INOCA, la face cachée de l’ischémie myocardique

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PCVI Antony Melun

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

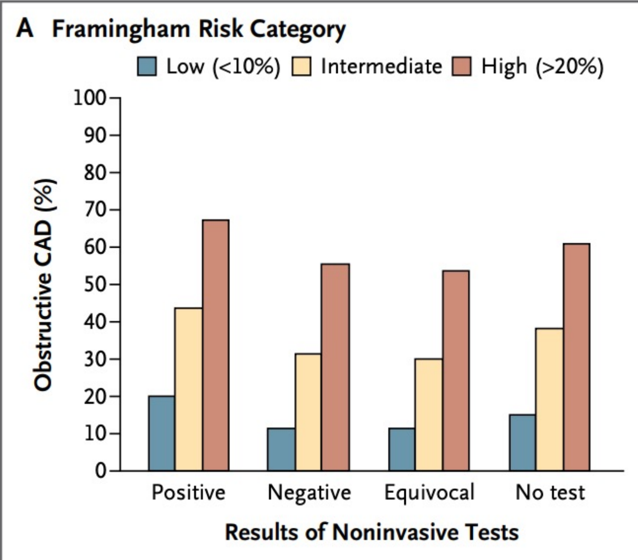
Low Diagnostic Yield of Elective Coronary Angiography

Manesh R. Patel, M.D., Eric D. Peterson, M.D., M.P.H., David Dai, M.S., J. Matthew Brennan, M.D., Rita F. Redberg, M.D., H. Vernon Anderson, M.D., Ralph G. Brindis, M.D., and Pamela S. Douglas, M.D.

37.6% ← 397,954 Patients at 663 sites

NONINVASIVE TESTING

Noninvasive testing (resting electrocardiography, echocardiography, computed tomography [CT], or a stress test) was performed in 83.9% of the patients before invasive angiography. A positive test result was recorded in the case of 68.6% of all the patients in the cohort. A noninvasive test was not performed before angiography in 17.1% of low-risk patients, 15.9% of intermediate-risk patients, and 15.0% of high-risk patients (P<0.001).



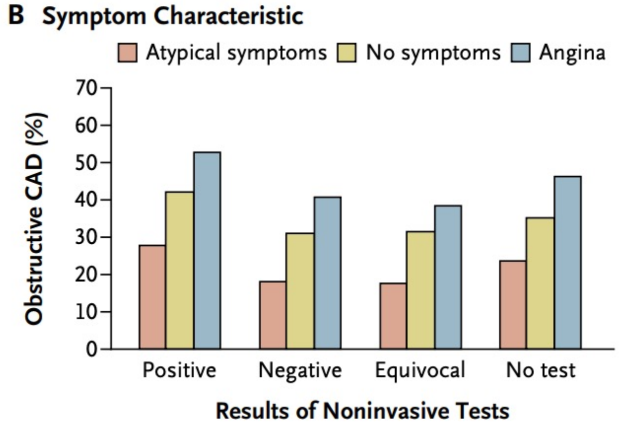
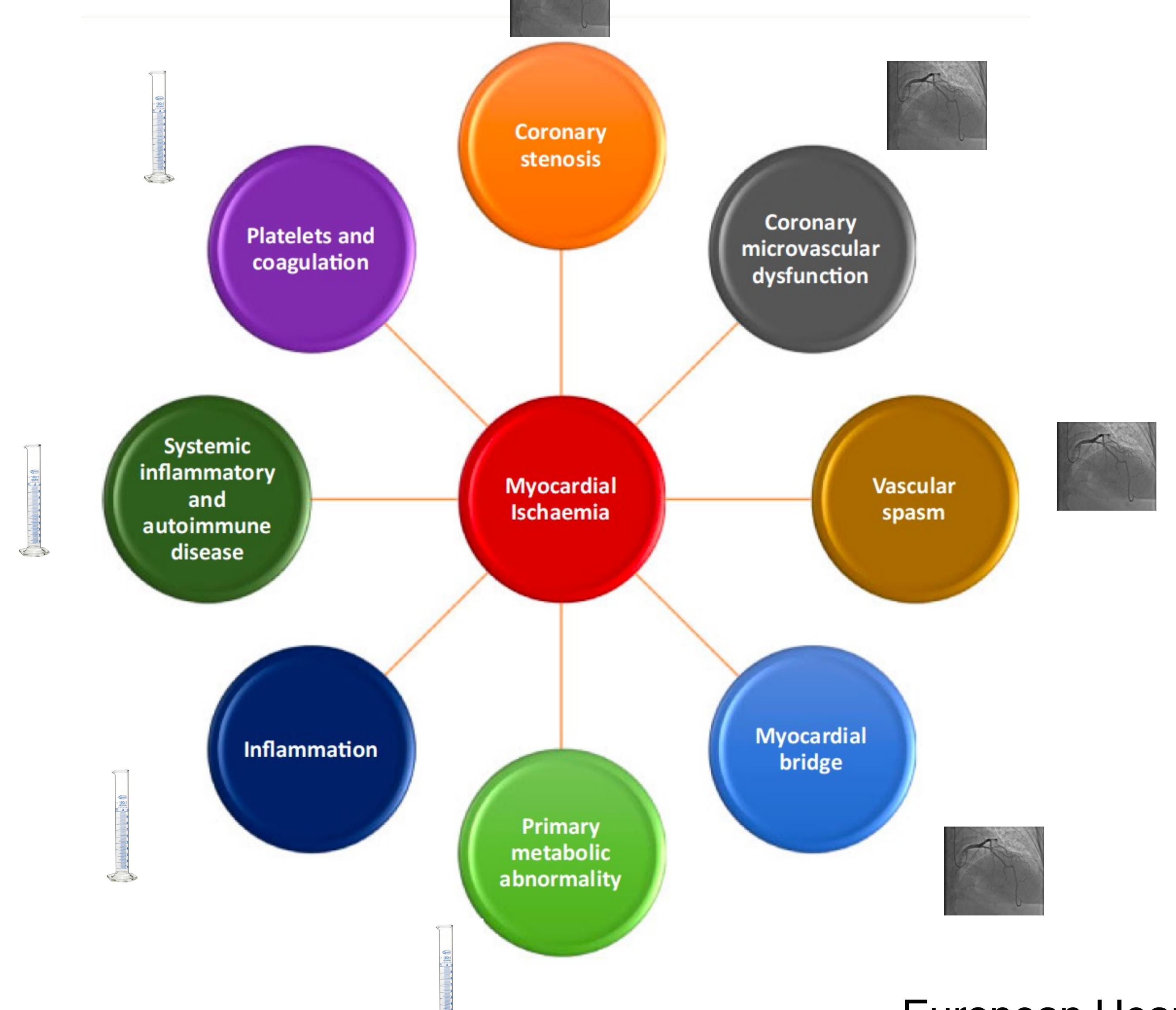


Figure 2. Patients with Obstructive Coronary Artery Disease, According to Noninvasive Test Result.

Results are presented according to the level of the Framingham risk score (low, intermediate, or high) (Panel A) and symptom category (no symptoms, atypical symptoms, or angina) (Panel B). CAD denotes coronary artery disease.

N Engl J Med 2010;362:886-95

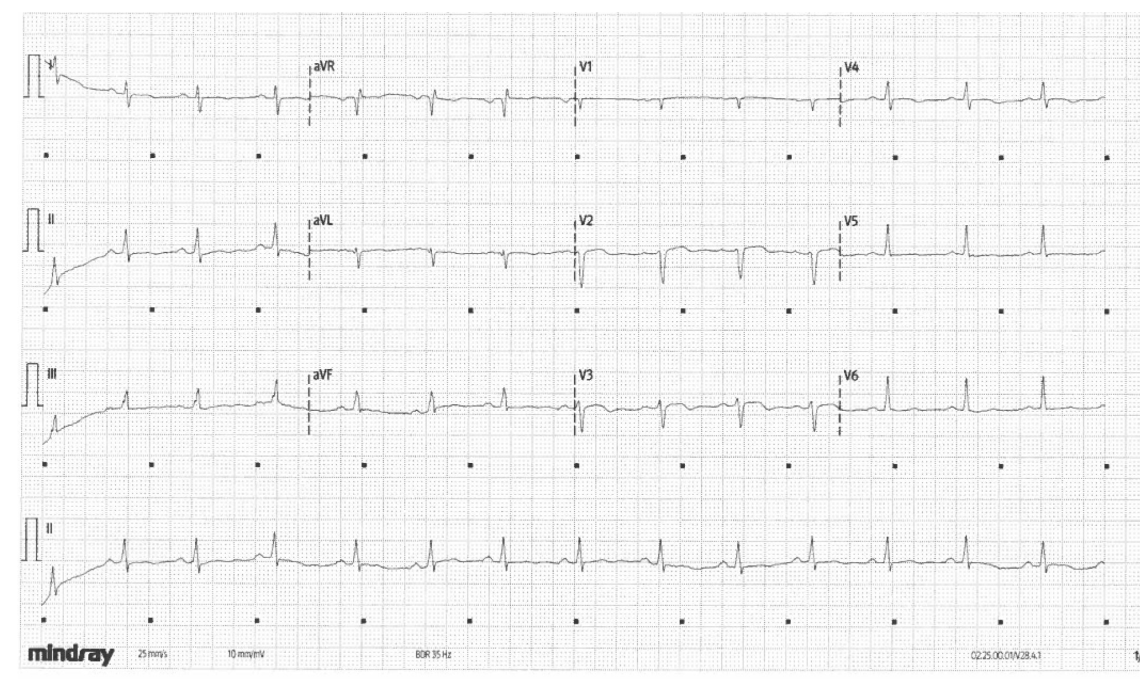
Mécanismes de l'ischémie myocardique



European Heart Journal (2020) 0, 1–21

Cas 1

- Patiente de 34 ans
- Atcd : Allergie saisonnière, Asthme saisonnier
- Tt : Citérizine
- Douleur thoracique + dyspnée
- ETT normale
- Tropo normale, CRP normale,
- d dimère normal, BNP 1300
- Adressée pour suspicion de myocardite
- IRM normale



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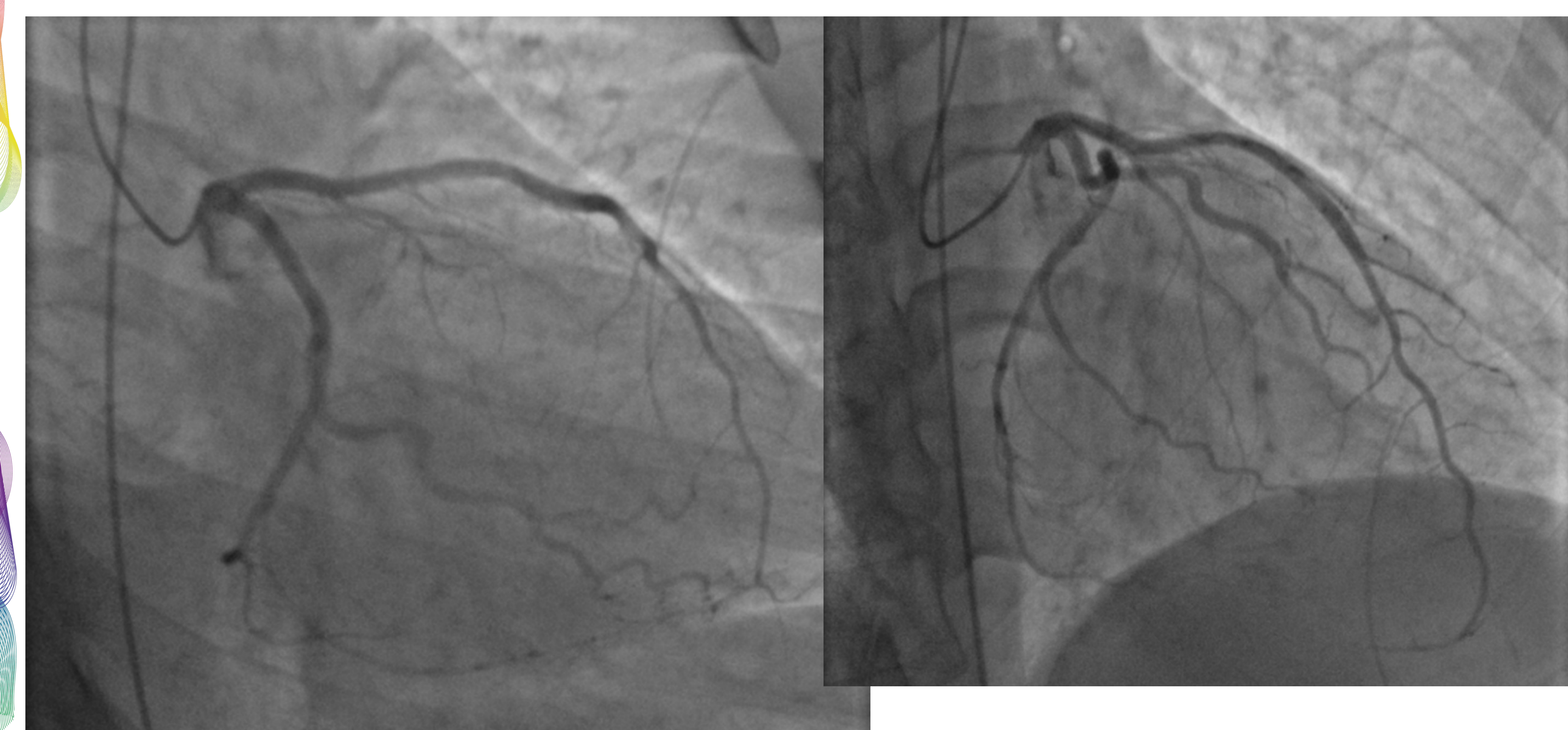

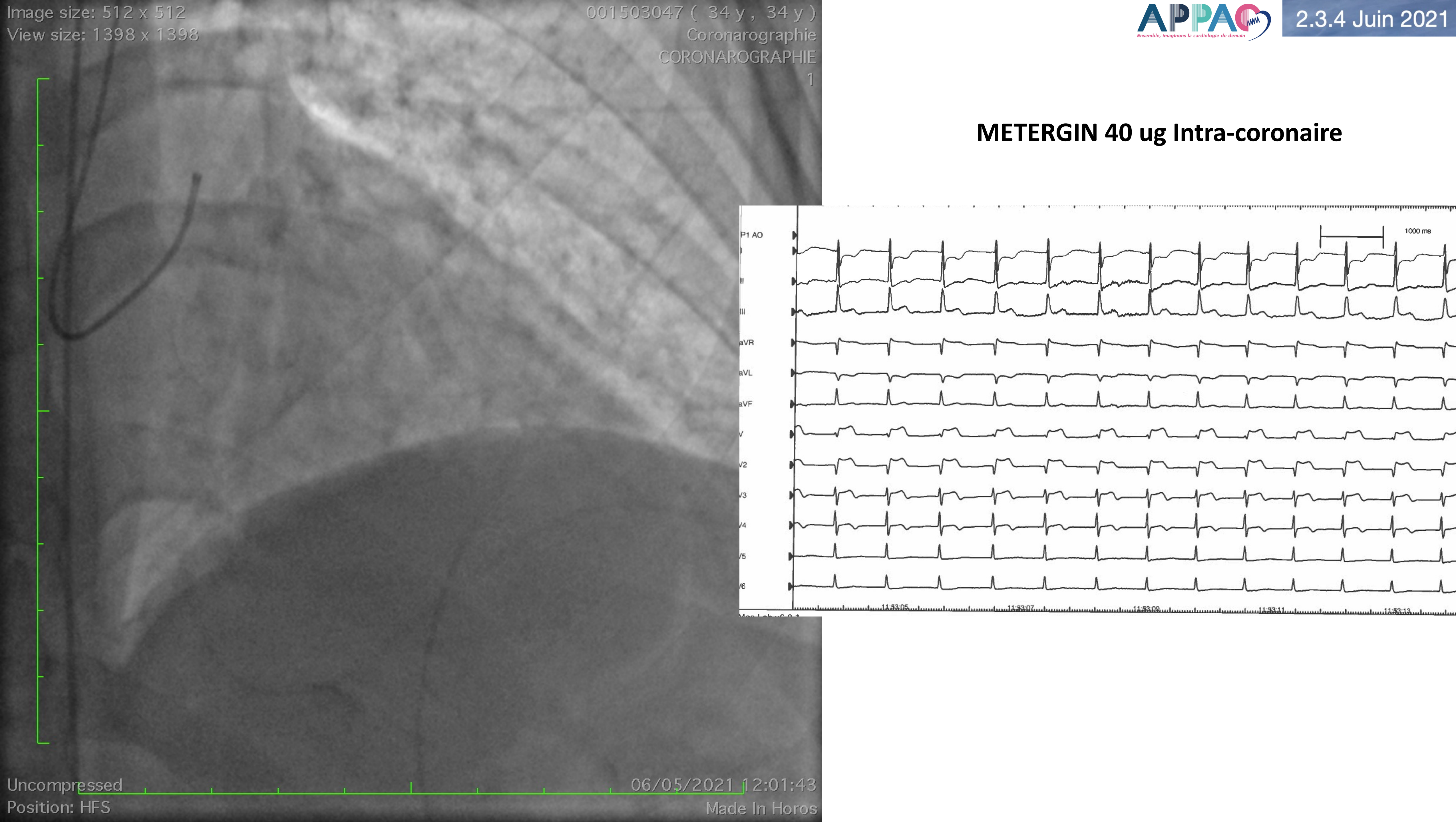
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Ensemble, imaginons la cardiologie de demain
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METERGIN 40 ug Intra-coronaire

European Heart Journal (2019) 00, 1–71
doi:10.1093/eurheartj/ehz425

ESC GUIDELINES

2019 ESC Guidelines for the diagnosis and management of chronic coronary syndromes

Recommendations for investigations in patients with suspected vasospastic angina

Recommendations	Class[a]	Level[b]
An ECG is recommended during angina if possible.	I	C
Invasive angiography or coronary CTA is recommended in patients with characteristic episodic resting angina and ST-segment changes, which resolve with nitrates and/or calcium antagonists, to determine the extent of underlying coronary disease.	I	C
Ambulatory ST-segment monitoring should be considered to identify ST-segment deviation in the absence of increased heart rate.	IIa	C
An intracoronary provocation test should be considered to identify coronary spasm in patients with normal findings or non-obstructive lesions on coronary arteriography and a clinical picture of coronary spasm, to diagnose the site and mode of spasm.[412,414,438–440]	IIa	B

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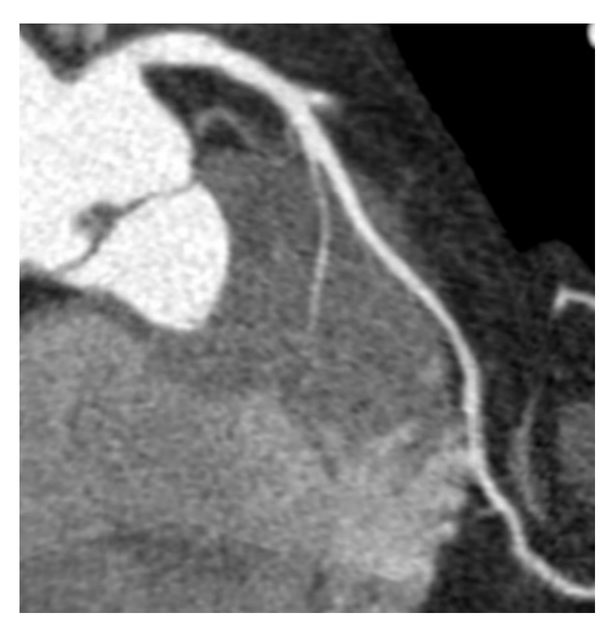
CTA = computed tomography angiography; ECG = electrocardiogram.
[a]Class of recommendation.
[b]Level of evidence.

Cas 2

- Homme 45 ans sportif
- FDR : 0
- Douleur thoraciques d'apparition récente lors des efforts
- Coro scanner :
    - absence d'athérome
    - Pont myocardique



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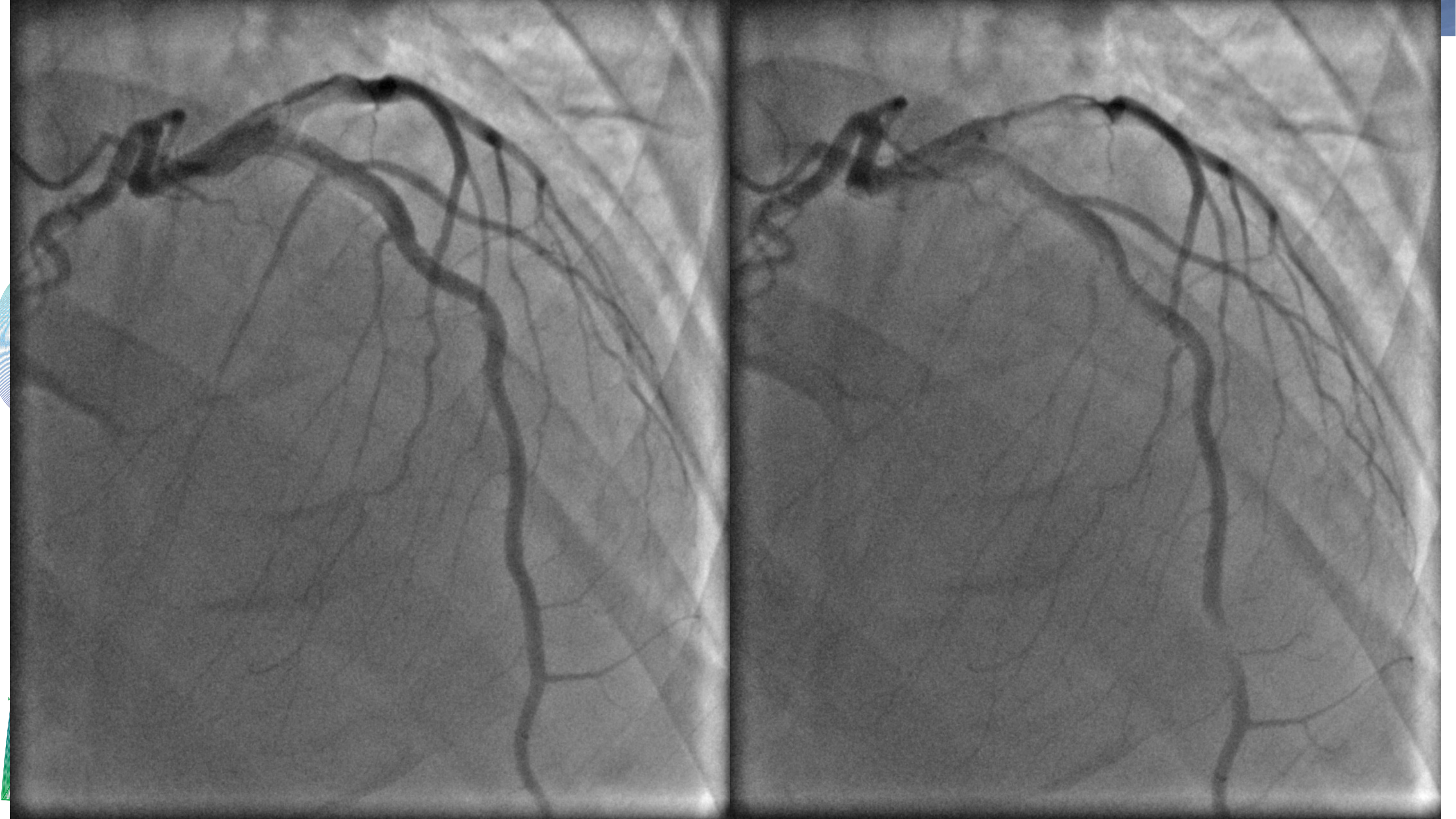

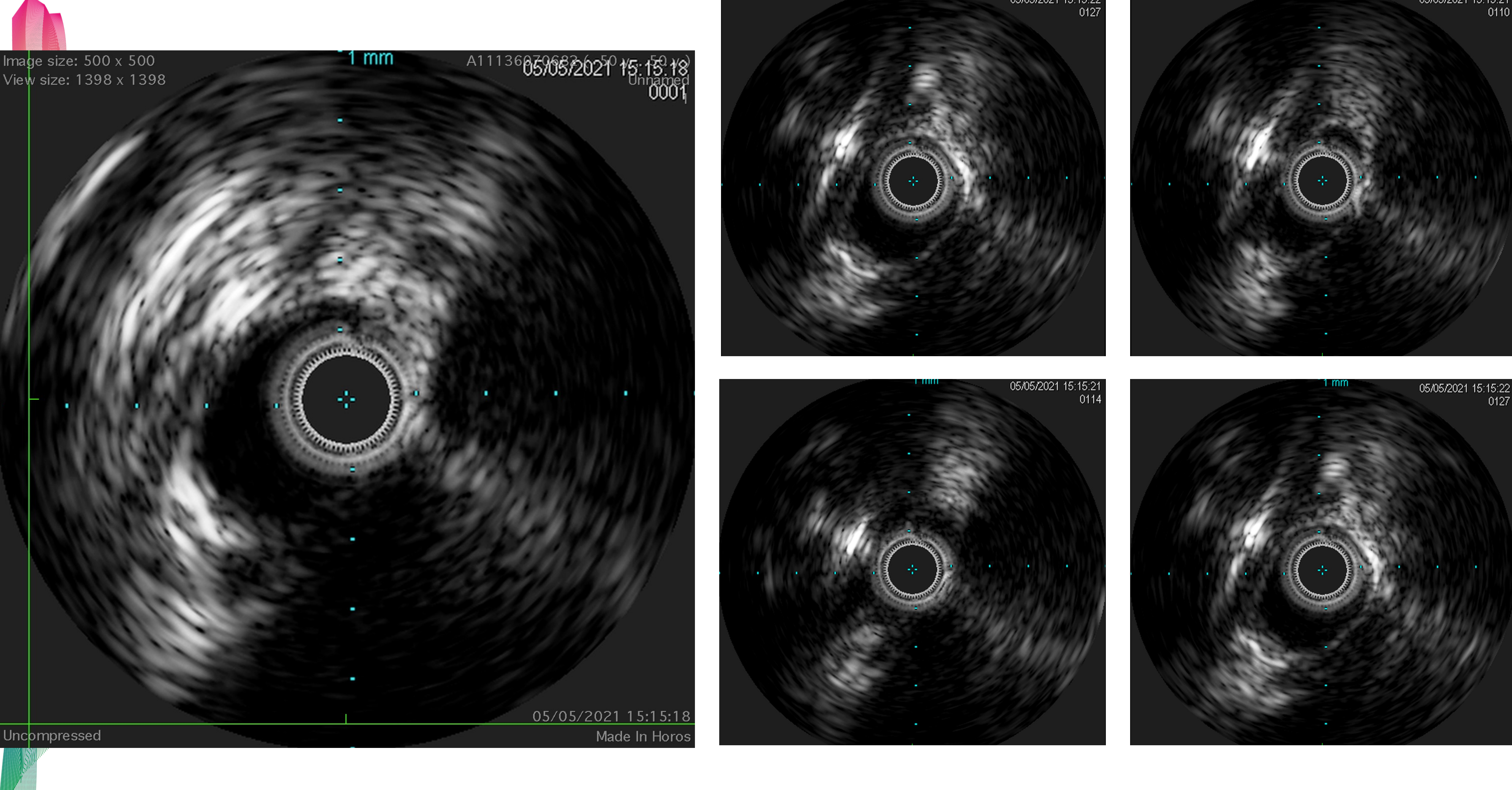
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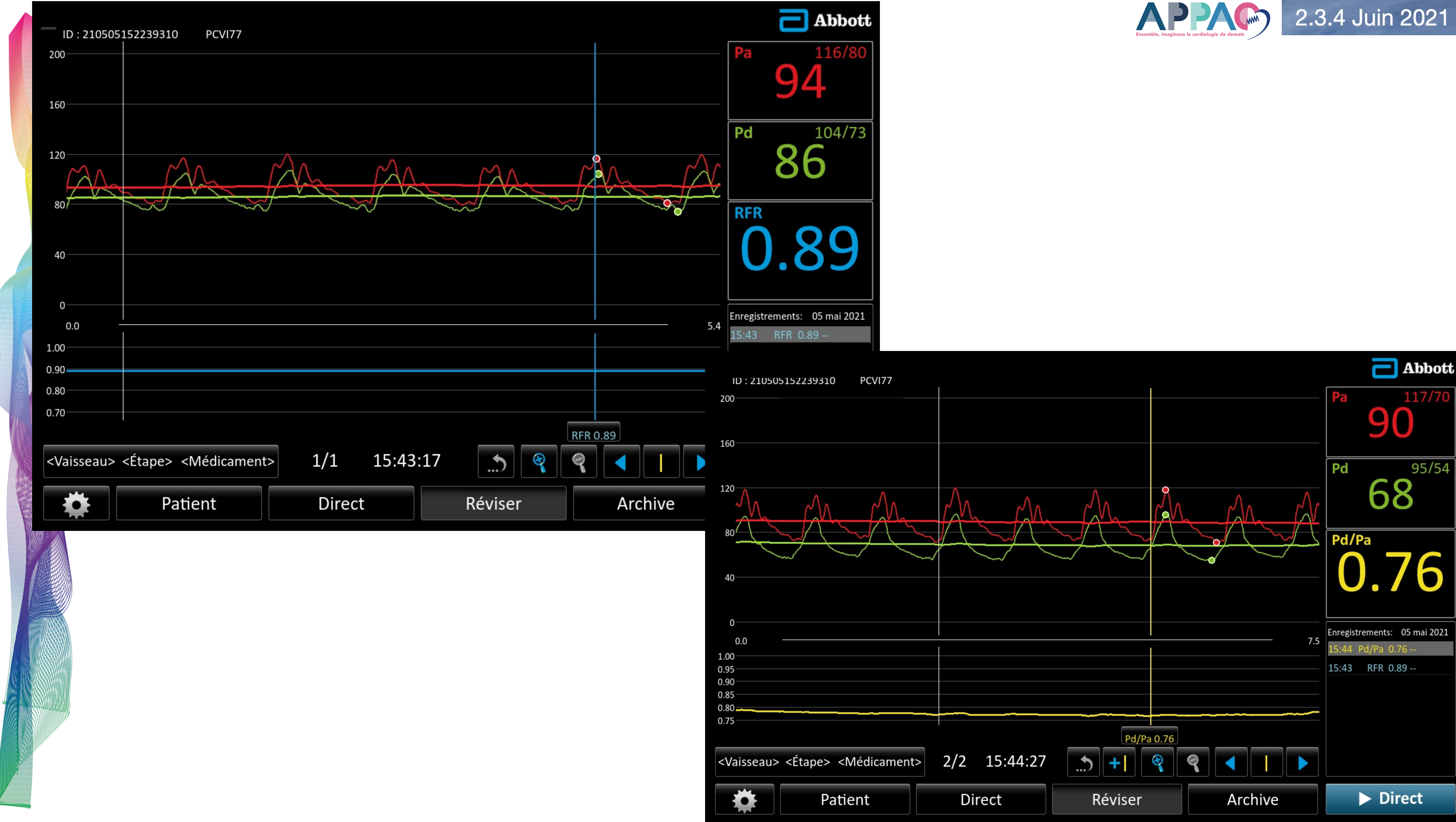

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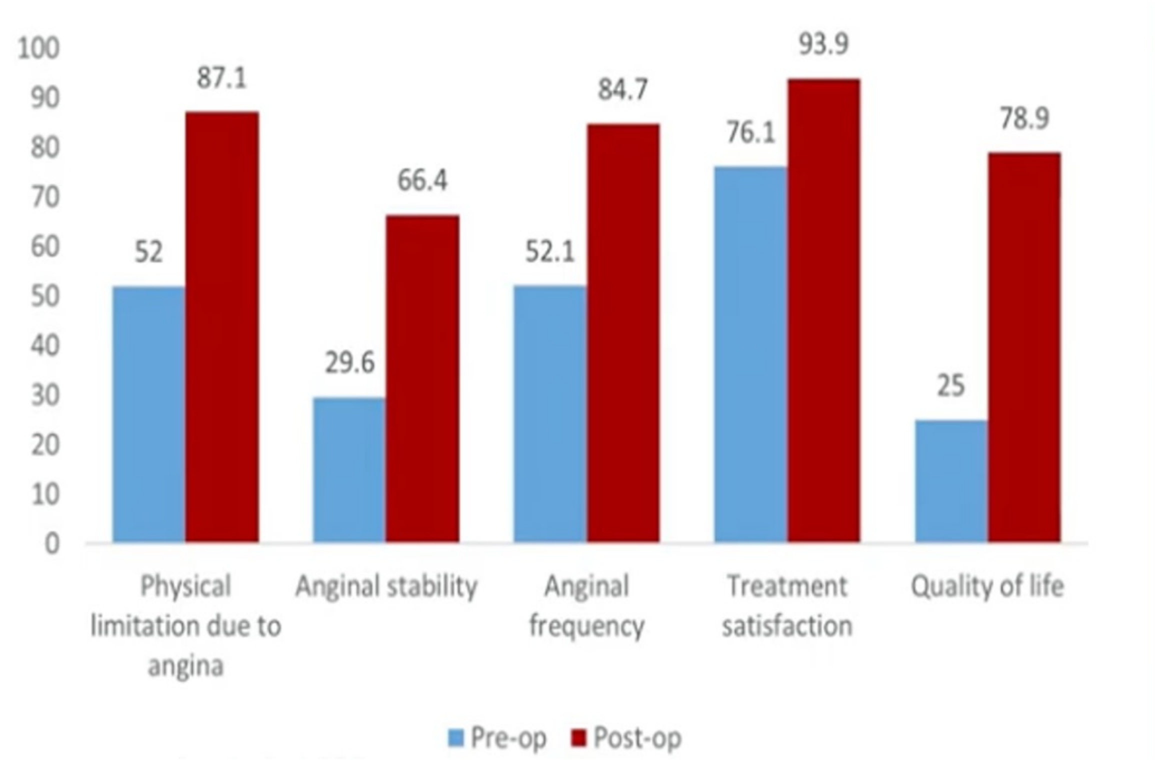
Pont Myocardique

- Le pont myocardique est un processus dynamique
- Exploration d'un PM
  - Inotropisme (dobutamine)
  - Adenosine vasodilatateur moins adapté
- La perte de pression de perfusion s'étend sur la diastole
  - Exploration par paramètres diastoliques
  - FFR moyenne sur tout le cycle cardiaque moins adapté ?

Escaned et al. J Am Coll Cardiol 2003;42:226-33
Hakeem et al. Catheter Cardiovasc Interv. 2010;75(2):229-36

Traitement ?

- Traitement médical : BB, Inhibiteur calciques, Nitrés
- Pontage ? Stent ?
- Unroofing ?



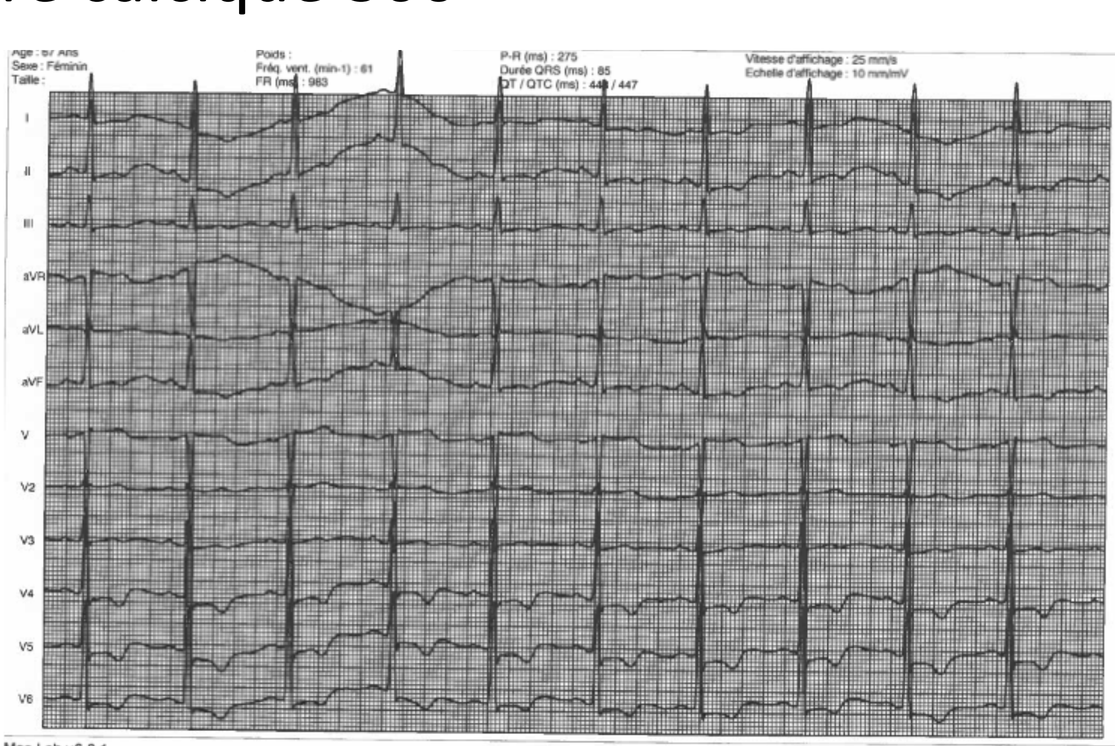
Boyd, Tremmel, et al. Ann Thorac Surg 2017;103:1443-1450

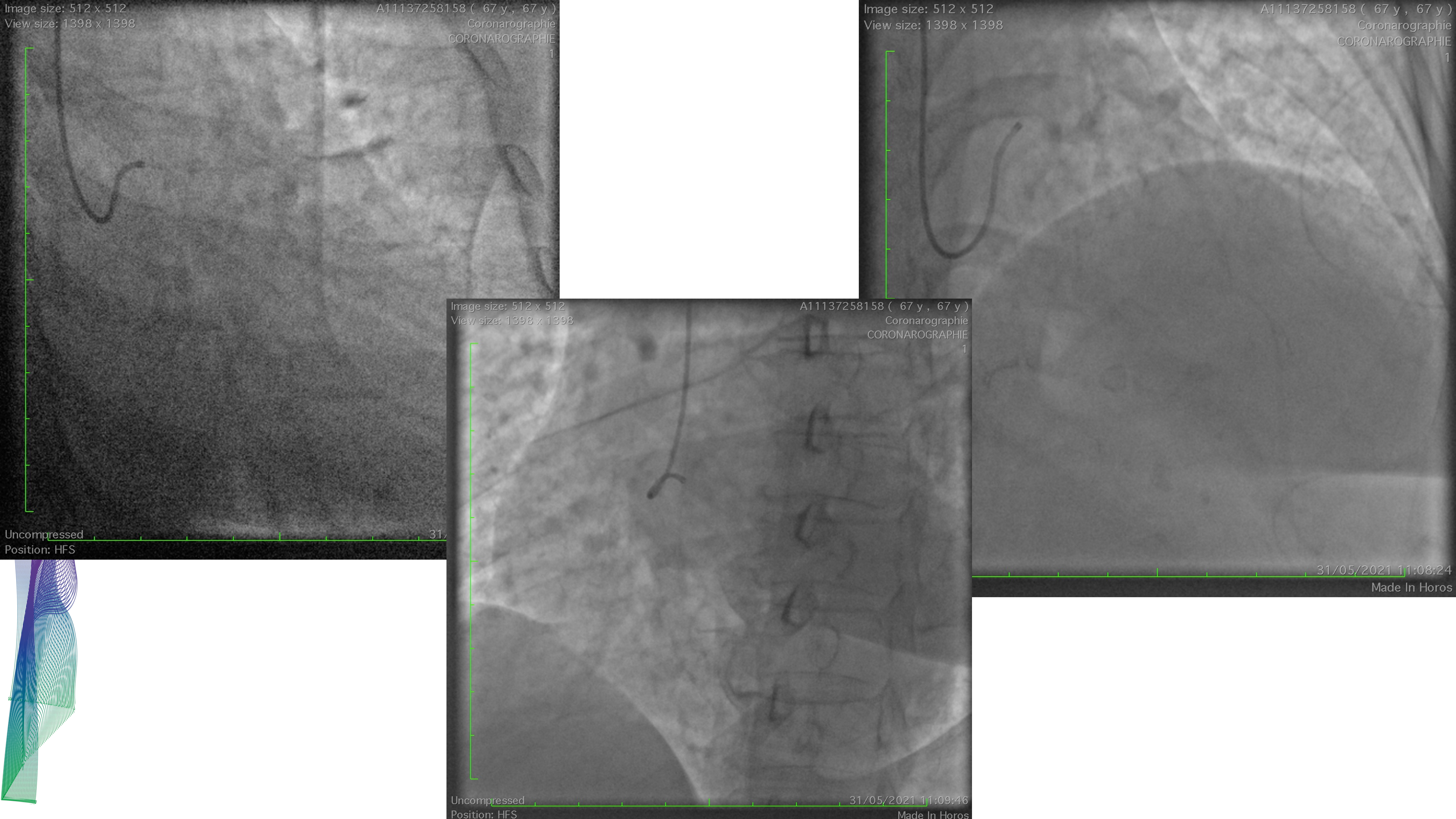
Cas 3

- Patiente de 68 ans
- FDR : surpoids, HTA, diabète, SAS
- Douleurs thoraciques suspectes et dyspnée d'effort
- Coro-scanner : Athérome limité NS, Score calcique 300
- Scintigraphie myocardique

  ECG +

  Isotope homogène





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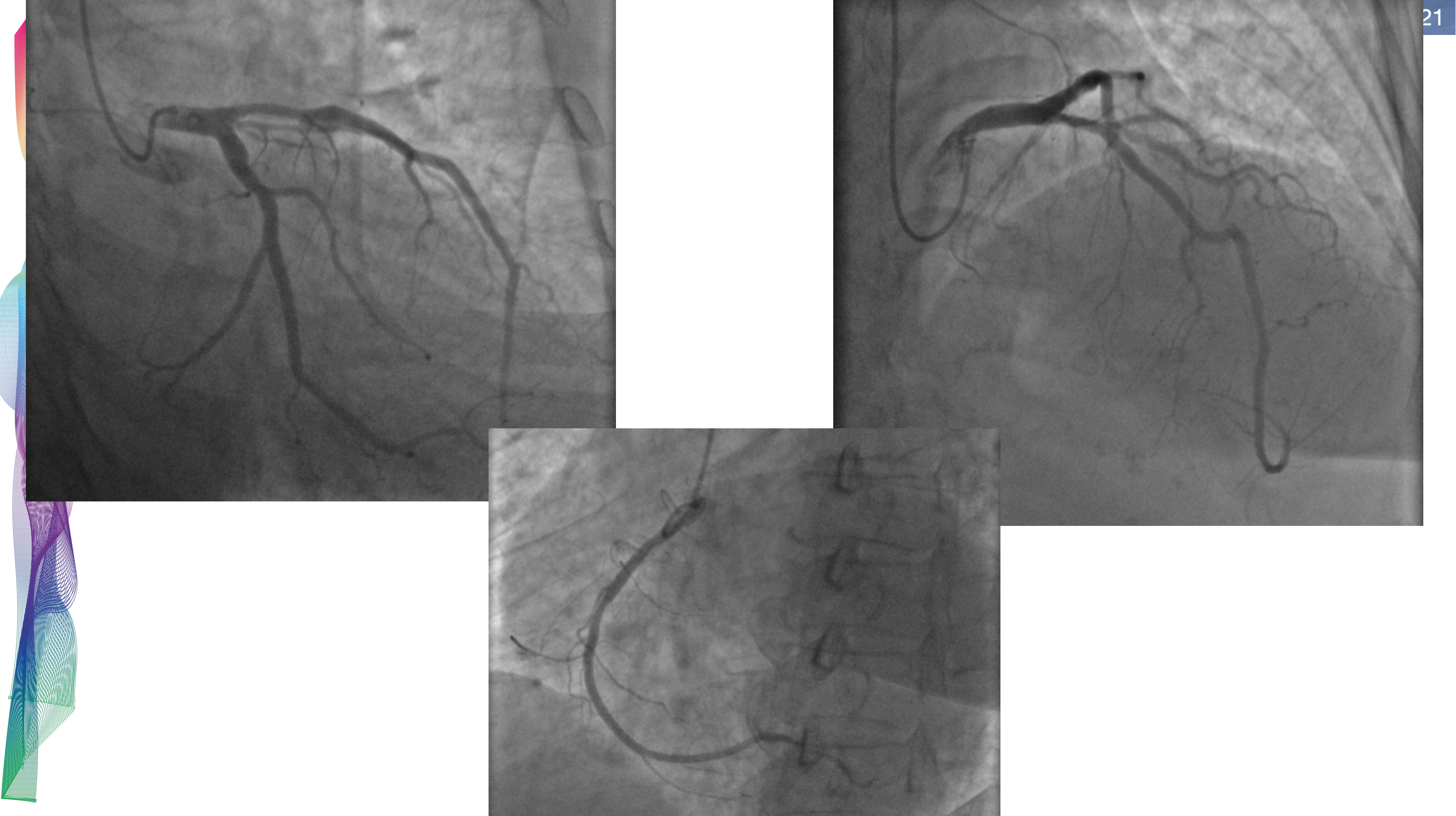

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Patient
Live
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Coroventis
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Pa
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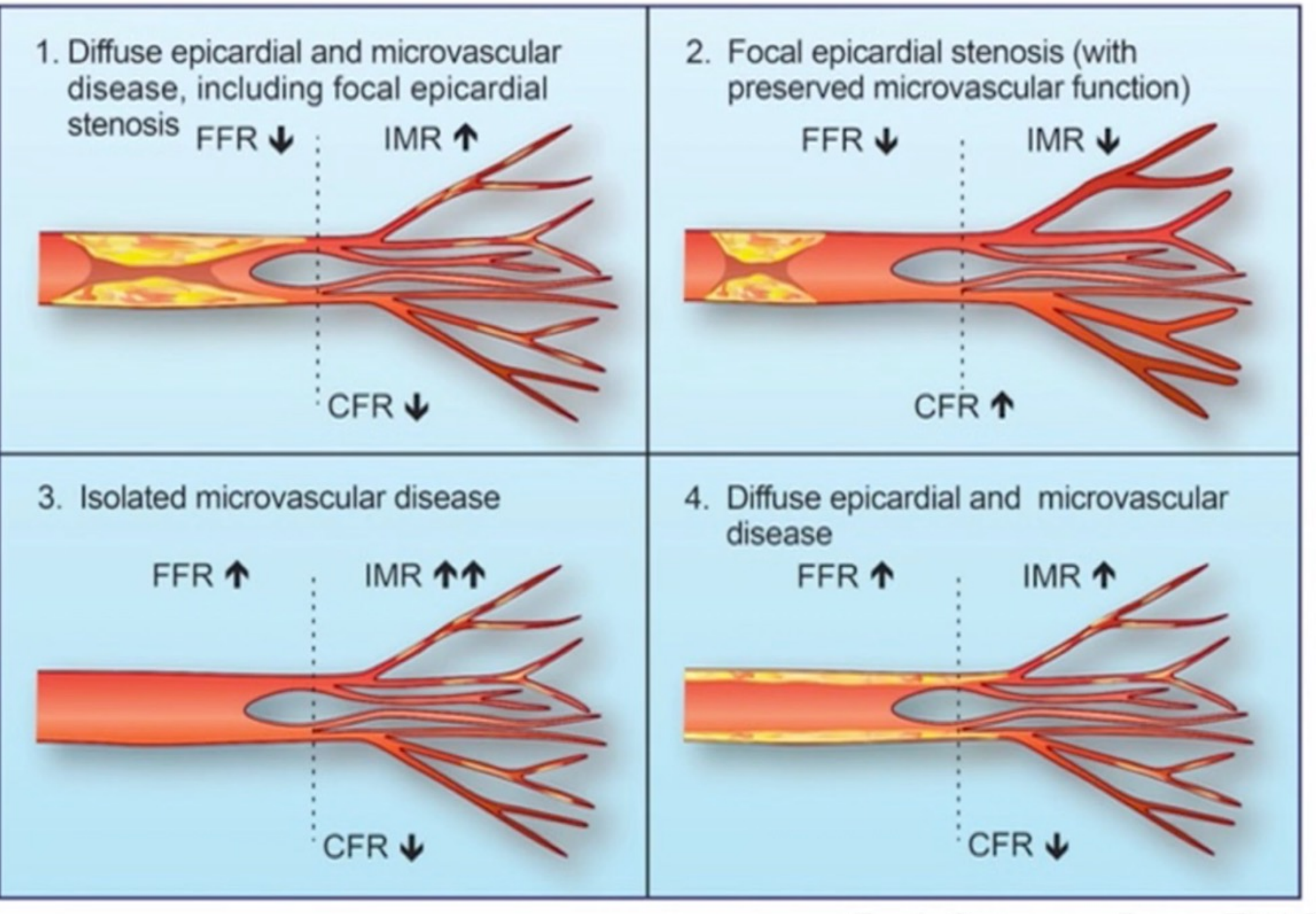
81
90
Pd/Pa
Pd
Pa
0.91
83
91
CFR
2.1
2.4
IMR
32
32
RRR
2.2
Resting 0.86s
0.90
0.82
0.86
Hyperemic 0.40s
0.33
0.49
0.38
Resume
Live
LAD Distal
Pre PCI
X 21
D 4.91
16:07:06
2/3

- Absence de réserve coronaire



Ford, Corcoran, Berry. EHJ 2017

ESC European Society of Cardiology
European Heart Journal (2019) 00, 1–71
doi:10.1093/eurheartj/ehz425
ESC GUIDELINES

2019 ESC Guidelines for the diagnosis and management of chronic coronary syndromes

Investigations in patients with suspected coronary microvascular angina

Recommendations	Class[a]	Level[b]
Guidewire-based CFR and/or microcirculatory resistance measurements should be considered in patients with persistent symptoms, but coronary arteries that are either angiographically normal or have moderate stenoses with preserved iwFR/FFR.[412,413]	IIa	B
Intracoronary acetylcholine with ECG monitoring may be considered during angiography, if coronary arteries are either angiographically normal or have moderate stenoses with preserved iwFR/FFR, to assess microvascular vasospasm.[412,438–440]	IIb	B
Transthoracic Doppler of the LAD, CMR, and PET may be considered for non-invasive assessment of CFR.[430–432,441]	IIb	B

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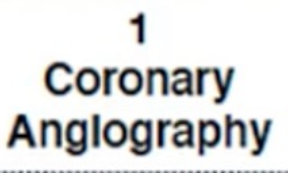
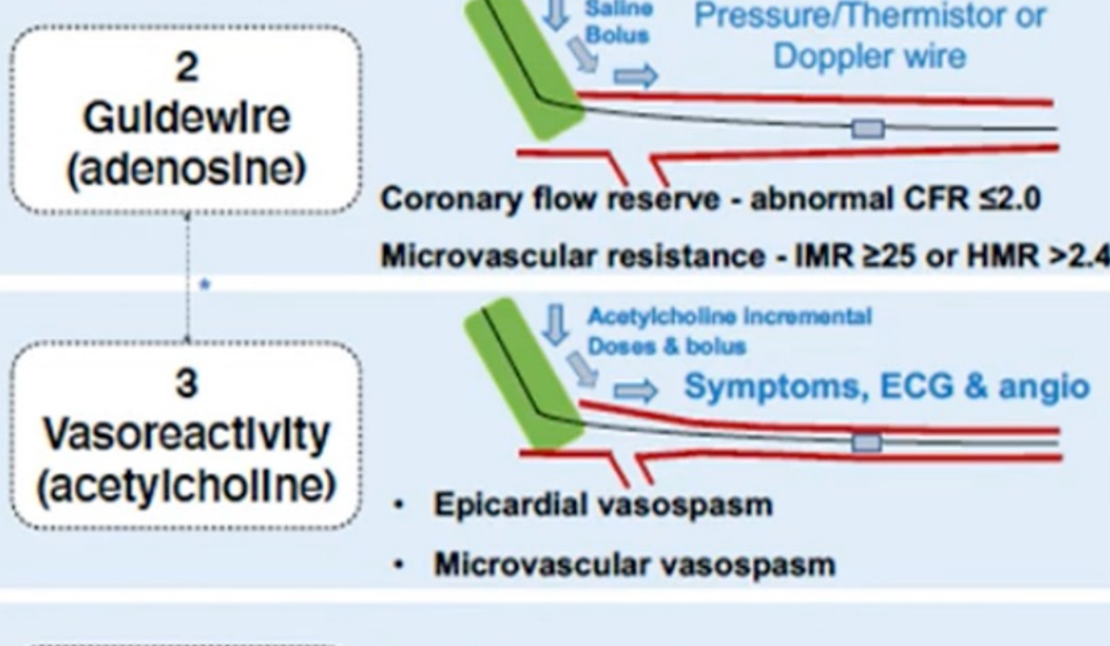
CFR = coronary flow reserve; CMR = cardiac magnetic resonance; ECG = electrocardiogram; FFR = fractional flow reserve; iwFR = instantaneous wave-free ratio; LAD = left anterior descending; PET = positron emission tomography.
[a]Class of recommendation.
[b]Level of evidence.





- 3 situations radicalement différentes
- Justifient la pratique d'une coronarographie
- Importance des tests fonctionnels
- Si arguments solides pour une ischémie myocardique
  - Justifie une coronarographie complète avec test fonctionnels