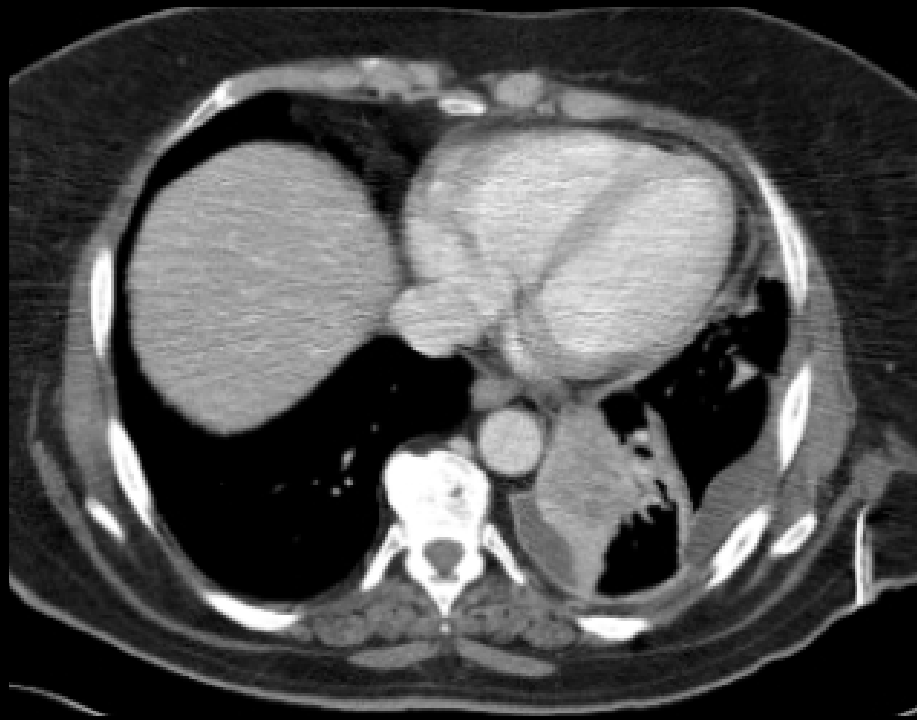






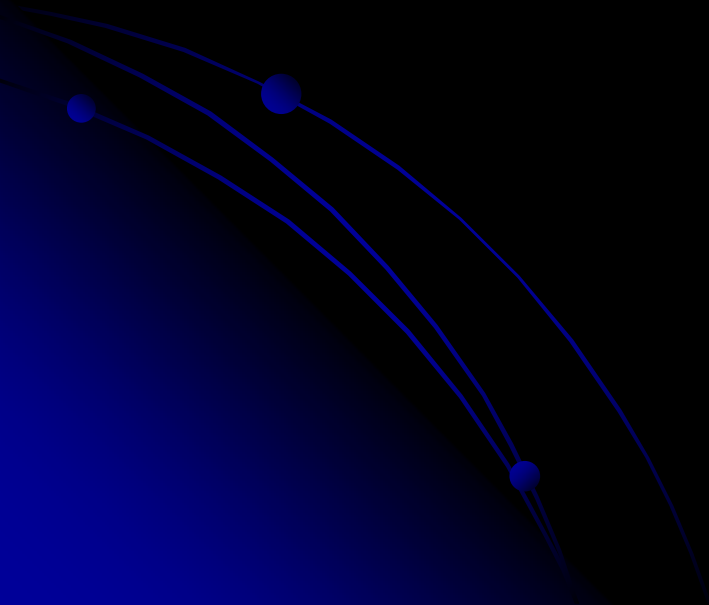






“PET imaging with 18 F-FDG may aid in characterizing pleural disease...”

Munden RF et al
Radiol. Clin. N AM
2005; 43:467-480



N1

**Linfoadenopatie peribronchiali
o ilari omolaterali.**

N2

**Linfoadenopatie mediastiniche
omolaterali o sottocarenali.**

N3

**Linfoadenopatie mediastiniche
controlaterali, del m. scaleno,
sovraclaveari.**

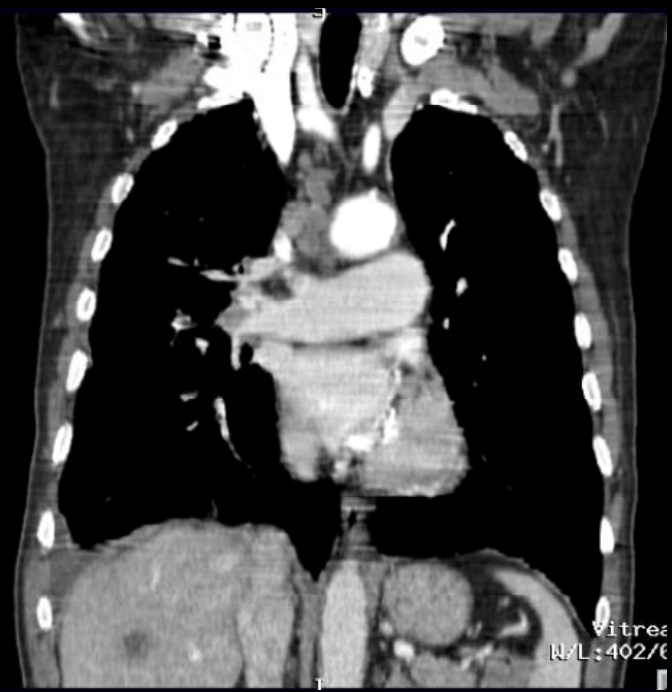
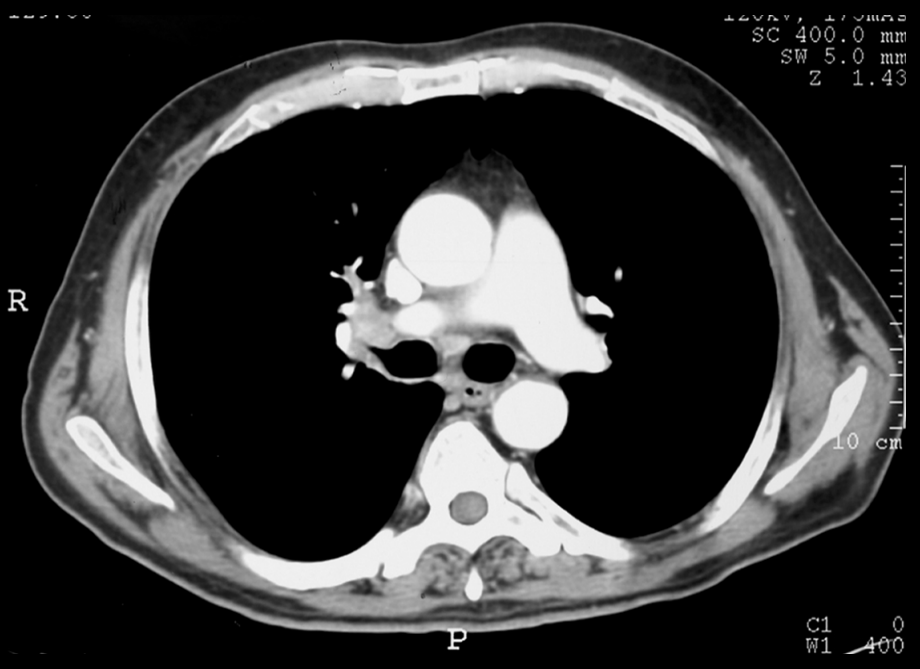
LIMITI NELLA VALUTAZIONE MORFOLOGICA DEI LINFONODI

FALSI NEGATIVI 8 – 64% micrometastasi

FALSI POSITIVI 40% reattivi

Gross B et Al
Radiology 1988; 166:71-74

Arita M et Al
Chest 1996; 110:1004-1008



PARAMETRO N

	TC	PET	EUS
SENSIBILITA'	41 – 67%	67 – 100%	81 – 91%
SPECIFICITA'	79 – 86%	81 – 100%	56 – 96%

Dales RE et Al AM Rev Respir Dis 1990; 141:1096-1101
Dwamena BA et Al Radiology 1999; 213:530-536

Beadsmoore CJ EJCR 2003 45:8-17
Tolozza E et Al CHEST 2003 123:137-146

PARAMETRO M

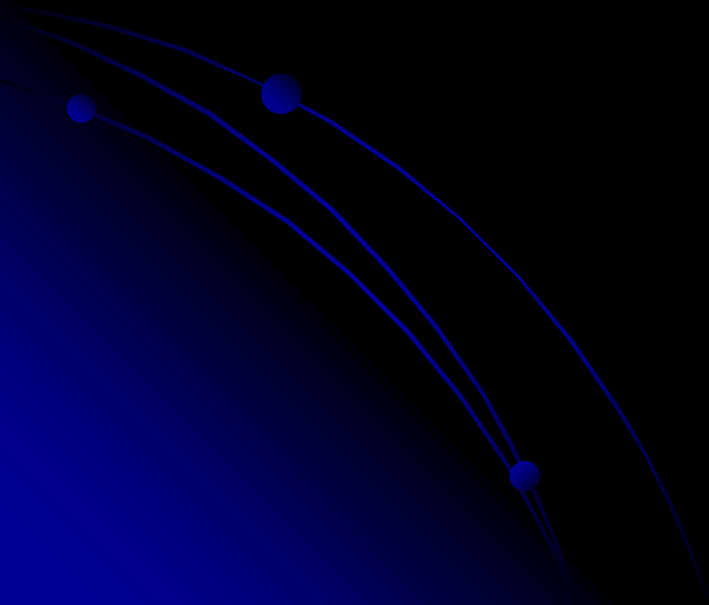
FEGATO

SURRENI

ENCEFALO

OSSA

RENI



INDICAZIONI DELLA AMERICAN THORACIC SOCIETY E DELLA EUROPEAN RESPIRATORY SOCIETY

- **Studi preoperatori dell'encefalo e dello scheletro non raccomandabili**
- **TC – RM risultati sostanzialmente sovrapponibili**

"PET – CT has been found to change the initial tumor stage in 20% of cases"

Viney RC et Al
J Clin Oncol 2004; 22:2357-2362

"PET can reduce the incidence of futile thoracotomies from 41% to 21%"

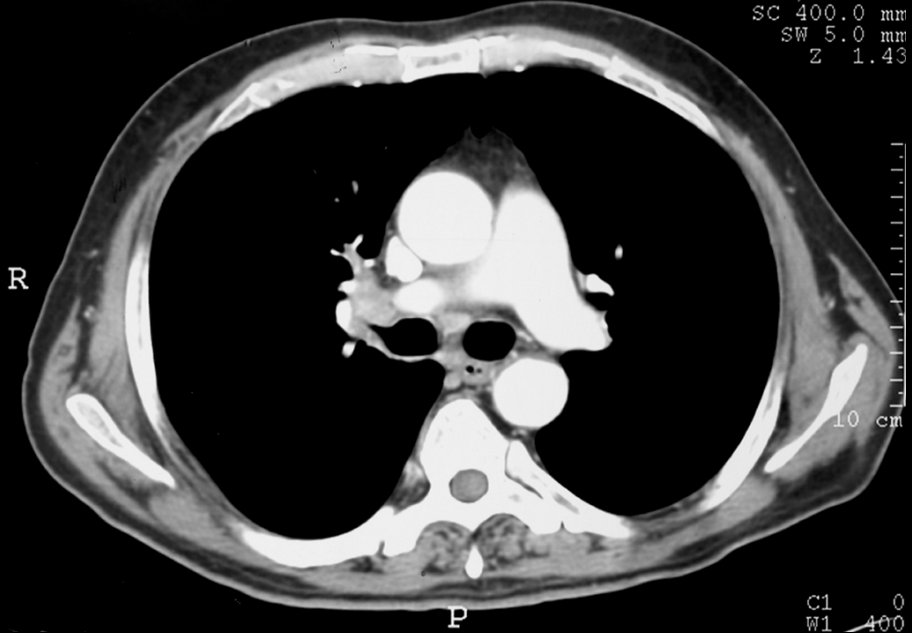
Van Tinterel M et Al
Lancet 2002; 359:1388-1393

CONCLUSIONI

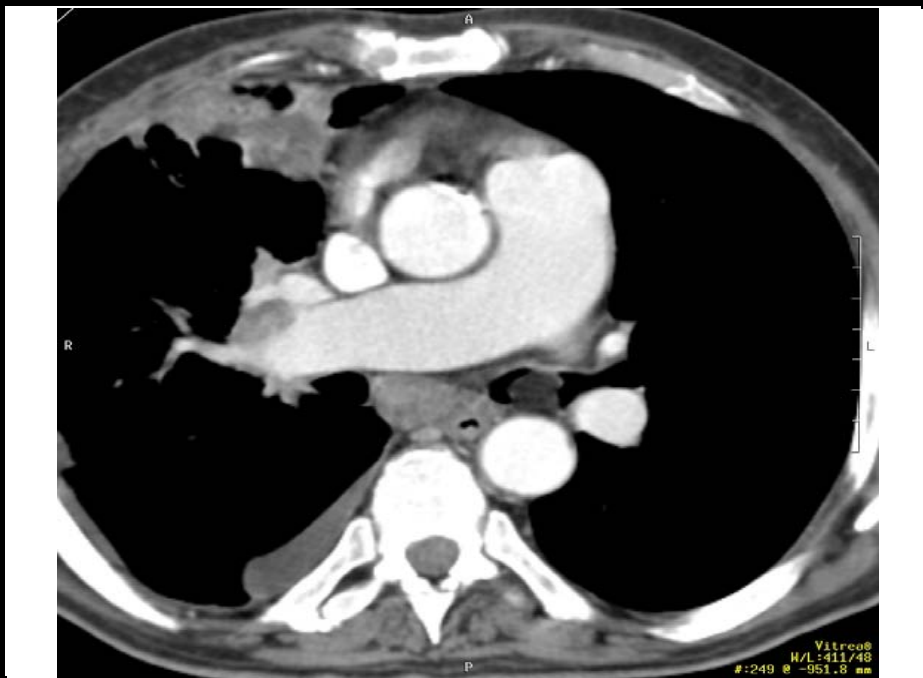
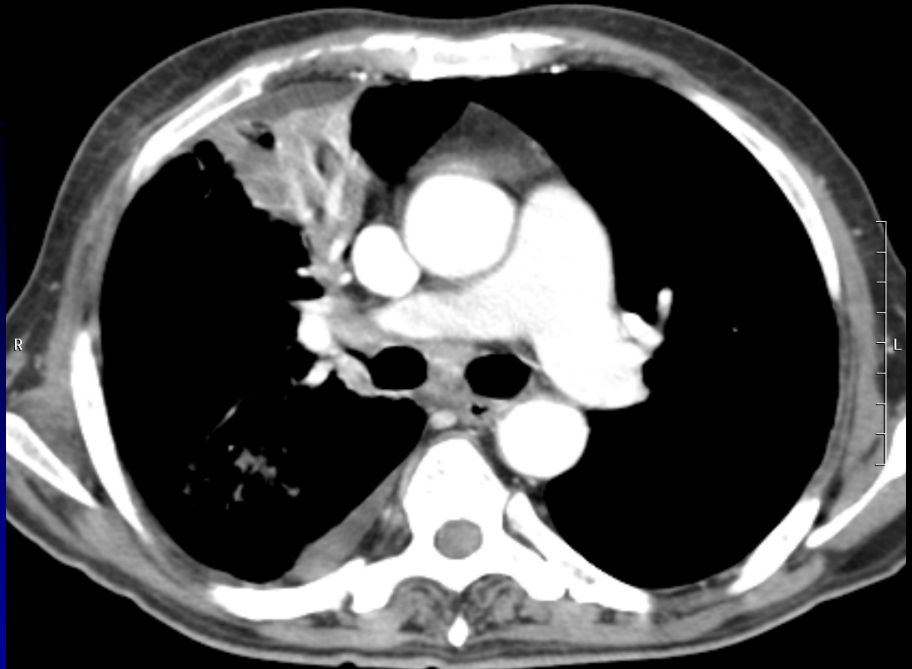
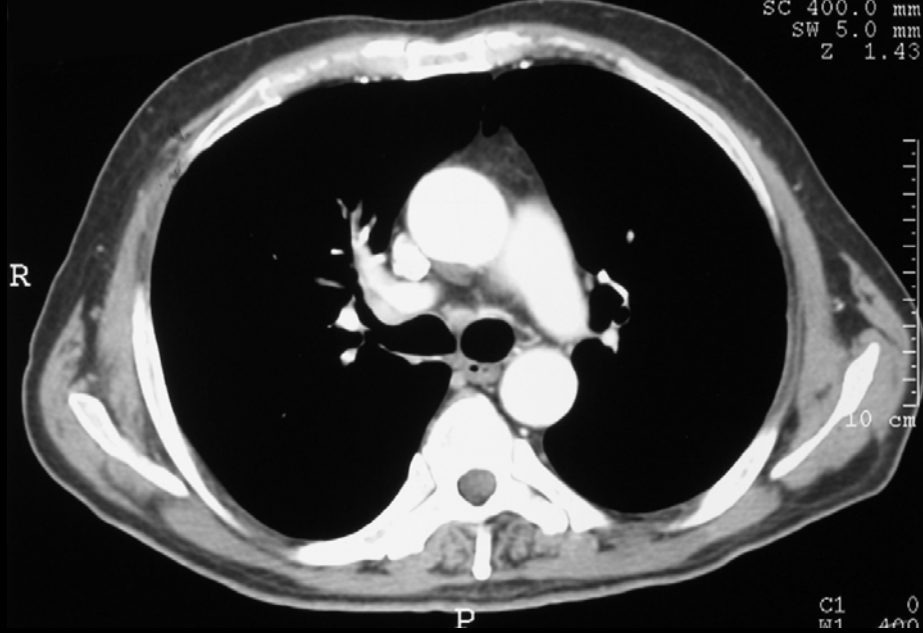
La moderna diagnostica per immagini, basata su valutazioni morfologiche e funzionali, consente una precisa stadiazione dei carcinomi polmonari in una elevata percentuale di pazienti e la necessità di indagini invasive (biopsia, mediastinoscopia e toracoscopia) può essere riservata alla risoluzione di problemi specifici.

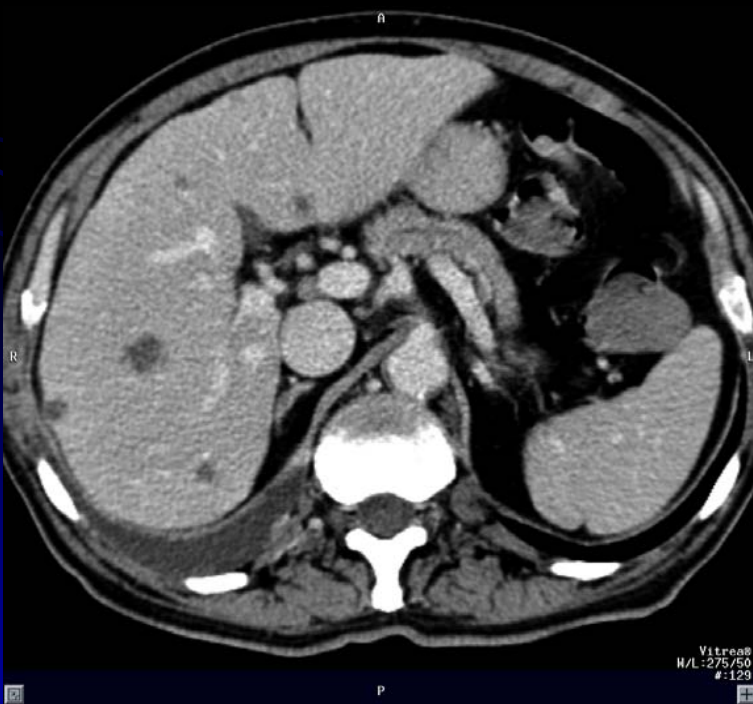
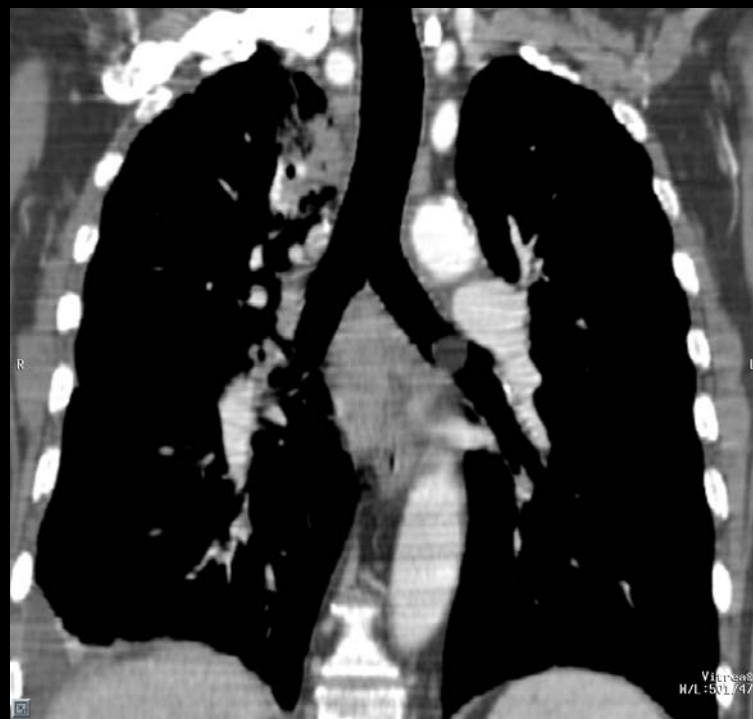
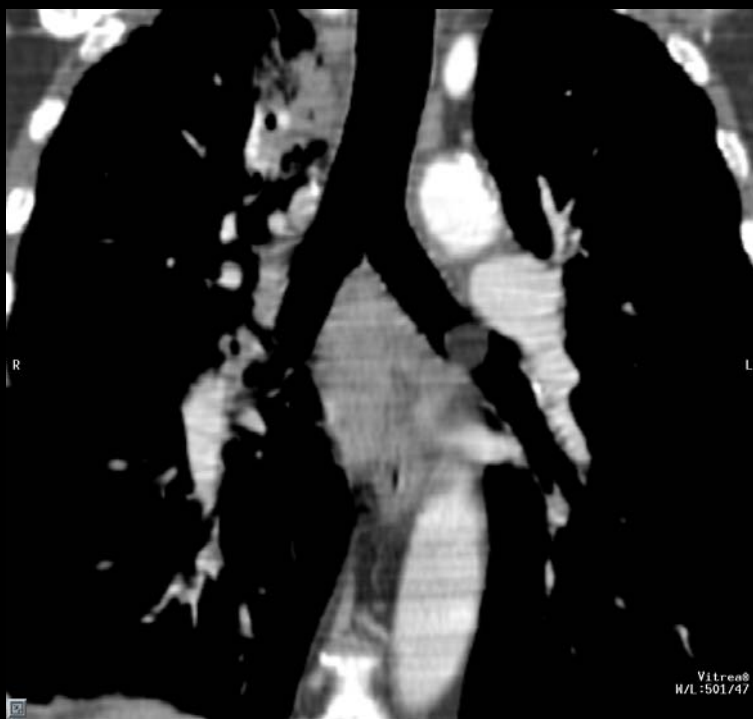
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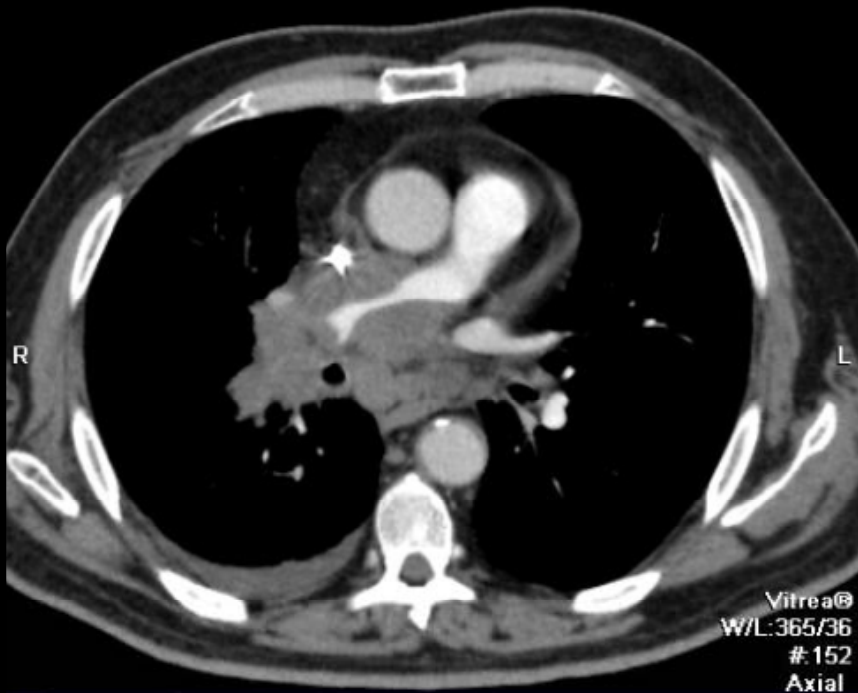
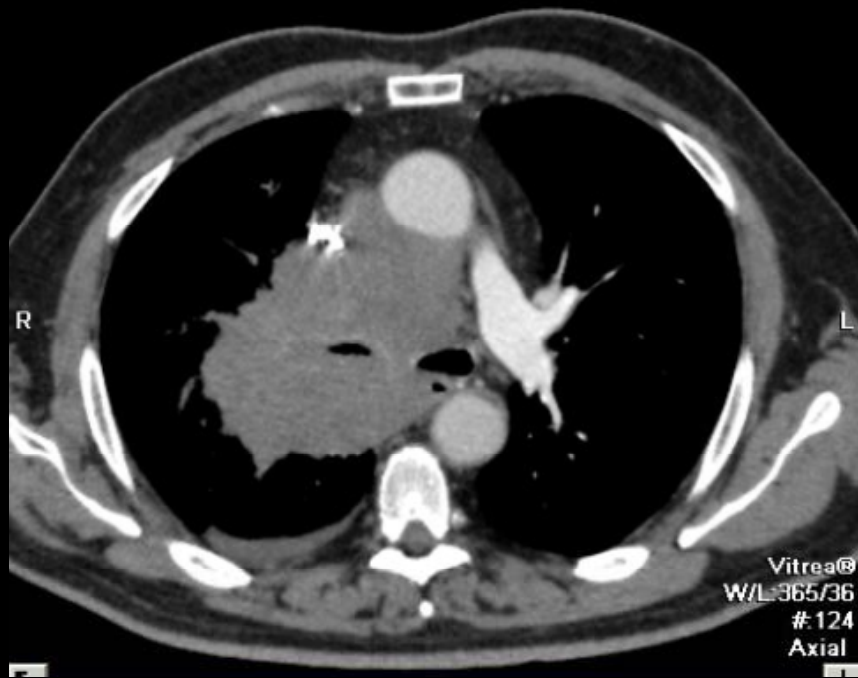
120kV, 175mAs
SC 400.0 mm
SW 5.0 mm
Z 1.43



120kV, 175mAs
SC 400.0 mm
SW 5.0 mm
Z 1.43







“PET – CT alters the treatment plan in more than 50% of patients with NSCLC when compared with CT alone”

Bradley J et Al
Int J Radiat Oncol Biol Phys 2004; 59:78-86

