

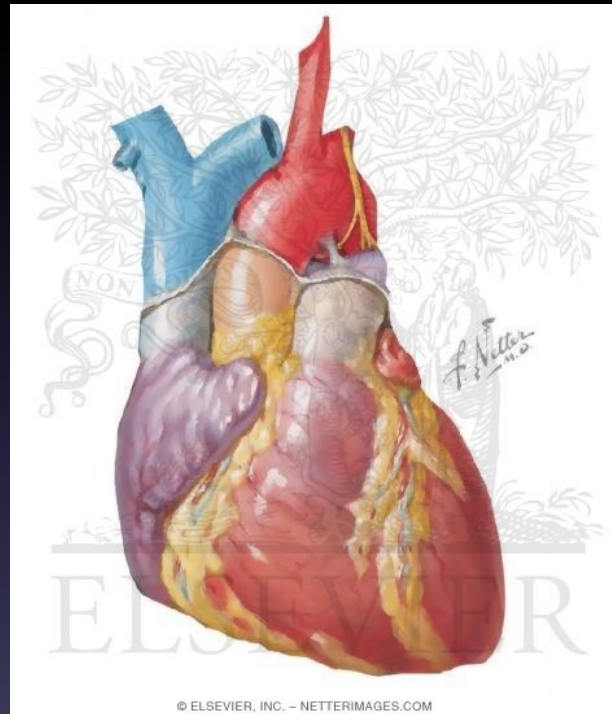


Semeiotica cardiaca

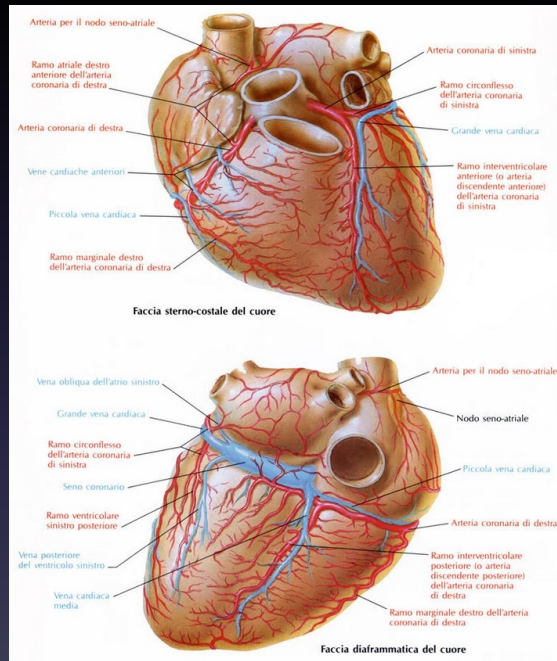
Dott. Riccardo Cau

Riccardo.cau@unica.it

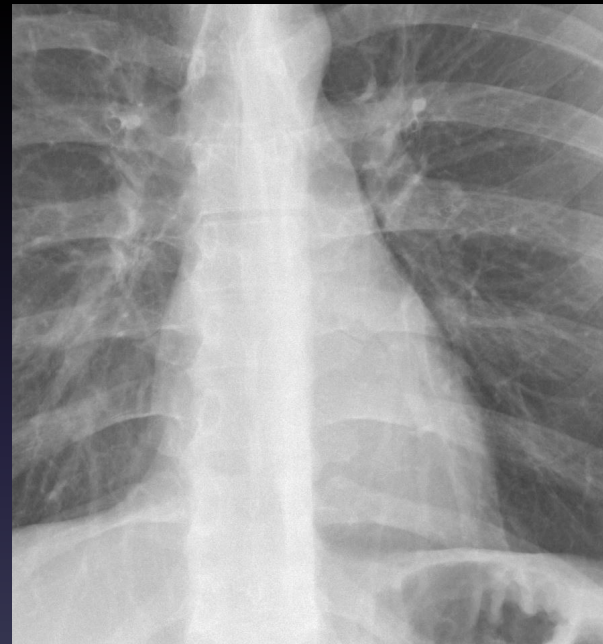
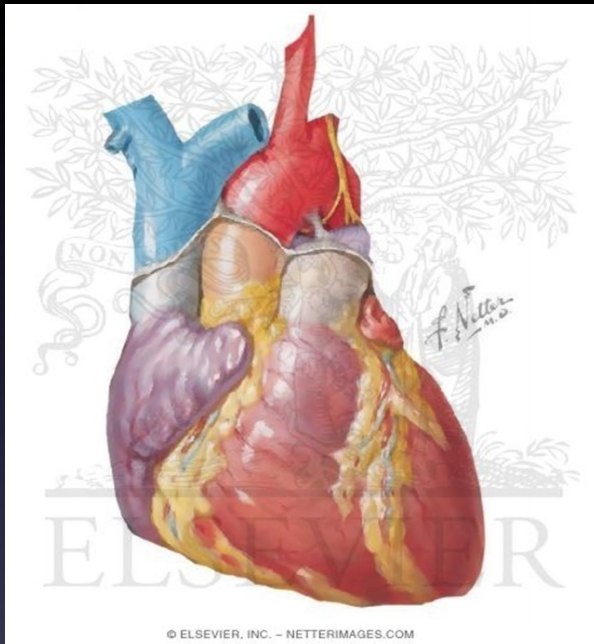
Anatomia umana normale



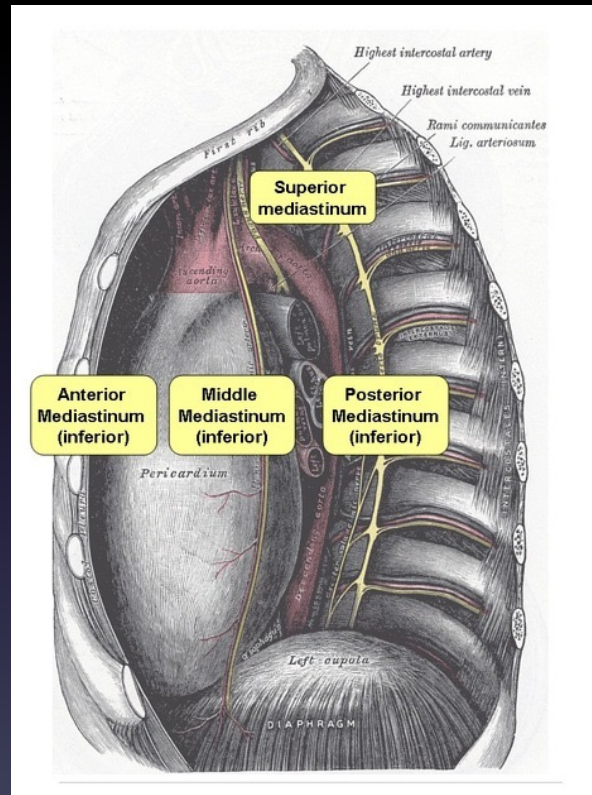
Anatomia umana normale



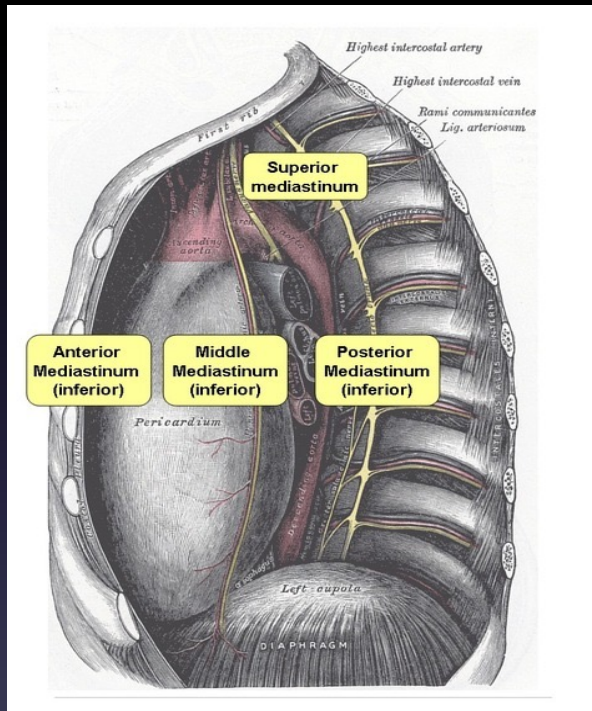
Anatomia Vs Radiografia



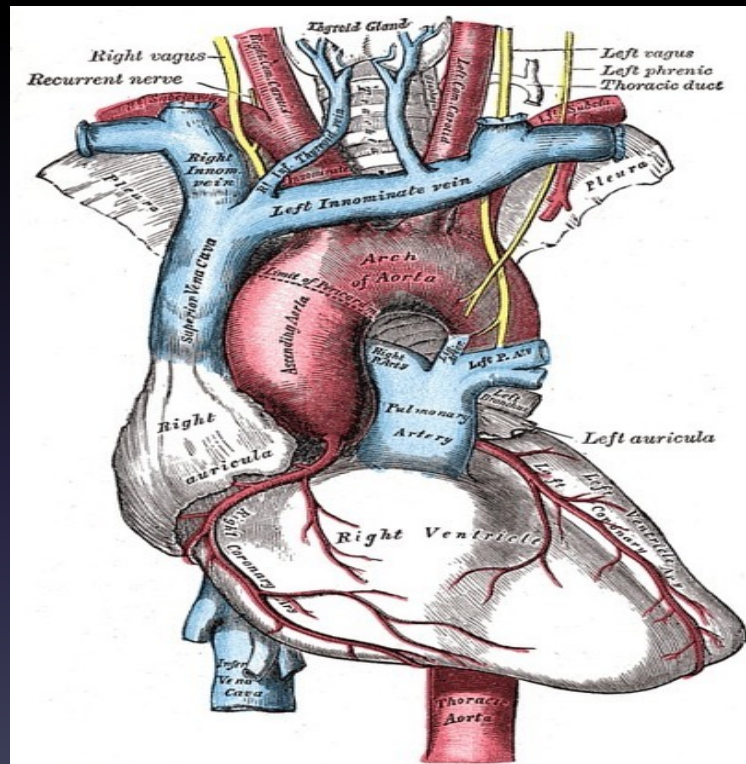
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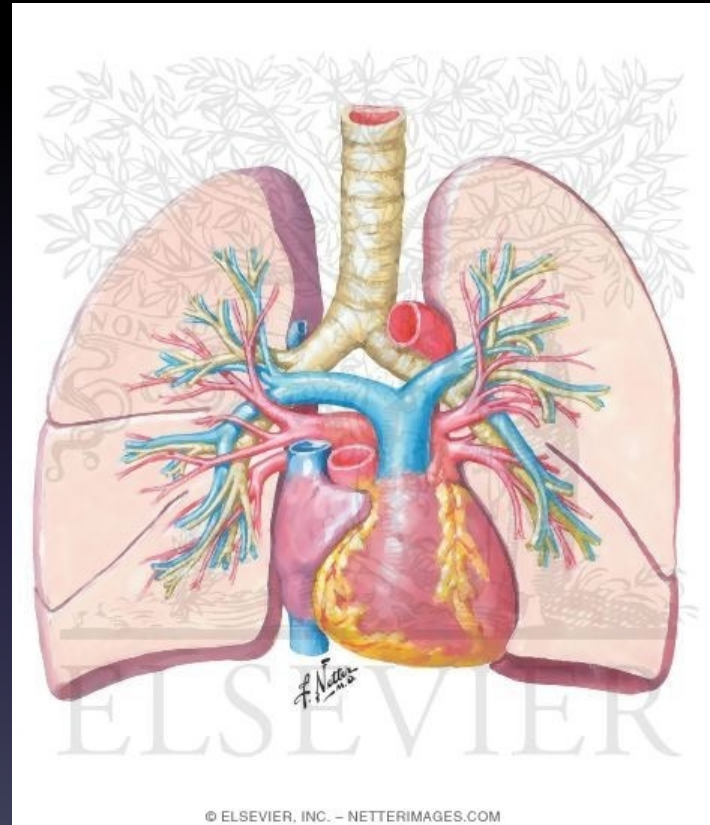
Anatomia Vs Radiografia

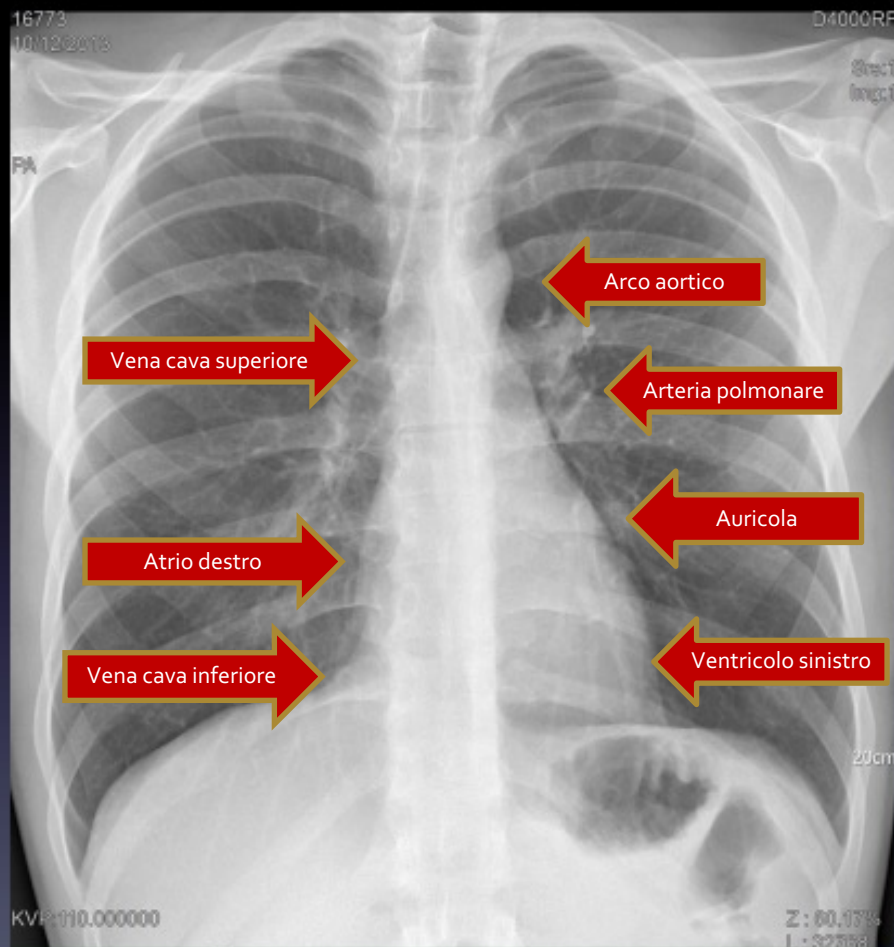


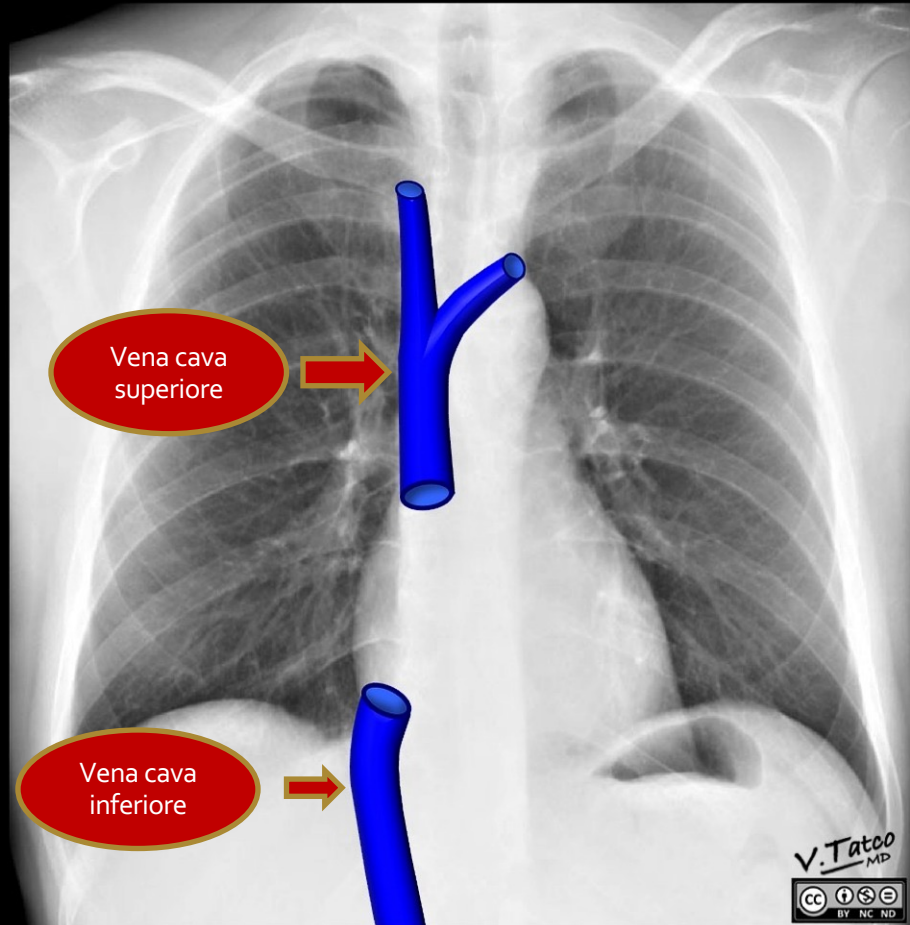
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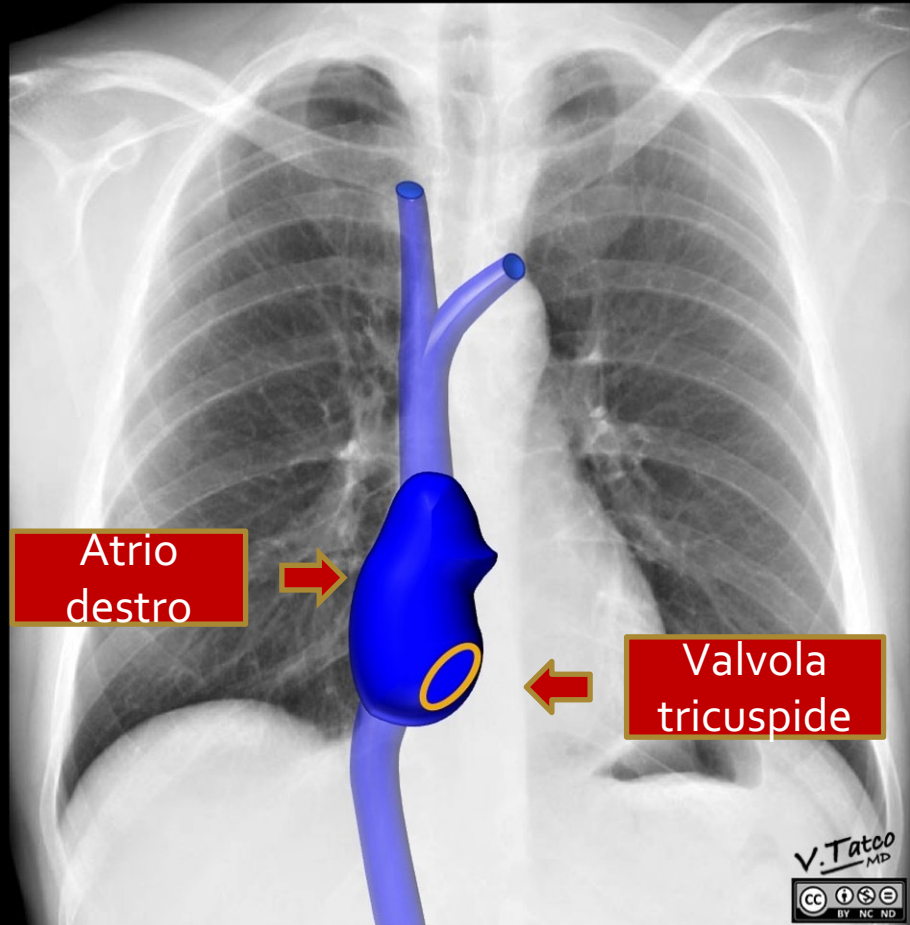


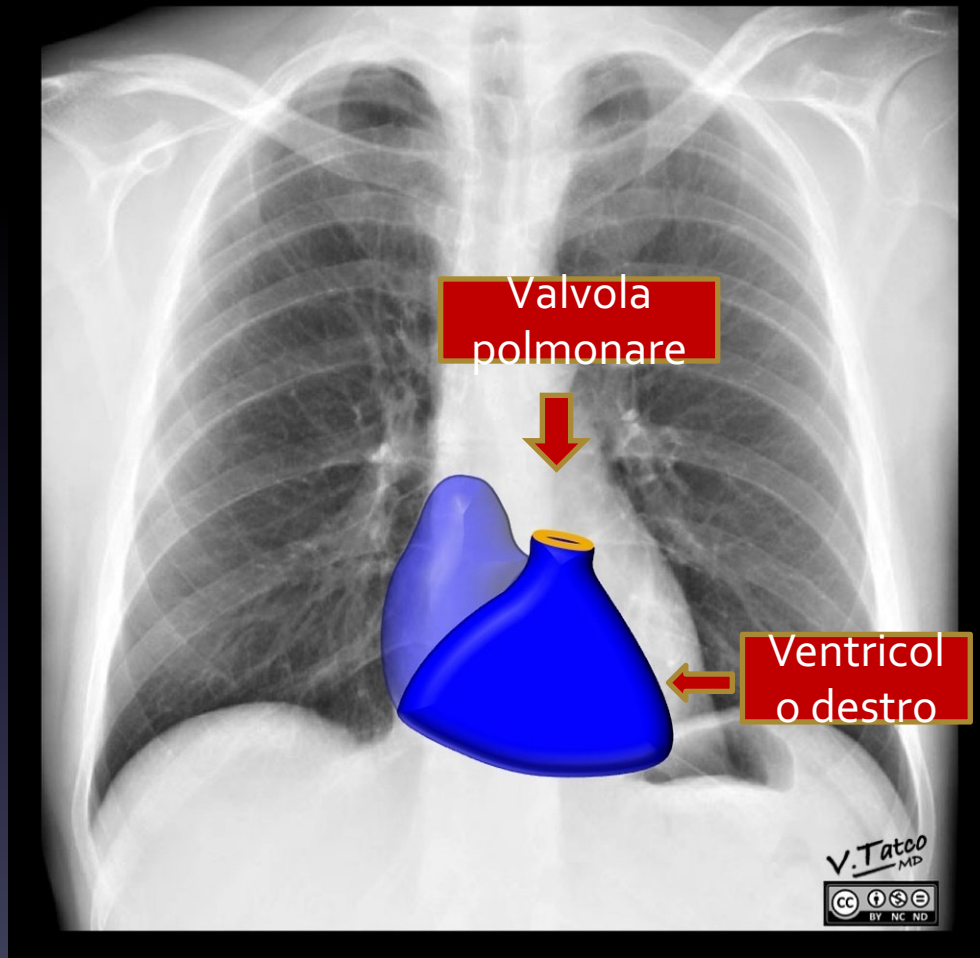
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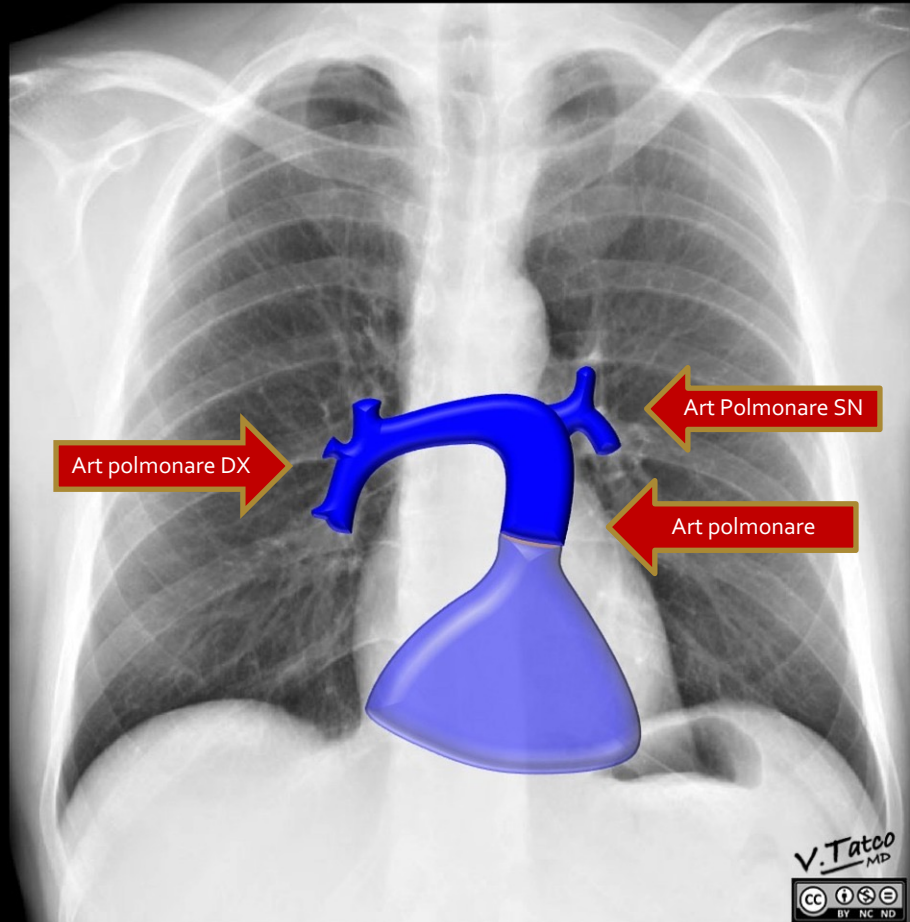


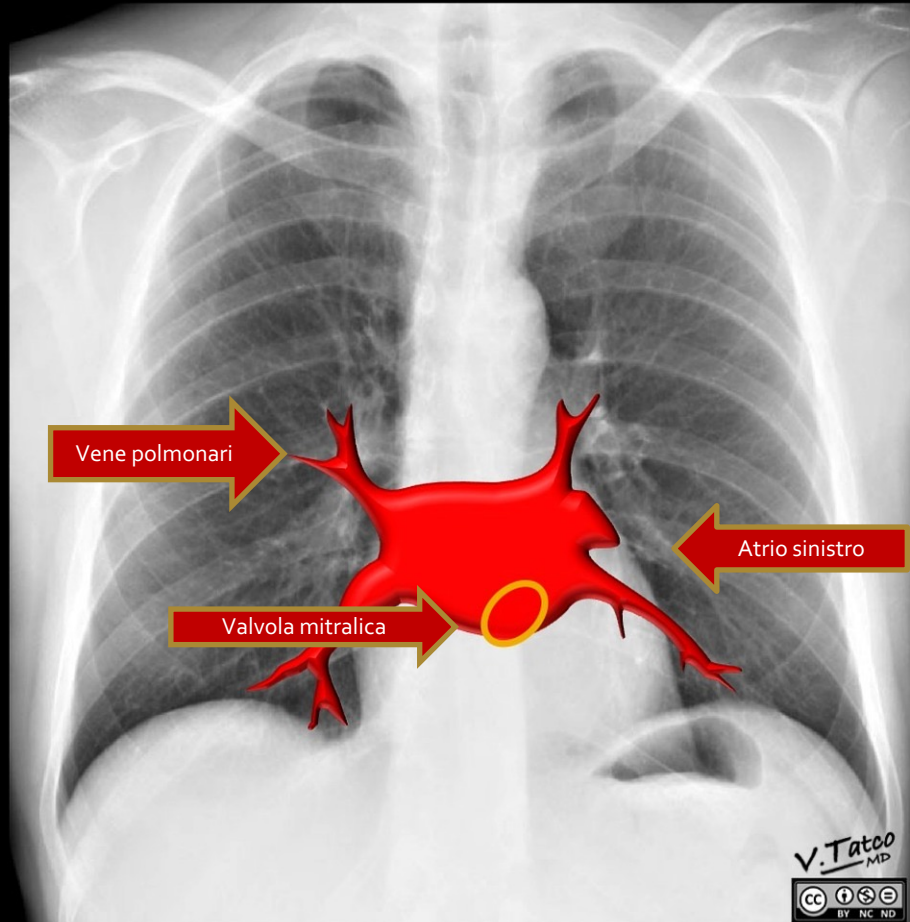


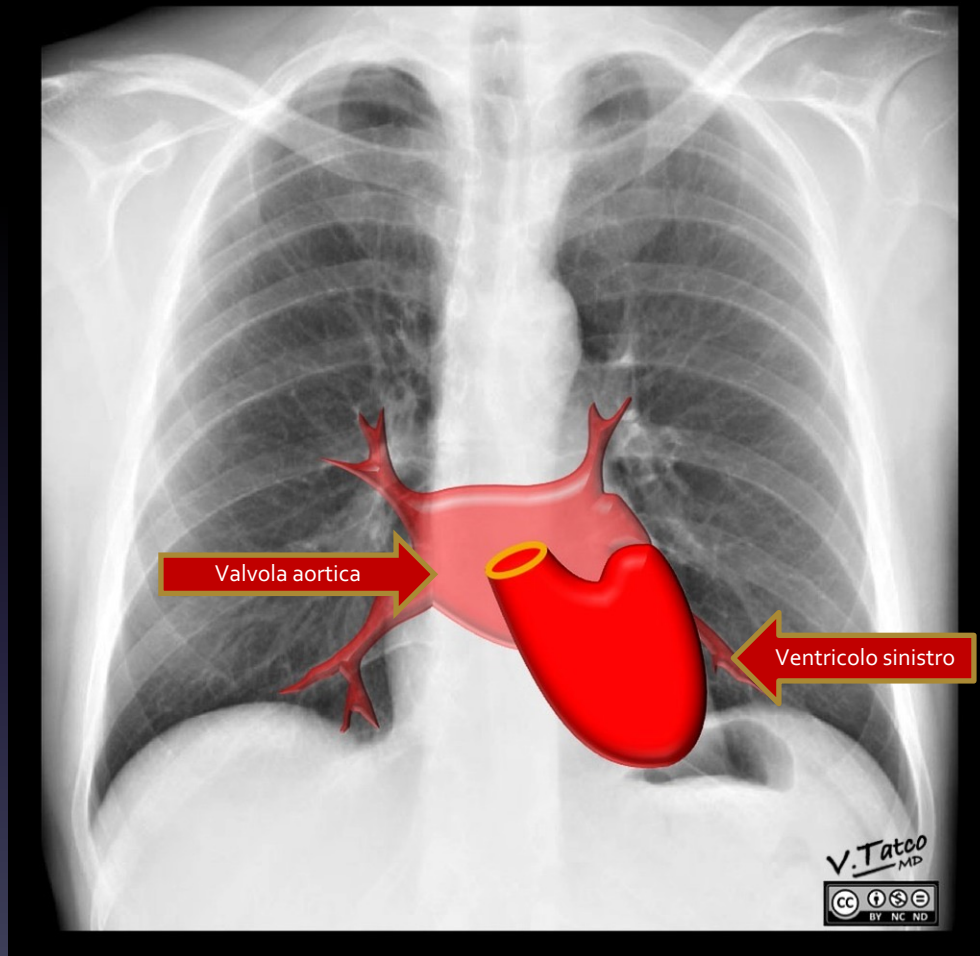


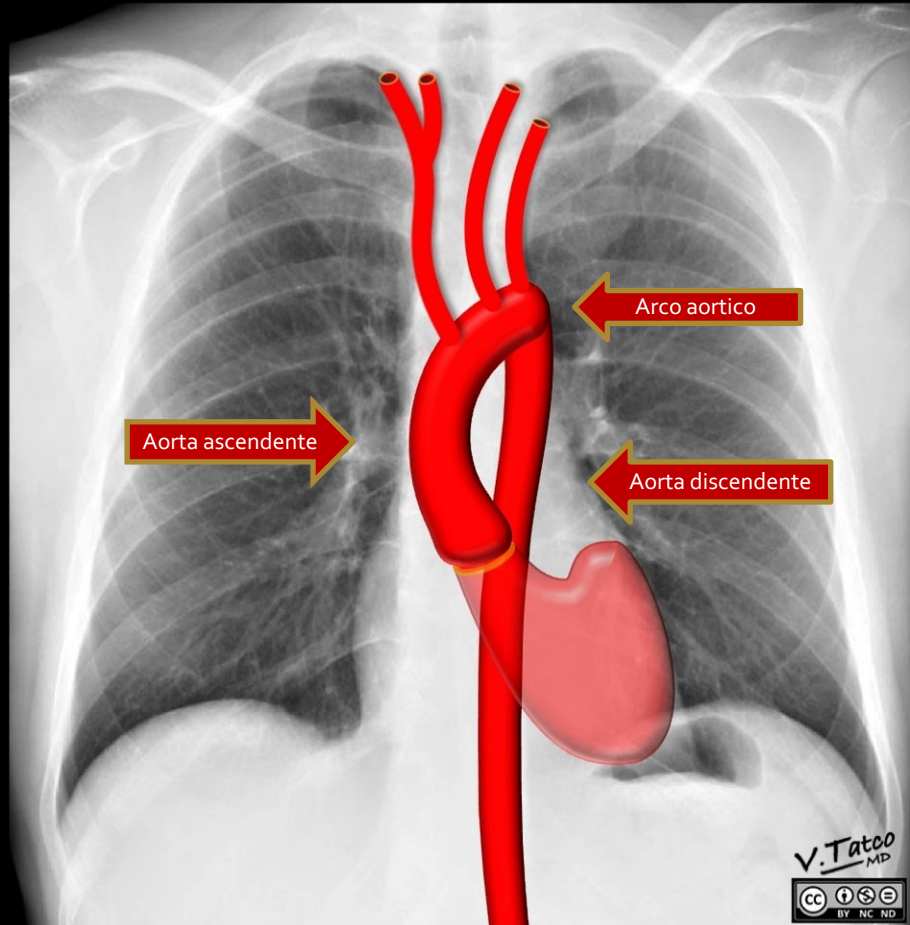


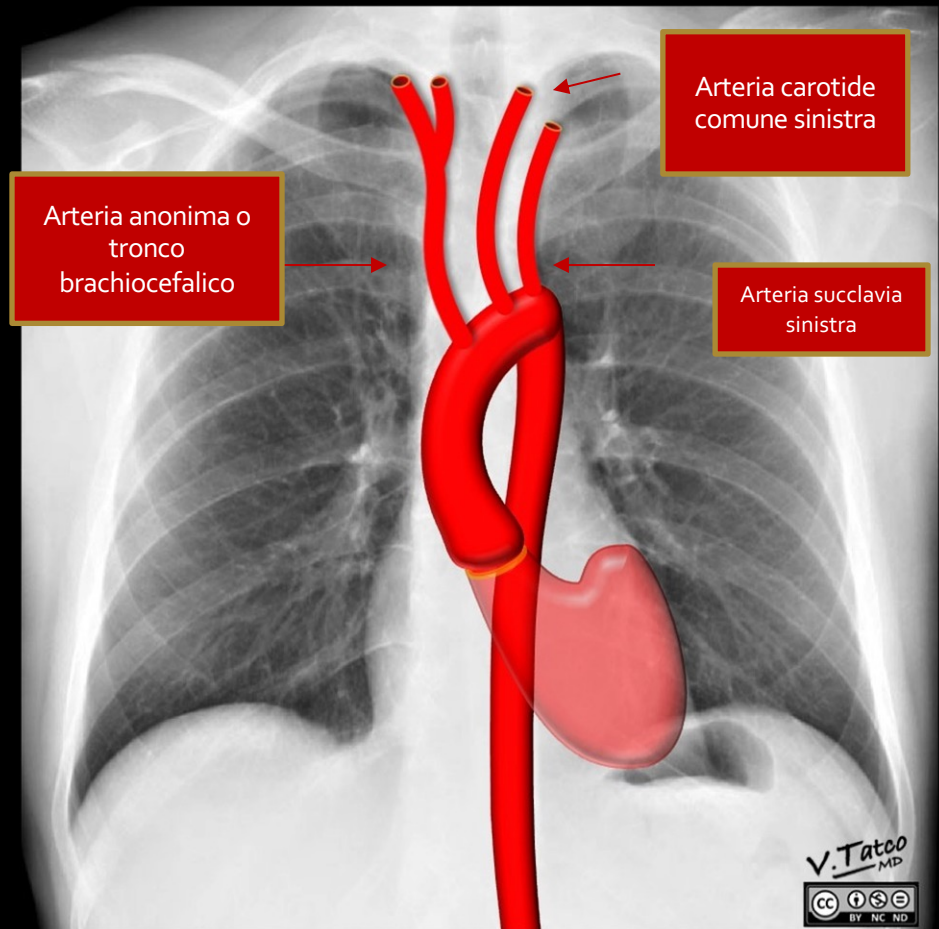


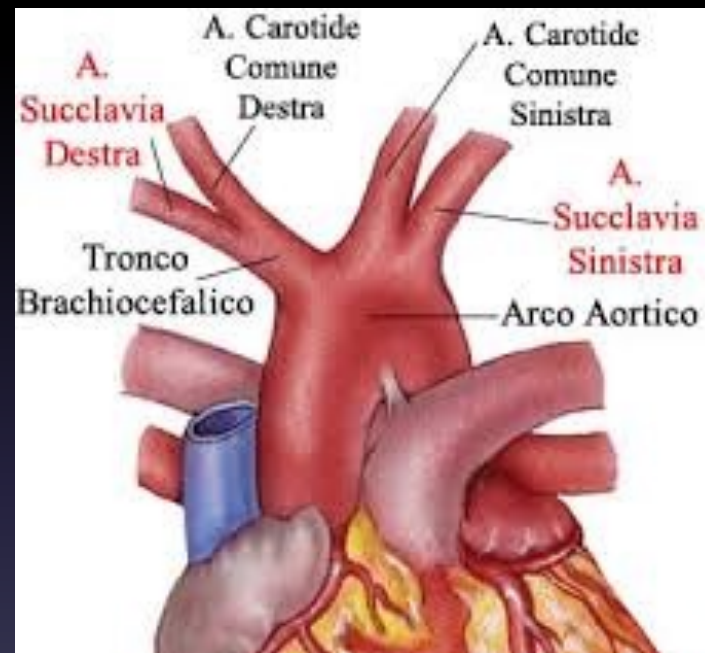


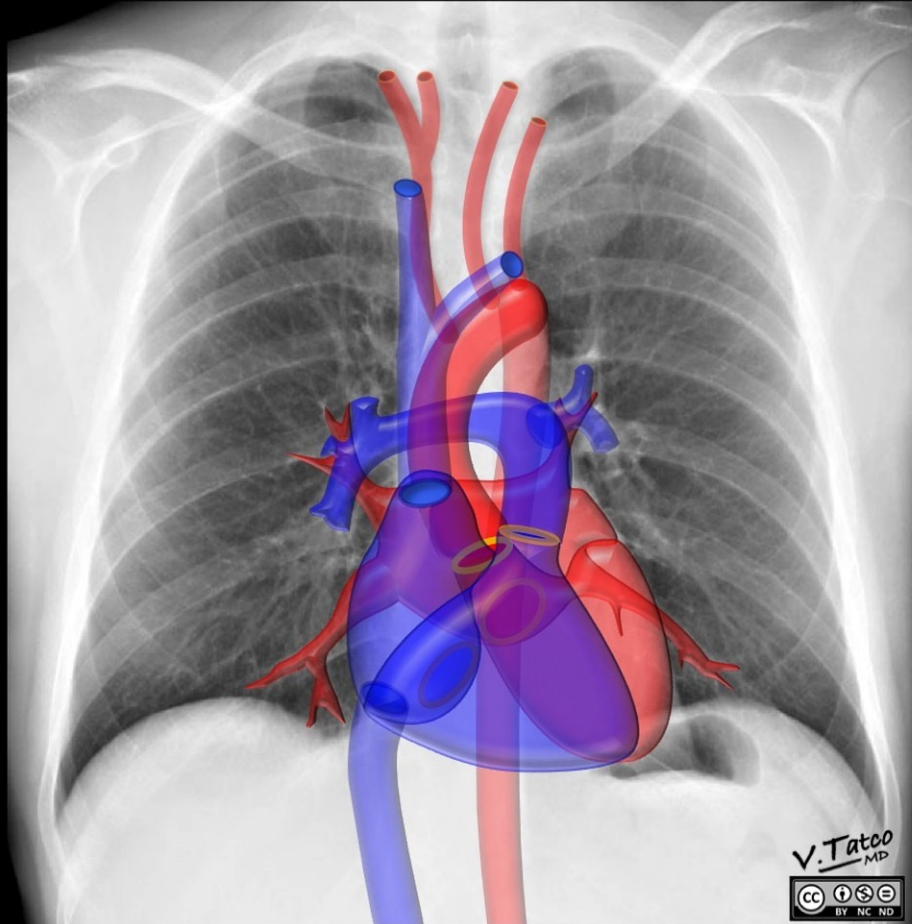


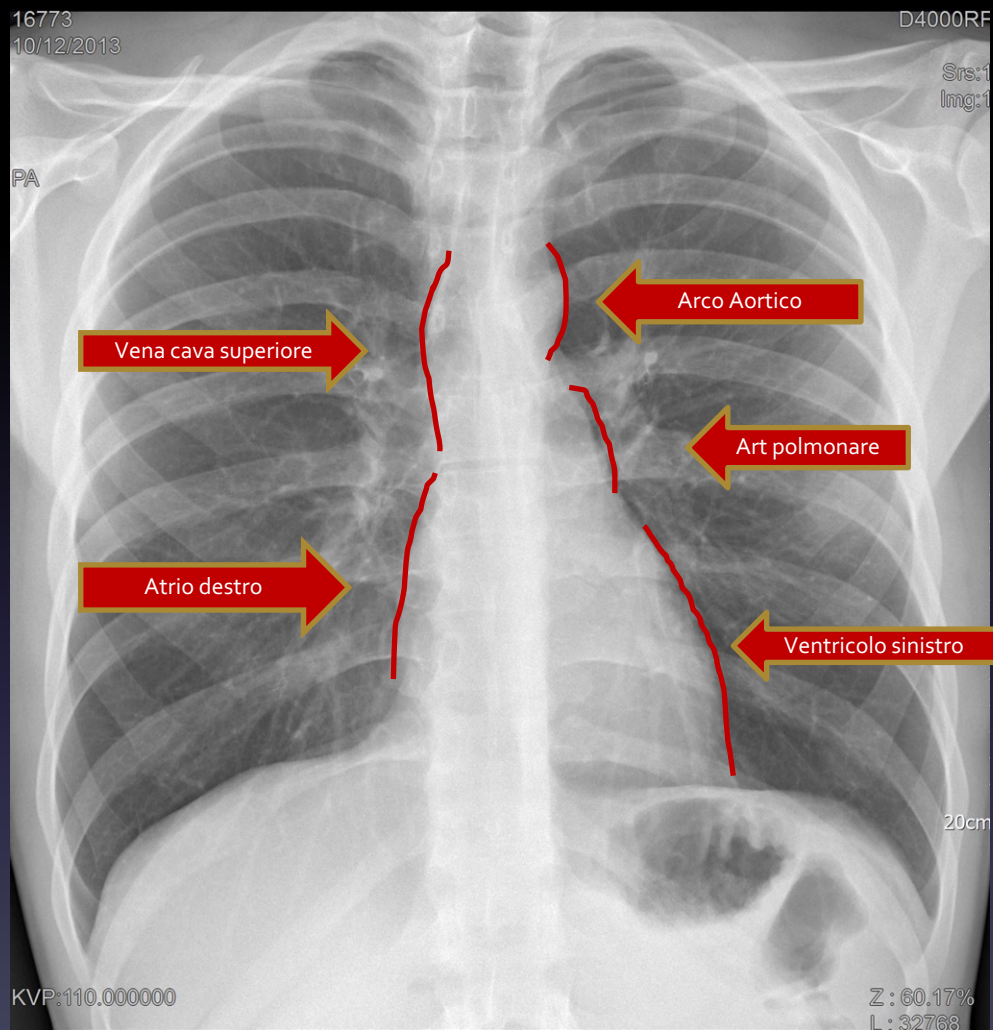


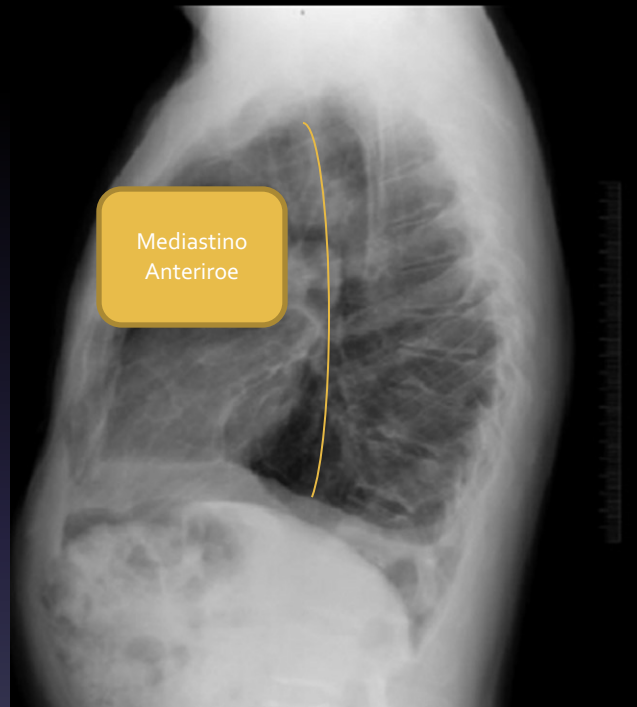


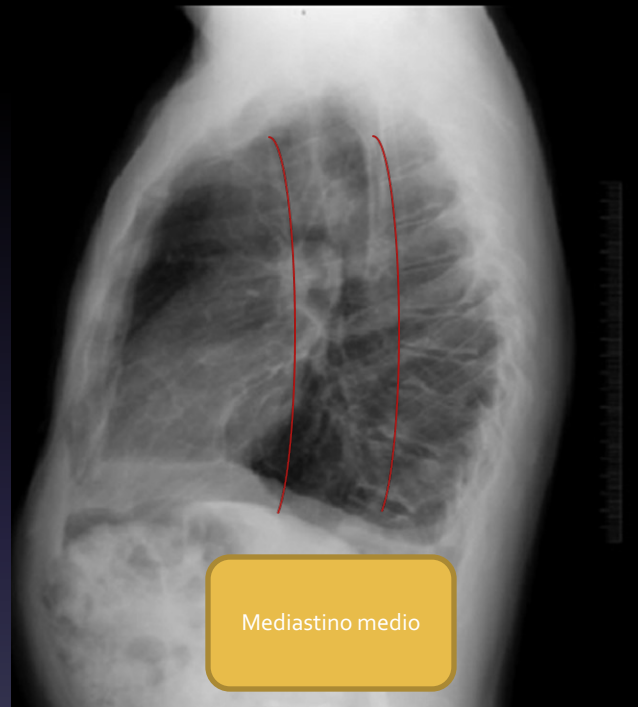


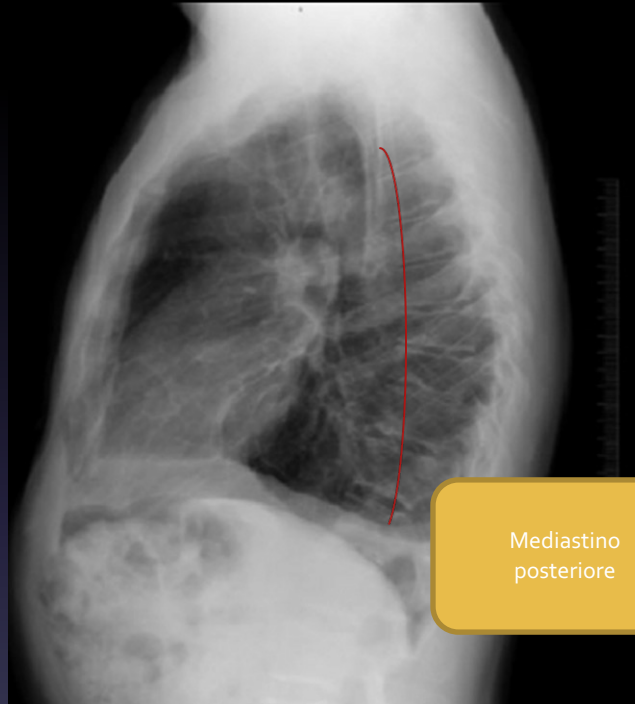




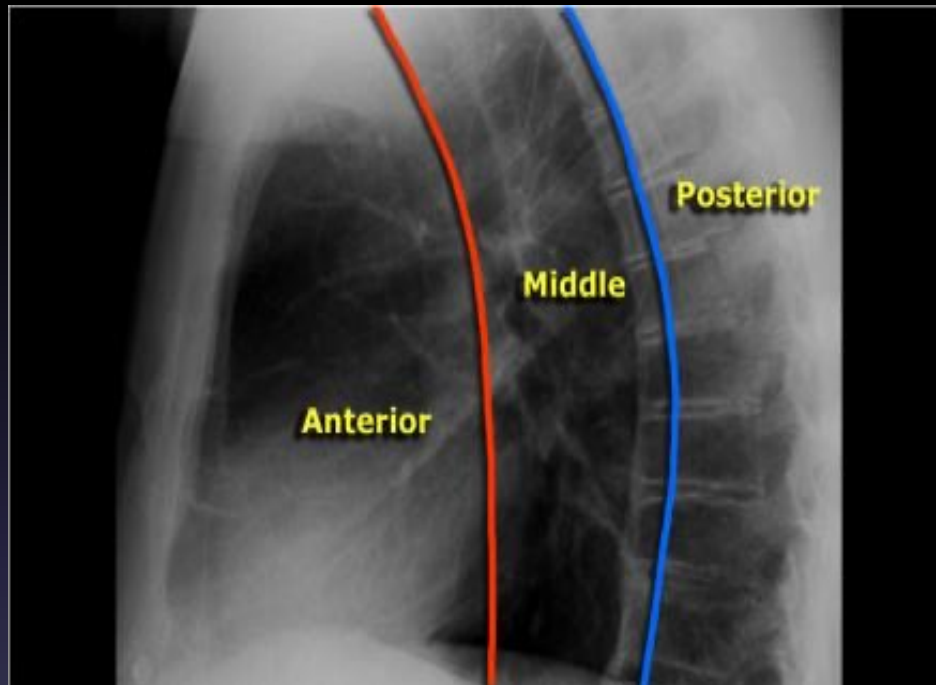


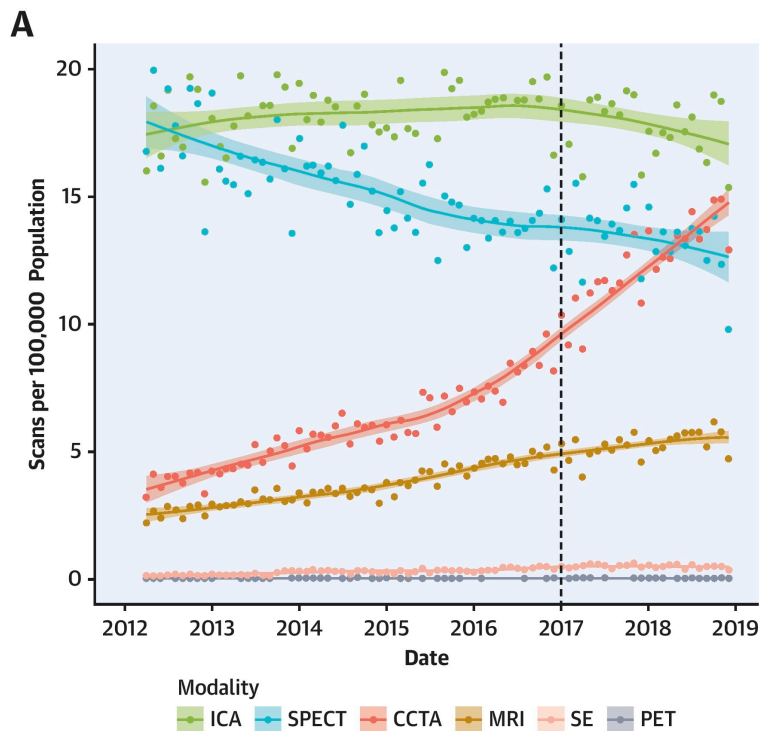






Mediastino
posteriore



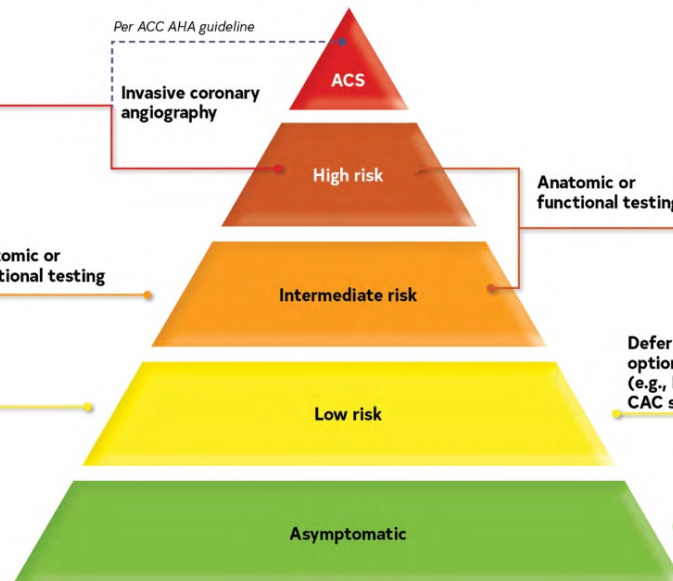


National Trends in Coronary Artery Disease Imaging: Associations With Health Care Outcomes and Costs GET ACCESS

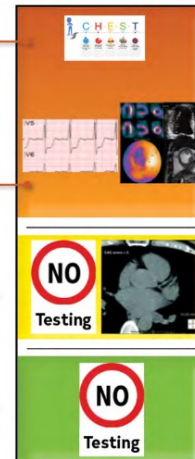
Acute Chest Pain Evaluation ED evaluation



Risk of Major CAD Events

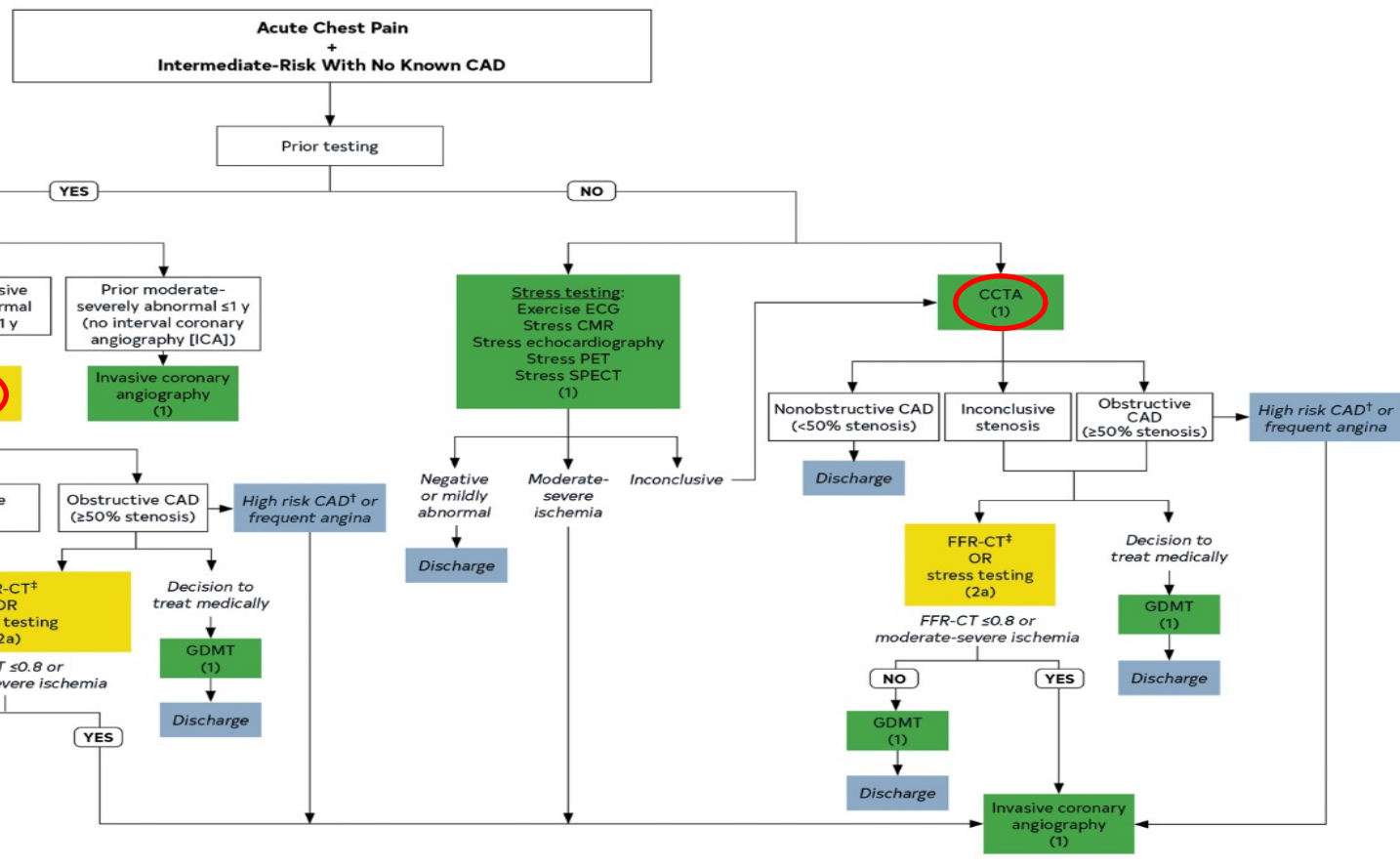


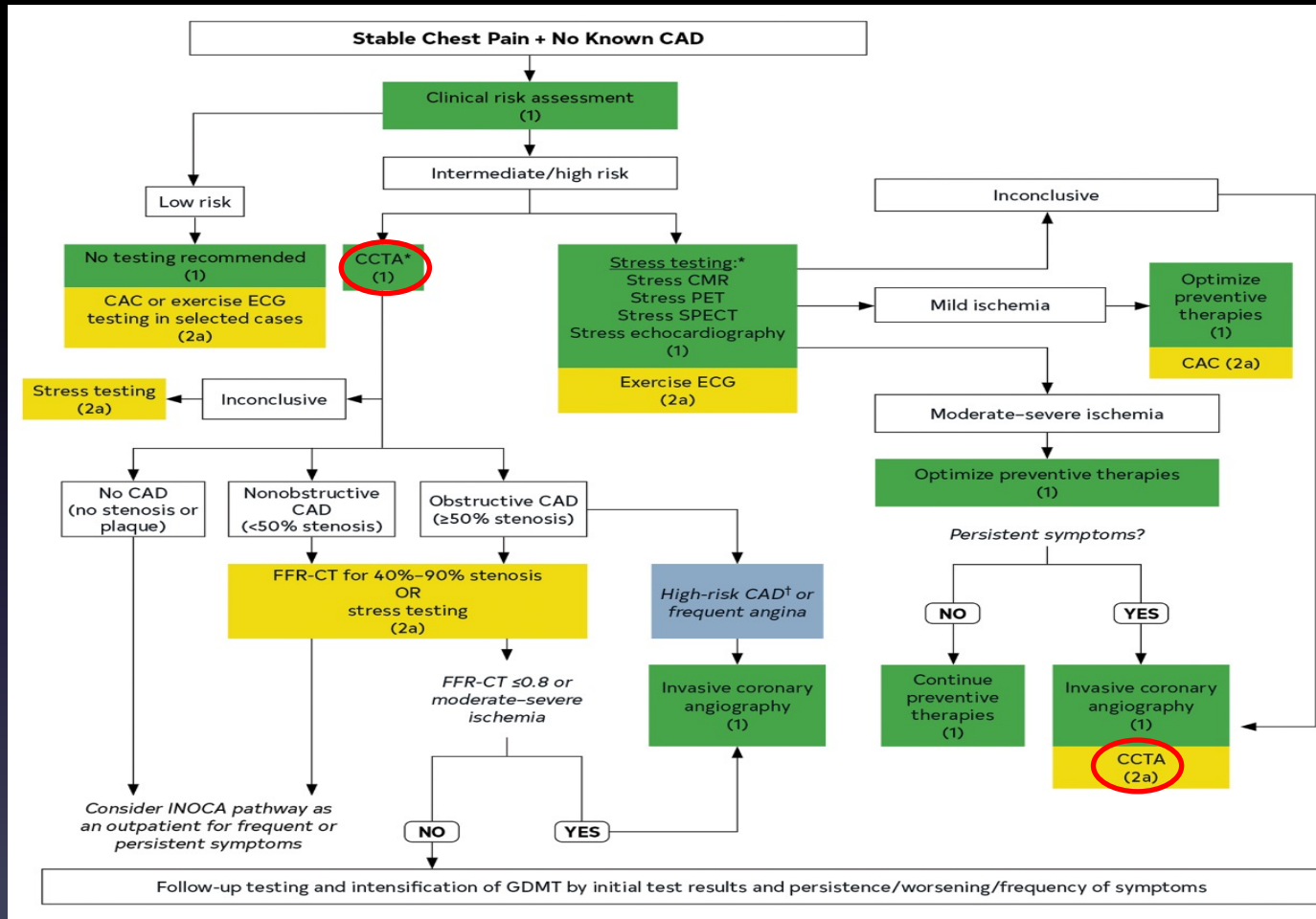
Stable Chest Pain Evaluation Outpatient evaluation



2021 AHA/ACC CLINICAL PRACTICE GUIDELINE

2021 AHA/ACC/AASE/CHEST/SAEM/SCCT/SCMR Guideline for the Evaluation and Diagnosis of Chest Pain: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines





Major changes in recommendations	
2015	2020
MDCT coronary angiography should be considered as an alternative to invasive angiography to exclude ACS when there is a low-to-intermediate likelihood of CAD and when cardiac troponin and/or ECG are inconclusive.	CCCTA is recommended as an alternative to invasive angiography to exclude ACS when there is a low-to-intermediate likelihood of CAD and when cardiac troponin and/or ECG are normal or inconclusive.

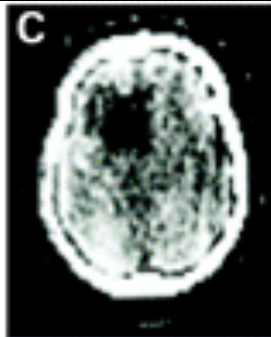
Imaging		
CCTA is recommended as an alternative to ICA to exclude ACS when there is a low-to-intermediate likelihood of CAD and when cardiac troponin and/or ECG are normal or inconclusive. ^{105,108,110–114}	I	A
In patients with no recurrence of chest pain, normal ECG findings, and normal levels of cardiac troponin (preferably high sensitivity), but still with a suspected ACS, a non-invasive stress test (preferably with imaging) for inducible ischaemia or CCTA is recommended before deciding on an invasive approach. ^{91,92,98,101,105–108}	I	B



1895 x ray
discovered by
Roentgen



1958 First
coronary
angiogram
performed



1972 CT
invented by
Hounsfield



2004 64-Slice
CT available

1850

1900

1950

2000

1929 First
cardiac
catheterisation

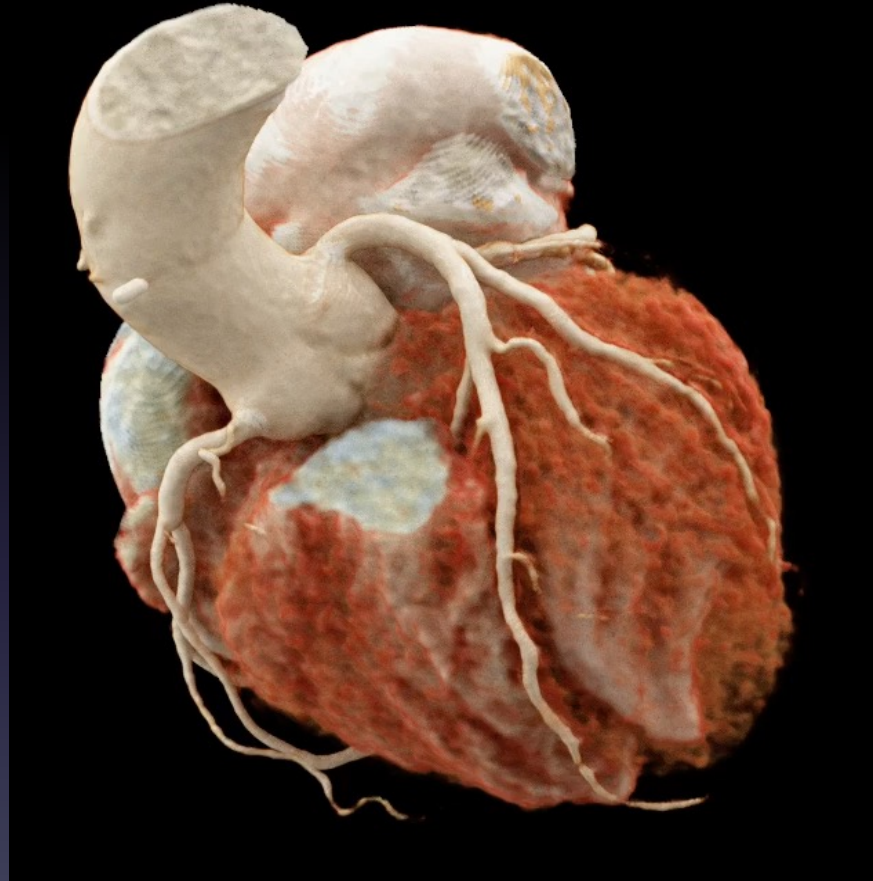
1991 Twin-slice
CT
available

2006 Dual-
source CT

Acquisition : synchronization ECG

Three approaches for ECG gating are currently used:

- (1) retrospective ECG gating with spiral data acquisition;
- (2) prospective ECG gating with a sequential (or “step-and-shoot”) data acquisition;
- (3) prospective ECG gating with spiral data acquisition and high pitch.



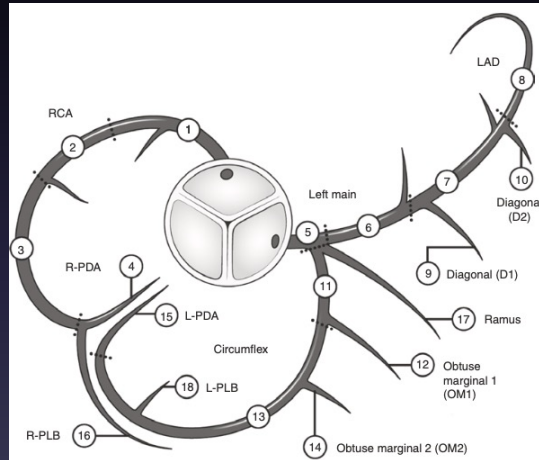
Coronary Anatomy

RCA Right Coronary Artery

AM Acute Marginal Branch

AV Node Branch

Posterior Descending Artery PDA



LCA Left Coronary Artery

LAD Left Anterior Descending

D1, D2 Diagonal Branches

Septal Branches

CX Circumflex

M1, M2 Marginal Branches

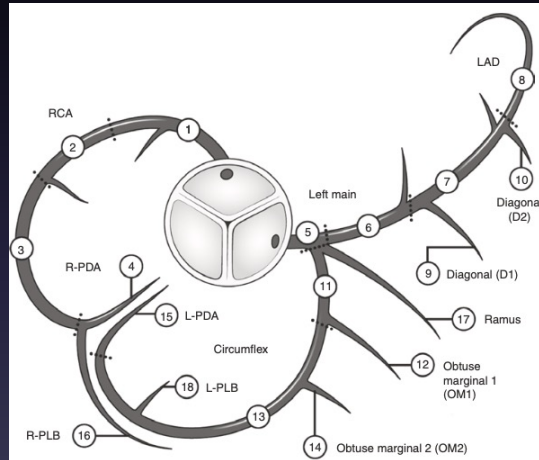
Coronary Anatomy

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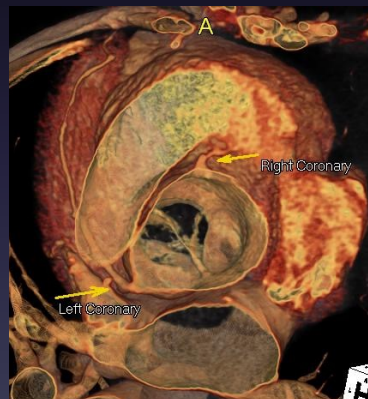
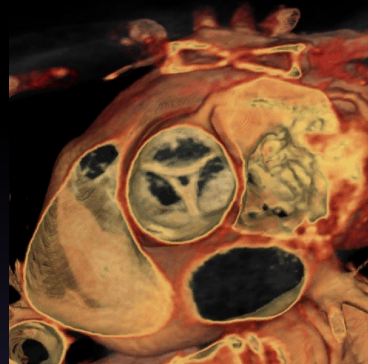
D1, D2 Diagonal Branches

Septal Branches

CX Circumflex

M1, M2 Marginal Branches

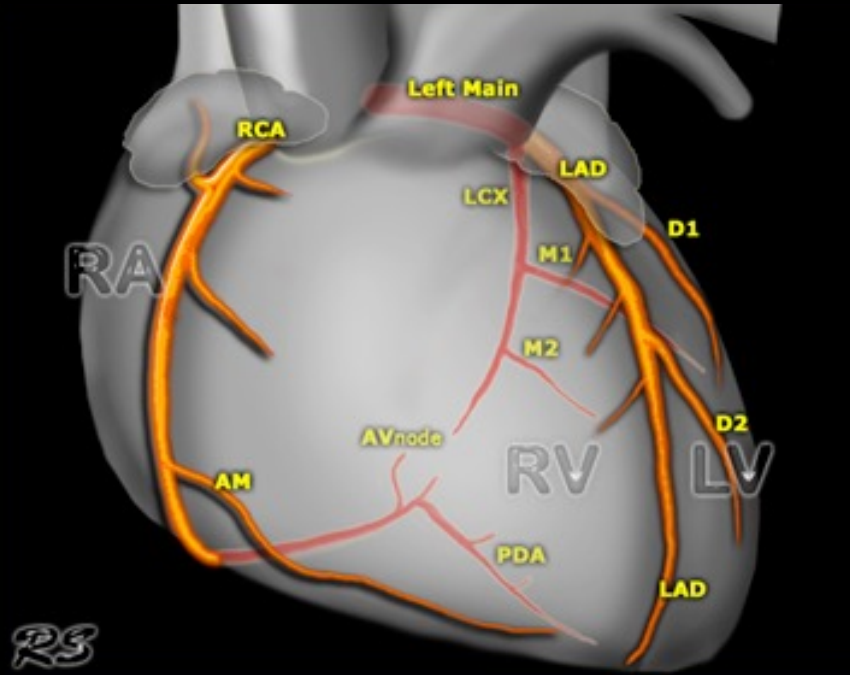
Coronary arteries



The LCA arises from the left coronary cusp.

The RCA arise from the right coronary cusp.

The non-coronary sinus is positioned on the right side.



LCA Left coronary artery

LAD left anterior descending

D1, D2 diagonal branches

Septal branches

CX Circumflex

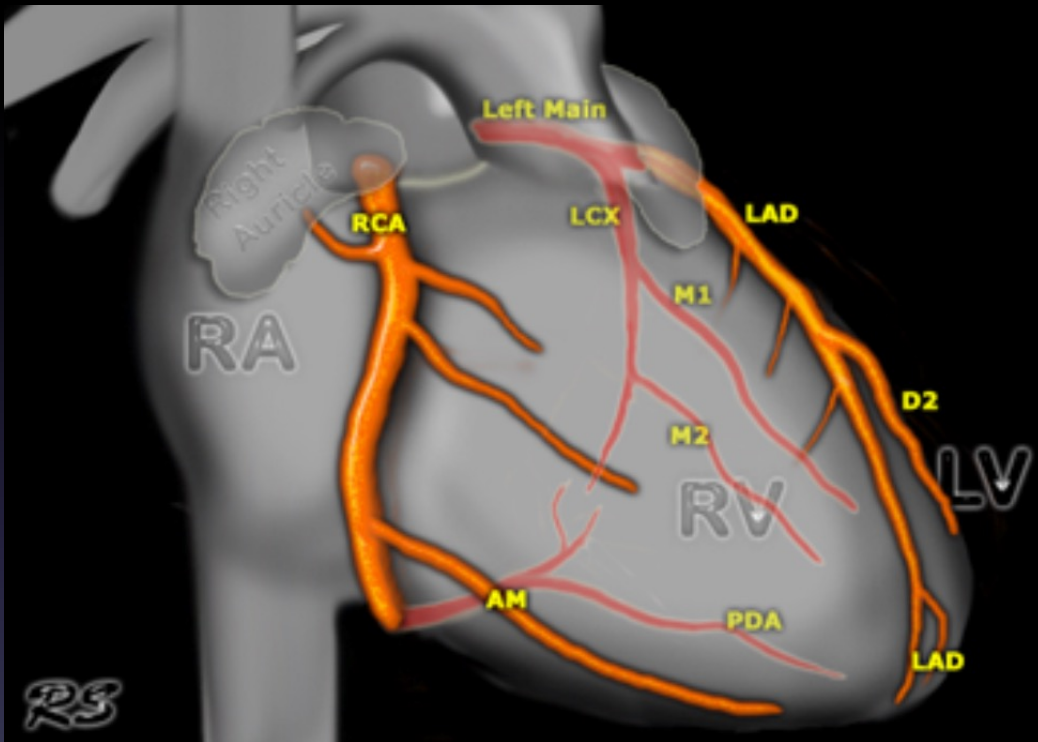
M1, M2 Marginal Branches

RCA right coronary artery

AM Acute marginal Branch

AV node Branch

Posterior descending artery PDA



LCA Left coronary artery

LAD left anterior descending

D1, D2 diagonal branches

Septal branches

CX Circumflex

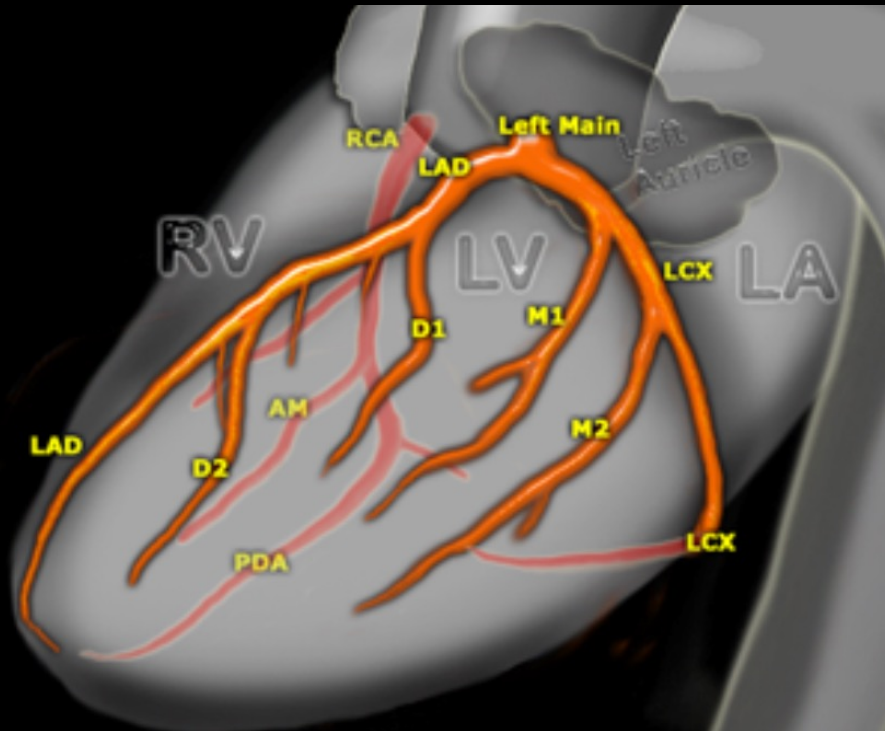
M1, M2 Marginal Branches

RCA right coronary artery

AM Acute marginal Branch

AV node Branch

Posterior descending artery PDA



LCA Left coronary artery

LAD left anterior descending

D1, D2 diagonal branches

Septal branches

CX Circumflex

M1, M2 Marginal Branches

RCA right coronary artery

AM Acute marginal Branch

AV node Branch

Posterior descending artery PDA

Left Circumflex Artery

*Supplies the left atrium
and ventricle*

Left Marginal Artery

Supplies the left ventricle

Right Marginal Artery

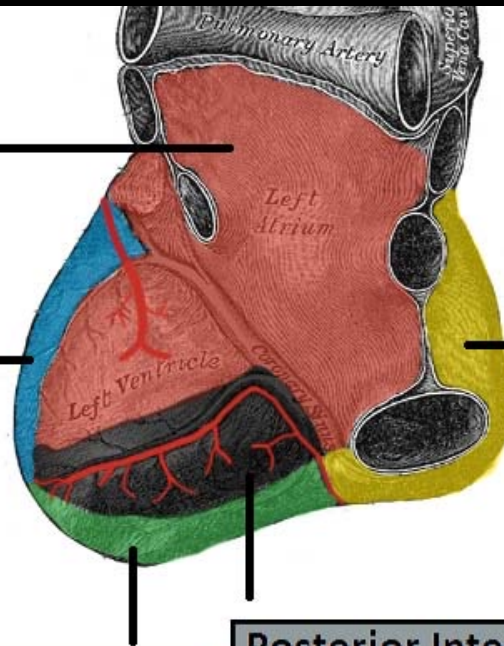
*Supplies the right
ventricle and apex*

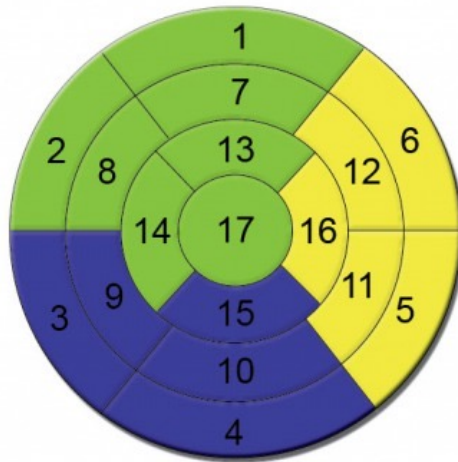
Posterior Interventricular Artery

*Supplies the right and left ventricles,
and the interventricular septum*

Right Coronary Artery

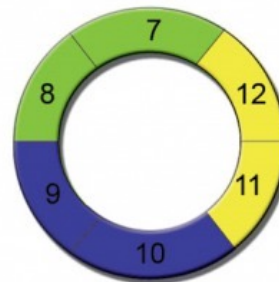
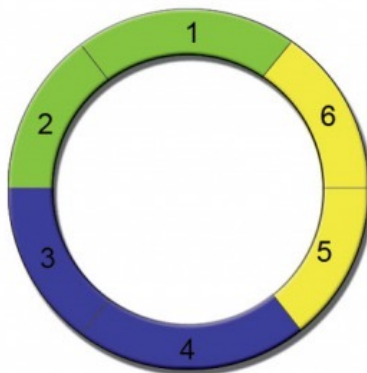
*Supplies the right atrium
and right ventricle*



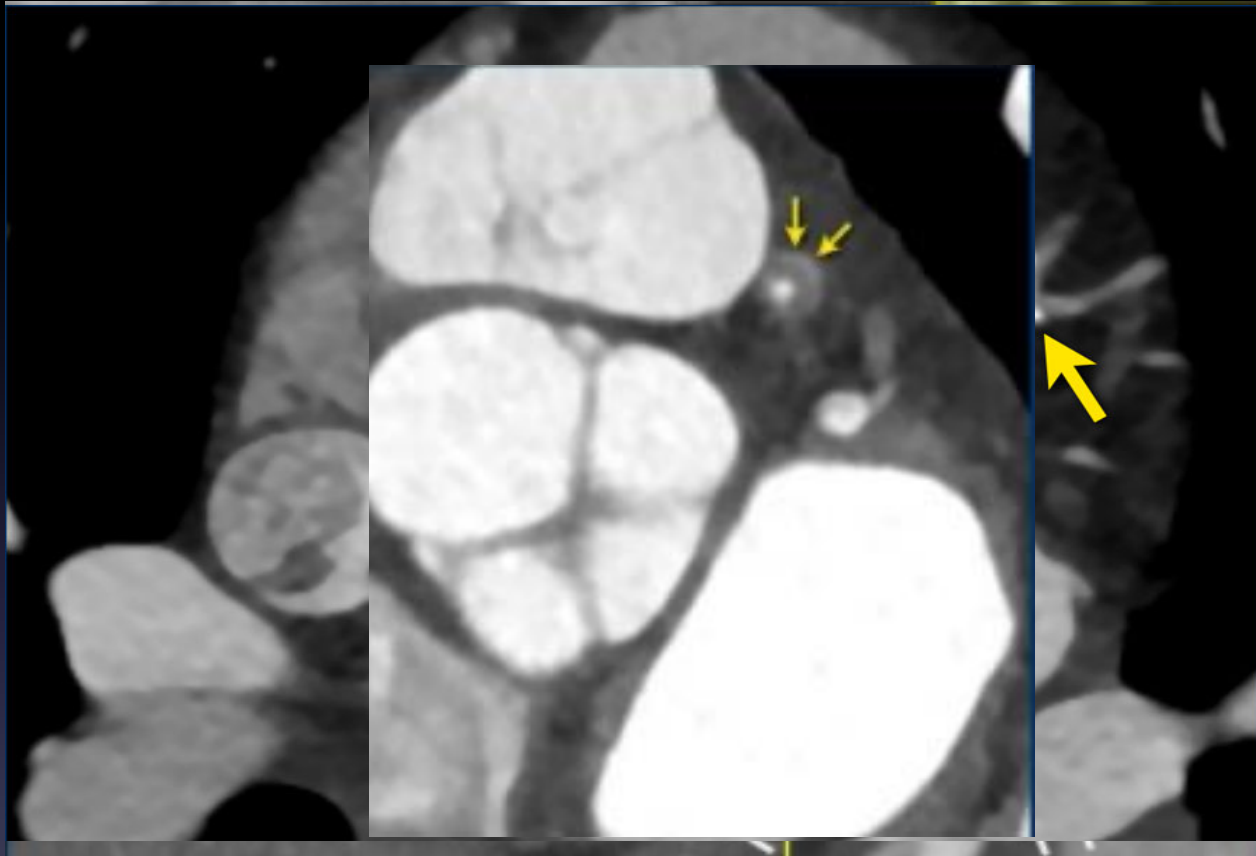


- | | | |
|------------------------|-----------------------|---------------------|
| 1) Basal anterior | 7) Mid anterior | 13) Apical anterior |
| 2) Basal anteroseptal | 8) Mid anteroseptal | 14) Apical septal |
| 3) Basal inferoseptal | 9) Mid inferoseptal | 15) Apical inferior |
| 4) Basal inferior | 10) Mid inferior | 16) Apical lateral |
| 5) Basal inferolateral | 11) Mid inferolateral | 17) Apex |
| 6) Basal anterolateral | 12) Mid anterolateral | |

Short Axis



LAD=Left Anterior Descending
 LCX= Left Circumflex artery
 RCA= Right Coronary Artery



Coronary anomalies

Coronary anomalies are uncommon with a prevalence of 1%.

Early detection and evaluation of coronary artery anomalies is essential because of their potential association with myocardial ischemia and sudden death.

With the increased use of cardiac-CT, we will see these anomalies more frequently.

Coronary anomalies can be differentiated into anomalies of the origin, the course and termination

Origin

From Pulmonary artery

Single coronary artery

From non coronary-cusp

Other

Course

Myocardial bridging

Duplication

termination

Coronary artery fistula

Extracardiac termination

Coronary anomalies

Origin

Single coronary artery

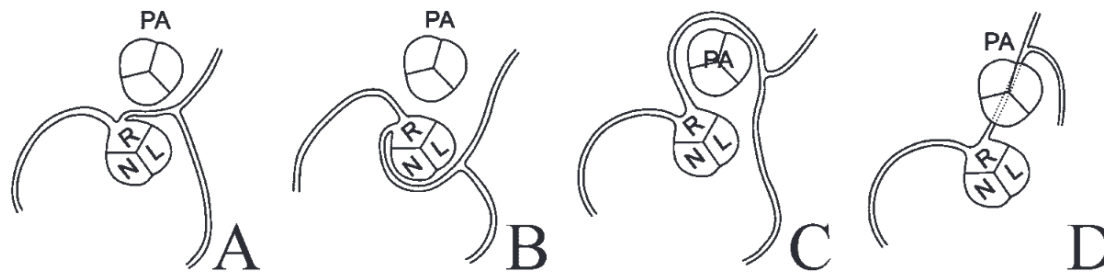
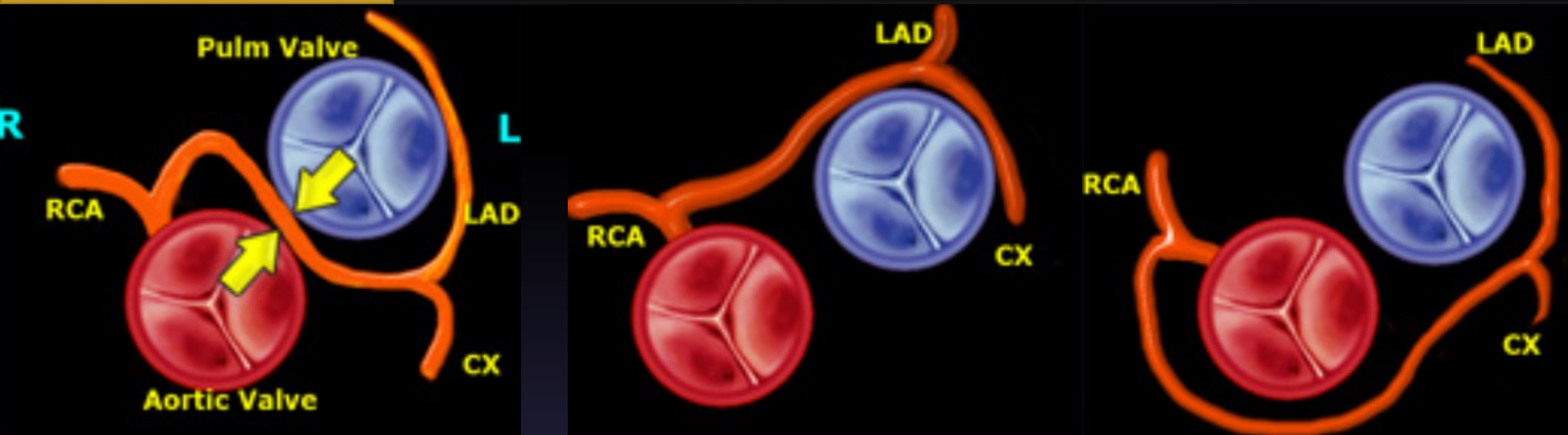
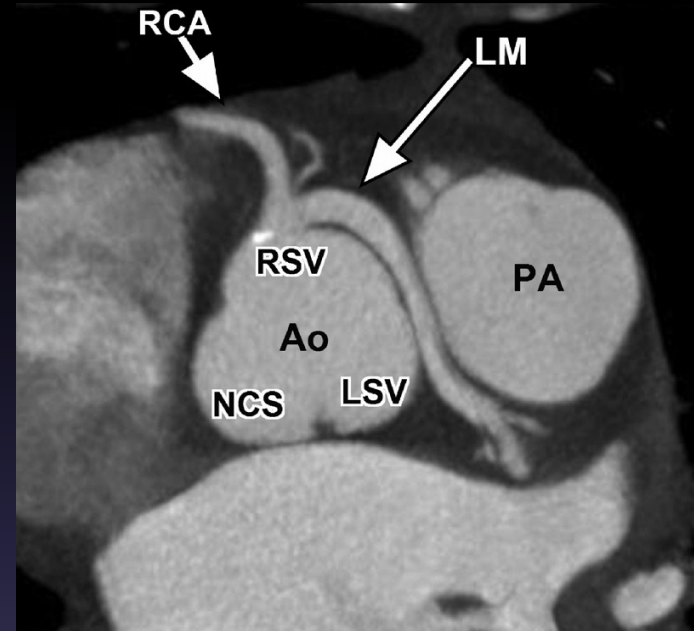
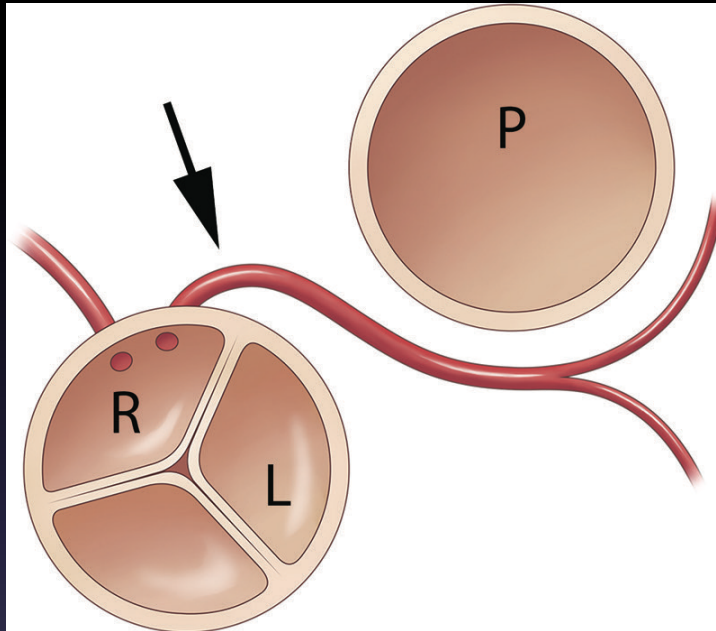


Figure 10. Drawings illustrate an LCA anomalously arising from the right coronary sinus (*R*) and four anomalous courses: interarterial (between the aorta and the pulmonary artery [*PA*]) (*A*), retroaortic (*B*), prepulmonic (*C*), and septal (subpulmonic [beneath the right ventricular outflow tract]) (*D*). *L* = left coronary sinus, *N* = noncoronary sinus.

Coronary anomalies

Origin

Other conditions



740

Anomalous Coronary Arteries That Need Intervention: Review of Pre- and Postoperative Imaging Appearances¹

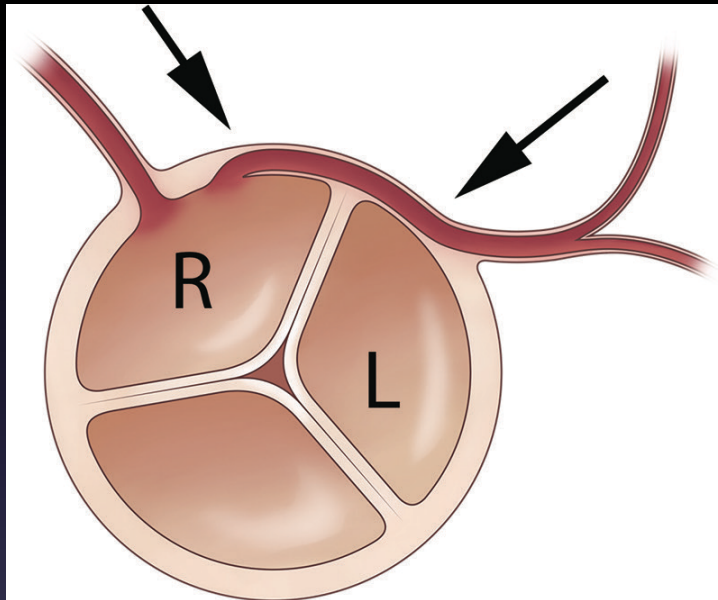
Poochi P. Agorval, MD, MS
Cardiologist, MD
Elise Pina, MD
Elise Nguyen, MD
Tara L. Lefkowitz, MD
Jin Yang, MS
Sara Patel, MD

Coronary artery anomalies constitute a diverse group of abnormalities, ranging from anatomic variants to those having hemodynamic consequences. This review focuses on major anomalies that have clinical implications requiring treatment, including anomalous origin of the coronary artery from the opposite sinus with interarterial course specifically with an intramural course, anomalous origin from the endocardial artery, and anomalous origin from the coronary sinus.

Coronary anomalies

Origin

Other conditions



a.



b.

740

Anomalous Coronary Arteries That Need Intervention: Review of Pre- and Postoperative Imaging Appearances¹

Pavith P. Aggarwal, MD, MS
Cecilia Damm, MD
Elise Pina, MD
Elise Nguyen, MD
Tara Lefkowitz, MD
Jia Yang, MS
Smita Paul, MD

Coronary artery anomalies constitute a diverse group of abnormalities, ranging from anatomic variants to those having hemodynamic consequences. This review focuses on major anomalies that have clinical implications requiring treatment, including anomalous origin of the coronary artery from the opposite sinus with interarterial course specifically with an intramural course, anomalous origin of the coronary artery from the pulmonary trunk, and anomalous origin of the coronary artery from the aorta.

STATE-OF-THE-ART REVIEW

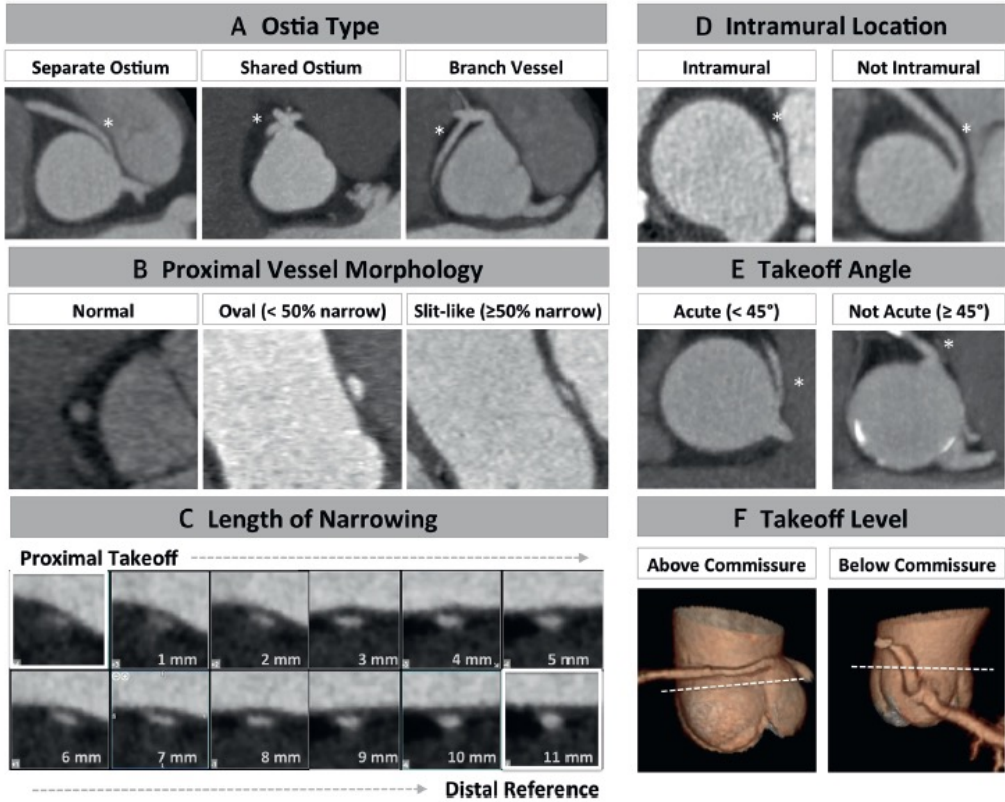
Anomalous Aortic Origin of a
Coronary Artery From the
Inappropriate Sinus of Valsalva



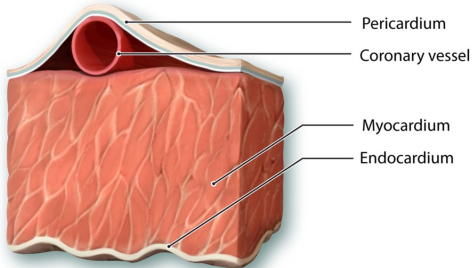
Michael K. Cheezum, MD,^{a,b} Richard R. Liberthson, MD,^c Nishant R. Shah, MD, MPH, MSc,^d Todd C. Villines, MD,^e
Patrick T. O’Gara, MD,^a Michael J. Landzberg, MD,^f Ron Blankstein, MD^a

JACC 2017

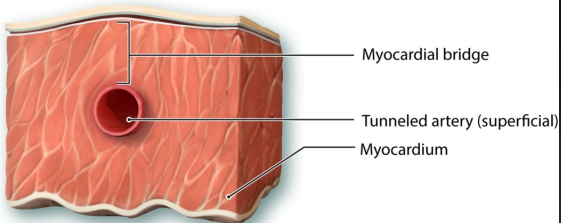
FIGURE 5 CTA-Identified AAOCA Features



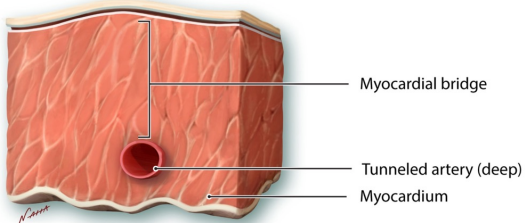
Normal Coronary Vessel:



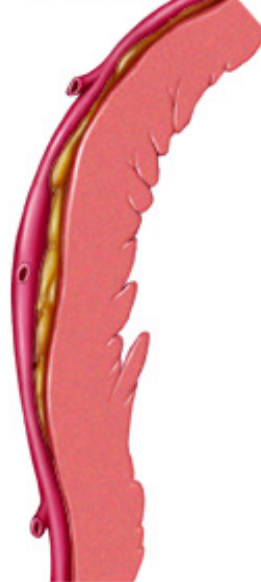
Superficial Tunneled Artery:



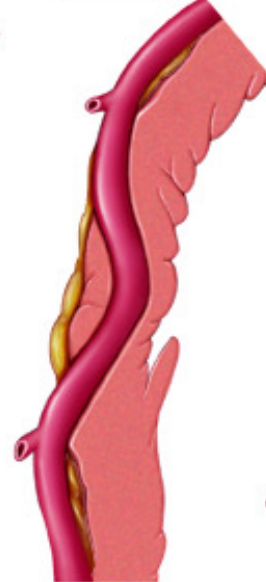
Deep Tunneled Artery:



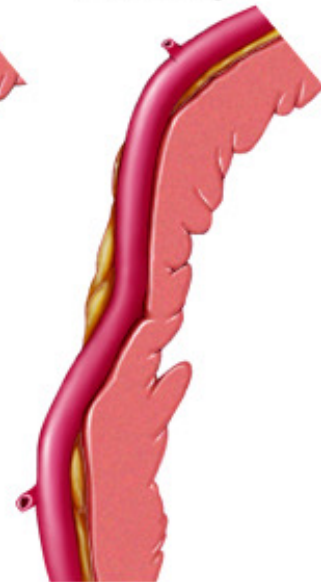
Normal LAD



Deep bridge



Shallow Bridge

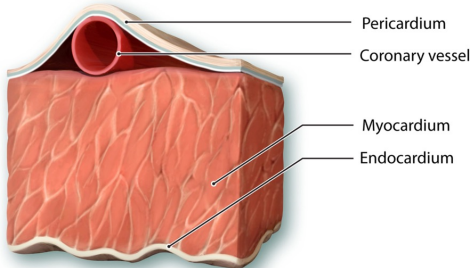


Coronary anomalies

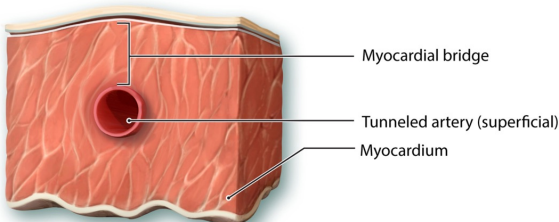
Course

Myocardial bridging

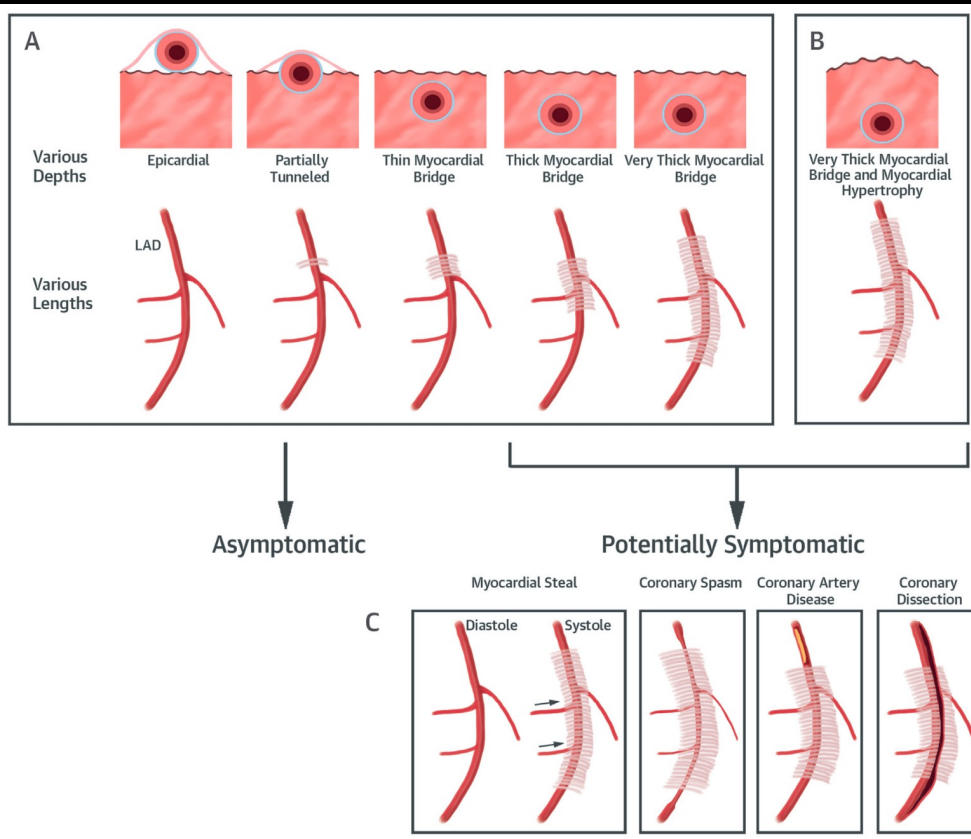
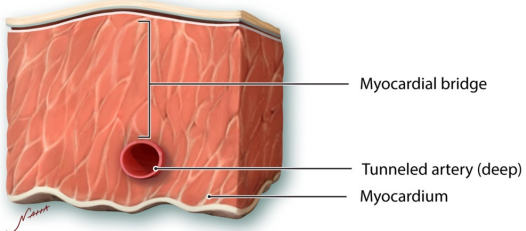
Normal Coronary Vessel:



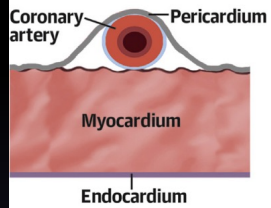
Superficial Tunneled Artery:



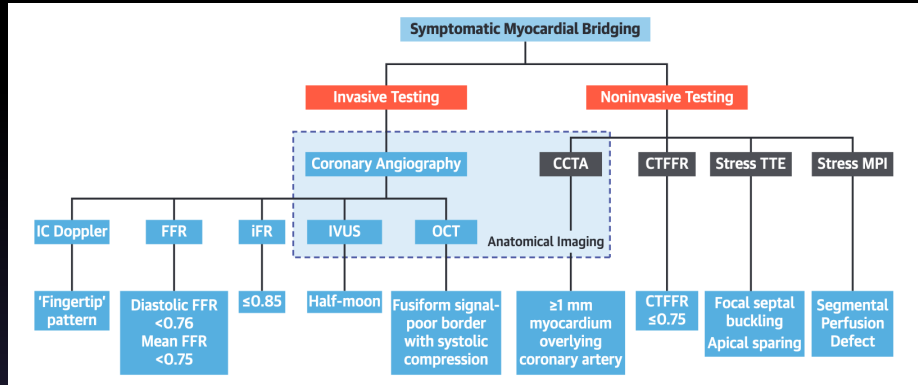
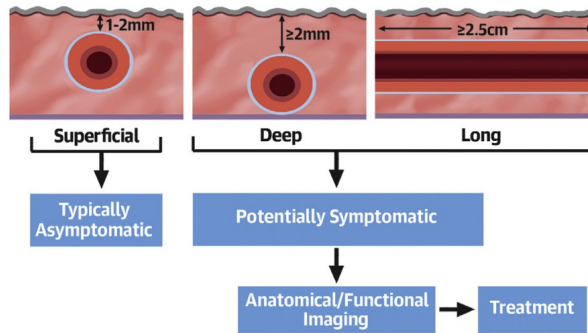
Deep Tunneled Artery:

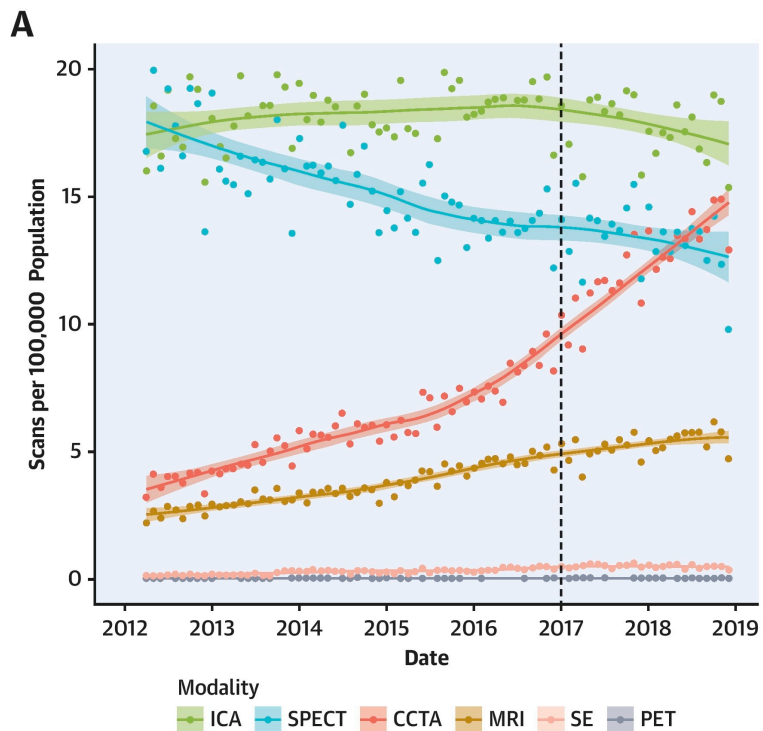


Epicardial Coronary Artery



Myocardial Bridging (MB)





National Trends in Coronary Artery Disease Imaging: Associations With Health Care Outcomes and Costs GET ACCESS

- Perché
- Come
- Quando

2022 ESC Guidelines on cardio-oncology developed in collaboration with the European Hematology Association (EHA), the European Society for Therapeutic Radiology and Oncology (ESTRO) and the International Cardio-Oncology Society (IC-OS)

Developed by the task force on cardio-oncology of the European
Society of Cardiology (ESC)

Recommendation Table 27 — Recommendations for the diagnosis and management of Takotsubo syn-

CMR should be considered for the assessment of
cardiac function when echocardiography is
unavailable or non-diagnostic.^{83,104,105}

IIa

C

Diagnosis and management of ICI-associated pericarditis

Multimodality CV imaging (echocardiography,
CMR ± CT), ECG and measurement of cardiac
biomarkers are recommended to confirm the
diagnosis, assess the haemodynamic
consequences of pericardial disease, and rule out
associated myocarditis.

I

C

Recommendation Table 26 — Recommendations for the diagnosis and management of immune checkpoint inhibitor-associated myocarditis

Recommendations

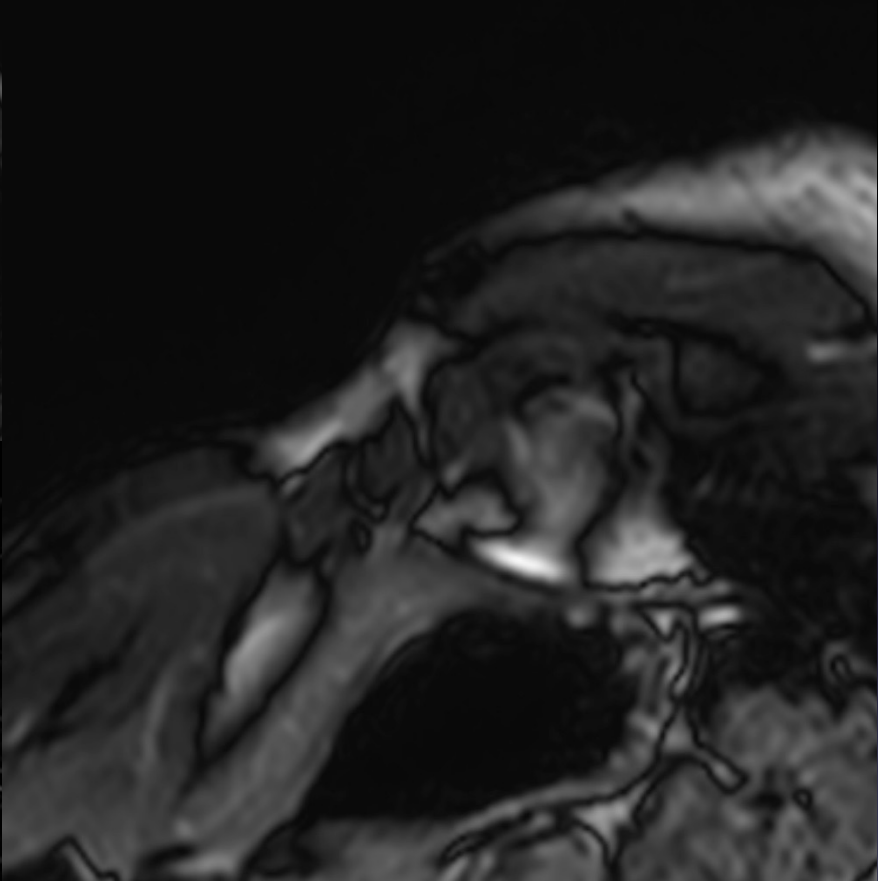
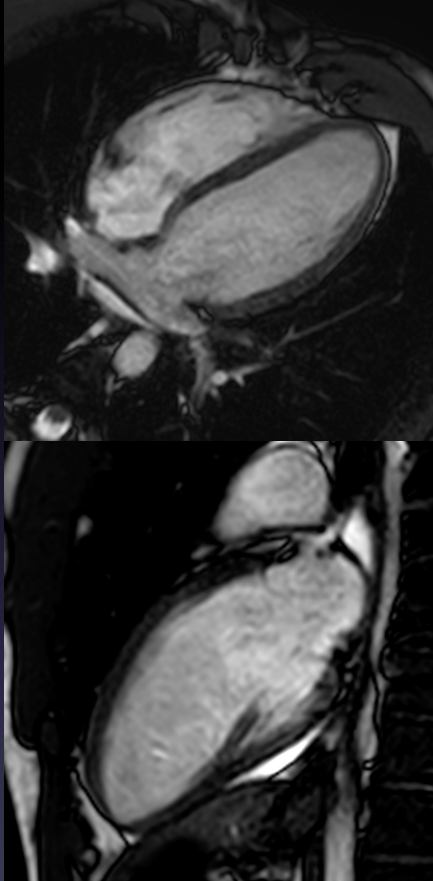
Class^a

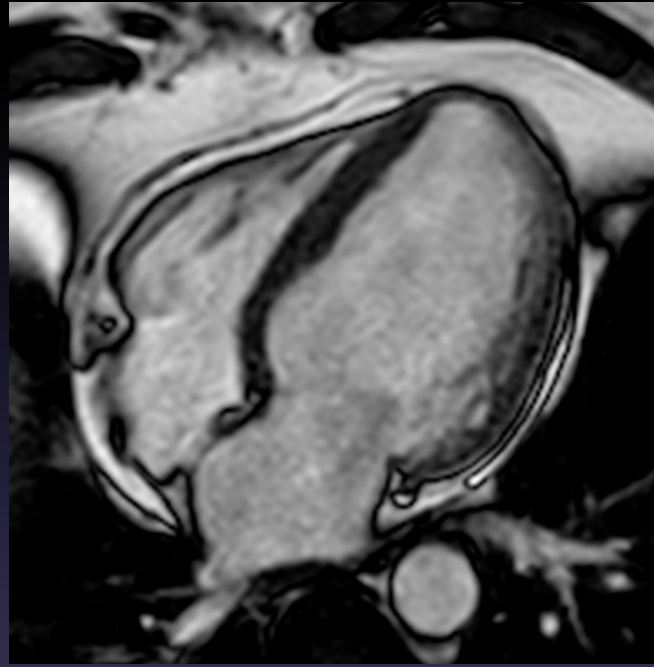
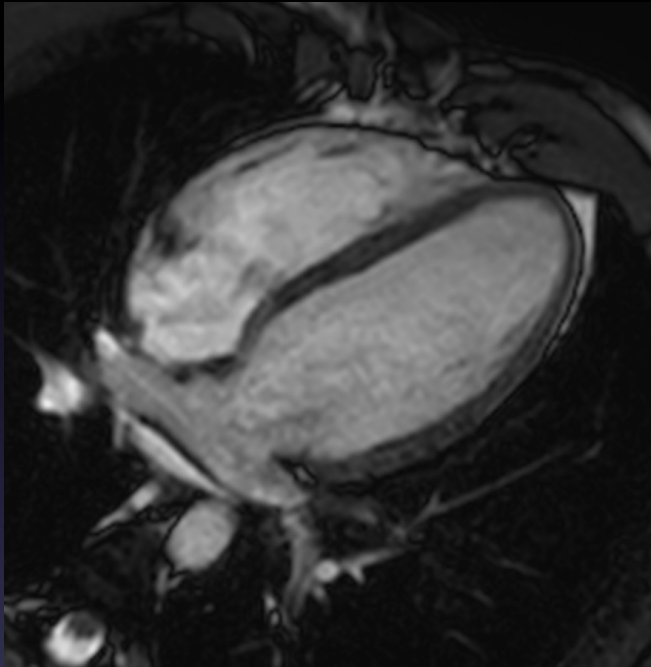
Level^b

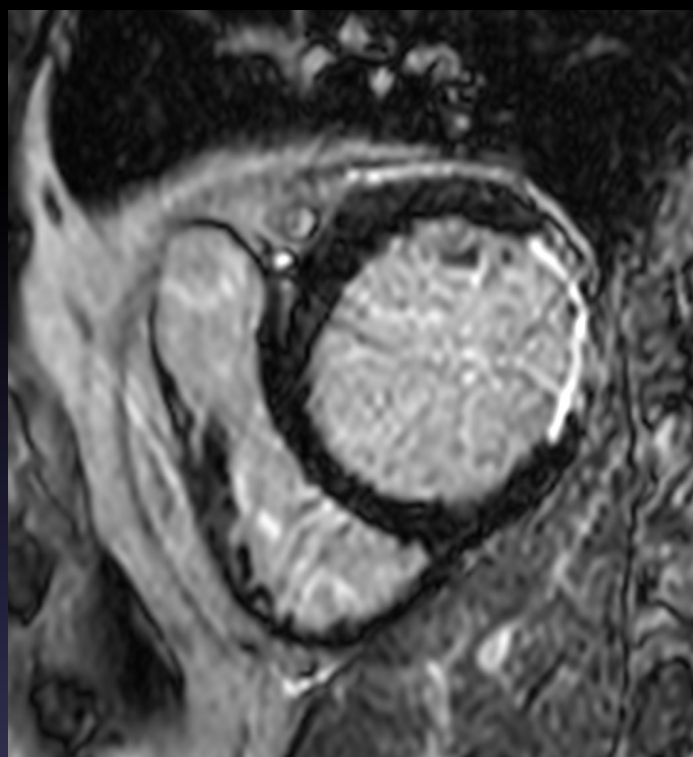
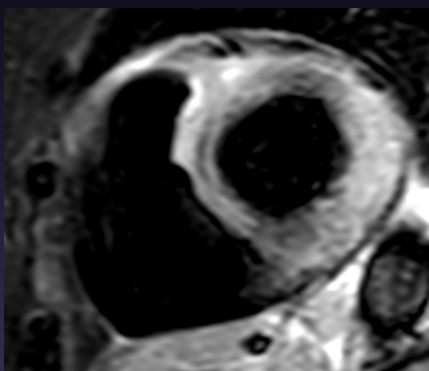
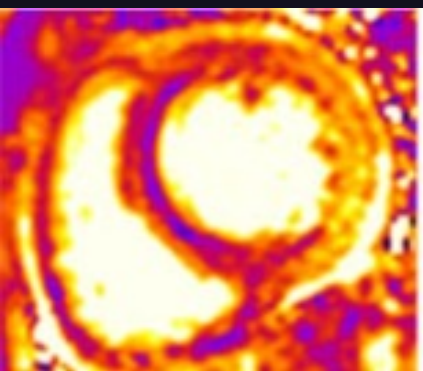
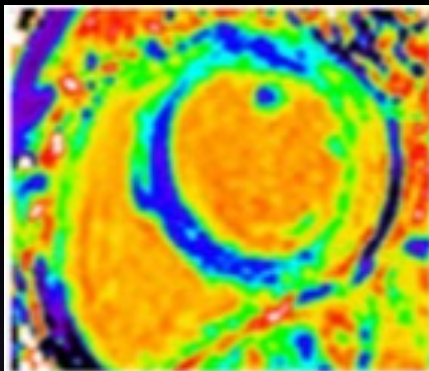
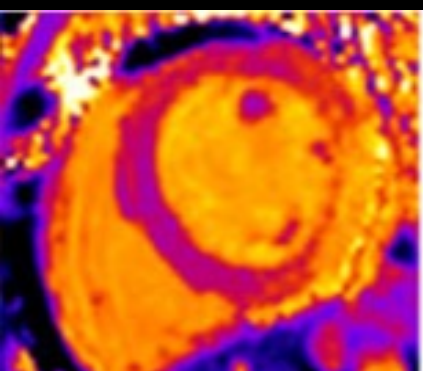
cTn, ECG, and CV imaging (echocardiography and
CMR) are recommended to diagnose
ICI-associated myocarditis.^{320,434,435,453}

I

B



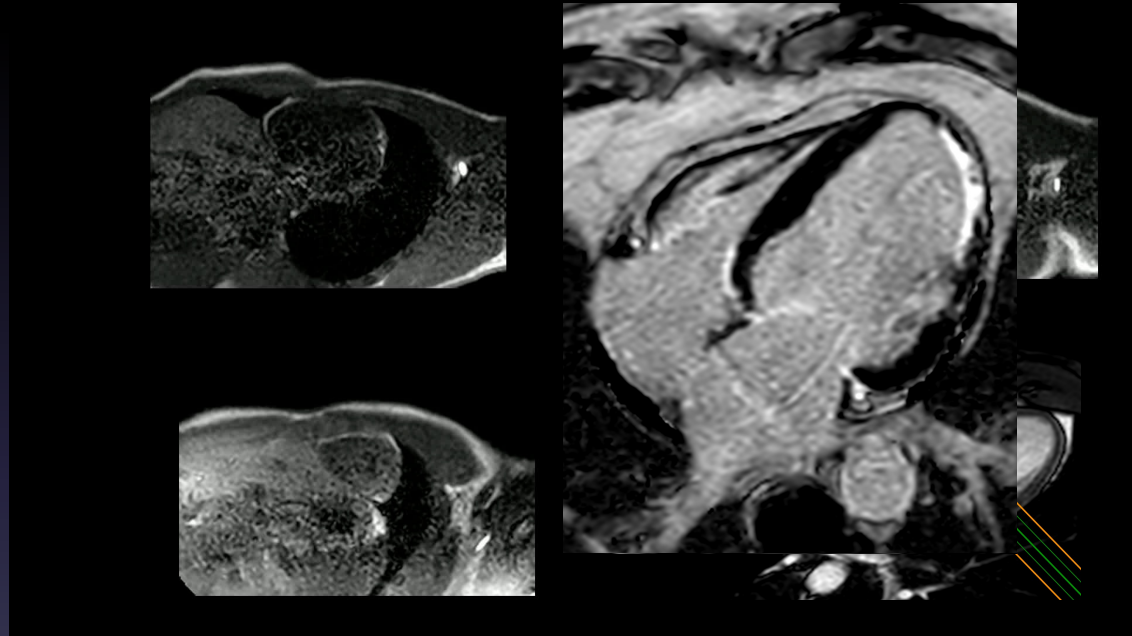




Cardiopatia ischemica

Sindrome coronarica

- Valutazione LV e RV
- Valutazione Edema/inflammatione
- First pass perfusion (opzionale)
- EGE (opzionale)
- LGE



Patologia Vascolare

Arterie coronarie



JACC: Cardiovascular Imaging

Volume 10, Issue 4, April 2017, Pages 471-481



State-of-the-Art Paper

Multimodality Imaging in Individuals With Anomalous Coronary Arteries

Christoph Gräni MD ^a, Ronny R. Buechel MD ^b, Philipp A. Kaufmann MD ^b, Raymond Y. Kwong MD, MPH ^a

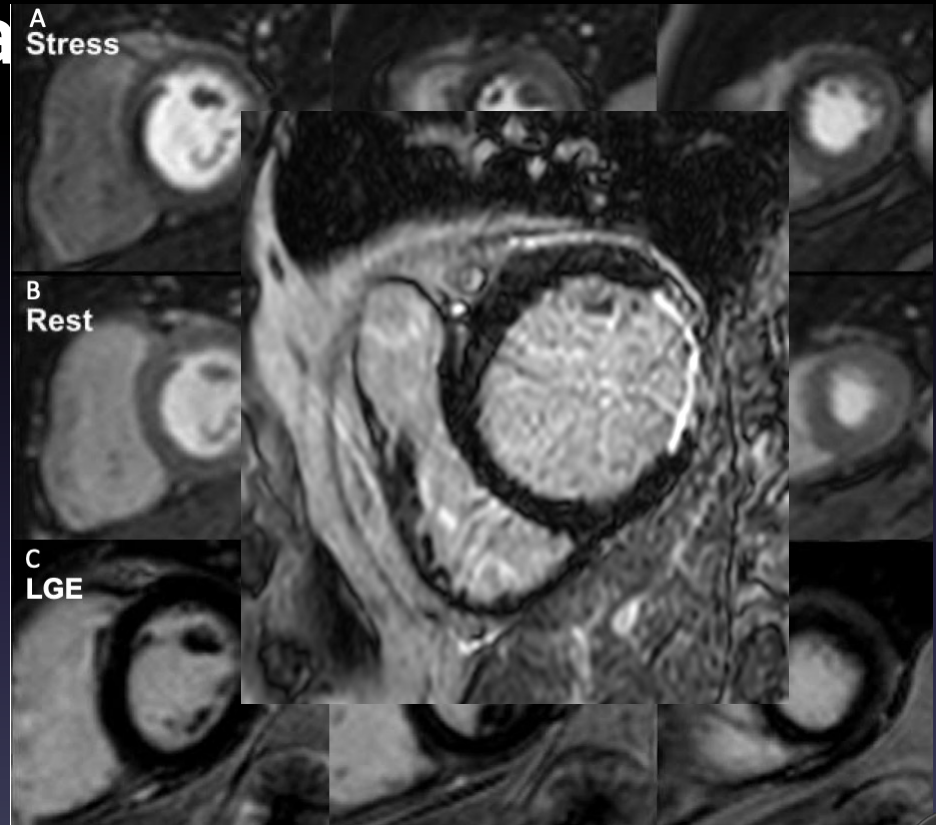
	TTE	TEE	Coronary CTA	CMR	Invasive Angiography and IVUS
Spatial resolution	++	++	+++	++	+++
Physiologic high-risk consequences in anomalous coronary arteries					
Ischemia	++	-	-	++++	++
Scar	+	+	++	++++	-
Feasibility in children	++++	++	++	++	++
Ionizing radiation exposure	-	-	+	-	++
Morphologic high-risk consequences in anomalous coronary arteries					
Slit-like ostium	+	+	++++	++	+++
Take-off angle	++	+	++++	++++	+
Intramural course	++	++	++++	+++	++++
Proximal narrowing	++	++	+++	++	+++
Elliptic shape	++	++	+++	++	+++

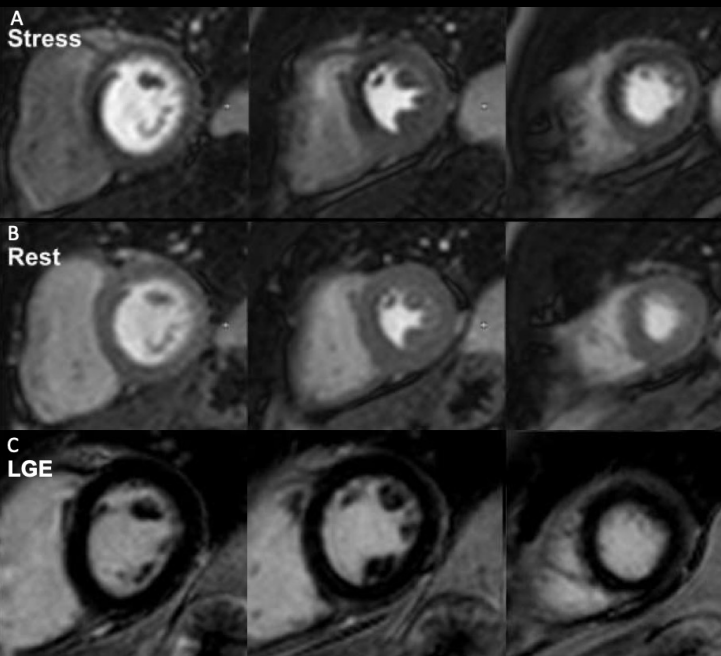


Cardiopatia ischemica

Cardiopatia ischemica cronica

- Valutazione LV e RV
- Sequenze di caratterizzazione tissutale (opzionale)
- Stress (opzionale)
- LGE





Vasodilator stress agents:

1. Adenosine: 140 $\mu\text{g}/\text{kg}$ body weight/min for 2–4 min (consider an increase up to 210 $\mu\text{g}/\text{kg}$ body weight/min depending on institutional and local norms if, after 2–3 min, heart rate (HR) does not increase by 10 bpm and or systolic blood pressure does not drop by > 10 mmHg)
2. Dipyridamole: 0.142 $\mu\text{g}/\text{kg}/\text{min}$ over 4 min
3. Regadenoson: 0.4 mg single injection
4. Adenosine triphosphate (ATP) – 140 $\mu\text{g}/\text{kg}/\text{min}$ for 3–5 min (consider an increase up to 210 $\mu\text{g}/\text{kg}$ body weight/min depending on institutional and local norms if, after 2–3 min, HR does not increase by 10 bpm and or blood pressure does not drop by > 10 mmHg)

Inotropic stress agents:

1. Dobutamine: typical maximum dose 40 $\mu\text{g}/\text{kg}/\text{min}$ \pm atropine: 0.25 mg fractions typical (maximal dose 2 mg) (ischemia) or 2.5–10 $\mu\text{g}/\text{kg}/\text{min}$ dobutamine (viability)

Standardized cardiovascular magnetic resonance imaging (CMR) protocols: 2020 update

[Christopher M. Kramer](#) , [Jörg Barkhausen](#), [Chiara Bucciarelli-Ducci](#), [Scott D. Flamm](#),
[Raymond J. Kim](#) & [Eike Nagel](#)



Cardiopatia ischemica

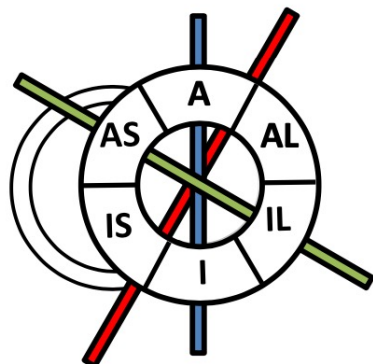
Refertazione

Key points

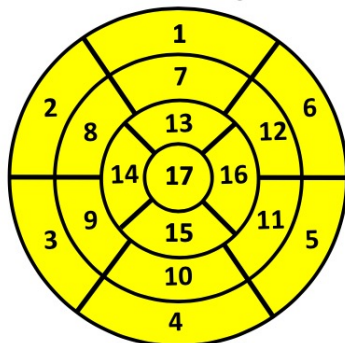
- Ventricolo SN:
 - Dimensioni
 - Cinesi distrettuale
 - Frazione di eiezione
- Ventricolo DX
- Edema/infiammazione
- MVO
- LGE (estensione)



proiezioni standard



modello 17-segmenti



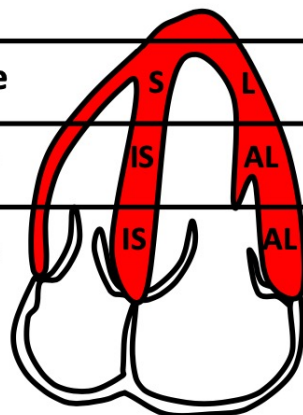
4 camere

apice

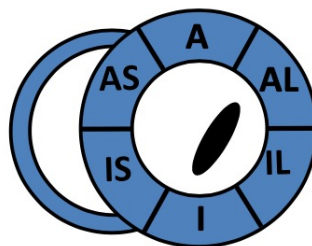
apicale

medio

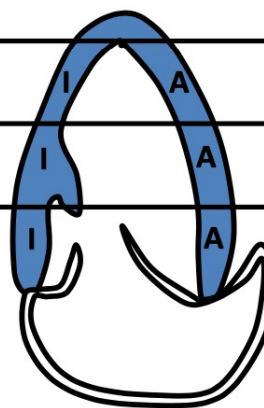
basale



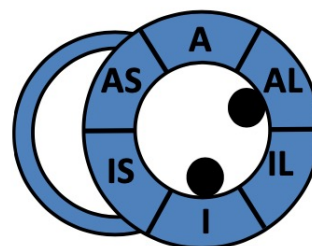
basale



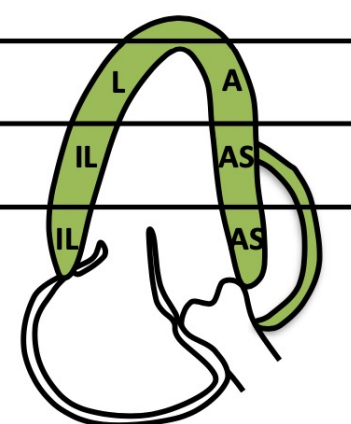
2 camere



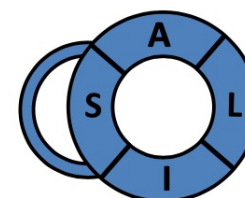
medio

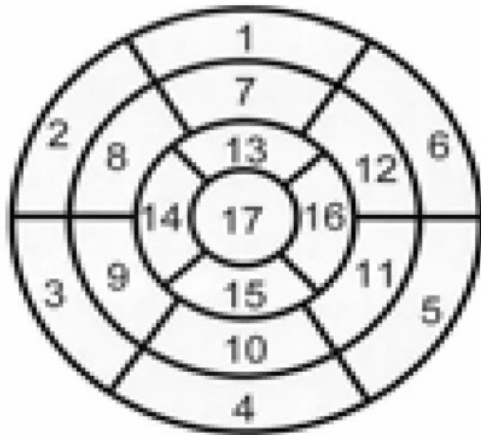


3 camere



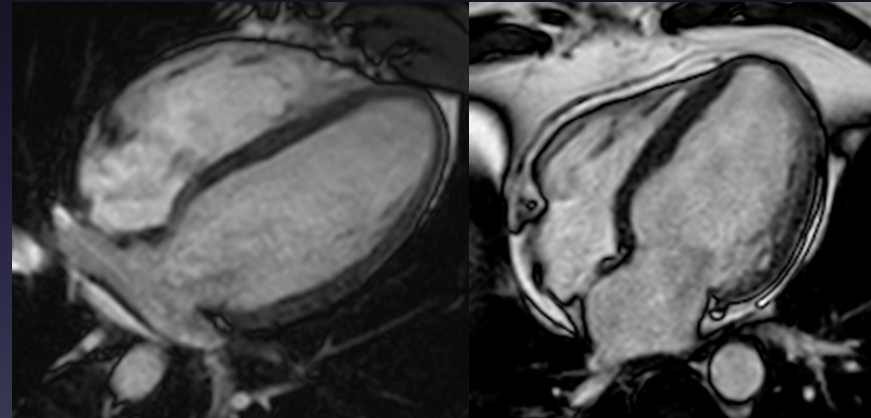
apicale

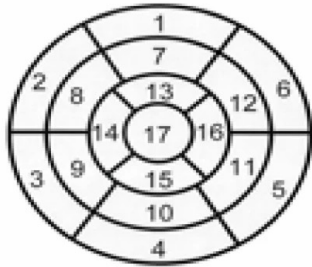




- | | | |
|------------------------|-----------------------|---------------------|
| 1. basal anterior | 7. mid-anterior | 13. apical anterior |
| 2. basal anteroseptal | 8. mid-anteroseptal | 14. apical septal |
| 3. basal inferoseptal | 9. mid-inferoseptal | 15. apical inferior |
| 4. basal inferior | 10. mid-inferior | 16. lateral |
| 5. basal inferolateral | 11. mid-inferolateral | 17. apex |
| 6. basal anterolateral | 12. mid-anterolateral | |

- Ipercinetico
- Normocinetico
- Ipocinetico
- Acinetico
- Discinetico
- Dissincronia





- | | | |
|------------------------|-----------------------|---------------------|
| 1. basal anterior | 7. mid-anterior | 13. apical anterior |
| 2. basal anteroseptal | 8. mid-anteroseptal | 14. apical septal |
| 3. basal inferoseptal | 9. mid-inferoseptal | 15. apical inferior |
| 4. basal inferior | 10. mid-inferior | 16. lateral |
| 5. basal inferolateral | 11. mid-inferolateral | 17. apex |
| 6. basal anterolateral | 12. mid-anterolateral | |

Generale

- La presenza di LGE non è una malattia ma può essere un segno di necrosi/fibrosi ischemica, patologie infettive o lesioni tumorali.
- I più recenti agenti di contrasto a base di gadolinio sono considerati sicuri ed extravascolari. Non si accumulano all'interno dei miociti in caso di rottura dei miociti, ma si accumulano all'interno dello spazio extracellulare o all'interno dei vasi rotti.

Distribuzione coronarica

Dal subendocardio al subepicardio (in caso di ischemia) all'aumentare della severità della malattia coronarica

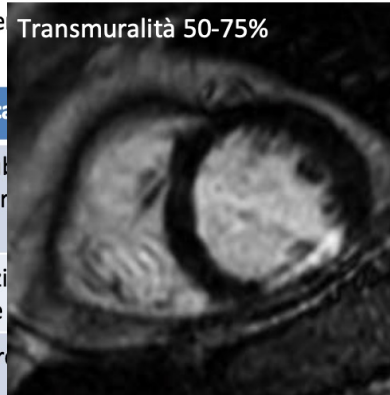
Estensione circonferenziale del letto di perfusione e

IMA ripperfuso può essere

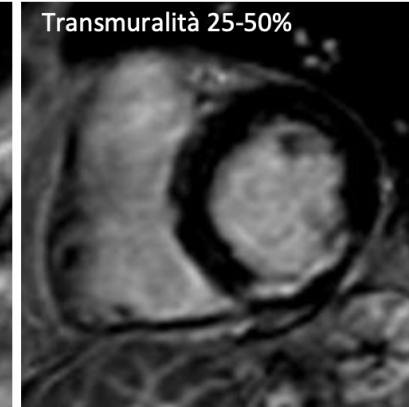
Micro-infarto



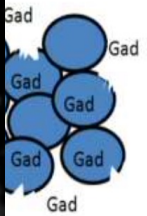
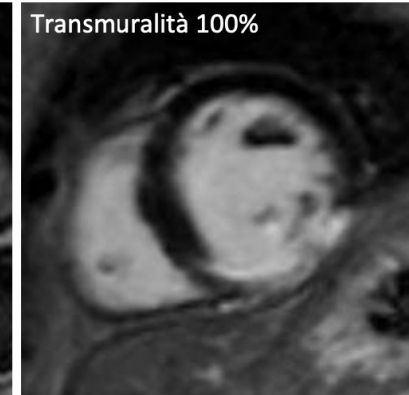
Transmuralità 50-75%



Transmuralità 25-50%



Transmuralità 100%



o miocardico
on rottura dei
ti e aumento
volume di
zione del Gad



a livello

che con




Miocardite

Refertazione

Key points

- Ventricolo SN:
 - Dimensioni
 - Cinesi segmentaria
 - Frazione di eiezione
 - Edema
 - LGE
 - Pericardio (versamento, flogosi)

Prognostic Role of Left Ventricular Intramyocardial Fatty Metaplasia in Patients With Previous Myocarditis (MYOFAT Study)

[Gianluca Di Bella, MD, PhD](#)   • [Giovanni Gentile, MD](#) • [Flaviano Irsuti, MD](#) • ...

[Antonio De Luca, MD, PhD](#) • [Jan Bogaert, MD, PhD](#) • [Giovanni Donato Aquaro, MD](#) • [Show all authors](#)

Murthy, MD, PHD^b, Vikram Agarwal, MD^c, Kyoichi Kaneko, MD, PHD^a, Sarah Cuddy, MD^a, Ayaz Aghayev, MD^c, Michael Steigner, MD^c, Ron Blankstein, MD^{a,c}, Michael Jerosch-Herold, PHD^c, and Raymond Y. Kwong, MD, MPH^a



Journal of the American College of
Cardiology

Volume 70, Issue 16, 17 October 2017, Pages 1977-1987



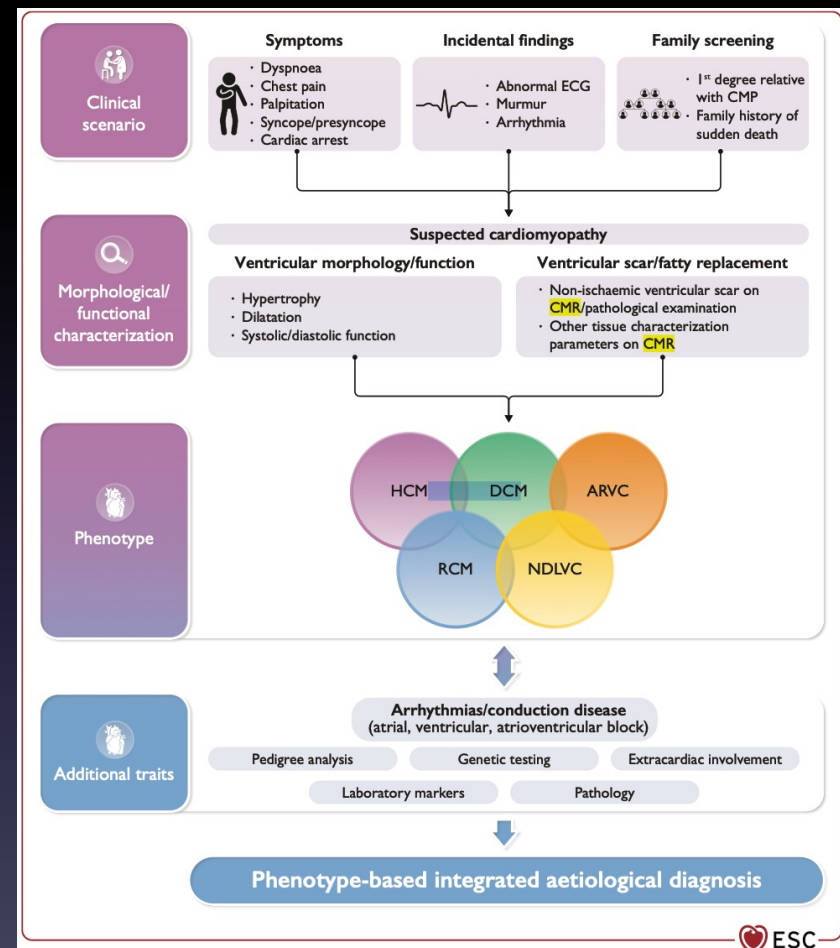
Original Investigation

Cardiac MR With Late Gadolinium Enhancement in Acute Myocarditis With Preserved Systolic Function: ITAMY Study



2023 ESC Guidelines for the management of cardiomyopathies: Developed by the task force on the management of cardiomyopathies of the European Society of Cardiology (ESC) ^{FREE}

Elena Arbelo ✉, Alexandros Protonotarios, Juan R Gimeno, Eloisa Arbustini, Roberto Barriales-Villa, Cristina Basso, Connie R Bezzina, Elena Biagini, Nico A Blom, Rudolf A de Boer ... [Show more](#)



JOURNAL ARTICLE
GUIDELINES

2023 ESC Guidelines for the management of cardiomyopathies: Developed by the task force on the management of cardiomyopathies of the European Society of Cardiology (ESC)

[Elena Arbelo](#) ✉, [Alexandros Protonotarios](#), [Juan R Gimeno](#), [Eloisa Arbustini](#), [Roberto Barriaes-Villa](#), [Cristina Basso](#), [Connie R Bezzina](#), [Elena Biagini](#), [Nico A Blom](#), [Rudolf A de Boer](#) ... [Show more](#)

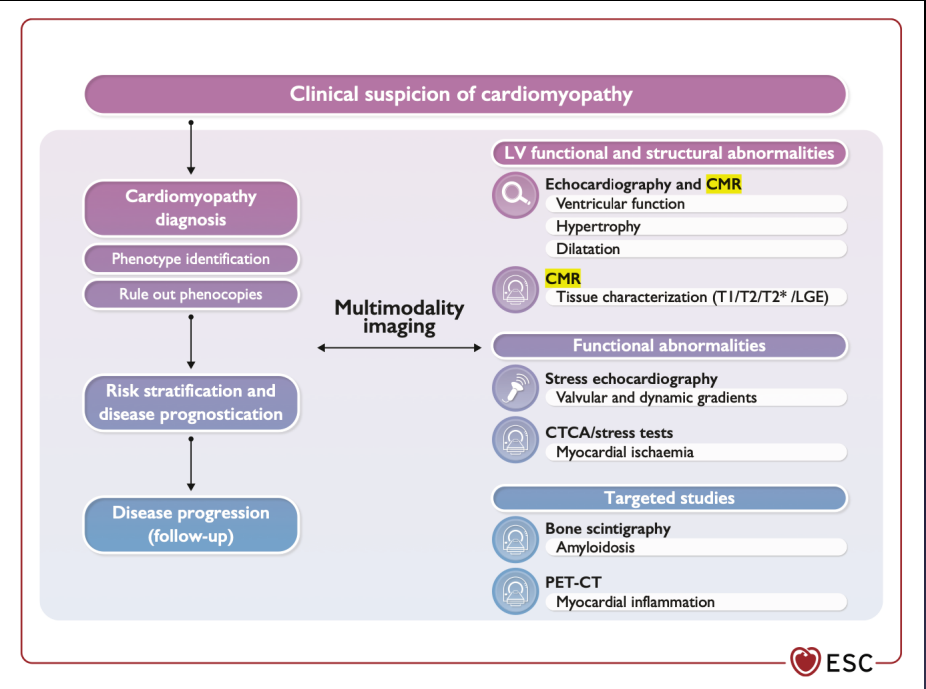
FREE

Recommendation Table 5 — Recommendations for cardiac magnetic resonance indication in patients with cardiomyopathy

Recommendations	Class ^a	Level ^b
Contrast-enhanced CMR is recommended in patients with cardiomyopathy at initial evaluation. 10,90,116,119–143	I	B
Contrast-enhanced CMR should be considered in patients with cardiomyopathy during follow-up to monitor disease progression and aid risk stratification and management. 89,90,120–122,127,129,136–147	IIa	C
Contrast-enhanced CMR should be considered for the serial follow-up and assessment of therapeutic response in patients with cardiac amyloidosis, Anderson–Fabry disease, sarcoidosis, inflammatory cardiomyopathies, and haemochromatosis with cardiac involvement. 148–152	IIa	C
In families with cardiomyopathy in which a disease-causing variant has been identified, contrast-enhanced CMR should be considered in genotype-positive/phenotype-negative family members to aid diagnosis and detect early disease. 10,122,126,128,129,135–143,145,153–159	IIa	B
In cases of familial cardiomyopathy without a genetic diagnosis, contrast-enhanced CMR may be considered in phenotype-negative family members to aid diagnosis and detect early disease. 10,128	IIb	C

2023 ESC Guidelines for the management of cardiomyopathies: Developed by the task force on the management of cardiomyopathies of the European Society of Cardiology (ESC) FREE

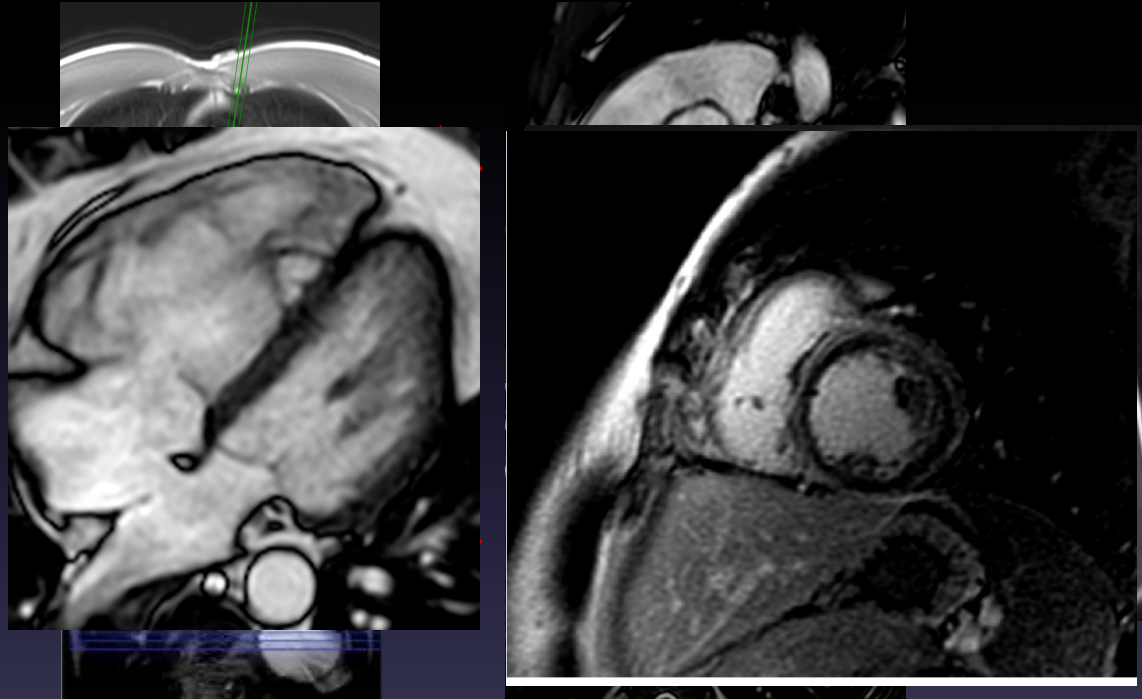
Elena Arbelo ✉, Alexandros Protonotarios, Juan R Gimeno, Eloisa Arbustini, Roberto Barriales-Villa, Cristina Basso, Connie R Bezzina, Elena Biagini, Nico A Blom, Rudolf A de Boer ... [Show more](#)





Cardiomiopatie

Cardiomiopatia aritmogena

- Valutazione LV
- Valutazione RV con piani dedicati
- T1 BB/T1 BB a soppressione del grasso (opzionale)
- LGE



Diagnosis of arrhythmogenic cardiomyopathy: The Padua criteria

Domenico Corrado   • Martina Perazzolo Marra • Alessandro Zorzi • ... Thomas Wichter • Barbara Bauce • Cristina Basso • [Show all authors](#)

Category	Right ventricle (upgraded 2010 ITF diagnostic criteria)	Left ventricle (new diagnostic criteria)
I. Morpho-functional ventricular abnormalities	<p><i>By echocardiography, CMR or angiography: Major</i></p> <ul style="list-style-type: none"> Regional RV akinesia, dyskinesia, or bulging <i>plus</i> one of the following: <ul style="list-style-type: none"> global RV dilatation (increase of RV EDV according to the imaging test specific nomograms) global RV systolic dysfunction (reduction of RV EF according to the imaging test specific nomograms) <p><i>Minor</i></p>	<p><i>By echocardiography, CMR or angiography: Minor</i></p> <ul style="list-style-type: none"> Global LV systolic dysfunction (depression of LV EF or reduction of echocardiographic global longitudinal strain), with or without LV dilatation (increase of LV EDV according to the imaging test specific nomograms for age, sex, and BSA) <p><i>Minor</i></p> <ul style="list-style-type: none"> Regional LV hypokinesia or akinesia of LV free wall, septum, or both
II. Structural myocardial abnormalities	<ul style="list-style-type: none"> Regional RV akinesia, dyskinesia or aneurysm of RV free wall <p><i>By CE-CMR: Major</i></p> <ul style="list-style-type: none"> Transmural LGE (stria pattern) of ≥ 1 RV region(s) (inlet, outlet, and apex in 2 orthogonal views) <p><i>By EMB (limited indications): Major</i></p> <ul style="list-style-type: none"> Fibrous replacement of the myocardium in ≥ 1 sample, with or without fatty tissue 	<p><i>By CE-CMR: Major</i></p> <ul style="list-style-type: none"> LV LGE (stria pattern) of ≥ 1 Bull's Eye segment(s) (in 2 orthogonal views) of the free wall (subepicardial or midmyocardial), septum, or both (excluding septal junctional LGE)

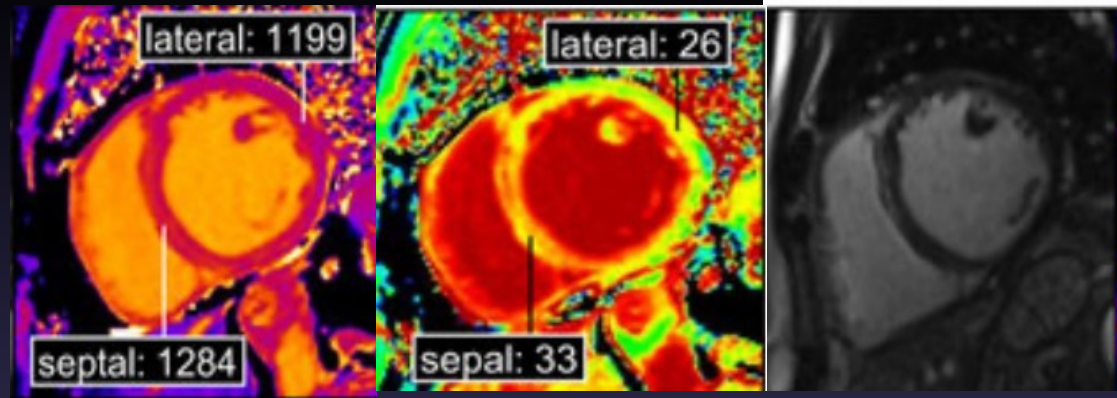
- LGE (estensione)



Cardiomiopatie


Cardiomiopatia a fenotipo dilatativo

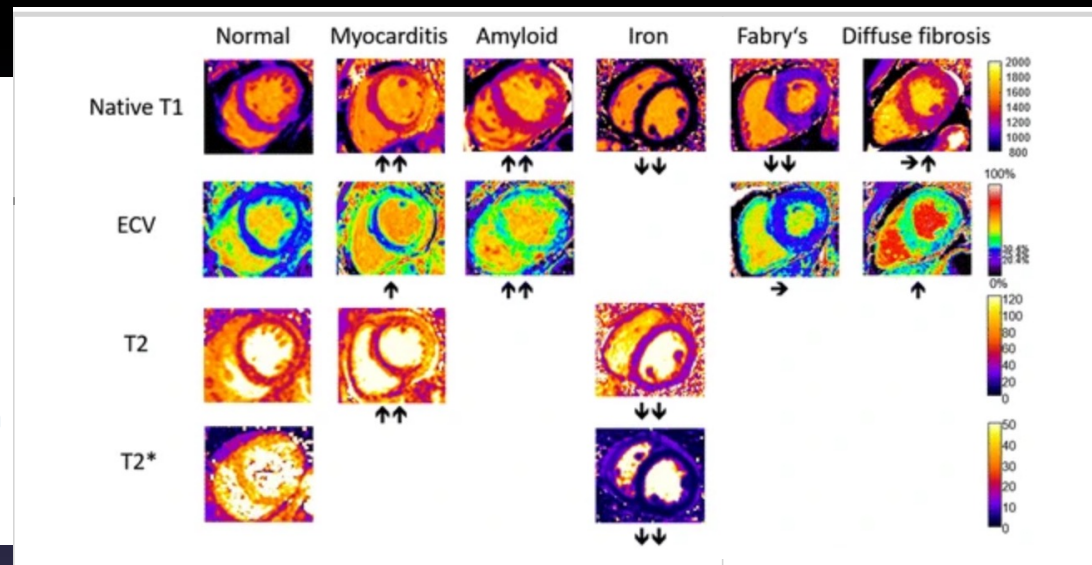
- Valutazione LV e RV
- Sequenze di caratterizzazione tissutale (opzionale)
- LGE



Position paper | [Open Access](#) | [Published: 09 October 2017](#)

Clinical recommendations for cardiovascular magnetic resonance mapping of T1, T2, T2* and extracellular volume: A consensus statement by the Society for Cardiovascular Magnetic Resonance (SCMR) endorsed by the European Association for Cardiovascular Imaging (EACVI)

[Daniel R. Messroghli](#) , [James C. Moon](#), [Vanessa M. Ferreira](#), [Lars Grosse-Wortmann](#), [Taigang He](#), [Peter Kellman](#), [Julia Mascherbauer](#), [Reza Nezafat](#), [Michael Salerno](#), [Erik B. Schelbert](#), [Andrew J. Taylor](#), [Richard Thompson](#), [Martin Ugander](#), [Ruud B. van Heeswijk](#) & [Matthias G. Friedrich](#)



Cardiopatía a fenotipo dilatativo

Refertazione

Key points

- Ventricolo SN:
 - Dimensioni
 - Frazione di eiezione ($< 35\%$)
- Ventricolo DX
- LGE (pattern ed estensione)
- ECV

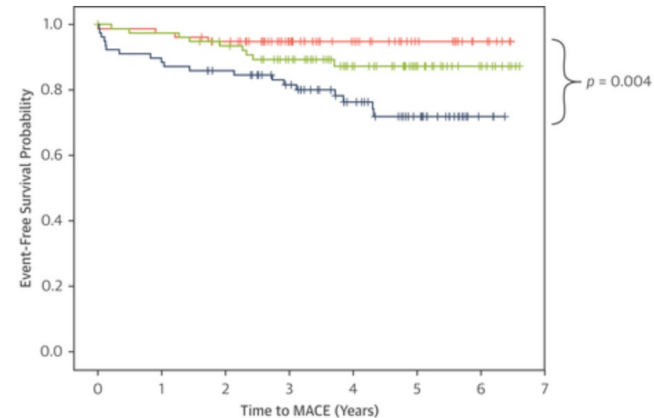
JACC Journals › JACC: Imaging › Archives › Vol. 12 No. 8_Part_2

[Previous](#) | [Next](#)

Comparing CMR Mapping Methods and Myocardial Patterns Toward Heart Failure Outcomes in Nonischemic Dilated Cardiomyopathy

Original Research

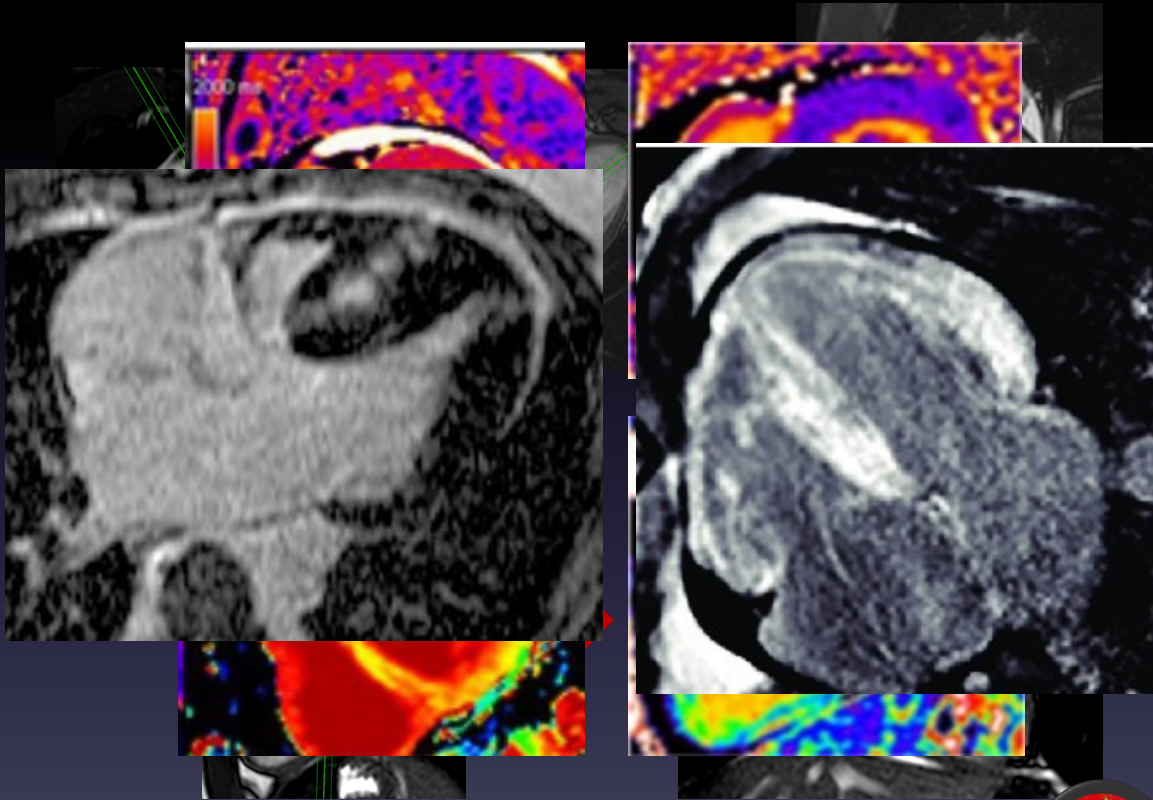
Tomas Vita, Christoph Gräni, Siddique A. Abbasi, Tomas G. Neilan, Ethan Rowin, Kyoichi Kaneko, Otavio Coelho-Filho,



Cardiomiopatie

Cardiomiopatie a fenotipo ipertrofico

- Valutazione LV, e in particolare degli spessori parietali (eccentrico vs concentrico)
- Sequenze dedicate sul LVOT (2 piani ortogonali)
- Se presenza di ostruzione al tratto di efflusso -> sequenze in flusso sul LVOT
- T1 mapping (opzionale)
- LGE



Cardiomiopatia a fenotipo ipertrofico

Refertazione

Key points

- Ventricolo SN:
 - Dimensioni
 - Massa
 - Spessore parietale massimo (concentrico vs eccentrico)
 - Frazione di eiezione
 - Ostruzione al tratto di efflusso del VS
 - SAM
- LGE (estensione)

Prognostic Value of LGE-CMR in HCM

A Meta-Analysis

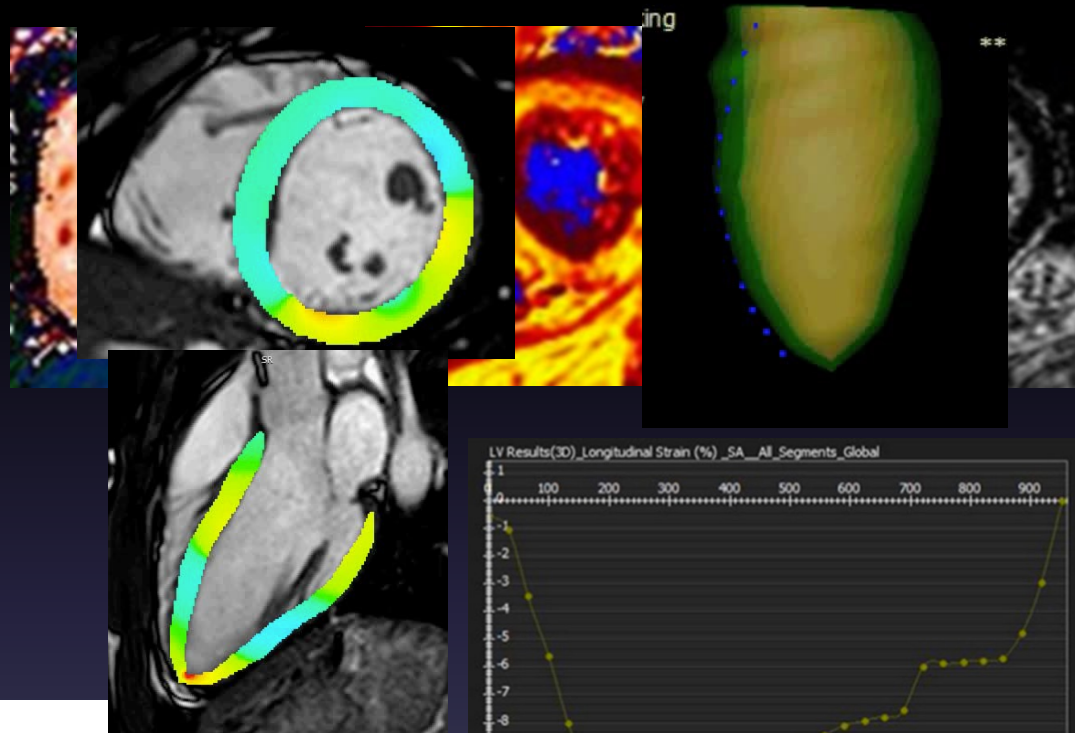
Zhen Weng, PhD,^a Jialu Yao, MD,^b Raymond H. Chan, MD, MPH,^c Jun He, MD,^a Xiangjun Yang, MD, PhD,^b Yafeng Zhou, MD, PhD,^b Yang He, MD^a



Cardiomiopatie

Cardiomiopatia chemio-relata

- Valutazione LV
- Sequenze di caratterizzazione tissutale (opzionale)
- LGE



Review

Early diagnosis of chemotherapy-induced cardiotoxicity by cardiac MRI

Riccardo Cau^a, Pierpaolo Bassareo^b, Valeria Cherchi^a, Vitanio Palmisano^{a,d}, Jasjit S. Suri^c, Michele Porcu^a, Antonella Balestrieri^a, Gianluca Pontone^f, Luca Saba^{a,*}

^a Department of Radiology, Azienda Ospedaliero Universitaria (A.O.U.), di Cagliari – Polo di Monserrato, s.s. 554 Monserrato, Cagliari, 09045, Italy

^b University College of Dublin, Mater Misericordiae University Hospital and Our Lady's Children's Hospital, Crumlin, Dublin, Ireland

^c Diagnostic and Monitoring Division, AtheroPoint™ LLC, Roseville, CA, 95661, United States

^d Radiology Department, Miulli Hospital, Acquaviva delle Fonti, Italy Strada Prov. 127 Acquaviva – Santeramo Km. 4,100, 70021, Acquaviva delle Fonti, BA, Italy

^f Centro Cardiologico Monzino, IRCCS, Milan, Italy

