

LA DOULEUR THORACIQUE AIGUE : LE POINT DE VUE DU RADIOLOGUE

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SITUATION CLINIQUE

- DOULEUR THORACIQUE = SIGNE D'APPEL FRÉQUENT ET PEU SPÉCIFIQUE.
- PEUT ÊTRE LA TRADUCTION DE PATHOLOGIES +/- GRAVES ET URGENTES.
- **L'IMAGERIE S'INTÈGRE DANS LES ALGORITHMES DE PRISE EN CHARGE DE CES PATIENTS, AVEC LES DONNÉES CLINIQUES, BIOLOGIQUES ET ECG.**

QUELS MOYENS D'IMAGERIE ?

- CLICHÉ THORACIQUE
- ÉCHOCARDIOGRAPHIE
- SCANNER
- IRM
- (SCINTIGRAPHIE PULMONAIRE)

QUELS MOYENS D'IMAGERIE ?

- CLICHÉ THORACIQUE
- ÉCHOCARDIOGRAPHIE
- SCANNER +++
- IRM
- (SCINTIGRAPHIE PULMONAIRE)

	Low Likelihood				High Likelihood
1. Presentation					
2. ECG					
3. Troponin	-	+			++

Rechercher
une autre
cause

Le doute
persiste

Coronarographie
en urgence

Douleur thoracique aiguë : Outils diagnostiques actuels

CLINIQUE

SCORE DE
RISQUE

BIOMARQUEURS

ECG

ECG D'EFFORT ET... MODALITES D'IMAGERIE

IMAGERIE DE PERFUSION MYOCARDIQUE

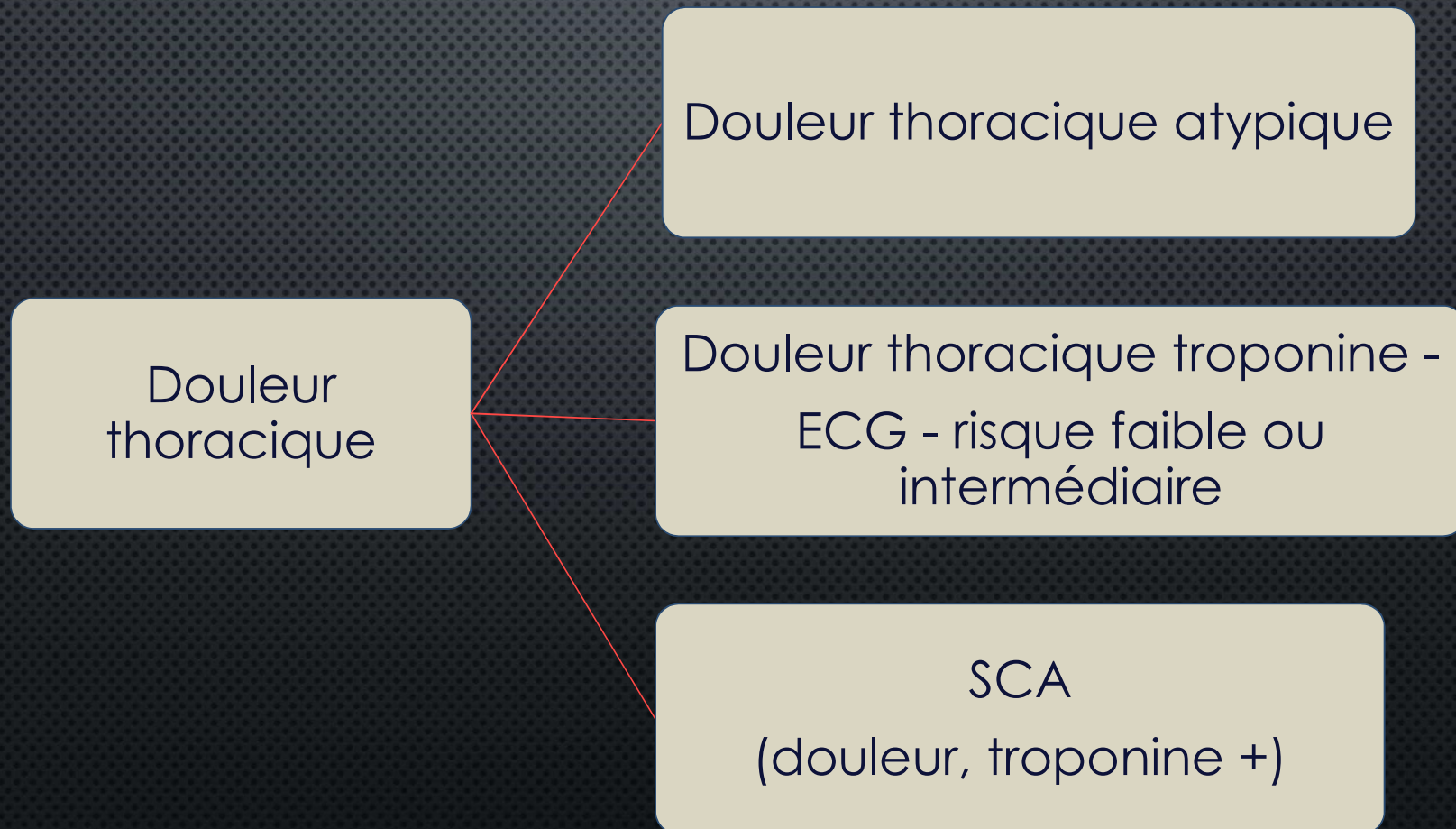
ETT

CORONAROGRAPHIE

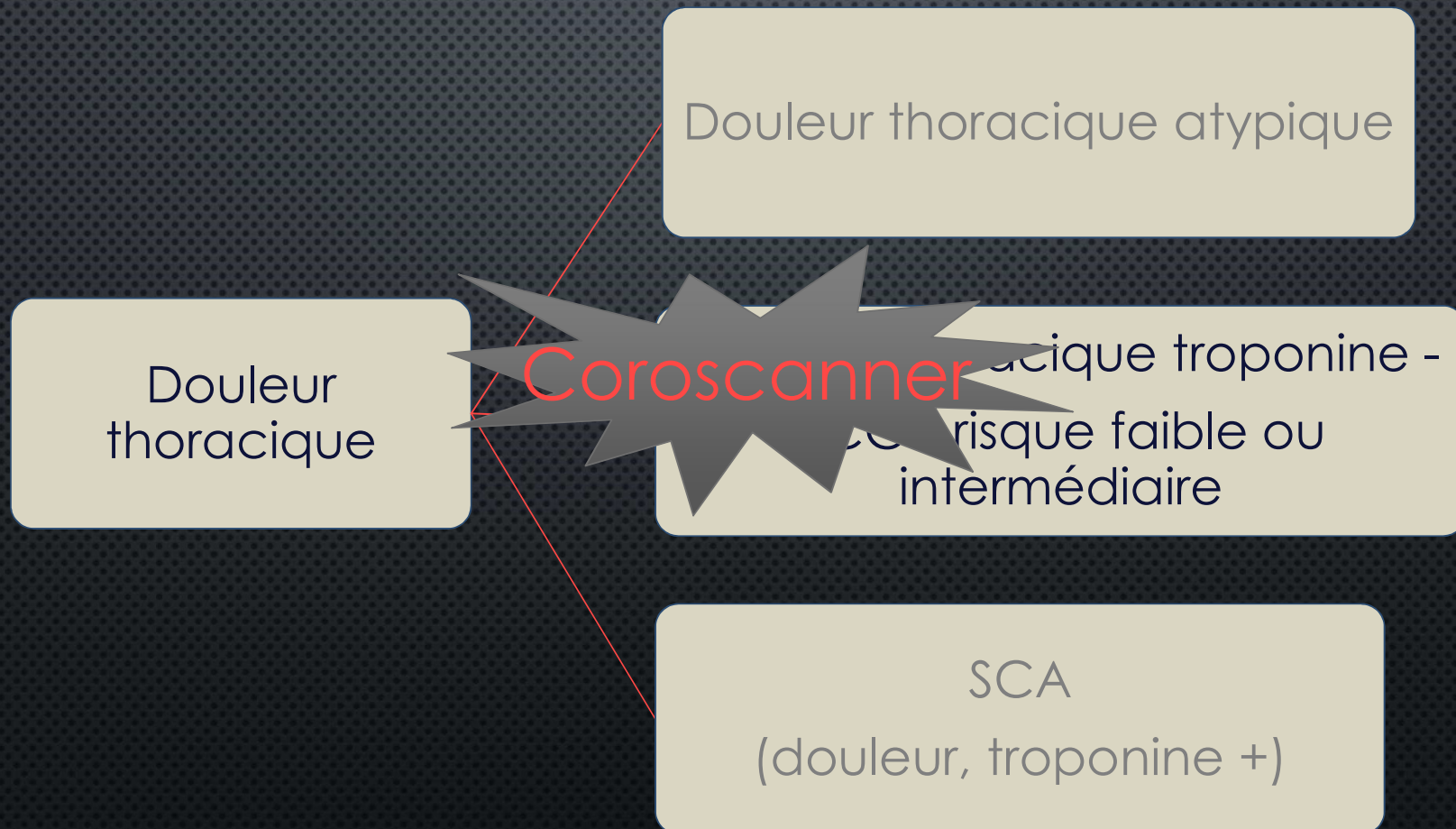
COROSCANNER ET IRM

Khorff et al. Heart 2006

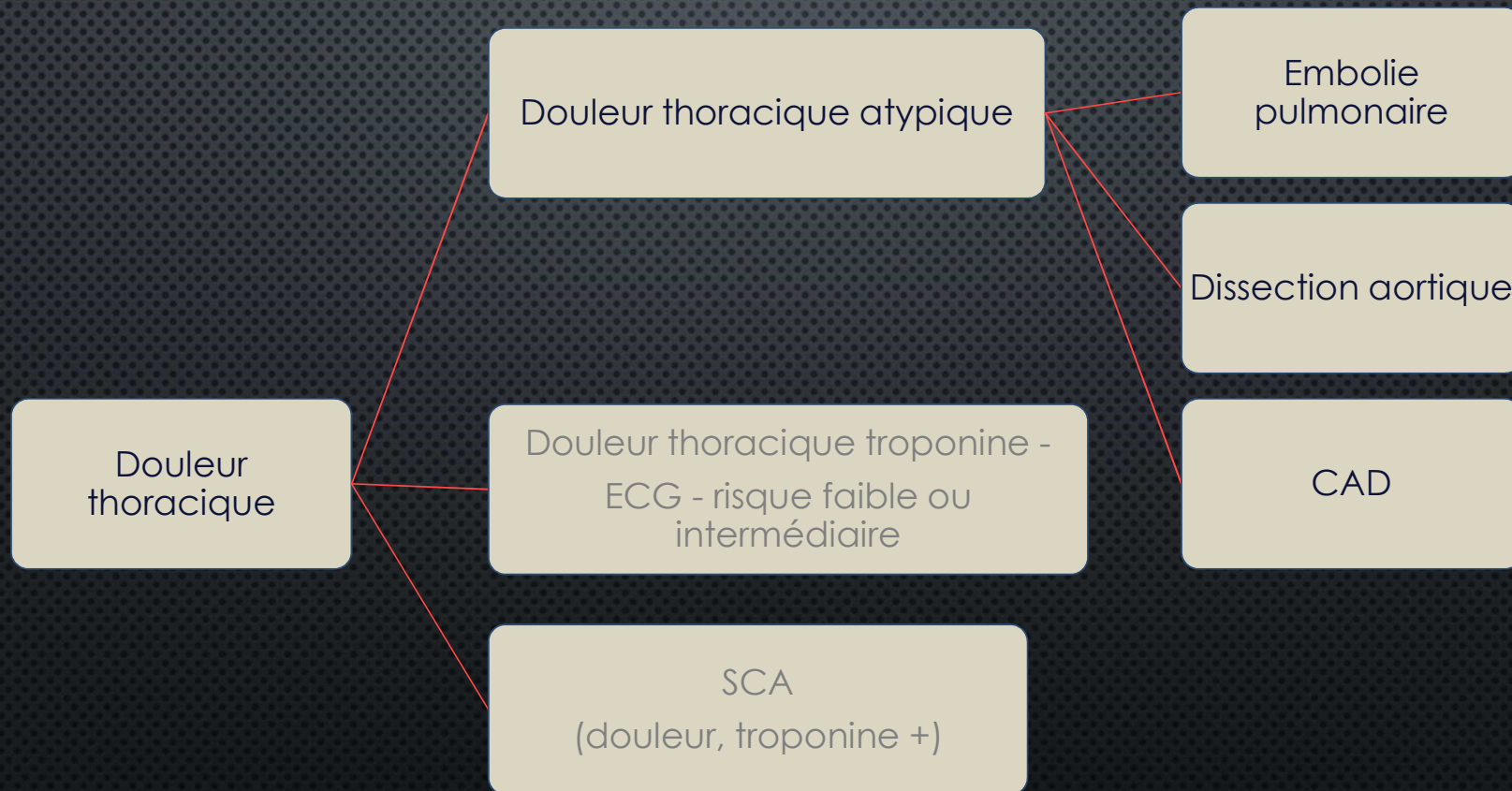
Douleur thoracique aiguë : Place de l'ANGIOSCANNER ?



Douleur thoracique aigue : Place de l'ANGIOSCANNER ?

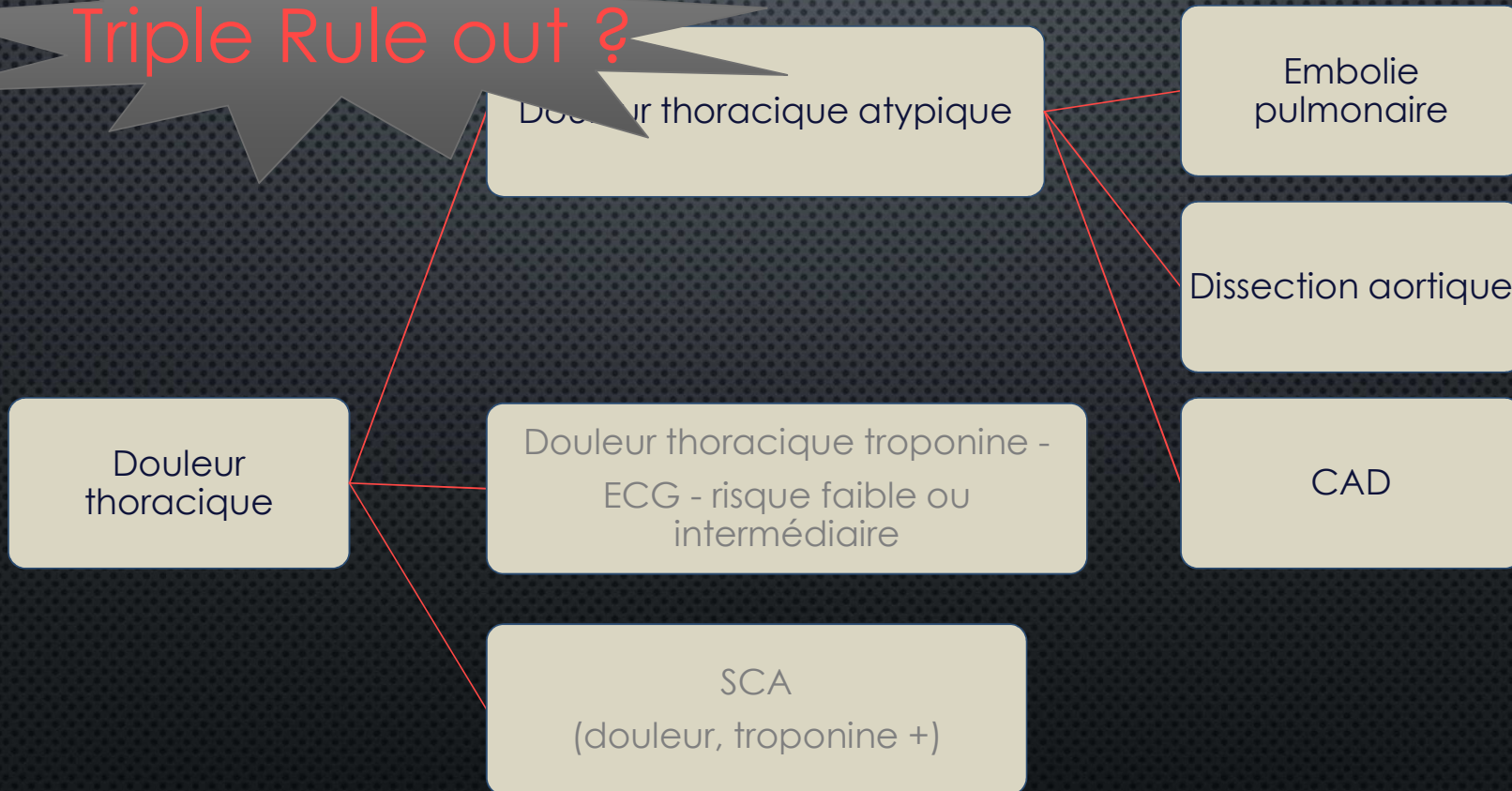


Douleur thoracique aigue : Place de l'ANGIOSCANNER ?

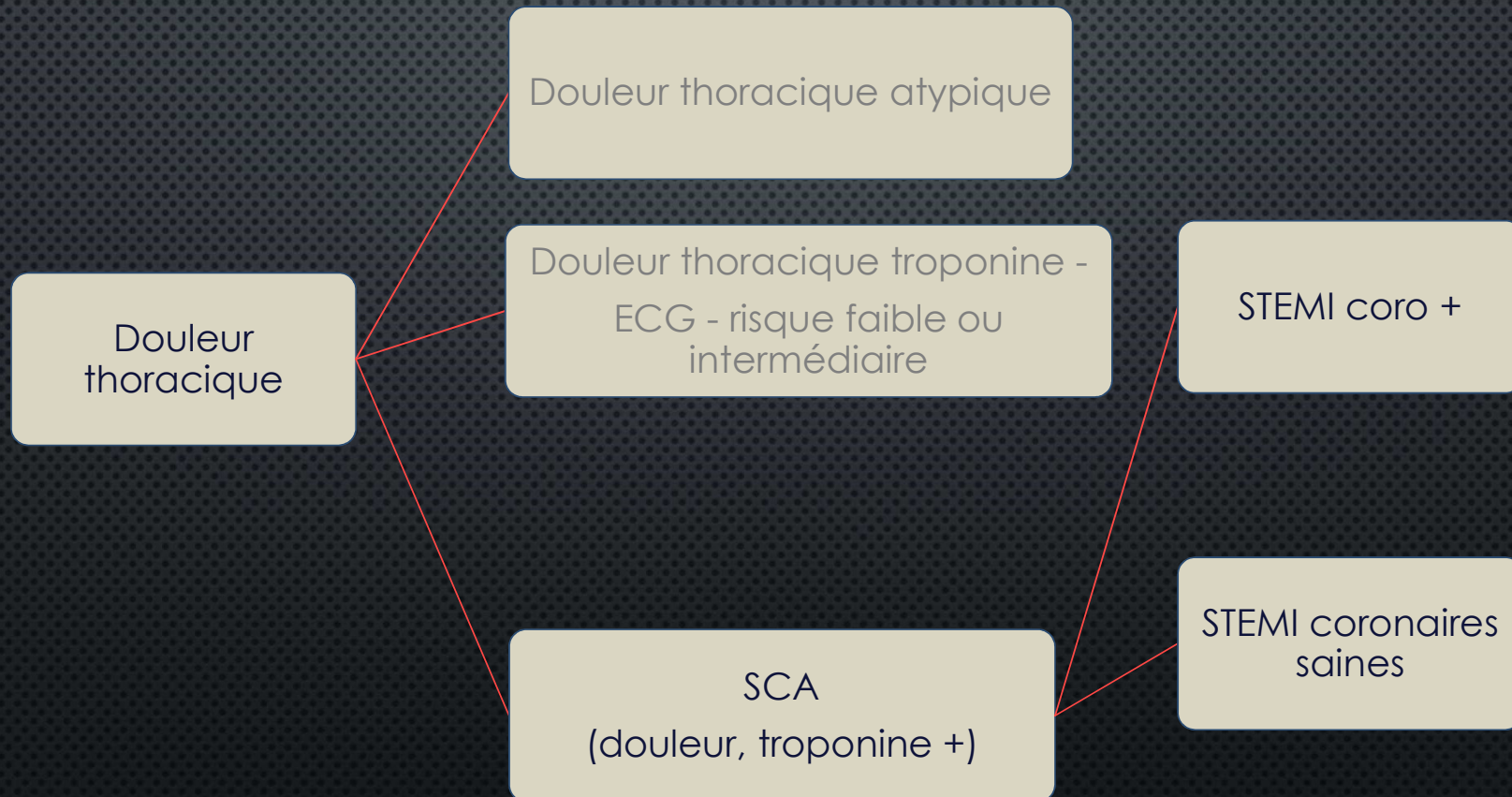


Douleur thoracique aigue : Place de l'ANGIOSCANNER ?

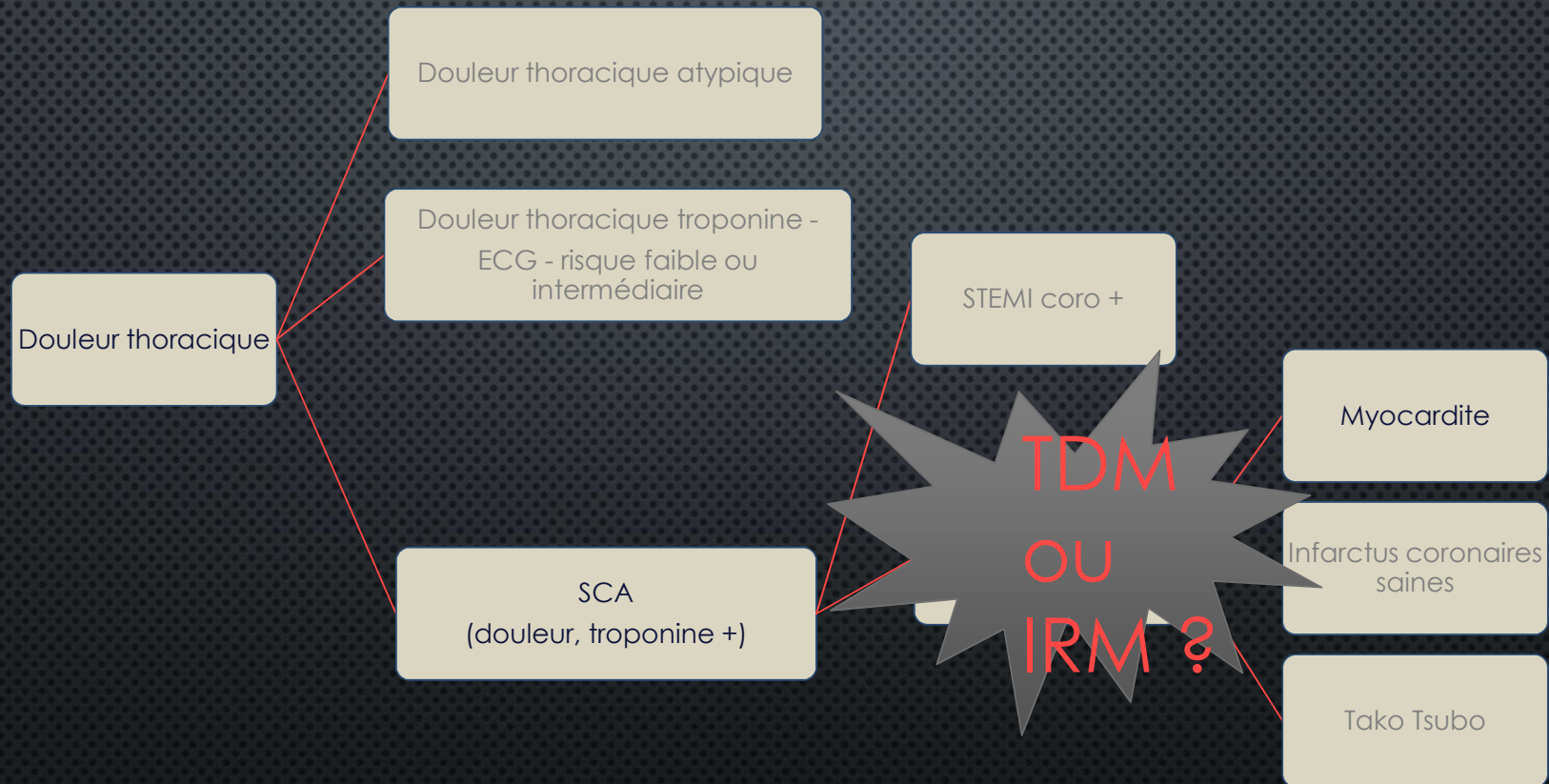
Triple Rule out ?



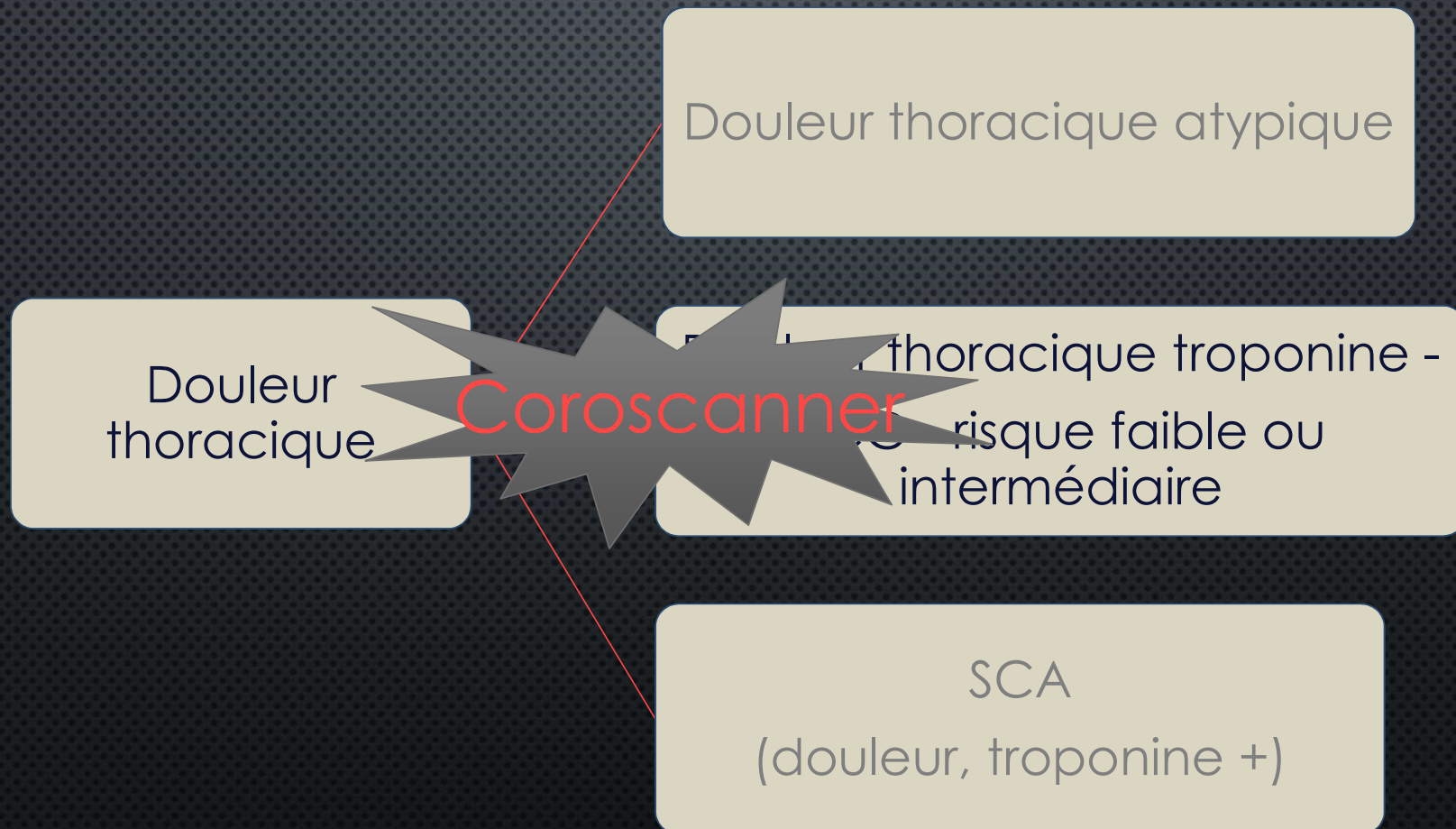
Douleur thoracique aigue : Place de l'ANGIOSCANNER ?



Douleur thoracique aigue : Place de l'ANGIOSCANNER ?



Douleur thoracique aiguë troponine - / ECG - risque faible ou intermédiaire



PERFORMANCES DU COROCT

- TRÈS BONNE VPN, 83 À 99 % SELON LES ÉTUDES
- ÉTUDE CT-STAT :
 - EN FAVEUR CT / IMAGERIE DE PERFUSION MYOCARDIQUE
 - RÉDUCTION DU TEMPS POUR OBTENIR DIAGNOSTIC (2,9 vs 6,3 h)
 - RÉDUCTION DU COÛT (SORTIE DES URGENCES PLUS RAPIDE)
 - MOINS D'IRRADIATION (11,5 vs 12,8 mSv)
 - PAS DE DIFFÉRENCE SUR LA SURVENUE D'ÉVTS CARDIAQUES MAJEURS
- ÉTUDES ROMICAT II ET ACRIN-PA : INTÉRÊT DU CT CHEZ LES **PATIENTS À RISQUE INTERMÉDIAIRE OU FAIBLE**

Coronary Computed Tomography Angiography for the
Assessment of Acute Chest Pain in the
Emergency Department
Evidence, Guidelines, and Tips for Implementation
Alan Ropp, MD, Cheng T. Lin, MD, and Charles S. White, MD

J Thorac Imaging • Volume 30, Number 3, May 2015

PERFORMANCES DU COROCT

- ESSAI MULTICENTRIQUE
- CRITÈRES ÉVALUÉS : DURÉE DE SÉJOUR, TAUX DE SORTIE DIRECT DES URGENCES, SURVENUE D'ÉVÉNEMENTS CARDIO-VASCULAIRES.
- DIAGNOSTIC FINAL DE SCA : 28 %
- BRAS CT :
 - RÉDUCTION DURÉE DE SÉJOUR DE 7,6 H
 - SORTIE DIRECTE DES URGENCES 47 % vs 12 %
 - PAS D'EVTS CV À 28 J, PAS DE DIAGNOSTIC MANQUÉ
 - PLUS DE DOSE

Hoffmann U et al. NEJM 2012, 367: 299-308
Redberg RF NEJM 2012, 367 : 375-376

CT Angiography for Safe Discharge of Patients with Possible Acute Coronary Syndromes

Harold I. Litt, M.D., Ph.D., Constantine Gatsonis, Ph.D., Brad Snyder, M.S.,
Harjit Singh, M.D., Chadwick D. Miller, M.D., Daniel W. Entikin, M.D.,
James M. Leaming, M.D., Laurence J. Gavin, M.D., Charissa B. Pacella, M.D.,
and Judd E. Hollander, M.D.

N Engl J Med 2012.

- 1370 PATIENTS > 30 ANS, SUSPECTS DE SCA, RISQUE CV BAS OU INTERMÉDIAIRE
- ENDPOINT : SURVIE À 1 MOIS SANS INFARCTUS
- PRISE EN CHARGE : INCLUANT UN SCANNER (2/3), CLASSIQUE SANS SCANNER (1/3)
- GROUPES COMPARABLES
- INFARCTUS ET DÉCÈS : AUCUN DÉCÈS, 1 % D'IDM DANS LES 2 GROUPES
- **GROUPE « SCANNER » :**
 - **SORTIE DIRECTE DES URGENCES (49,6 % vs 22,7 %)**
 - **TEMPS D'HOSPITALISATION MOINS LONG (18 vs 25 h)**
 - **TAUX DE DÉTECTION DE LA MALADIE CORONARIENNE PLUS ÉLEVÉ**

RECOMMANDATIONS ESC

INDICATIONS DU SCANNER CARDIAQUE ET CORONAIRE

- II A, NIVEAU DE PREUVE C, EN FAVEUR CT :
 - ALTERNATIVE AU TEST ISCHÉMIQUE POUR ÉLIMINER UNE MALADIE CORONAIRE **CHEZ DES PATIENTS À PROBABILITÉ < 50 % CHEZ QUI UNE BONNE QUALITÉ D'IMAGE EST ATTENDUE.**
 - TEST ISCHÉMIQUE NON CONCLUANT, OU CI À CE TEST
- CLASSE III, CT NON RECOMMANDÉ
 - PATIENT REVASCULARISÉ
 - TEST DE SCREENING CHEZ LE SUJET ASYMPTOMATIQUE

Coroscanner : COMMENT faire ?

Table 1 – Site requirements.

Requirement
Equipment Required Scanner with 64 detector rows or more, equipped with coronary artery-specific capabilities ACLS equipment in or in immediate vicinity of scan room Interpretation platforms with 3D postprocessing software Prior year coronary CTA, minimum volume of 300 scans CT laboratory accreditation Recommended Scanner equipped to perform prospective-triggered (sequential) scanning in appropriate patients for radiation dose reduction and other radiation dose reduction capabilities required to achieve target radiation dose levels Quality assurance program goals A) Achieving a nondiagnostic scan proportion <5% B) Median radiation dose within target reference level established by the Society for Cardiovascular Computed Tomography guidelines on radiation dose and dose-optimization strategies in cardiovascular CT C) Quarterly review of coronary CTA interpretation compared with invasive angiography achieving 75% accuracy Staffing Required At least 1 technologist with prior volume experience of at least 100 coronary CTA scans. Technologists performing scans without the immediate proximity of an ACLS-certified nurse must have current ACLS certification Properly trained ACLS-certified nursing staff for beta-blocker premedication of patients Rapid response team and/or ACLS-certified physician available for prompt response to urgent or emergent complications Scanner operation, availability, and staffing/service hours must satisfy ED minimum requirements 3D, 3 dimensional; ACLS, advanced cardiovascular life support; CTA, CT angiography; ED, emergency department.

SCCT guidelines on the use of coronary computed tomographic angiography for patients presenting with acute chest pain to the emergency department: A Report of the Society of Cardiovascular Computed Tomography Guidelines Committee

Coroscanner : QUI interprète ?

Table 2 – Interpreting physician requirements.

Physician requirement:

Required

At least 1 physician with a minimum of 2 years of clinical experience and/or 300 scan interpretations of coronary CTA

All other physicians must maintain level-2 coronary CTA certification or equivalent

Interpreting physicians must be trained in the best-practice protocol selection of the scanner(s) in use

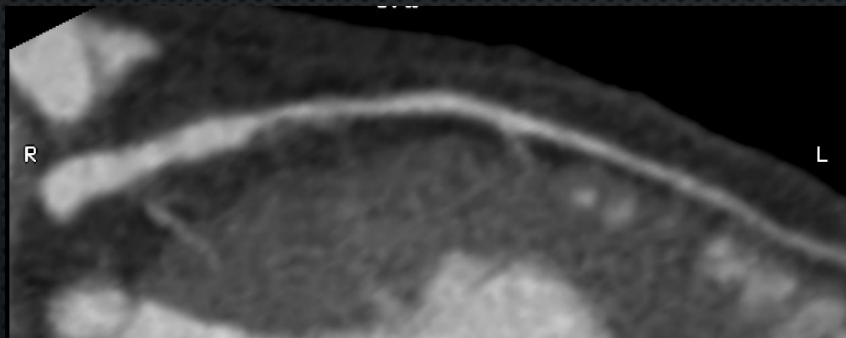
Physicians must be promptly available in person or by phone for consultation about patient preparation and scan protocoling

A qualified physician must interpret the noncardiac anatomy on all scans either as the primary reader or as a consulting physician

Recommended

CBCCT certification or ACR Board certification or dedicated fellowship training in advanced cardiac imaging

ACR, American College of Radiology; CTA, CT angiography; CBCCT, Certification Board of Cardiovascular Computed Tomography.



**Journal of Cardiovascular
Computed Tomography**

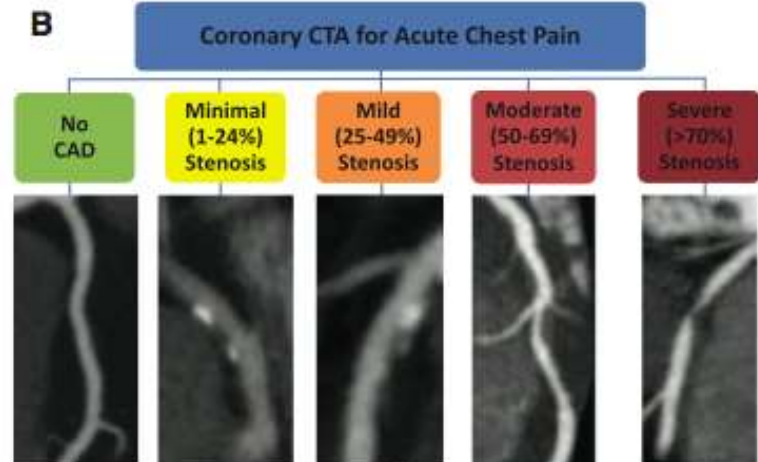
Raff et al. J Cardiovasc Comput Tomogr 2014

Coroscanner : COMMENT interpréter ?

Table 9 – Interpretation and reporting.

Required	
Interpretation and reporting should be consistent with SCCT guidelines	
Scans should be reconstructed immediately after acquisition	
Physicians should be notified immediately of scans for suspected ACS	
Scans should be interpreted within 60 min of reconstruction	
Abnormal scans must be reported verbally to referring physician	
Lesion location should be identified by the 18-segment SCCT model	
Lesion stenosis should be reported quantitatively according to SCCT guidelines	
Recommended Stenosis Grading	
0—Normal: absence of plaque and no luminal stenosis	
1—Minimal: plaque with <25% stenosis	
2—Mild: 25%–49% stenosis	
3—Moderate: 50%–69% stenosis	
4—Severe: 70%–99% stenosis	
5—Occluded	
Optional Stenosis Grading	
0—Normal: absence of plaque and no luminal stenosis	
1—Mild: plaque present, <39% stenosis	
2—Moderate: 40%–69% stenosis	
3—Severe: 70%–99% stenosis	
4—Occluded	
Extent of disease should be further qualified by identification of plaque type, that is, calcified, noncalcified, or mixed noncalcified/calcified.	
Additionally, positive remodeling or other features of lesion complexity may be described	
Noncoronary cardiac findings should be included in the body of the report on coronary findings	
Important noncardiac or noncoronary cardiac findings (pulmonary embolism, aortic dissection) should be reported immediately to allow expedited patient triage	
Recommended	
All scans including normal studies should be reported verbally to ED staff to expedite triage	
Scan reports should be incorporated immediately into an electronic medical record	
Management recommendations of abnormal scans should be discussed directly with the referring physician to facilitate understanding of coronary CTA findings	
Development of institution-specific management guidelines is recommended	

ACS, acute coronary syndrome; CTA, CT angiography; ED, emergency department; SCCT, Society of Cardiovascular Computed Tomography.



Raff et al. J Cardiovasc Comput Tomogr 2014

Cheezum et al. Circulation 2014

L'analyse robotisée peut-elle être une option ?

Cardiopulmonary Imaging • Original Research

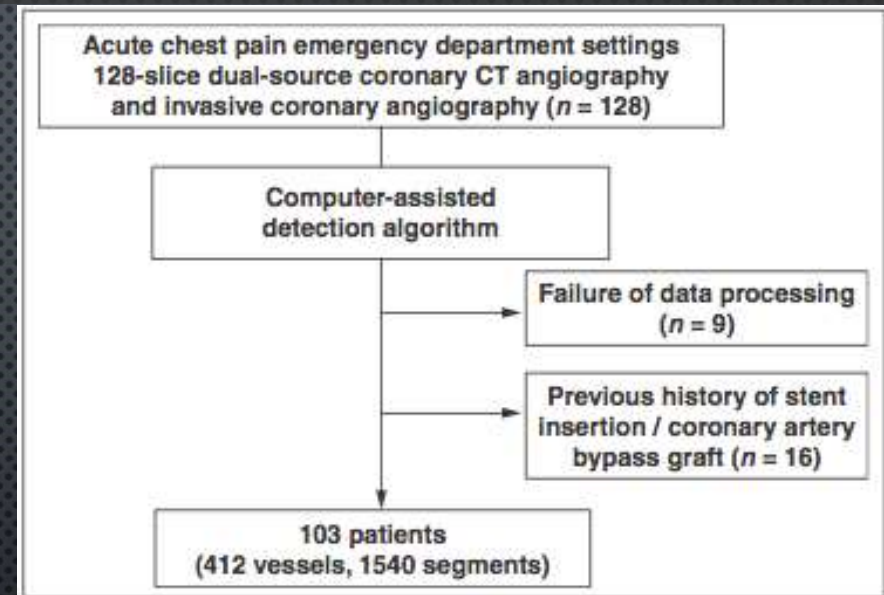
Diagnostic Performance of Algorithm for Computer-Assisted Detection of Significant Coronary Artery Disease in Patients With Acute Chest Pain: Comparison With Invasive Coronary Angiography

128 PATIENTS CONSÉCUTIFS

DOULEUR THORACIQUE AIGUE

COROSCANNER (128 BARRETTES BI-TUBE) + CORONAROGRAPHIE

COROSCANNER : 2 RADIOLOGUES ET CAD



L'analyse robotisée peut-elle être une option ?

Parameter	Per-Segment Analysis (n = 1540)		Per-Vessel Analysis (n = 412)	
	Result	95% CI	Result	95% CI
Sensitivity, %	51.4 (72/140)	42.9–59.9	90.0 (81/90)	81.4–95.0
Specificity, %	85.4 (1195/1400)	83.4–87.4	62.4 (201/322)	56.9–67.7
Positive predictive value, %	26.0 (72/277)	21.0–31.7	40.1 (81/202)	33.3–47.2
Negative predictive value, %	94.6 (1195/1263)	93.2–95.8	95.7 (201/210)	91.8–97.9
Accuracy, %	82.3 (1267/1540)		68.4 (102/412)	
κ	0.26		0.36	

CAD

Parameter	Per-Segment Analysis (n = 1540)		Per-Vessel Analysis (n = 412)	
	Result	95% CI	Result	95% CI
Sensitivity, %	95.7 (134/140)	91.4–98.2	96.7 (87/90)	91.1–99.1
Specificity, %	98.4 (1378/1400)	98.0–98.7	95.0 (306/322)	93.5–95.7
Positive predictive value, %	85.9 (134/156)	82.1–88.1	84.5 (87/103)	79.6–86.6
Negative predictive value, %	99.6 (1378/1384)	99.1–99.8	99.0 (306/309)	97.4–99.7
Accuracy, %	98.1 (1512/1540)	97.4–98.6	95.4 (393/412)	92.9–96.5
κ	0.90		0.87	

Radio

L'analyse robotisée peut-elle être une option ?

Parameter	Per-Segment Analysis (n = 1540)		Per-Vessel Analysis (n = 412)		Per-Patient Analysis (n = 103)	
	Result	95% CI	Result	95% CI	Result	95% CI
Sensitivity, %	53.2 (83/156)	45.8–60.4	89.3 (92/103)	82.1–94.2	100 (71/71)	95.5–100
Specificity, %	86.0 (1190/1384)	85.1–86.8	64.4 (199/309)	62.0–66.0	28.1 (9/32)	18.2–28.1
Positive predictive value, %	30.0 (83/277)	25.8–34.0	45.5 (92/202)	41.9–48.0	75.5 (71/94)	72.2–75.5
Negative predictive value, %	94.2 (1190/1263)	93.3–95.1	94.8 (199/210)	91.2–97.1	100 (9/9)	64.8–100
Accuracy, %	82.7 (1273/1540)	81.2–84.1	70.6 (291/412)	67.0–73.1	77.7 (80/103)	71.5–77.7
κ	0.35		0.41		0.29	

Agreement of Computer-Aided Detection Algorithm With Human Interpretation of Coronary CT Angiography for Detection of Significant Coronary Artery Stenosis on Per-Segment, Per-Vessel, and Per-Patient Bases

BONNE VPN DU CAD POUR STÉNOSE > 50%

PEUT ÊTRE UTILE EN « 2ND » LECTEUR

MAIS SOUS-ENTEND EXAMEN DE PARFAITE QUALITÉ

ET LA FFR CT ?

- 584 PATIENTS AVEC DOULEUR THORACIQUE AIGUE
- ALTERNATIVE À LA CORONAROGRAPHIE
- TAUX DIMINUÉ DE CORONAROGRAPHIE BLANCHE
- MAIS NON RÉALISABLE EN URGENCE, DONC INTÉRÊT LIMITÉ

European Heart Journal (2015) 36, 3359–3367
doi:10.1093/eurheartj/ehv444

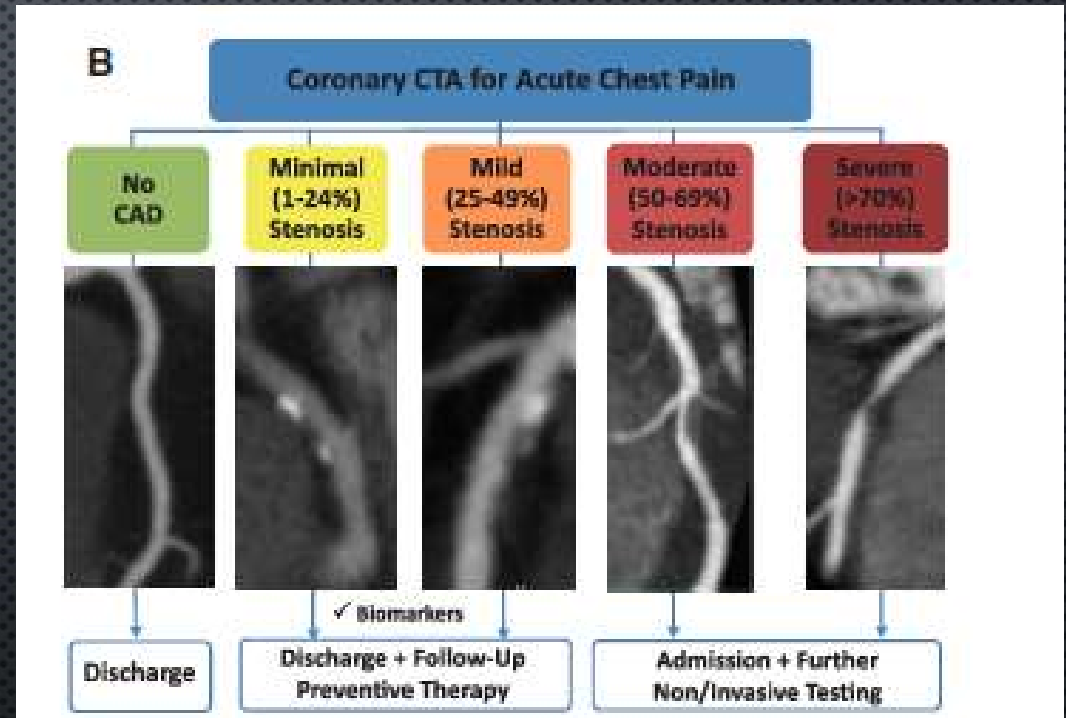
Clinical outcomes of fractional flow reserve by computed tomographic angiography-guided diagnostic strategies vs. usual care in patients with suspected coronary artery disease: the prospective longitudinal trial of FFR_{CT}: outcome and resource impacts study

AVANTAGES ET INCONVÉNIENTS DE LA TECHNIQUE

Table 1. Strengths and Limitations of CTA for Acute Chest Pain

Strengths	Limitations
Is noninvasive	Significance of anatomic lesions may be unknown
Detects the full spectrum of CAD	Incidental findings may require further workup
May affect preventive therapies	Intravenous contrast
Lowers ED cost relative to usual care	Radiation
Decreases time to diagnosis and length of stay	May increase downstream costs and revascularizations
Evaluates other causes of chest pain	Limited quality if elevated heart rate, arrhythmias, or morbid obesity is present

CAD indicates coronary artery disease; CTA, computed tomographic angiography; and ED, emergency department.



Coronary Computed Tomographic Angiography Its Role in Emergency Department Triage

Michael K. Cheezum, MD; Ron Blankstein, MD

(Circulation. 2014;130:2052-2056.)

Coroscanner : quelles perspectives ?

Table 10 – Sample management recommendations to ED physicians.

Degree of maximal coronary stenosis	Management recommendation
0%–25%	ACS unlikely; discharge is reasonable. Follow-up for minimal CAD at physician discretion
26%–49%	ACS unlikely; discharge is reasonable. Outpatient follow-up recommended for preventive measures
50%–69%	ACS possible; further evaluation indicated before discharge
>70%	ACS likely; admit for further evaluation

ACS, acute coronary syndrome, CAD, coronary artery disease.

EXPLORATIONS COMPLÉMENTAIRES POUR STÉNOSE 50% - 69%

RECHERCHE ISCHÉMIE : PERFUSION MYOCARDIQUE

Raff et al. J Cardiovasc Comput Tomogr 2014

National Institute for Health and Clinical Excellence. Chest Pain of Recent Onset: Assessment and Diagnosis of Recent Onset Chest Pain or Discomfort of Suspected Cardiac Origin. London: NICE, 2010)

Unanswered Questions

Can Coronary Artery Calcification Testing Alone Safely Exclude ACS in Low-Risk Patients?

Is There a Role for Triple Rule-Out Scanning?

Table 2. Factors Influencing Testing Strategy

	Examples	Favors CTA	Favors Functional Testing
Clinical factors			
What is the clinical question?	Exclude CAD	✓	
	Exclude ischemia		✓
	Identify future risk of adverse cardiac events...		
	To guide preventive therapies	✓	
	To guide revascularization		✓
	Evaluate physiological response to exercise		✓
Is there an alternative diagnosis that may account for patient symptoms?	Hiatal hernia, aortopathy, lung disease, pulmonary embolism	✓	
	Valvular disease, pericarditis		✓*
Patient factors			
Pretest probability of CAD	Low to intermediate risk	✓	
	High risk, known CAD, prior PCI/CABG		✓
Ability to obtain diagnostic CTA image quality	High heart rate, arrhythmias, extensive coronary calcification, inability to hold breath, morbid obesity		✓
Contraindications to CTA	Kidney dysfunction, iodine allergy, pregnancy		✓
Institutional factors (experience, availability, local reimbursement policy)			

ACS indicates acute coronary syndrome; CABG, coronary artery bypass grafting; CAD, coronary artery disease; CTA, computed tomographic angiography; and PCI, percutaneous coronary intervention.

*Depending on the type of functional testing performed (eg, magnetic resonance imaging is best for evaluating pericardial disease; echocardiography may be useful when valvular disease is suspected).

Score calcique : Peut-il être vraiment utile ?



European Heart Journal – Cardiovascular Imaging (2014) **15**, 886–892
doi:10.1093/ehjci/jeu011

Diagnostic role of coronary calcium scoring in the rapid access chest pain clinic: prospective evaluation of NICE guidance

Ajay Yerramasu¹, Avijit Lahiri^{1,2}, Shreenidhi Venuraju¹, Alain Dumo¹, David Lipkin¹,
S. Richard Underwood^{3,4,*}, Roby D. Rakhit⁵, and Deven J. Patel⁶

2 OBJECTIFS :

- **CA SCORE NUL** PERMET IL VRAIMENT **D'EXCLURE UNE CAD** ?
- LE SEUIL DE **400** EST-IL BIEN CHOISI POUR PRÉDIRE UNE **MOINDRE EFFICACITÉ DU COROSCANNER** ?

Score calcique : Peut-il être vraiment utile ?

300 PATIENTS

DOUL. THORACIQUE STABLE

EN FONCTION SC CA :

CORO CT OU
CORONAROGRAPHIE

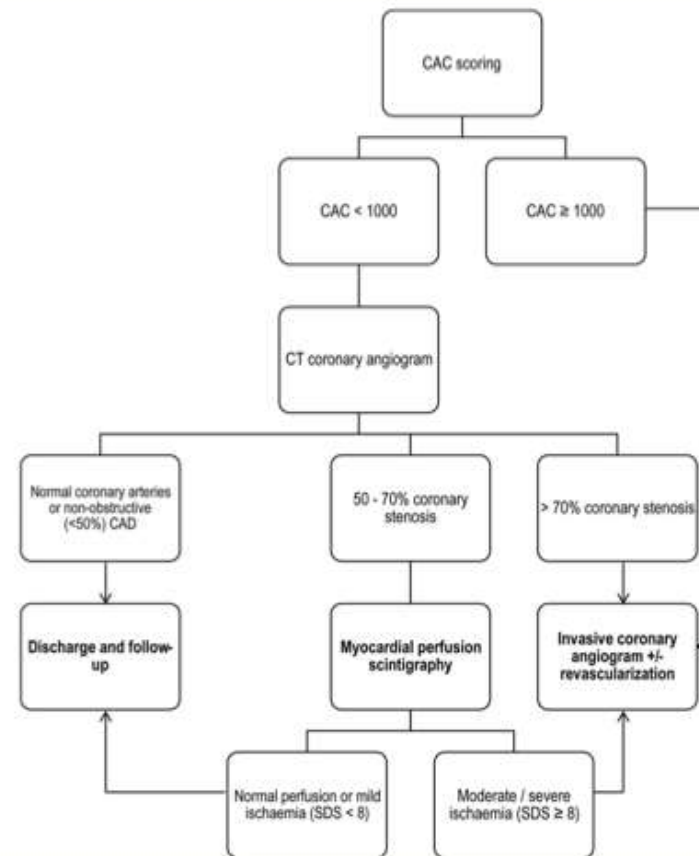
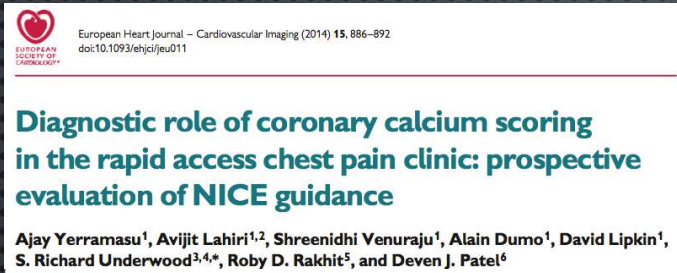


Figure 2 Diagnostic algorithm for patients included in this study. All the patients underwent CAC scoring.

Calcium Score : Bonne précision diagnostique



CA SCORE NUL ET FAIBLE
PROBABILITÉ PRÉ-TEST :

CAD = 0

CA > 400 : FORTE PRÉVALENCE DE
CAD (94%)

CA SCORE : EXCELLENTE SEN ET
VPN ++

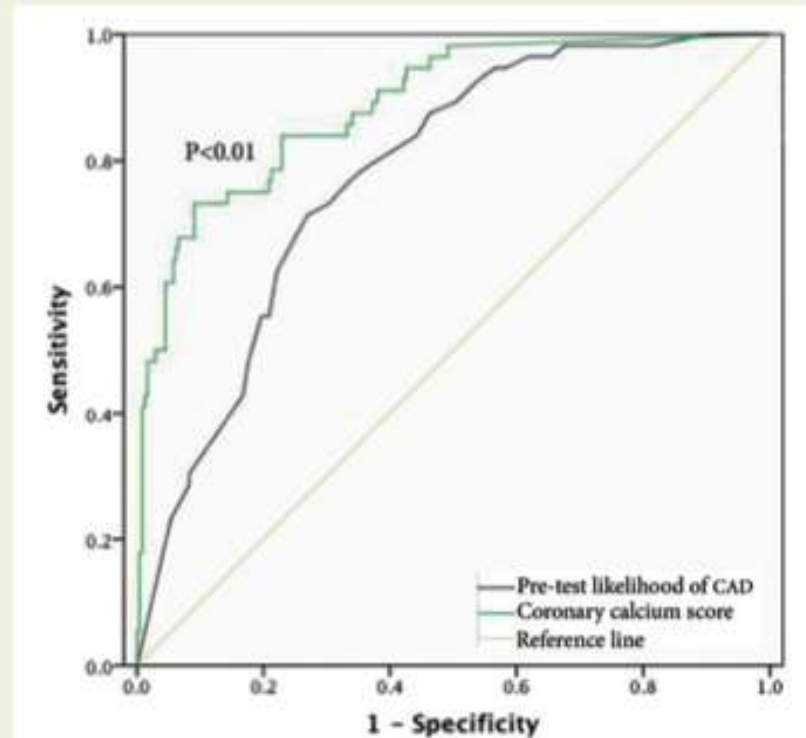
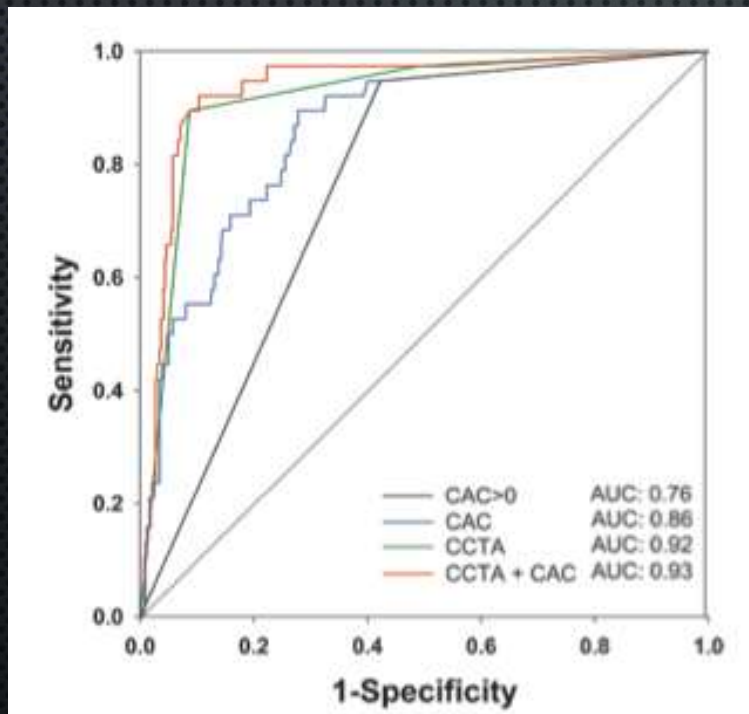


Figure 5 Diagnostic accuracy of CAD likelihood and CAC score for the detection of obstructive CAD, measured as the area under the receiver-operating characteristic curve (AUC). (AUC = 0.78 for likelihood and 0.89 for CAC).

OUI mais.... son intérêt reste controversé !!

Coronary Artery Disease

Use of Coronary Artery Calcium Scanning Beyond Coronary
Computed Tomographic Angiography in the Emergency
Department Evaluation for Acute Chest Pain
The ROMICAT II Trial

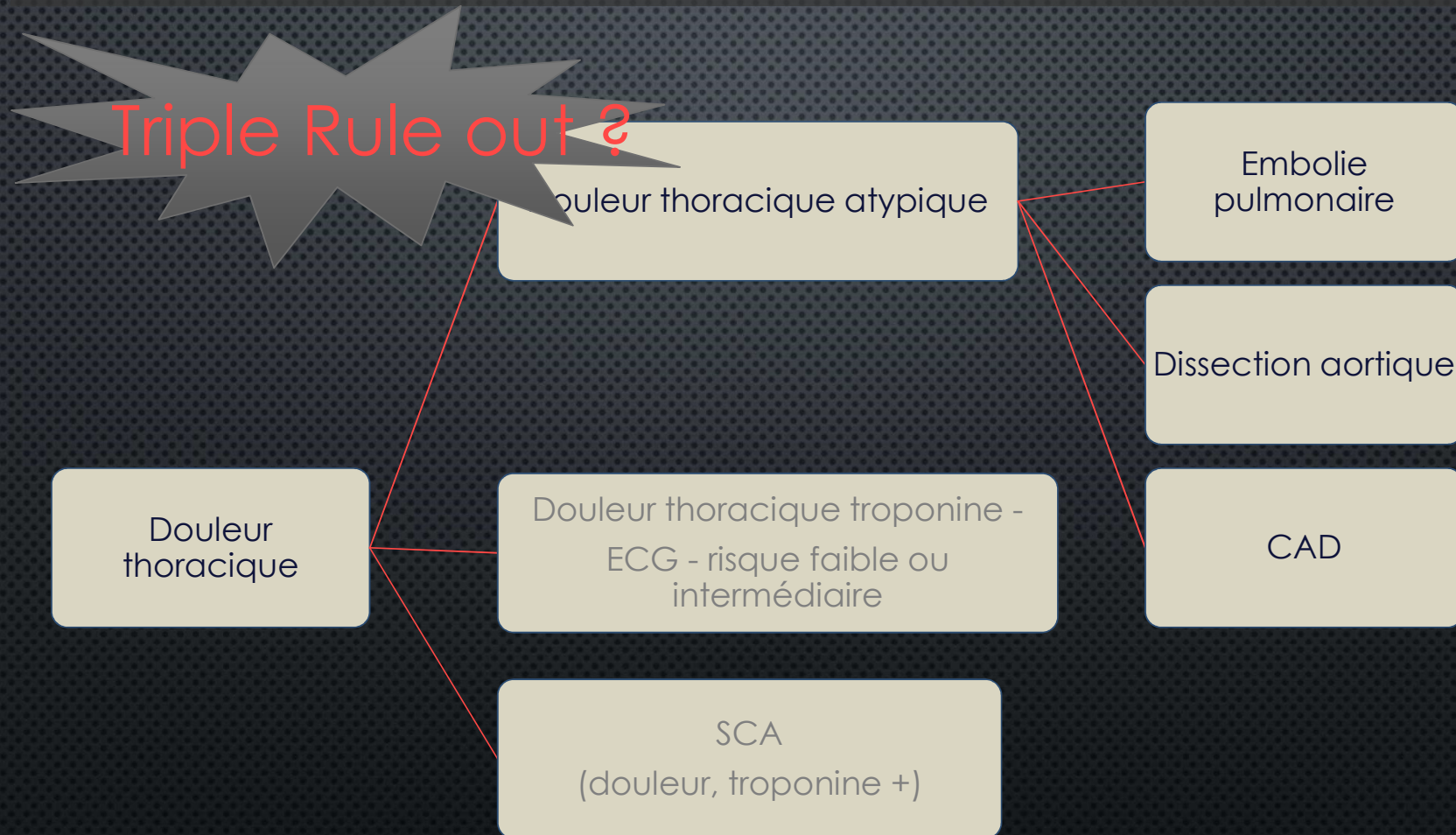


Pas de **valeur ajoutée** du
Ca score / coroscanner

Ca score = 0 n'élimine pas
une CAD

Purnani et al. Circ Cardiovasc Imaging 2015

Douleur thoracique aiguë atypique : Place du scanner Triple Rule Out ?



Scanner Triple Rule Out : QUI ?

Embolie pulmonaire ?

« POPULATION SÉLECTIONNÉE »

Coronaropathie ?

DOULEUR THORACIQUE ATYPIQUE

PROBABILITÉS PRÉ TEST EP / CAD IDENTIQUES

PROTOCOLE CARDIOLOGUES / URGENTISTES / RADIOLOGUES

BIEN CHOISIR LE PATIENT !

Dissection aortique ?

Pathologies pulmonaires ?

Scanner Triple Rule Out : COMMENT ?

EXPLORATION DE **TOUT LE THORAX**

DE LA CROSSE AORTIQUE AU DIAPHRAGME

TEMPS APNÉE PLUS LONG

INJECTION **TRIPHASIQUE** CONTRASTE

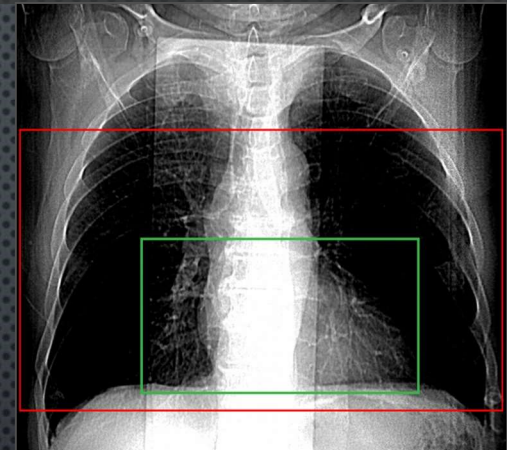
300 UH AORTE ET 200 UH AP

SYNCHRONISATION AU RYTHME CARDIAQUE

RECONSTRUCTIONS

EN PETIT CHAMP POUR LE CŒUR

EN GRAND CHAMP POUR LE THORAX ET L'AORTE



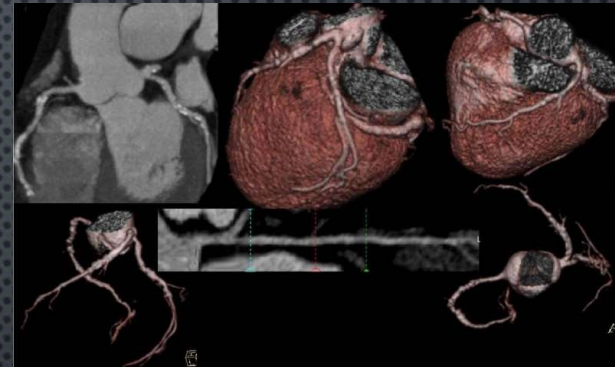
Halpern et al. Radiology 2009

Scanner Triple Rule Out : POURQUOI ?

EXPLORATION DE **TOUT LE THORAX**

OPACIFICATION RÉSEAU ARTÉRIEL

PULMONAIRE ET SYSTÉMIQUE



Triple Rule Out : Rentabilité diagnostique ?

JUILLET 2007 – SEPTEMBRE 2013

12 834 PATIENTS

DOULEUR THORACIQUE AIGUE AUX URGENCES

53 HÔPITAUX MICHIGAN

TRIPLE RULE OUT : 1555 / CCTA : 11279

Burris et al. JACC Cardiovasc Imaging 2015



Triple Rule Out : Rentabilité diagnostique ?

JUILLET 2007 – SEPTEMBRE 2013

12 834 PATIENTS

DOULEUR THORACIQUE AIGUE AUX URGENCES

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- RENTABILITÉ DIAGNOSTIQUE TRO / CCTA
- IRRADIATION, CONTRASTE ET QUALITÉ IMAGE

Burris et al. JACC Cardiovasc Imaging 2015



Triple Rule Out : Rentabilité diagnostique ?

12 834 PATIENTS

DOULEUR THORACIQUE AIGUE AUX URGENCES

TRIPLE RULE OUT : 1555 / CCTA : 11279

RENTABILITÉ DIAGNOSTIQUE IDENTIQUE TRO / CCTA

CAD : 15.5% / 17.2%

EP : 1.1% / 0.4%

DAO : 1.7% / 1.1%

Burris et al. JACC Cardiovasc Imaging 2015



Triple Rule Out : Mais

12 834 PATIENTS

DOULEUR THORACIQUE AIGUE AUX URGENCES

TRIPLE RULE OUT : 1555 / CCTA : 11279

IRRADIATION TRO > IRRADIATION CCTA

CONTRASTE TRO > CONTRASTE CCTA

ARTÉFACTS TRO > ARTÉFACTS CCTA

Burris et al. JACC Cardiovasc Imaging 2015



TRIPLE RULE OUT : place encore mal définie !

12 834 PATIENTS

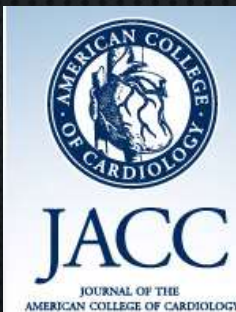
DOULEUR THORACIQUE AIGUE AUX URGENCES

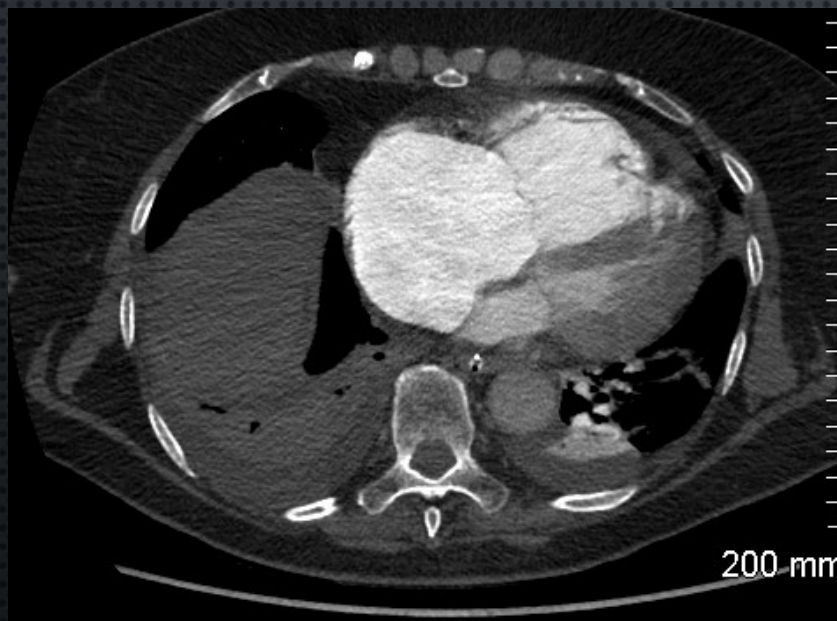
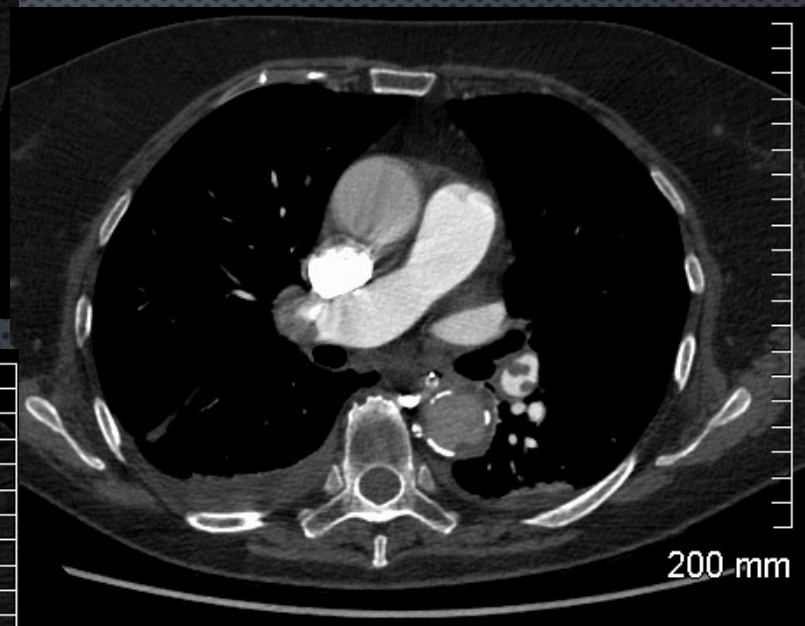
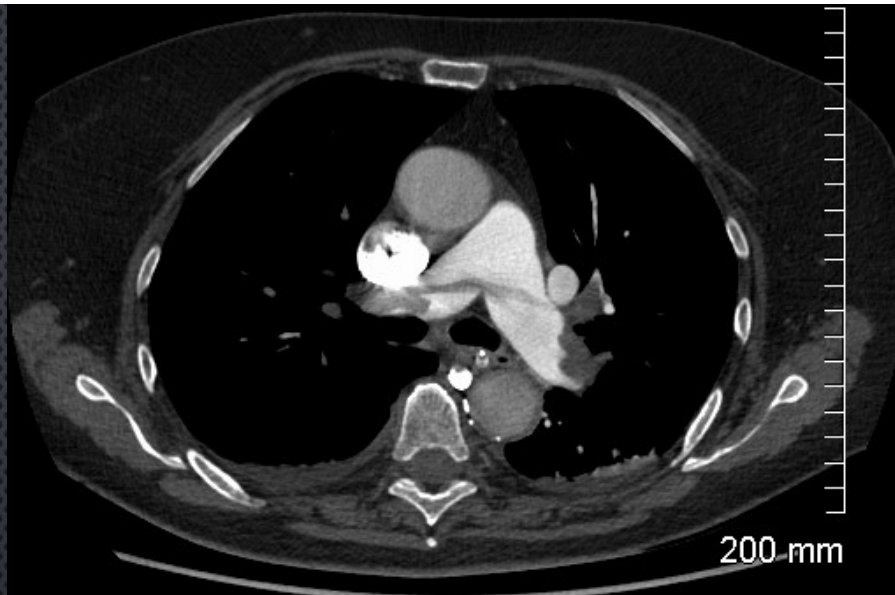
TRIPLE RULE OUT : 1555 / CCTA : 11279

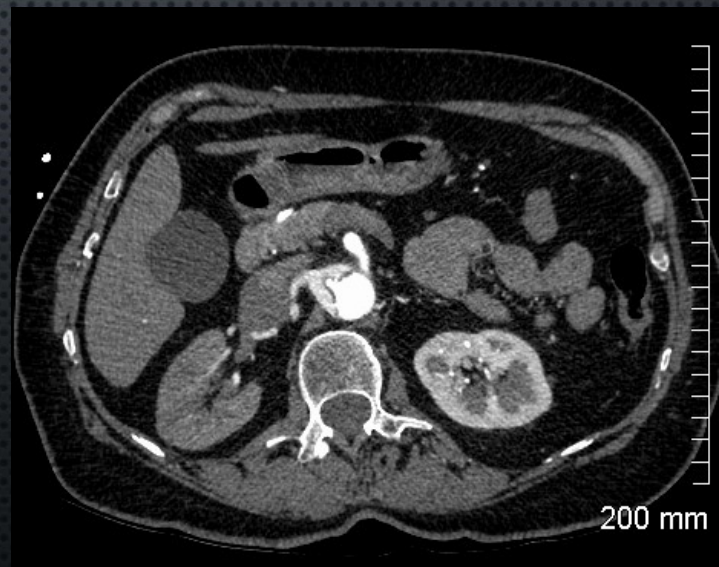
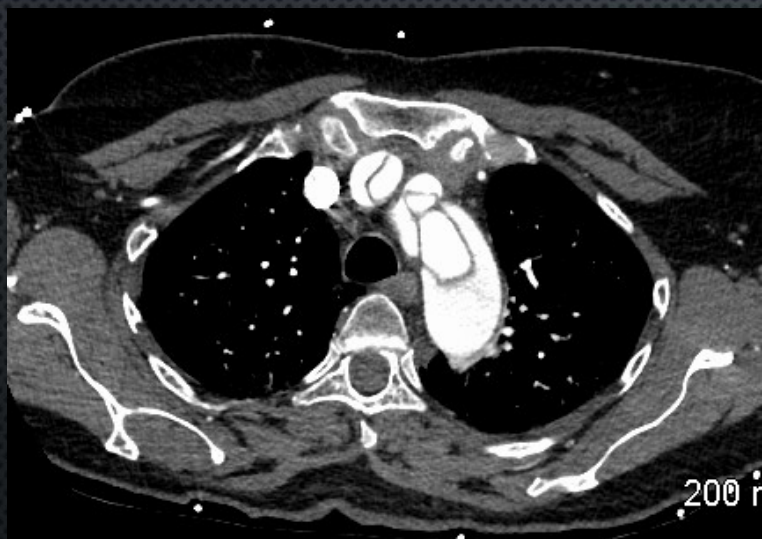
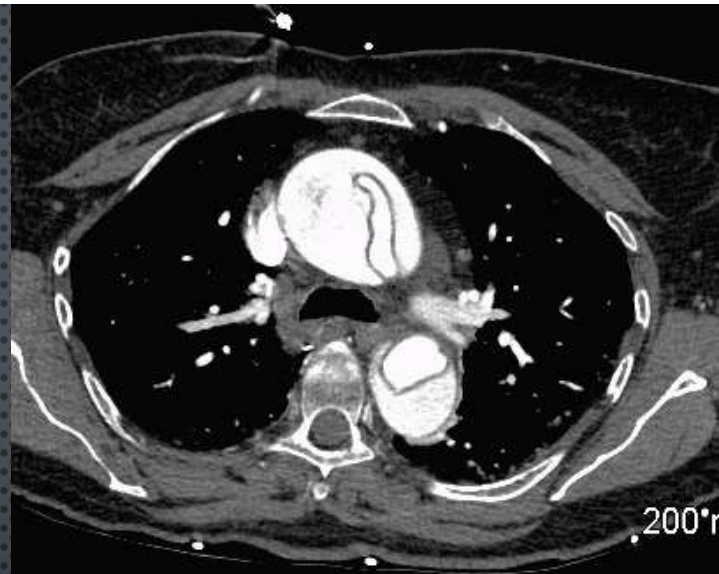
Conclusions

TRO was associated with slightly higher yield of PE and AD, specifically in the emergency department. This benefit comes with higher nondiagnostic image quality, radiation, and contrast doses. Although TRO may be of value in selected patients, its indiscriminate use is not warranted. The appropriate use of TRO needs to be further defined. (Advanced Cardiovascular Imaging Consortium [ACIC]; [NCT00640068](#)).

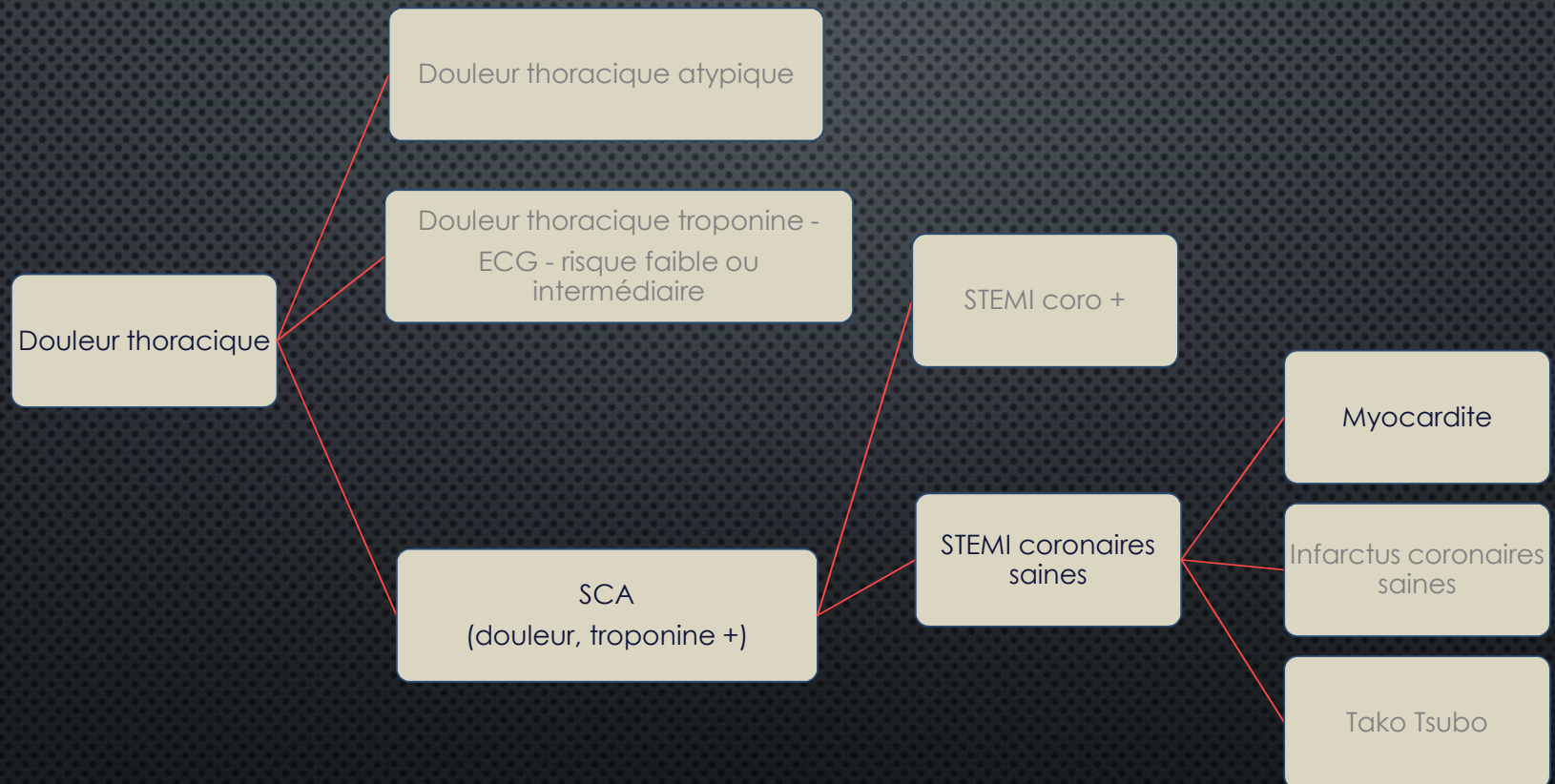
Burris et al. JACC Cardiovasc Imaging 2015



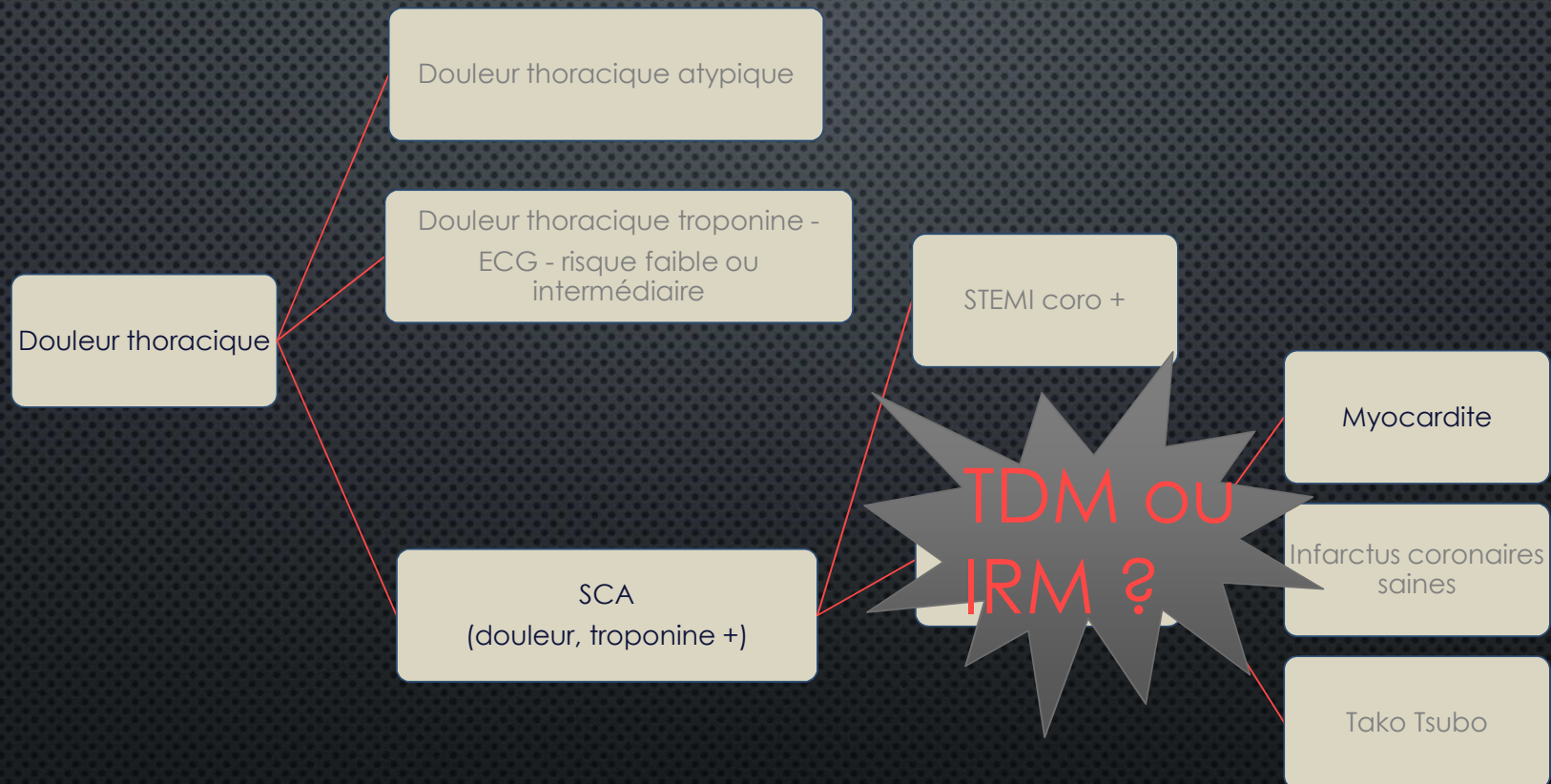




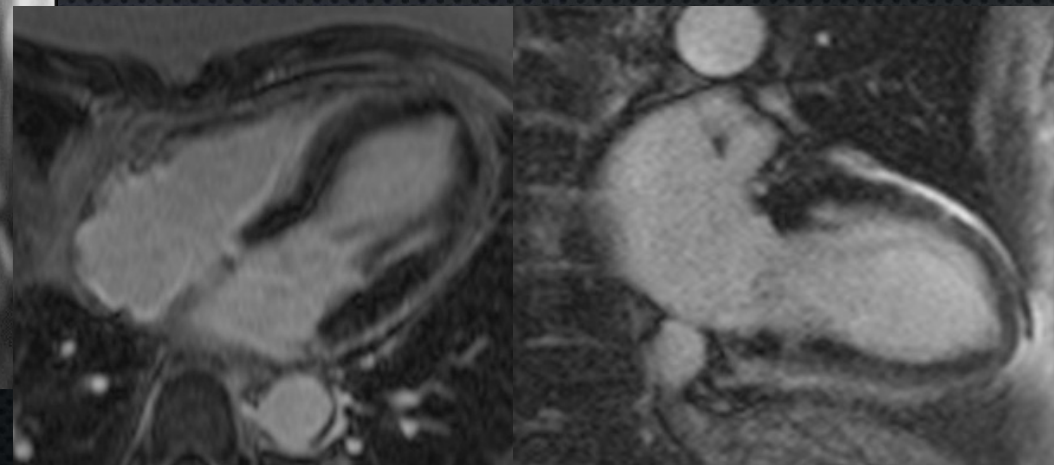
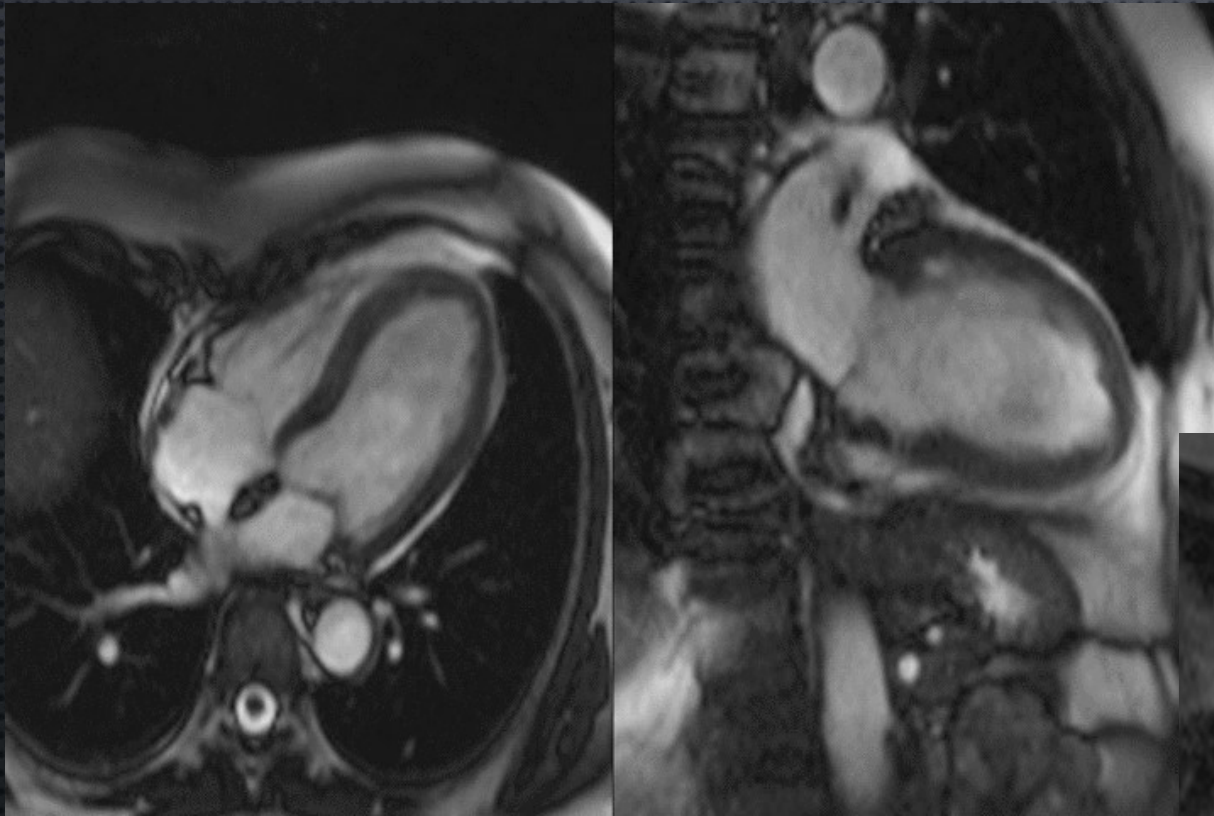
ET L'IRM ?



ET L'IRM ?



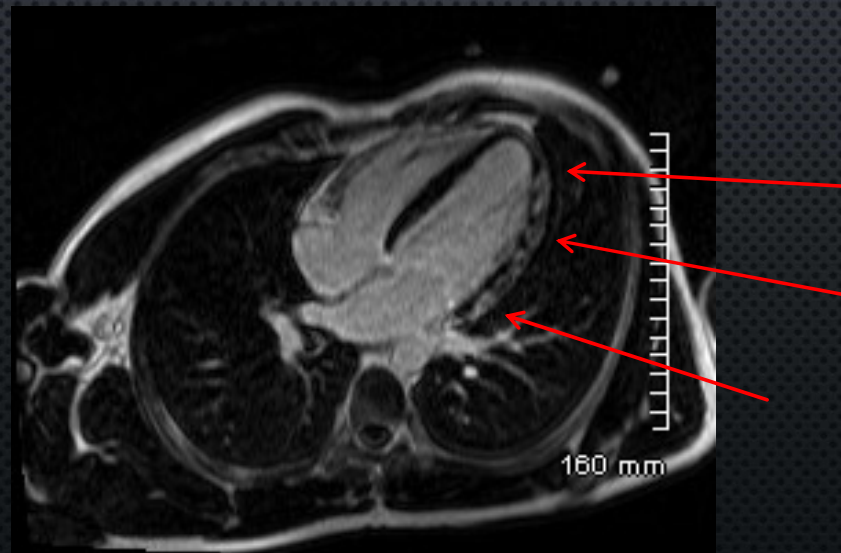
- PATIENTE DE 80 ANS
- DOULEUR THORACIQUE PROLONGÉE AVEC SUS DÉCALAGE DU SEGMENT ST.
- ANOMALIES CINÉTIQUES APICALES À L'ÉCHOGRAPHIE.
- CORONAROGRAPHIE NORMALE



Syndrome de Tako Tsubo

MYOPÉRICARDITE: APPORT DE L'IMAGERIE

- DIAGNOSTIC INITIAL : ÉCHOCARDIOGRAPHIE + BIOLOGIE + CLINIQUE
- IRM : INTÉRÊT POUR LA DÉTECTION D'UNE MYOCARDITE ASSOCIÉE:
 - PAS EN URGENCE : DEMANDE ORIENTÉE PAR L'ANOMALIE DES ENZYMES CARDIAQUES +/- CORONAIOGRAPHIE
 - ÉTUDE FONCTIONNELLE VG.



ET L'IRM ?

- EN PRATIQUE PEU DISPONIBLE EN URGENCE
- EXAMEN DIFFICILE CHEZ UN PATIENT EN PHASE AIGUE DE LA DOULEUR THORACIQUE
- INTÉRÊT DANS LES DIAGNOSTICS DIFFÉRENTIELS SOUS 24-48 H

CONCLUSION

COROSCANNER

EXCELLENTE VPN

POPULATION SÉLECTIONNÉE PAR SCORE DE RISQUE (RISQUE INTERMÉDIAIRE OU FAIBLE)

DÉVELOPPEMENT ACTIVITÉ EN COLLABORATION

*Urgentistes, Radiologues,
Cardiologues*

Triple Rule Out

Diagnostics différentiels +++

Patients sélectionnés (risque faible ?)