Comment faut-il envisager et organiser le bilan d'une perte de connaissance dans mon expérience?

Le rôle respectif du cardiologue et du rythmologue

Dr Mina AIT SAID,

Institut Cardio Vasculaire Paris Sud , Massy

ICPS
INSTITUT CARDIOVASCULAIRE
PARIS SUD

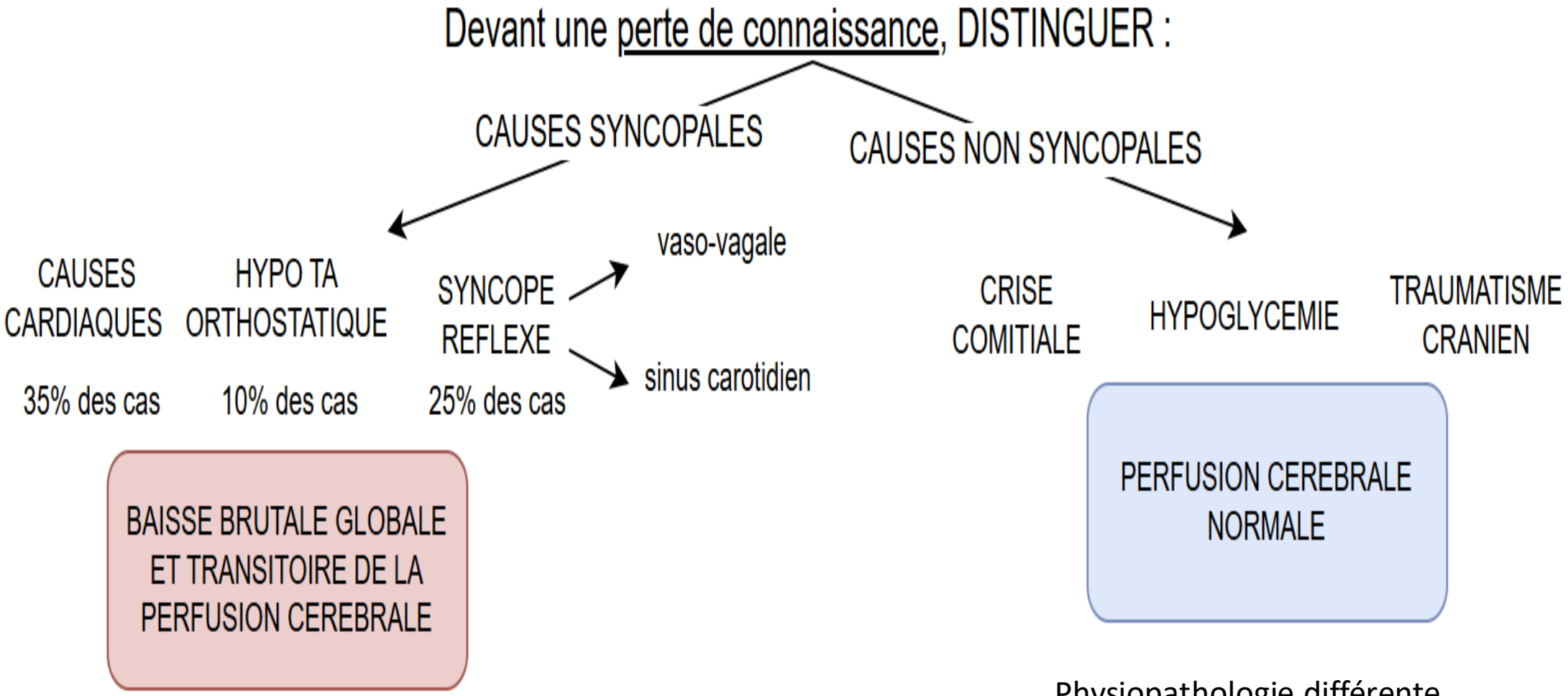
PERTE DE CONNAISSANCE

- ➢ Complète
  - Brutale
  - Brève (≠coma)
  - Spontanément résolutive (≠coma, ≠epilepsie, ≠mort subite)
  - Reprise rapide d'une conscience normale (≠ epilepsie)

SYNCOPE

- ➢ Incomplète

LIPOTHYMIE



Physiopathologie différente

Syncopes cardiaques

1. Bradycardies
   - Dysfonction sinusale
   - BAV de haut grade

2. Tachycardies
   - Tachycardie ventriculaire / FV
     - Cardiopathie ischémique / non ischémique
     - Syndrome de Brugada
     - DAVD
     - Syndrome du QT long / QT court
   - Torsade de pointe
     - Hypokaliémie / QT long
   - FA + WPW

3. Obstruction
   - Rétrécissement aortique
   - Embolie pulmonaire
   - Cardiomyopathie obstructive
   - HTAP

Syncopes reflexes

1. Vaso-vagale

2. Situationnelles (déglutition, post effort…)

3. Syndrome du sinus carotidien

Syncopes sur hypotension orthostatique

1. Avec tachycardie reflexe
   - Hypovolémie
   - Surdosage en hypotenseurs

2. Sans tachycardie reflexe (dysautonomie)
   - Neuropathie diabétique, alcoolique
   - Parkinson
   - Amylose

Objectifs du bilan

- Identifier la cause : réflexe, cardiaque, neurologique, métabolique.
- Évaluer le risque immédiat.
- Déterminer le parcours le plus pertinent selon la clinique.

Première Evaluation → STRATIFICATION DU RISQUE

- Interrogatoire précis : circonstances, prodromes, position, contexte.

- Examen clinique complet :
  - Auscultation, TA couchée/debout,
  - ECG de base, MSC.

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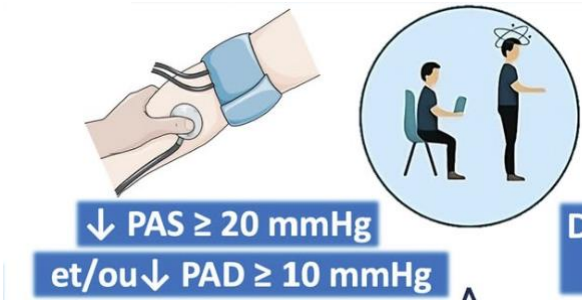

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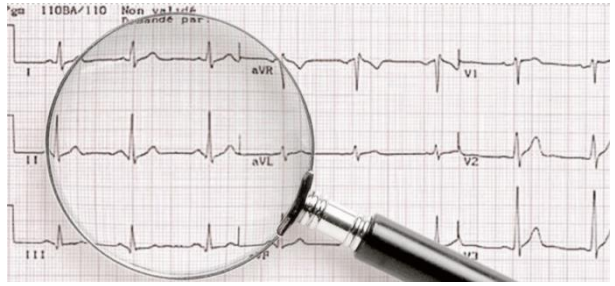


Le CARDIOLOGUE

- Réalisation systématique : ECG, échocardiographie si suspicion structurelle.
- Évaluation du risque cardiaque : QT long, BAV, cardiomyopathies.
- Choix des examens : Holter, test d'effort, bilan imagerie.

INTERROGATOIRE +++++++

Low-risk	High-risk (red flag)
Syncopal event	
1. Associated with prodrome typical of reflex syncope (e.g. light-headedness, feeling of warmth, sweating, nausea, vomiting) 2. After sudden unexpected unpleasant sight, sound, smell, or pain 3. After prolonged standing or crowded, hot places 4. During a meal or postprandial 5. Triggered by cough, defaecation, or micturition 6. With head rotation or pressure on carotid sinus (e.g. tumour, shaving, tight collars) 7. Standing from supine/sitting position	**Major** 1. New onset of chest discomfort, breathlessness, abdominal pain, or headache 2. Syncope during exertion or when supine. 3. Sudden onset palpitation immediately followed by syncope **Minor** (high risk only if associated with structural heart disease or abnormal ECG): 1. No warning symptoms or short (<10 s) prodrome 2. Family history of SCD at young age 3. Syncope in the sitting position

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

Low-risk	High-risk (red flag)
Past medical history	
1. Long history (years) of recurrent syncope with low-risk features with the same characteristics of the current episode 2. Absence of structural heart disease	**Major** 1. Severe structural or coronary artery disease (heart failure, low LVEF or previous myocardial infarction)
Physical examination	
1. Normal examination	**Major** 1. Unexplained systolic BP in the ED <90 mmHg 2. Suggestion of gastrointestinal bleed on rectal examination 3. Persistent bradycardia (<40 b.p.m.) in awake state and in absence of physical training 4. Undiagnosed systolic murmur

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

ECG

Low-risk	High-risk (red flag)
ECG	
1. Normal ECG	**Major** 1. ECG changes consistent with acute ischaemia 2. Mobitz II second- and third-degree AV block 3. Slow AF (<40 b.p.m.) 4. Persistent sinus bradycardia (<40 b.p.m.) 5. Bundle branch block or IVCD 6. Q waves consistent with CAD or cardiomyopathy 7. Sustained and non-sustained VT 8. Dysfunction of a pacemaker or ICD 9. Type 1 Brugada pattern 10. Long QT

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

Echographie cardiaque

Recommendations	Class	Level
Indications		
1. Echocardiography is indicated for diagnosis and risk stratification in patients with suspected structural heart disease	I	B
2. Two-dimensional and Doppler echocardiography during exercise in the standing, sitting, or semi-supine position to detect provocable left ventricular outflow tract obstruction is indicated in patients with HCM, a history of syncope, and a resting or provoked peak instantaneous left ventricular outflow tract gradient <50 mmHg	I	B
Diagnostic criteria		
3. Aortic stenosis, obstructive cardiac tumours or thrombi, pericardial tamponade, and aortic dissection are the most probable causes of syncope when the echocardiography shows the typical features of these conditions	I	C

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

MONITORING-TELEMETRIE

In-hospital monitoring		
1. *Immediate in-hospital monitoring* (in bed or by telemetry) is indicated in high-risk patients.	I	C

Favour initial management in ED observation unit and/or fast-track to syncope unit	Favour admission to hospital
High-risk features AND: • Stable, known structural heart disease. • Severe chronic disease. • Syncope during exertion. ⟶ EE • Syncope while supine or sitting. • Syncope without prodrome. • Palpitations at the time of syncope. • Inadequate sinus bradycardia or sinoatrial block. • Suspected device malfunction or inappropriate intervention. • Pre-excited QRS complex. • SVT or paroxysmal atrial fibrillation. • ECG suggesting an inheritable arrhythmogenic disorders. • ECG suggesting ARVC.	**High-risk features AND:** • Any potentially severe coexisting disease that requires admission. • Injury caused by syncope. • Need of further urgent evaluation and treatment if it cannot be achieved in another way (i.e. observation unit), e.g. ECG monitoring, echocardiography, stress test, electrophysiological study, angiography, device malfunction, etc. • Need for treatment of syncope.

2018 ESC Guidelines on Syncope – Michele Brignole & Angel Moya
European Heart Journal 2018;39:1883–1948 - Doi:10.1093/eurheartj/ehy037 30

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

Le RYTHMOLOGUE

- Analyse avancée des troubles du rythme.
- Indication d'enregistrements prolongés : Holter 7 j, ILR.
- Interprétation fine des syncopes inexpliquées.
- Indication potentielle de stimulation ou ablation selon le mécanisme identifié.

HOLTER ECG

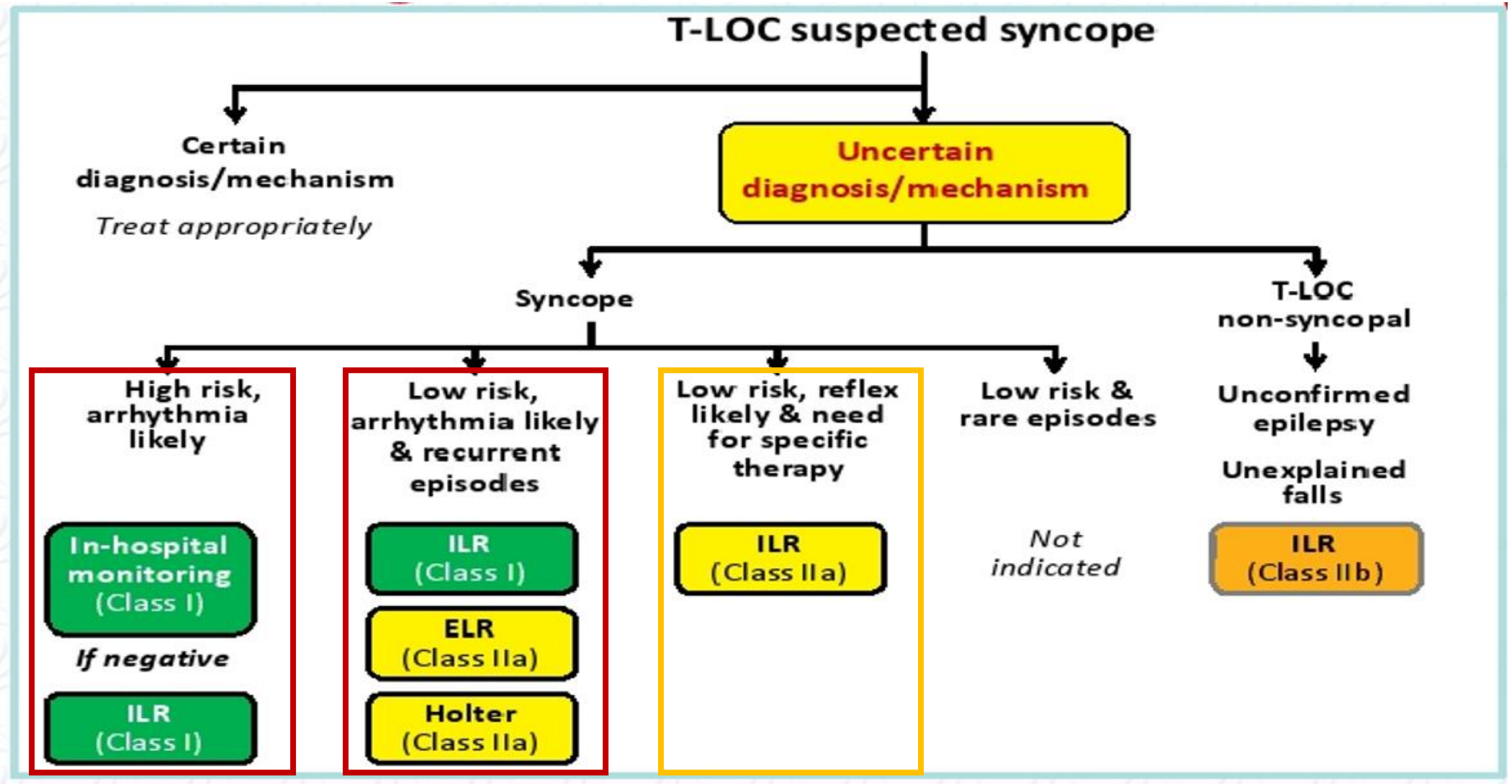
Holter monitoring		
2. *Holter monitoring* should be considered in patients who have frequent syncope or presyncope (≥1 episode per week).	IIa	B
External loop recorder		
3. External loop recorders should be considered, early after the index event, in patients who have an inter-symptom interval ≤4 weeks	IIa	B

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

HOLTER IMPLANTABLE

Implantable loop recorder		
4. ILR is indicated in an early phase of evaluation in patients with recurrent syncope of uncertain origin, absence of high-risk criteria (listed in *Table 6*), and a high likelihood of recurrence within the battery life of the device.	I	A
5. ILR should be considered in patients with suspected or certain reflex syncope presenting with frequent or severe syncopal episodes.	IIa	B
6. ILR may be considered in patients in whom epilepsy was suspected but the treatment has proven ineffective.	IIa	B

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

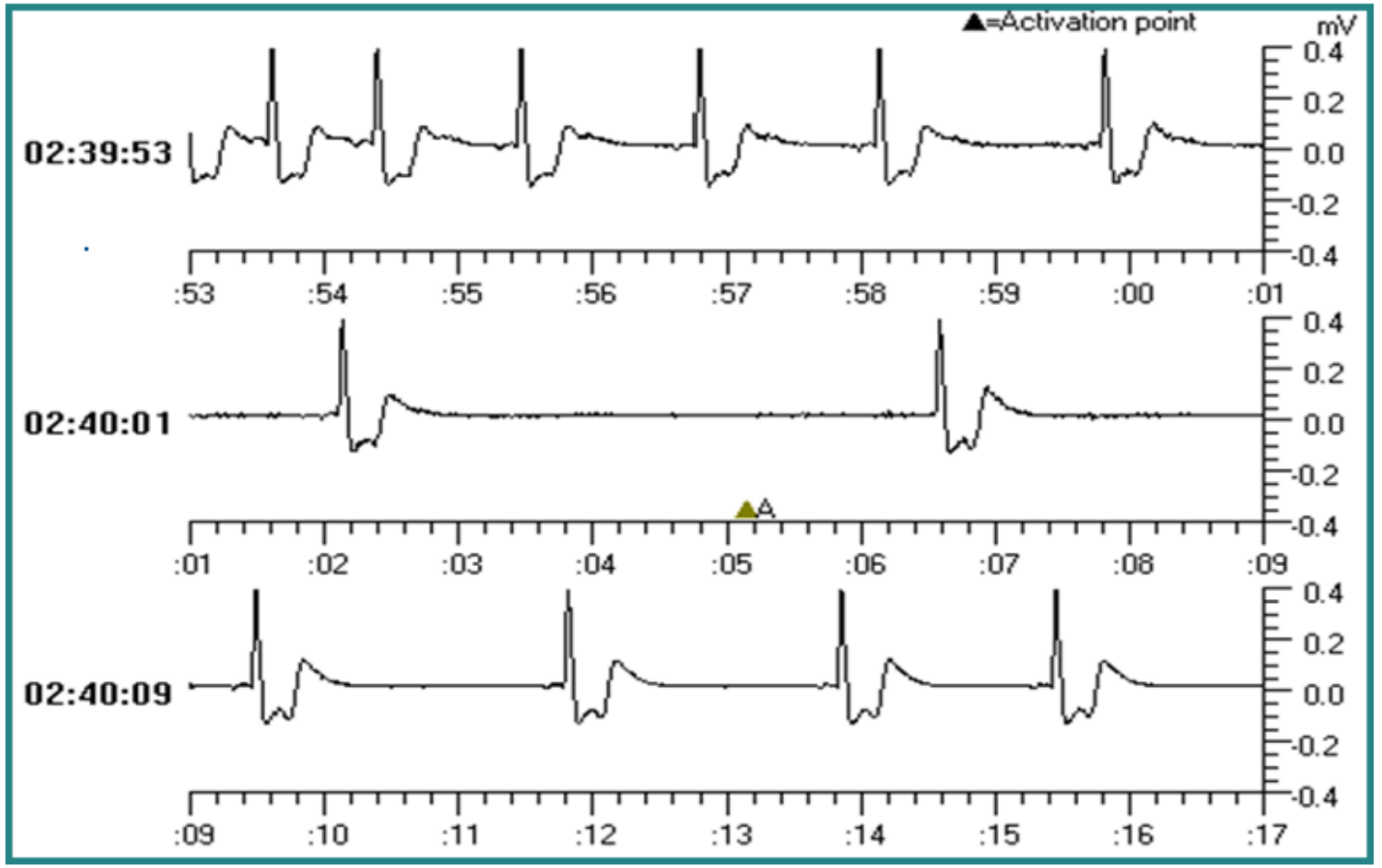


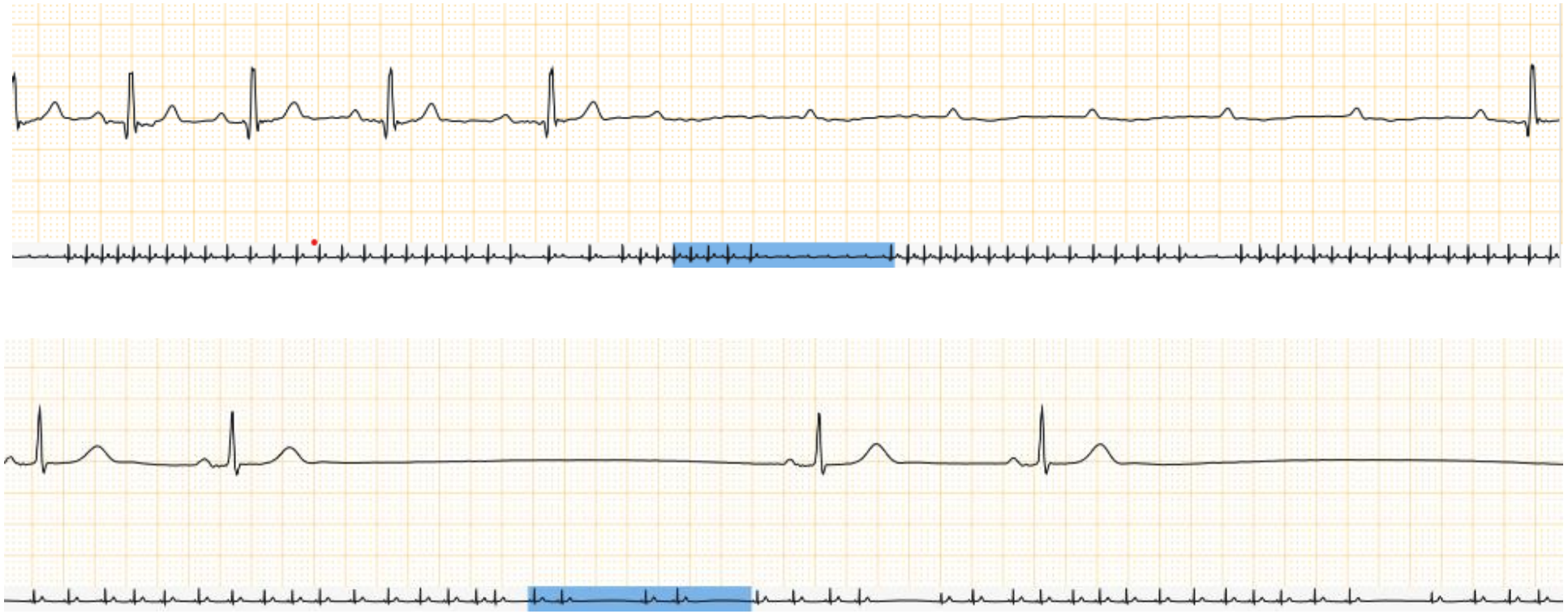
ESC Guidelines. European Heart Journal (2018) 39, 1883–1948

Exploration Electrophysiologique

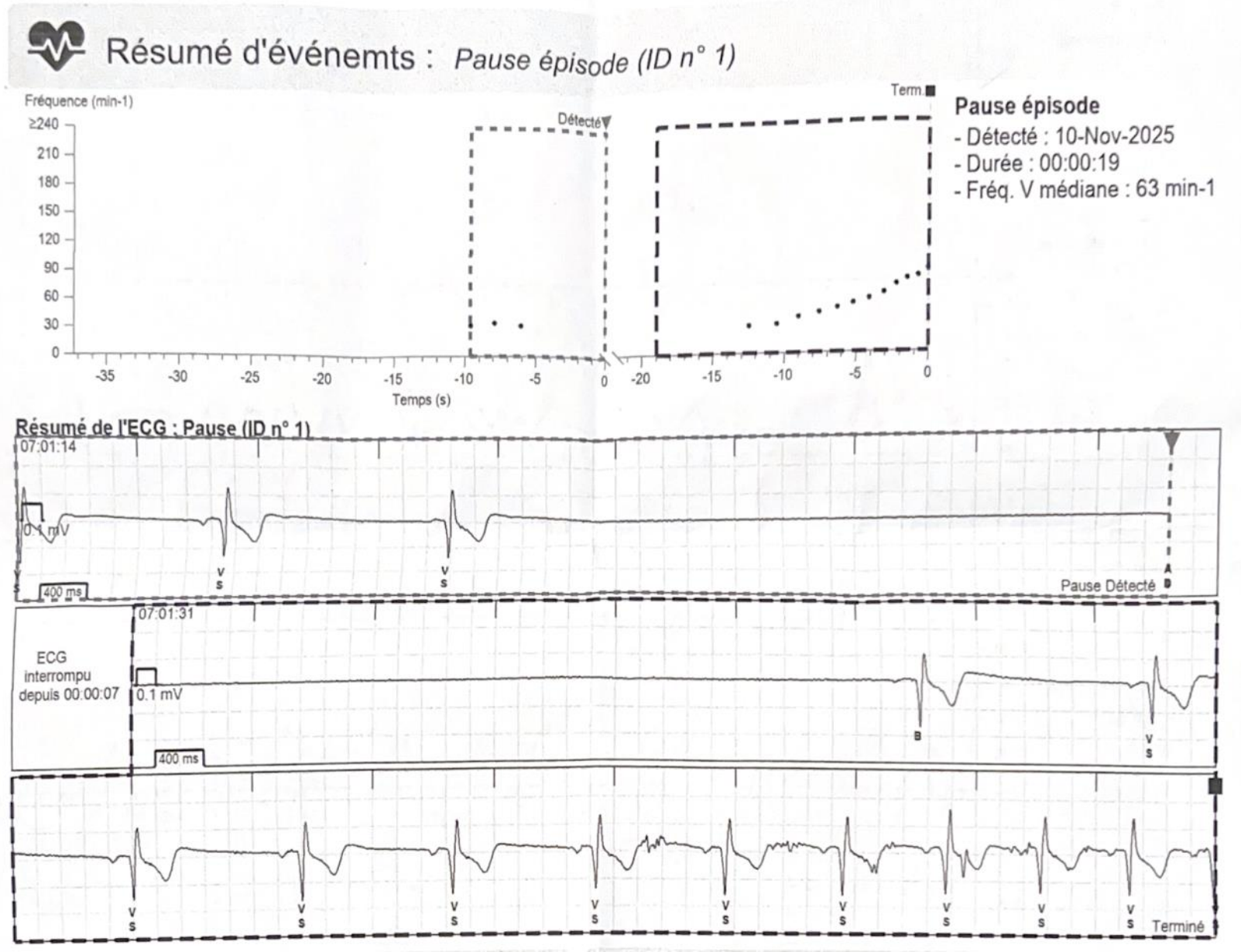
Recommendations	Class	Level
1. In patients with syncope and previous myocardial infarction or other scar-related conditions, EPS is indicated when syncope remains unexplained after non-invasive evaluation	I	B
2. In patients with syncope and bifascicular BBB, EPS should be considered when syncope remains unexplained after non- invasive evaluation.	IIa	B
3. In patients with syncope and asymptomatic sinus bradycardia, EPS may be considered in a few instances when non-invasive tests (e.g. ECG monitoring) have failed to show a correlation between syncope and bradycardia.	IIb	B
4. In patients with syncope preceded by sudden and brief palpitations, EPS may be considered when syncope remains unexplained after non-invasive evaluation.	IIb	C

ESC Guidelines. European Heart Journal (2018) 39, 1883–1948


▲=Activation point
mV
02:39:53
02:40:01
02:40:09
0.4
0.2
0.0
-0.2
-0.4
:53
:54
:55
:56
:57
:58
:59
:00
:01
:02
:03
:04
:05
:06
:07
:08
:09
:10
:11
:12
:13
:14
:15
:16
:17
A



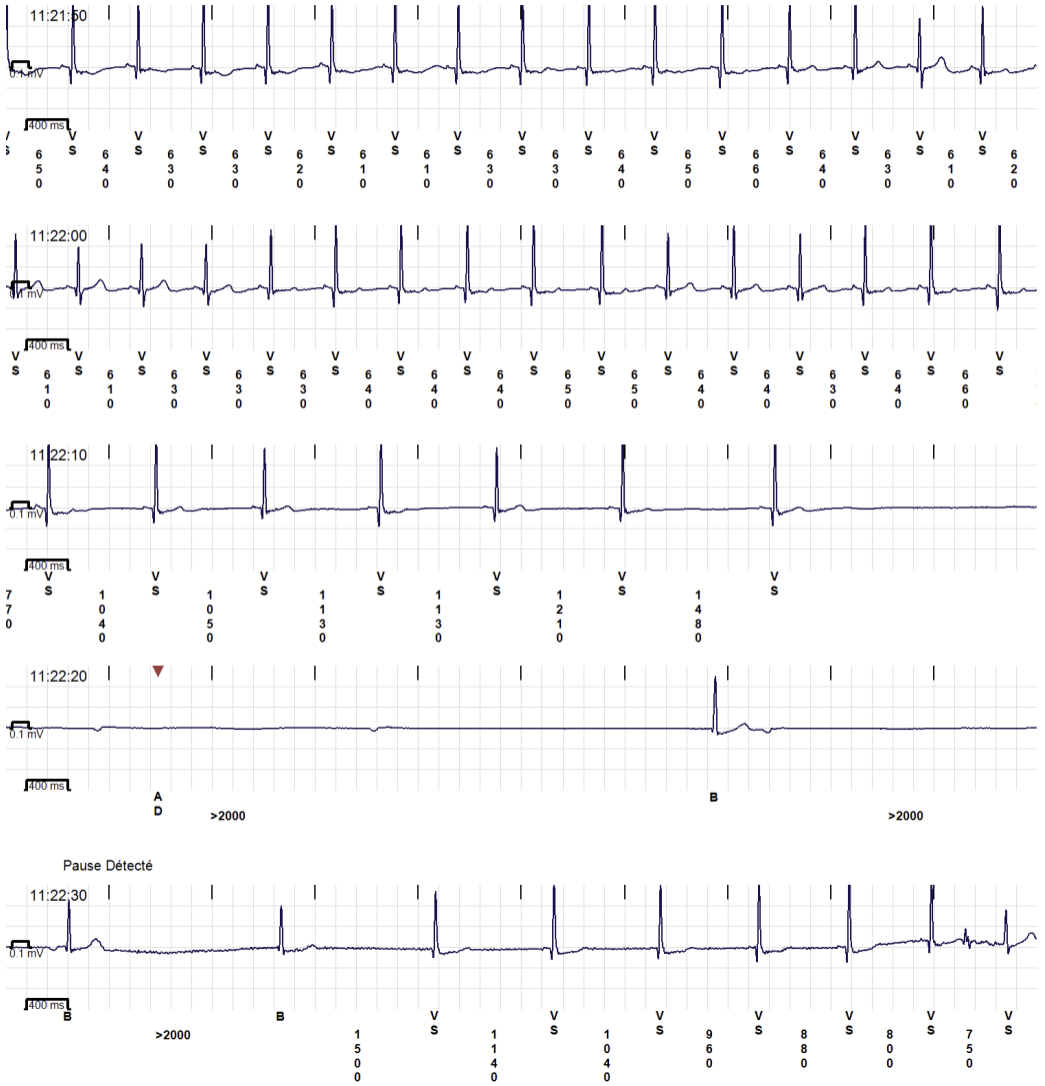

A
1:54:25 Bradys; Nb QRS=10; Durée=27,73s; FC moy=19min-1
25mm/s; 10mm/mV
B
2:06:00 Bradys; Nb QRS=6; Durée=20,55s; FC moy=15min-1
25mm/s; 10mm/mV


Résumé d'événemts : Pause épisode (ID n° 1)
Fréquence (min-1)
≥240
210
180
150
120
90
60
30
0
Détecté
Term.
-35
-30
-25
-20
-15
-10
-5
0
-20
-15
-10
-5
0
Temps (s)
Pause épisode
- Détecté : 10-Nov-2025
- Durée : 00:00:19
- Fréq. V médiane : 63 min-1
Résumé de l'ECG : Pause (ID n° 1)
07:01:14
0.1 mV
400 ms
V
S
Pause Détecté
A
B
07:01:31
ECG
interrompu
depuis 00:00:07
0.1 mV
400 ms
Terminé

Medtronic

ID n°	Évaluation	Type	Date	hh:mm détectées	Durée hh:mm:ss	Fréq. V max	Fréq. V médiane	Détails épisode
2		Pause	21-May-2022	08:37	00:00:11		67 min-1	ECG
1		Pause	20-May-2022	11:22	00:00:09		58 min-1	ECG

Détail ECG: *Pause (ID n° 1), 20-May-2022*

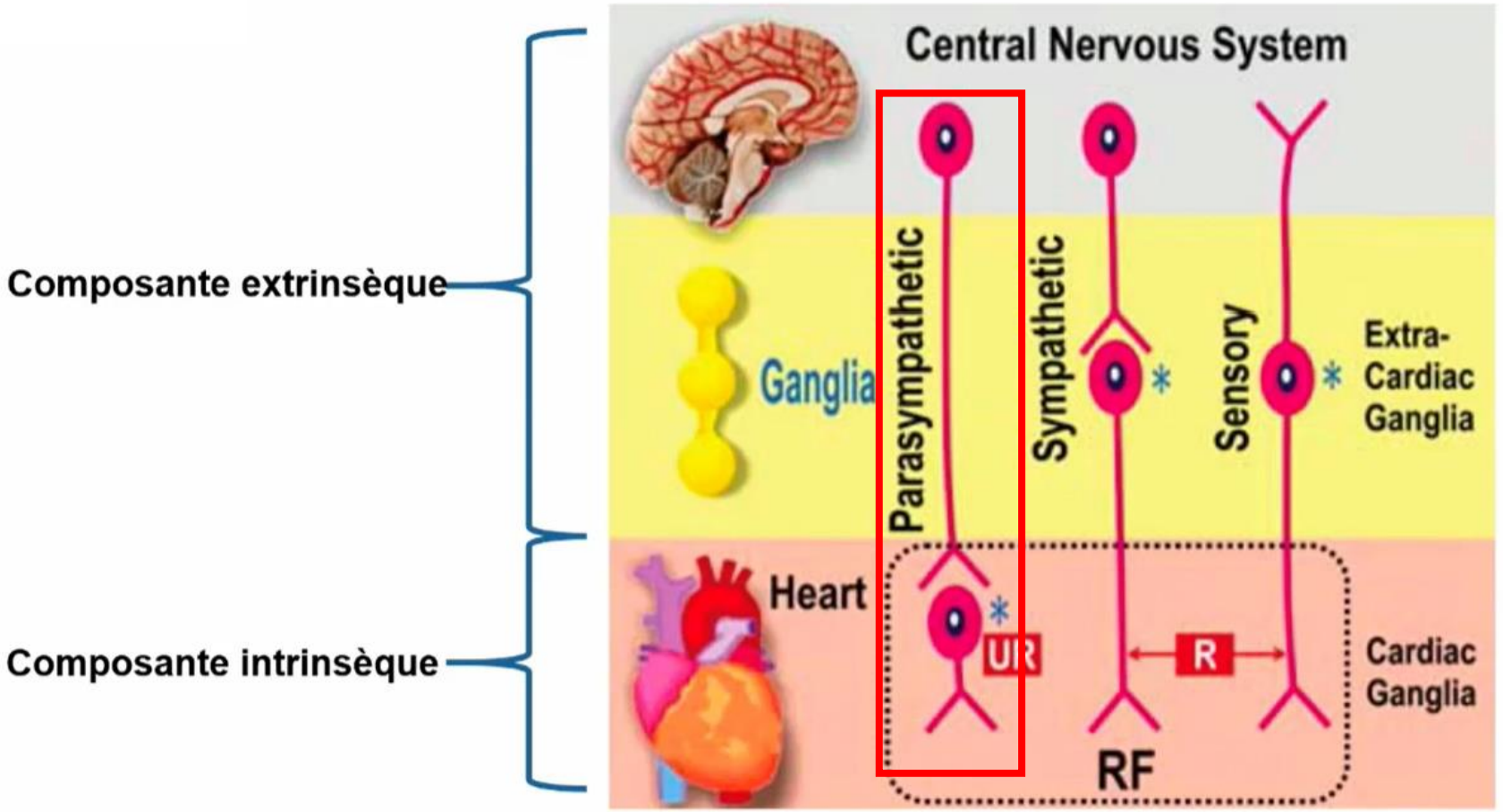


PACEMAKER

Recommendations	Class	Level
Cardiac pacing		
1. Cardiac pacing should be considered to reduce syncopal recurrences in patients aged >40 years, with spontaneous documented symptomatic asystolic pause/s >3 seconds or asymptomatic pause/s >6 seconds due to sinus arrest or AV block or the combination of the two.	IIa	B
2. Cardiac pacing should be considered to reduce syncope recurrence in patients with cardioinhibitory carotid sinus syndrome who are >40 years with recurrent frequent unpredictable syncope.	IIa	B
3. Cardiac pacing may be considered to reduce syncope recurrences in patients with tilt-induced asystolic response who are >40 years with recurrent frequent unpredictable syncope.	IIb	B
4. Cardiac pacing may be considered to reduce syncope recurrences in patients with the clinical features of adenosine-sensitive syncope.	IIb	B
5. Cardiac pacing is not indicated in the absence of a documented cardioinhibitory reflex.	III	B

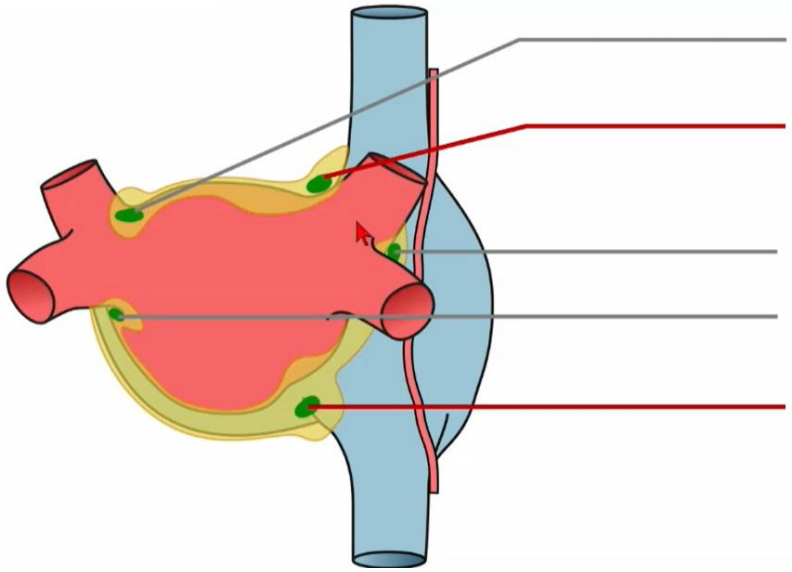
CARDIO NEURO ABLATION

Organisation à 2 neurones



CARDIO NEURO ABLATION

Cibles principales de la CNA



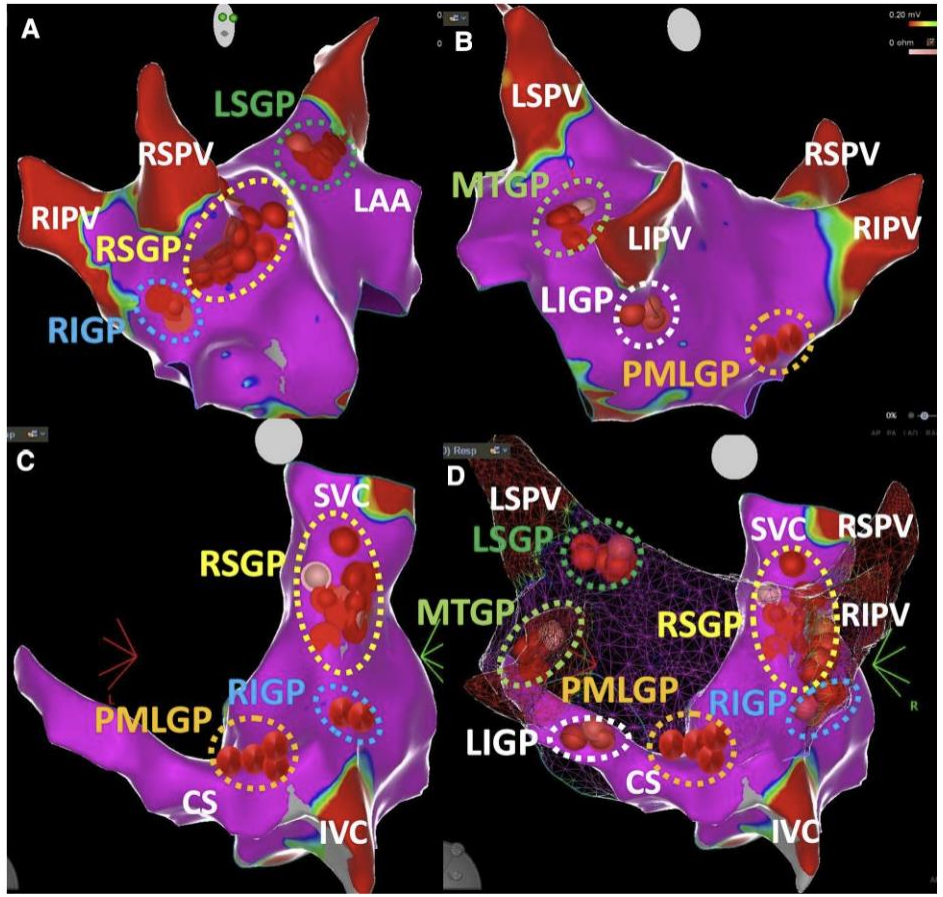
PG atrial supérieur gauche

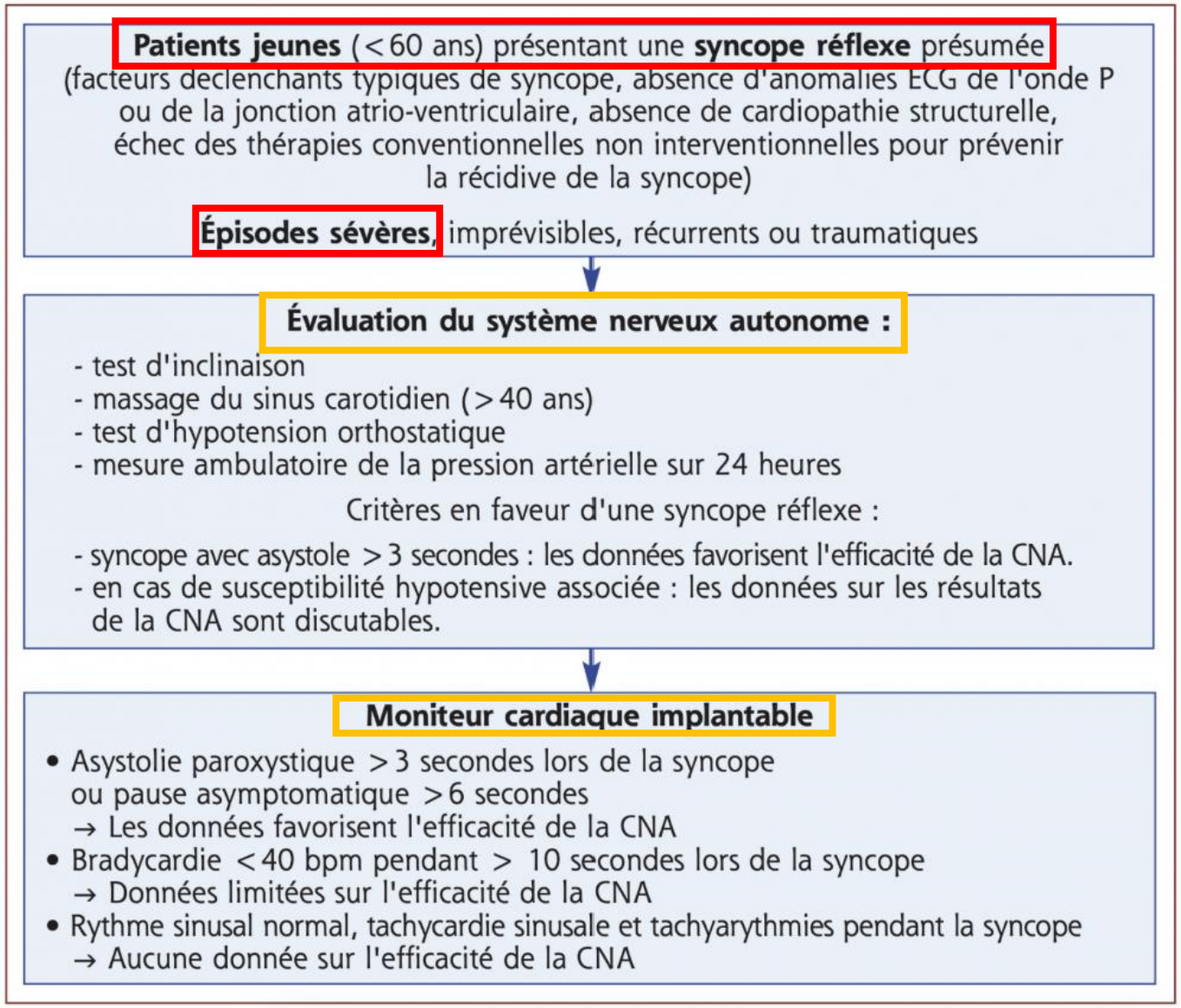
PG atrial supérieur droit
(PG paraseptal supérieur) — NS

PG atrial postérieur droit ?

PG atrial postéro-latéral gauche

PG atrial postéro-médial gauche
(PG paraseptal supérieur) — NAV





T. Aksu et al. Europace (2024)

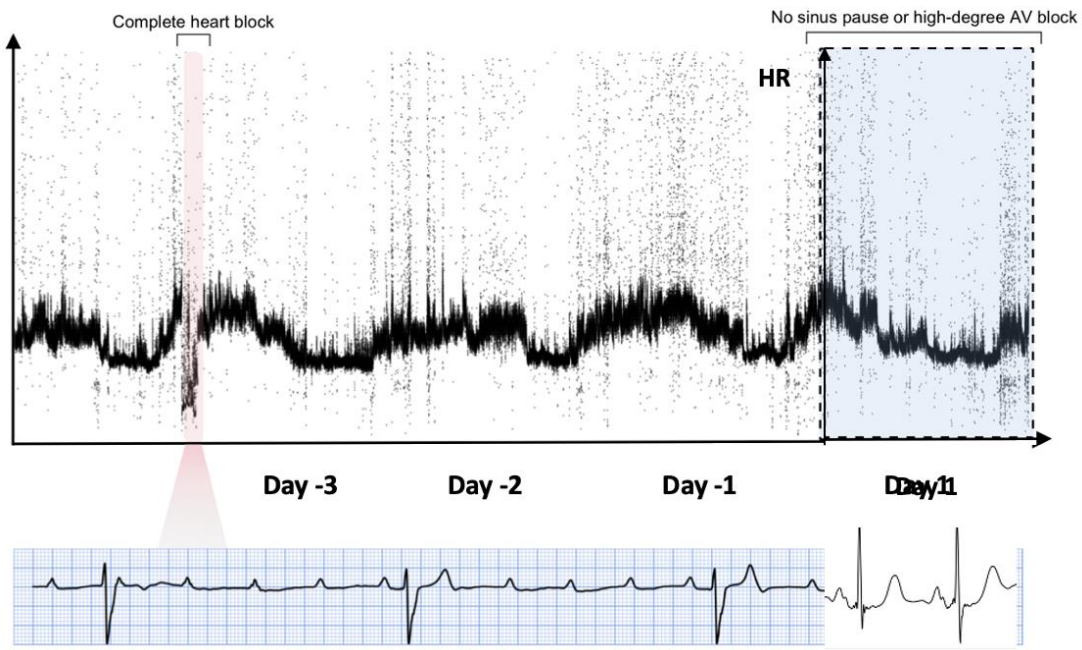
IA

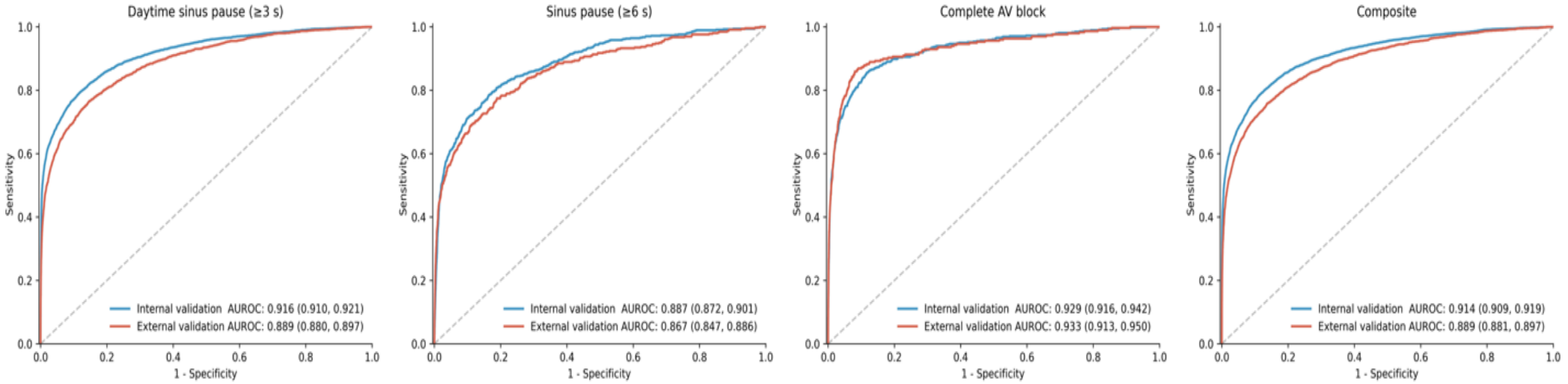
Circulation: Arrhythmia and Electrophysiology

ORIGINAL ARTICLE

Deep Learning Can Unmask Conduction Tissue Disease From an Ambulatory ECG

Laurent Fiorina, MD*; Tanner Carbonati, BSc*; Baptiste Maille, MD; Kumar Narayanan, MD; Pauline Porquet, MSc; Christine Henry, MSc; Jagmeet P. Singh, MD, PhD; Eloi Marijon, MD, PhD; Jean-Claude Deharo, MD, PhD





MESSAGES

- Tri initial par le cardiologue (urgence vs différé).
- ECG + imagerie cardiaque selon les signes.
- Orientation vers rythmologue si suspicion rythmique ou bilan initial négatif.
- Coordination pour ILR / EP study / prise en charge spécifique.
- Cardioneuroablation
- Utilisation de l'IA dans le futur proche