ECOCARDIOCHIRURGIA – IV Congresso Nazionale
Milano 11 Marzo 2010

Ruolo della cardio TC nelle sindromi coronariche acute

Come inserire la cardio TC negli algoritmi diagnostici tradizionali?

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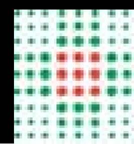


SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Ospedaliero - Universitaria di Parma

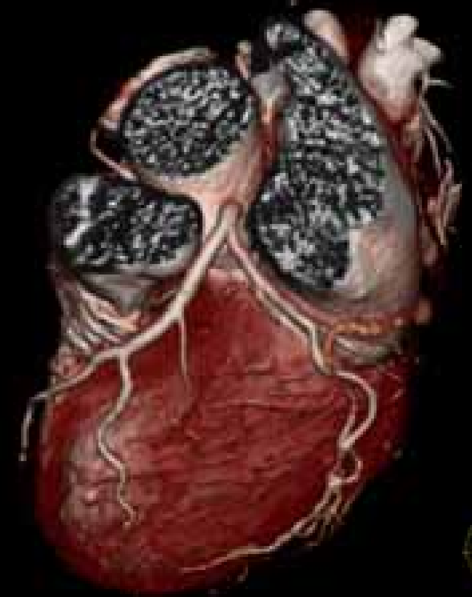
64 sliceTC – indicazioni cliniche

Diagnosi CAD:

- **Stress test equivoco/non interpretabile**
- **Probabilità pretest bassa/intermedia**
- **Anomalie coronariche**

- **Elevato PPN**
- **Buona accuratezza**

ACS ?



CCTA in ACS

Dolore toracico UA NSTEMI STEMI

ECG +/-
Tn I-

ECG +
Tn I +

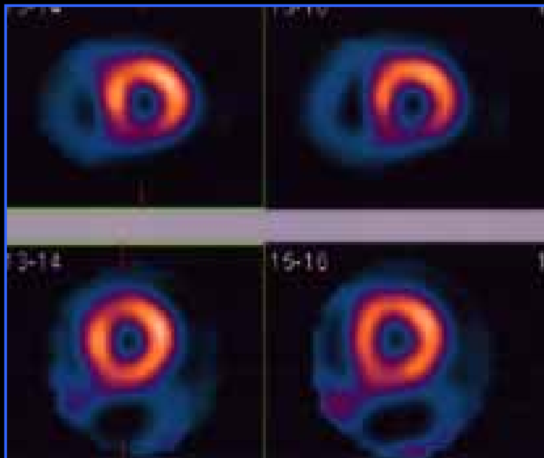
Tp antitrombotica
Tp antischemica
PTCA

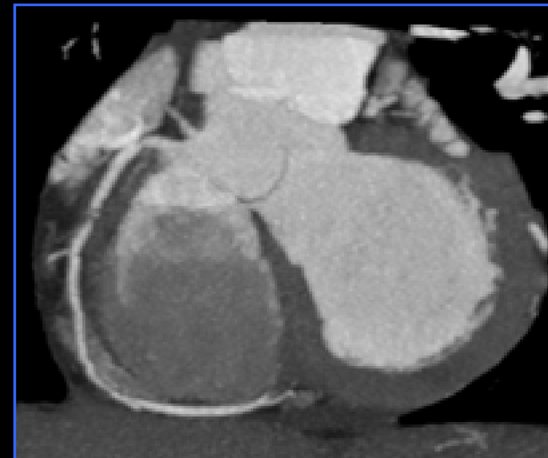
PTCA I

Chest pain

Dolore toracico tipico
Enzimi cardiaci negativi
ECG normale

?

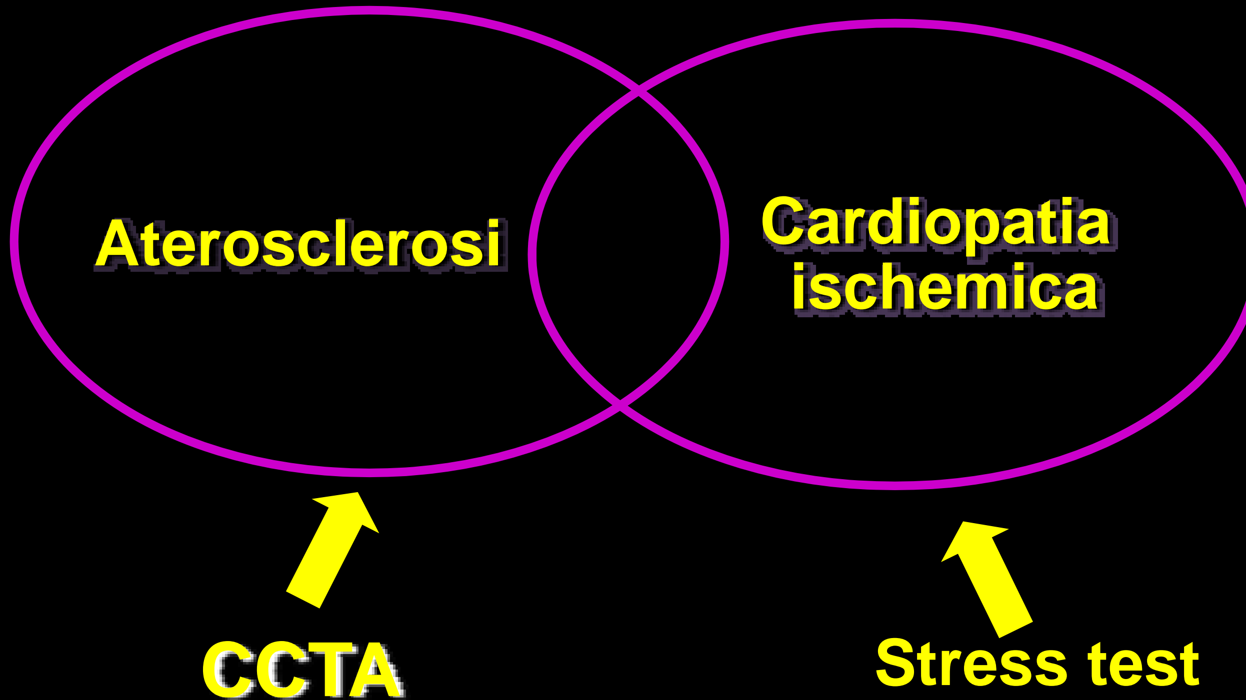




Ischemia

Anatomia

TC multislice

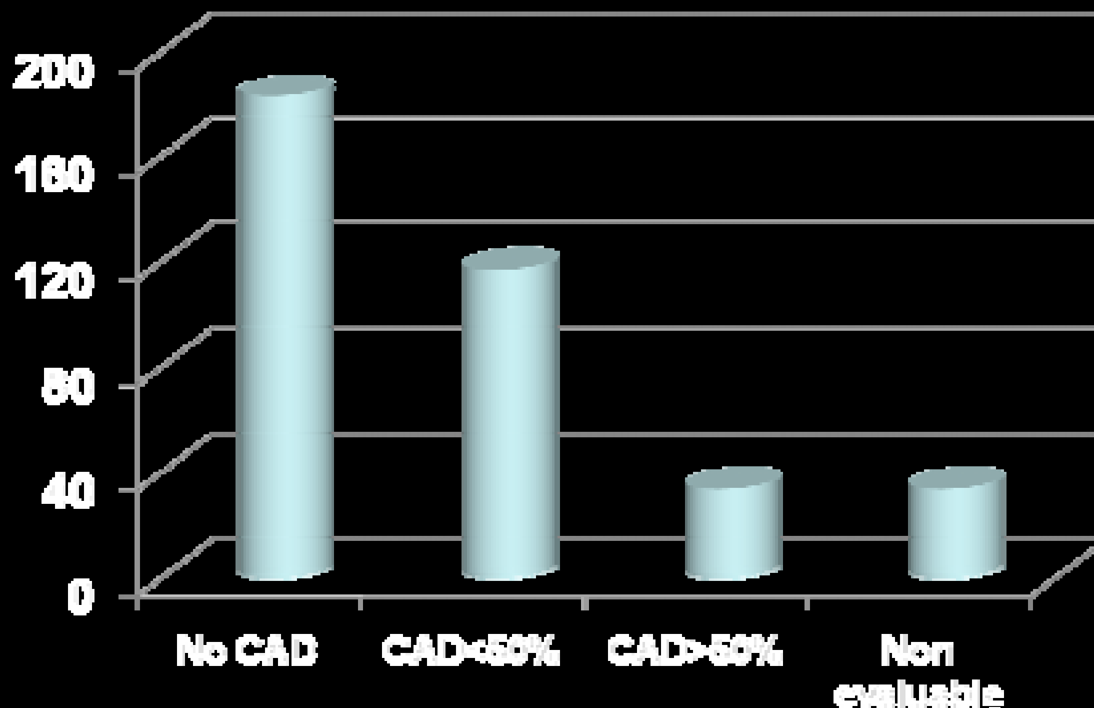


Caratterizzazione non invasiva placca

CCTA in chest pain

368 pts
Chest pain, normal ECG, normal Tn T

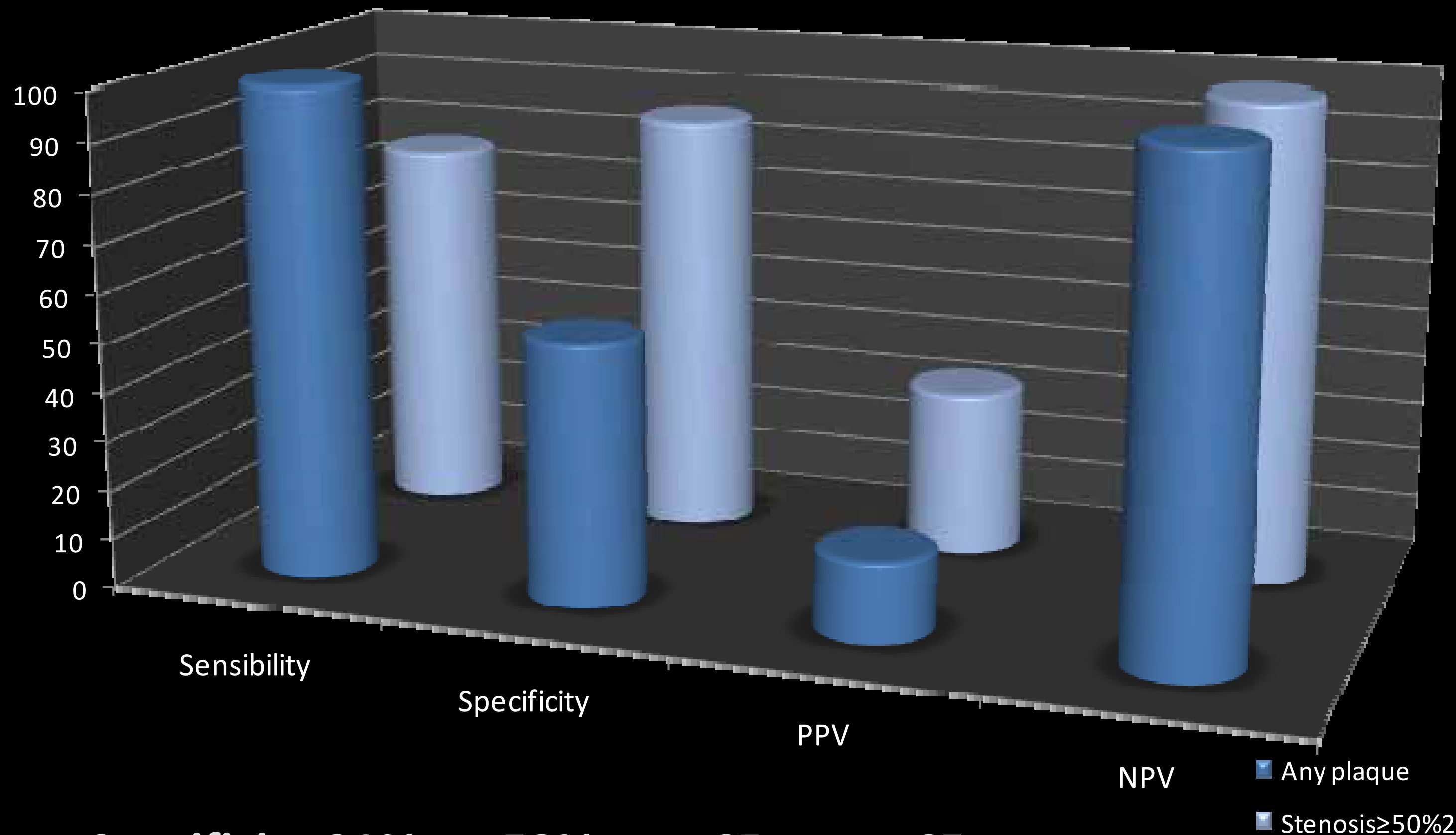
ACS 8.1% No CAD 50.3%



Follow up 6 mesi
0% eventi

Romicat study JACC 2009 ; 53: 1642-50

CCTA in chest pain



Specificity 21% vs. 59% age>65 y vs.< 65y

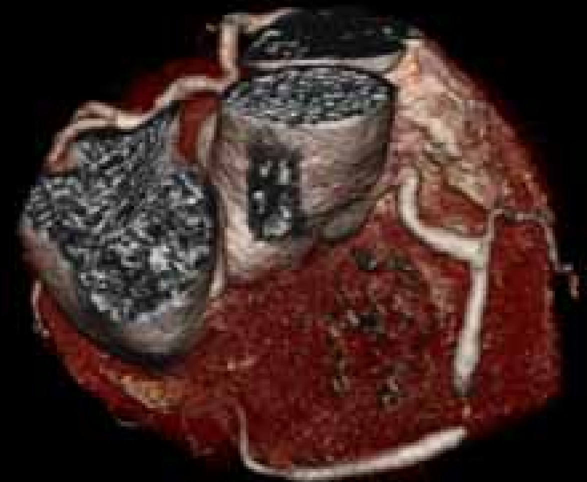
Romicat study JACC 2009 ; 53: 1642-50

CCTA in chest pain

Stenosi > 50%

Non è un criterio certo

- *Instabilizzazione di placca subcritica*
- *Imprecisa quantificazione della stenosi*



CCTA in ACS

- ***Dolore toracico***
  bassa probabilità pretest (età <65)
  test provocativo dubbio

CGF?

CCTA in Chest pain

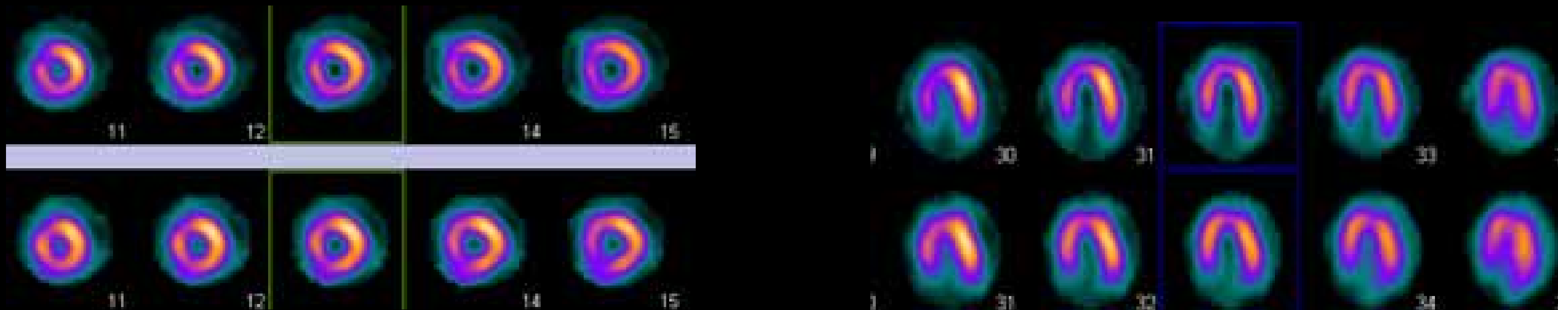
F.E. 58 aa Attività sportiva regolare

HTA

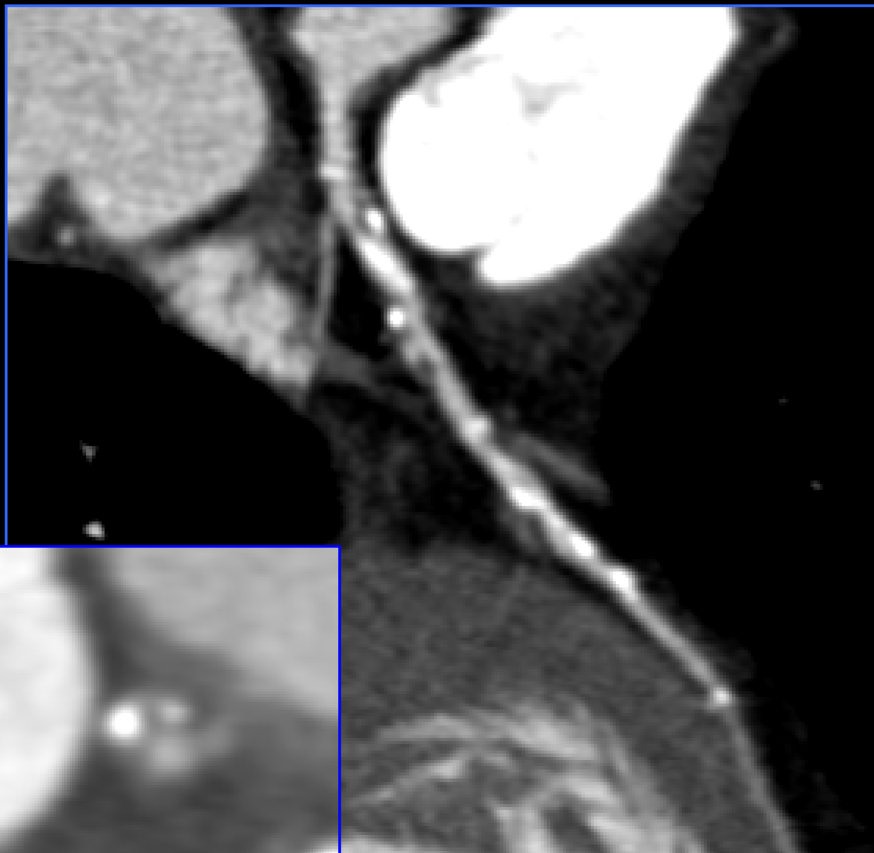
Dolore toracico (15')

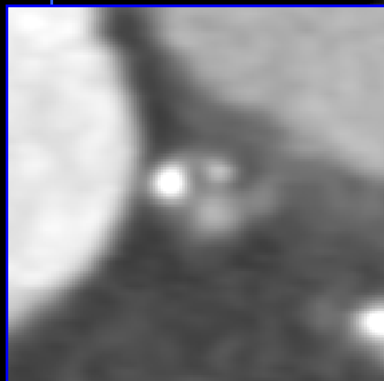
Test da sforzo: dubbio (comparsa di BBS)

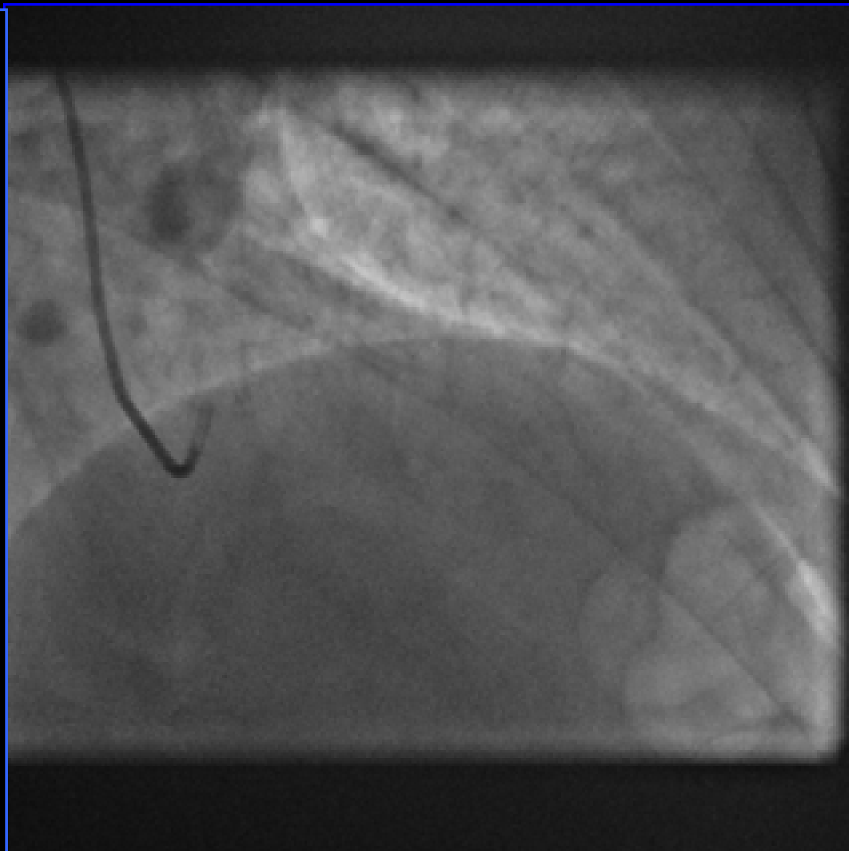
SPECT: dubbia ipoperfusione settale



CCTA in Chest pain







CCTA in ACS

- ***Dolore toracico***
  bassa probabilità pretest
  test provocativo dubbio

- ***Troponina positiva isolata***

Caso clinico

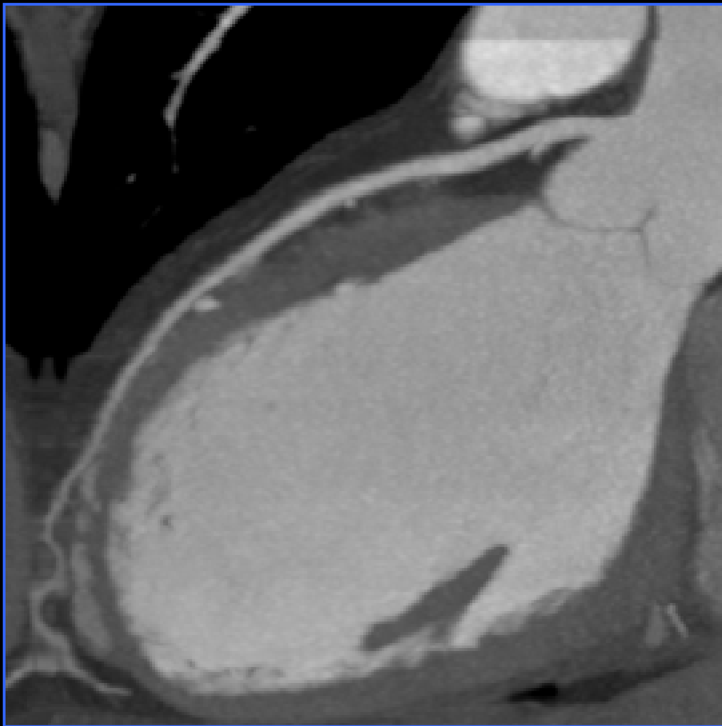
L.D. 56 aa
FdR: HTA

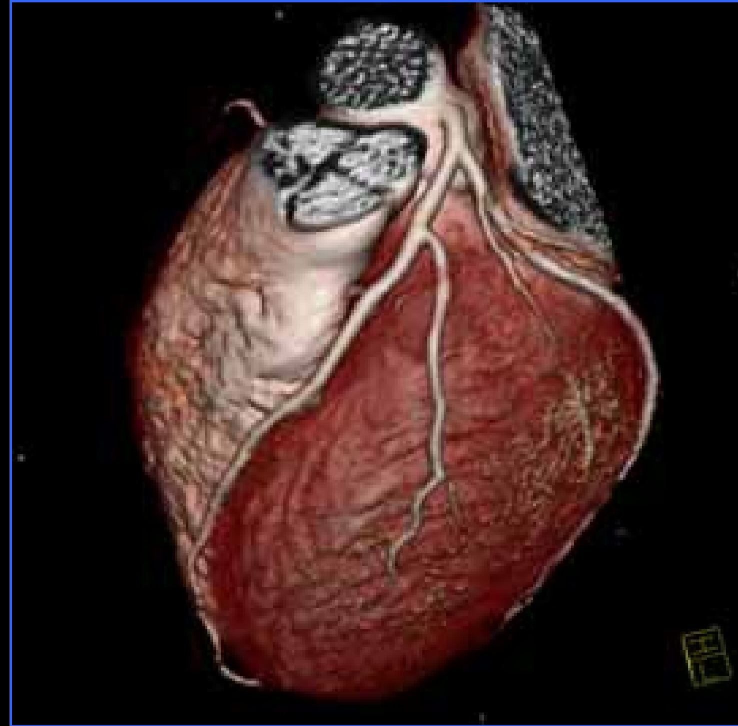
Malessere, cardiopalmo

FA parossistica

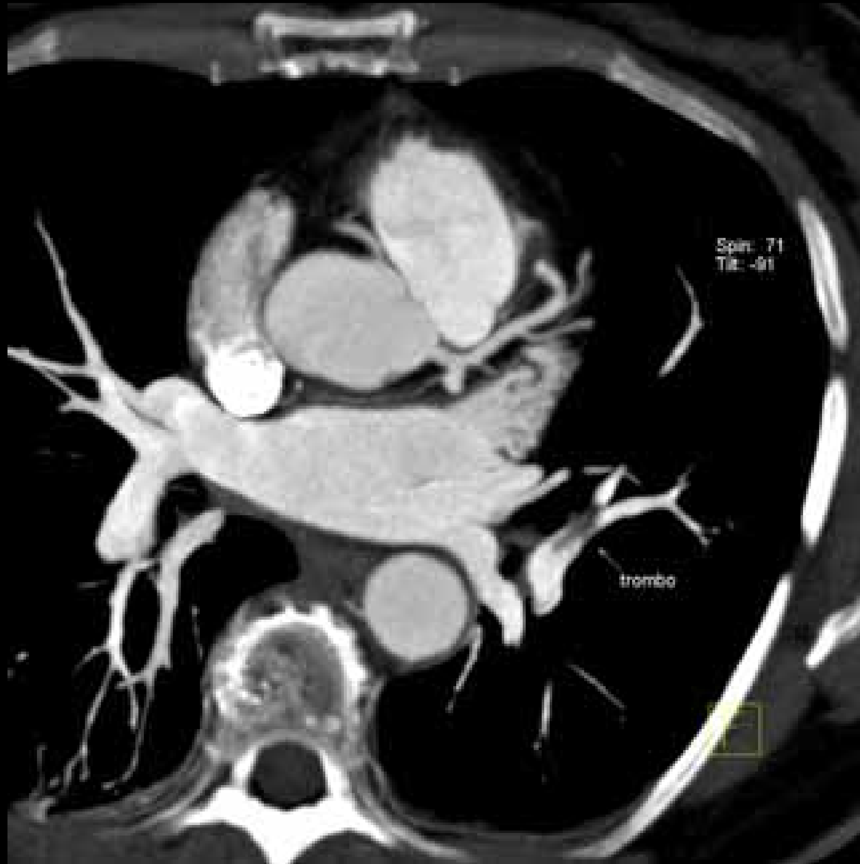
Troponina I 0.7

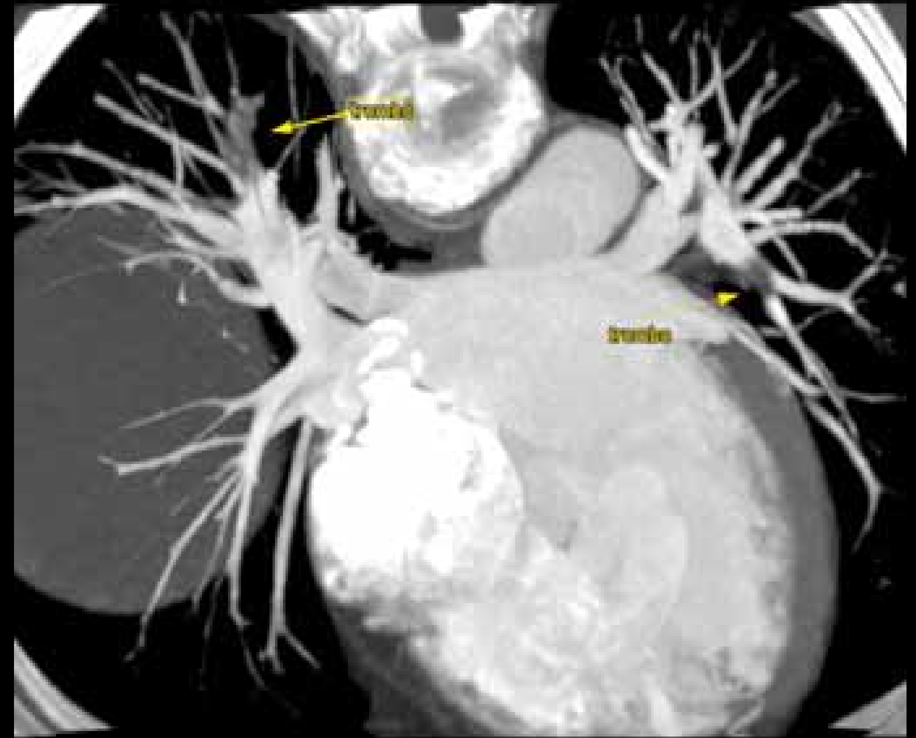
Caso Clinico





Caso Clinico





Albero coronarico indenne

Embolia polmonare

Features associated with plaque rupture

Structural

Large Lipid-core
Thin fibous cap (TCFA)

Remodeling

Expansive (outward)

Cellular

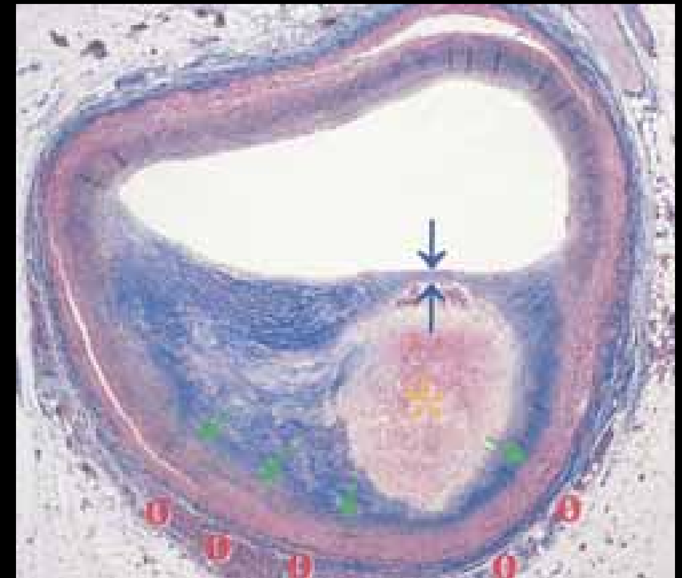
Lack of SMC at rupture site
Accumulation of MACRs

Function

Impaired matrix synhesis,
Increased matrix breakdown

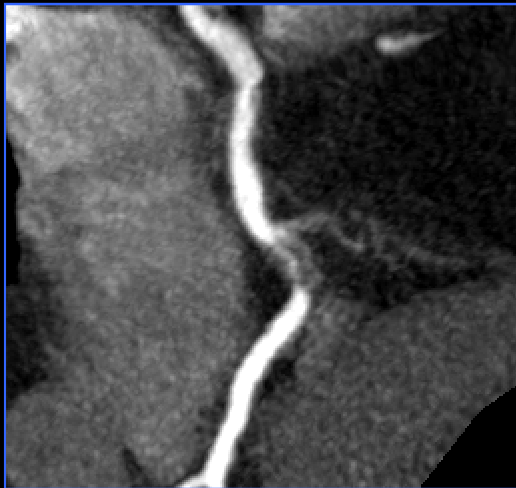
Other

Inflammation, neovascularization



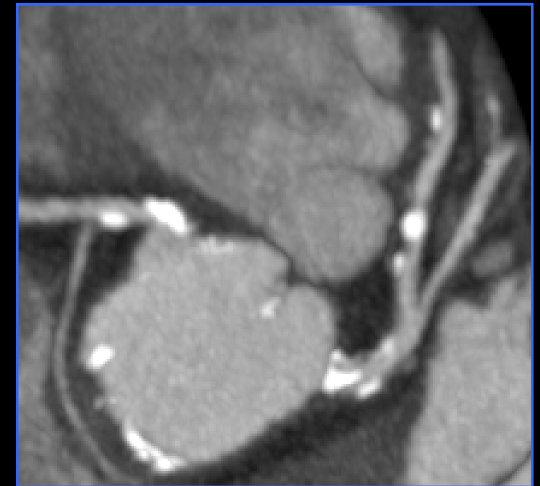
Falk jacc 2006 47:c7-12

Morfologia placca aterosclerotica



Placca non calcifica

Placca mista



Placca Calcifica

Valori di attenuazione: Unità Hounsfield

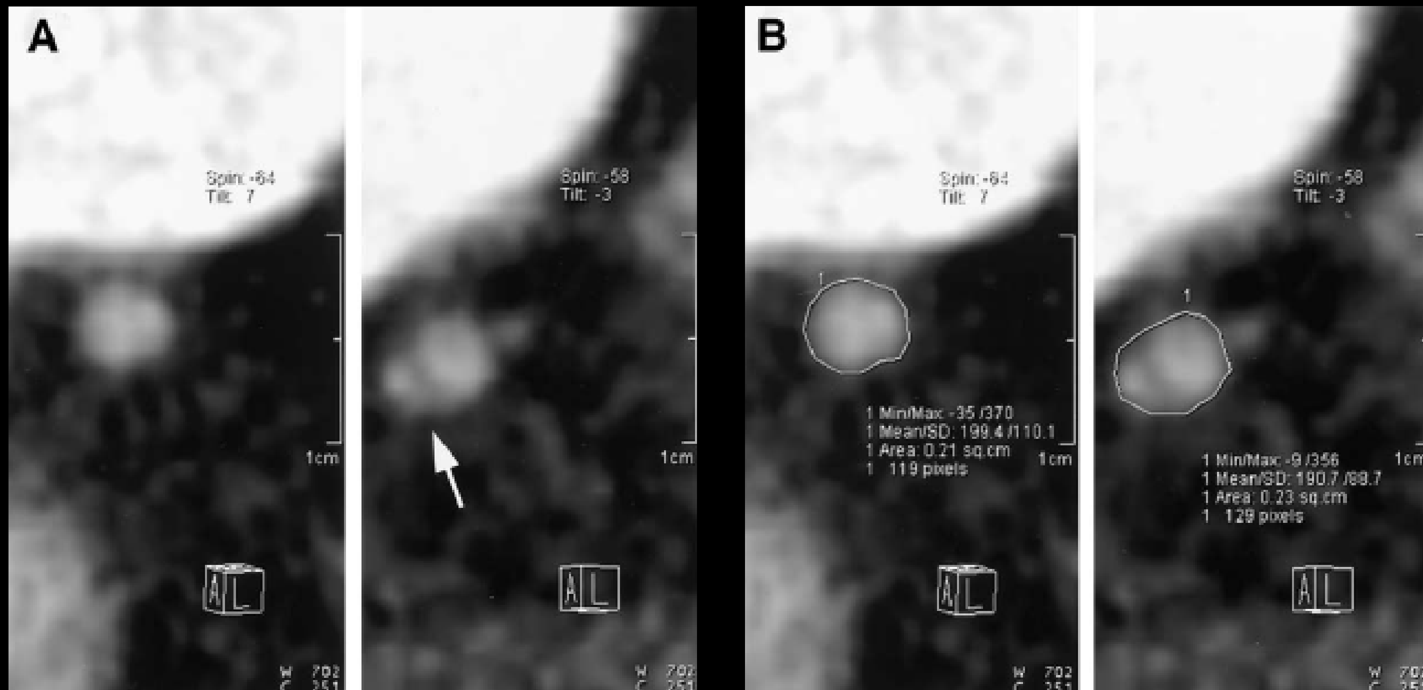
0 HU

1000 HU

CT Coronary Plaque Imaging

Coronary remodeling

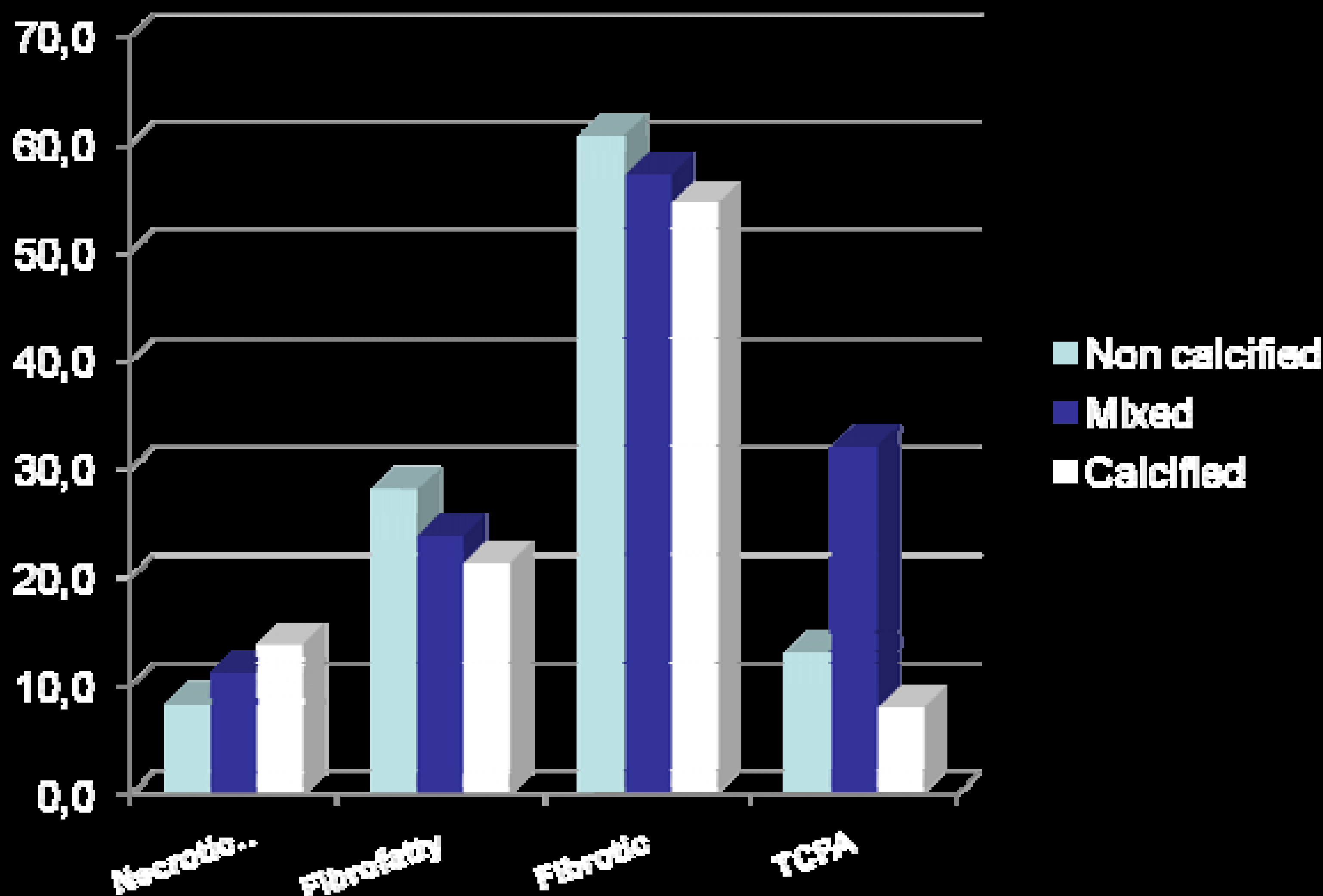
MSCT permits identification of both positive (expansive) and negative (shrinkage) vessel wall remodeling



Non-Stenotic lesions (n=23): RI = 1.3±0.2,
Stenotic lesions (n=21): RI = 1.0±0.2 (p<0.001)

Achenbach, JACC '04

64 CCTA compared to VH-IVUS



Ponditutze G. JACC Cardiovascular Interv 2010

Morfologia Placca in ACS

	ACS (n=38)	SA (n=33)
Positive remodeling	87%	12%
NCP <30 HU	79%	8%
NCP <150 HU	100%	100%
Spotty calcification	63%	21%
Large calcification	22%	55%

Motoyama JACC 2007;50:319-26

Morfologia Placca in ACS

	ACS (n=38)	SA (n=33)	OR	P value
Non calcified	57 (32%)	14 (12%)	3.9 (1.6-9.5)	0.003
Mixed	105 (59%)	32 (27%)	3.4 (1.6-6.9)	0.001
Calcified	17 (9%)	72 (61%)	0.06 (0.02-0.2)	<0.001

Pondijutze EHJ 2008;29:2373-2381

Morfologia Placca in ACS

	Culprit Vessel (plaque n=72)	Non-culprit (plaque n=107)	OR (95% CI)	P-value
Non calcified	19 (26%)	38 (36%)	0.6 (0.3-1.2)	0.2
Mixed	44 (61%)	61 (57%)	1.2 (0.6-2.2)	0.6
Calcified	9 (13%)	8 (7%)	1.8 (0.6-5.3)	0.3

Pondijutze EHJ 2008;29:2373-2381

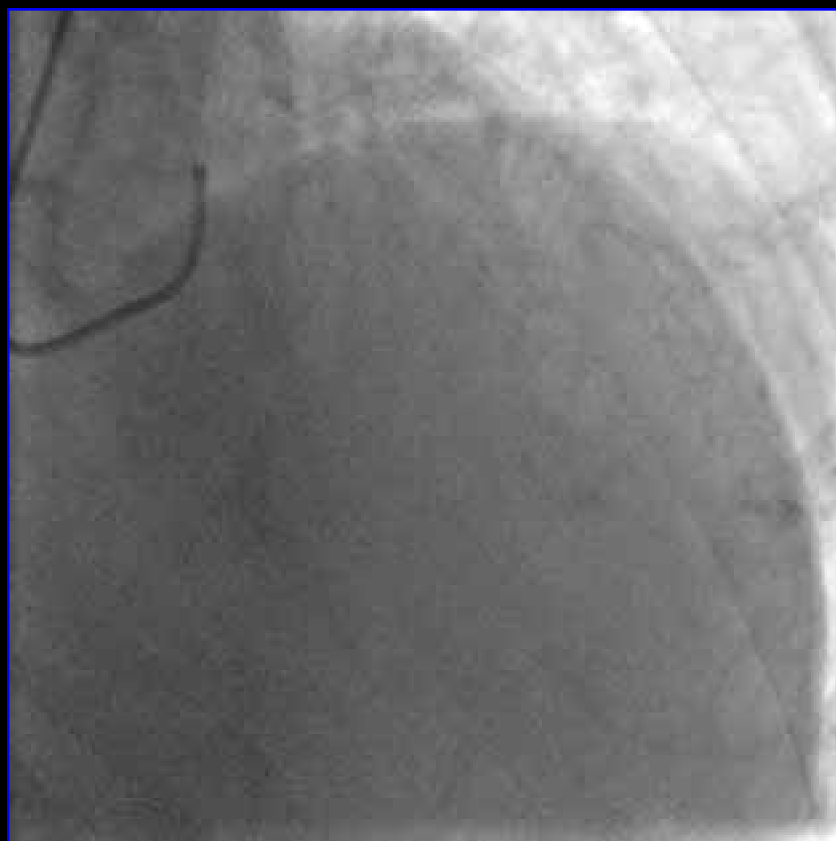
ACS senza stenosi coronariche

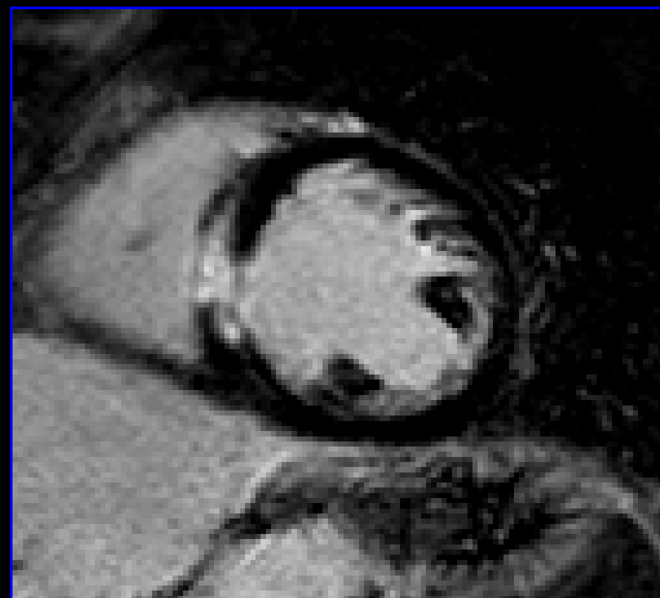
C.G. 74 aa
Fdr CV: dislipidemia

Dolore toracico prolungato
ECG alterazioni aspecifiche

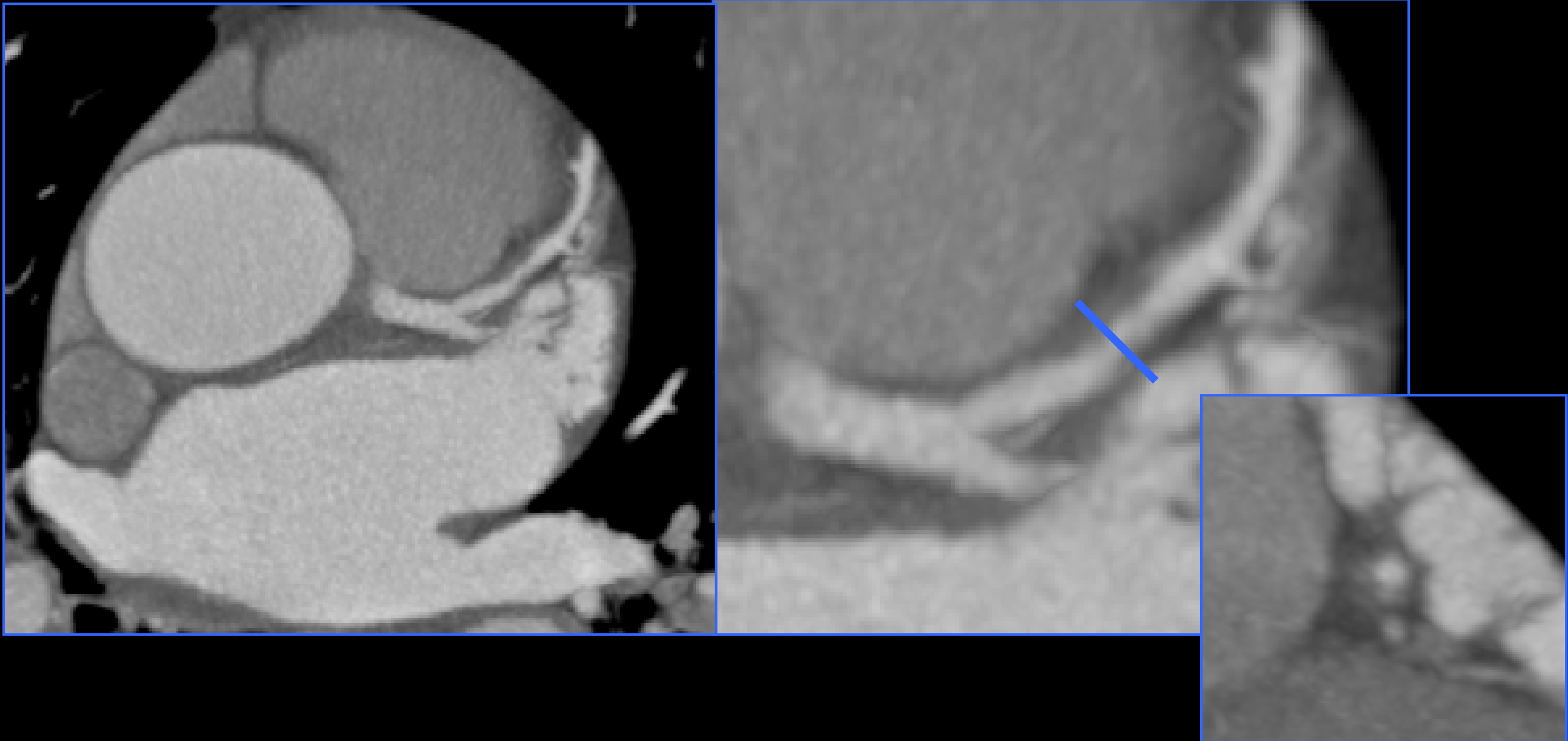
TnI 3.5

Caso clinico





Caso clinico



CCTA in ACS

Quando usare?

- è importante escludere stenosi coronariche

Quando non usare?

- Probabilità pretest alta / CAD nota
- Qualità immagini non ottimale
- Non influenza l'iter diagnostico successivo

- Dati limitati di confronto con test provocativi

- Ruolo diagnostico limitato in ACS