JHaS
Junge Haus- und KinderärztInnen Schweiz
Jeunes médecins de famille suisses
Giovani medici e pediatri di famiglia svizzeri
Swiss Young Family Doctors

L'ECG pour le généraliste
Hands-on workshop

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HFR hôpital fribourgeois freiburger spital

UNI FR Science & Medicine

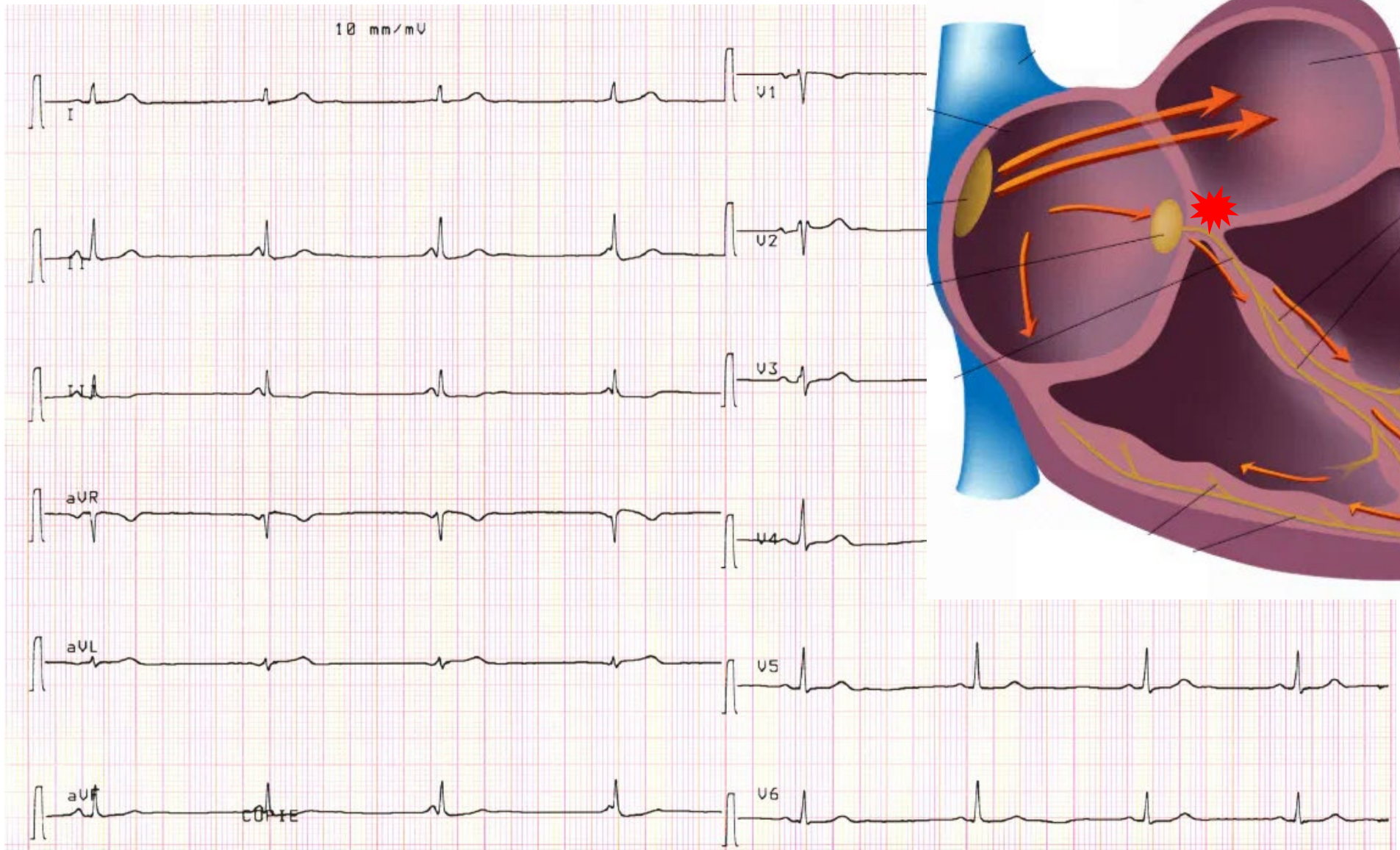
25 avril 2026

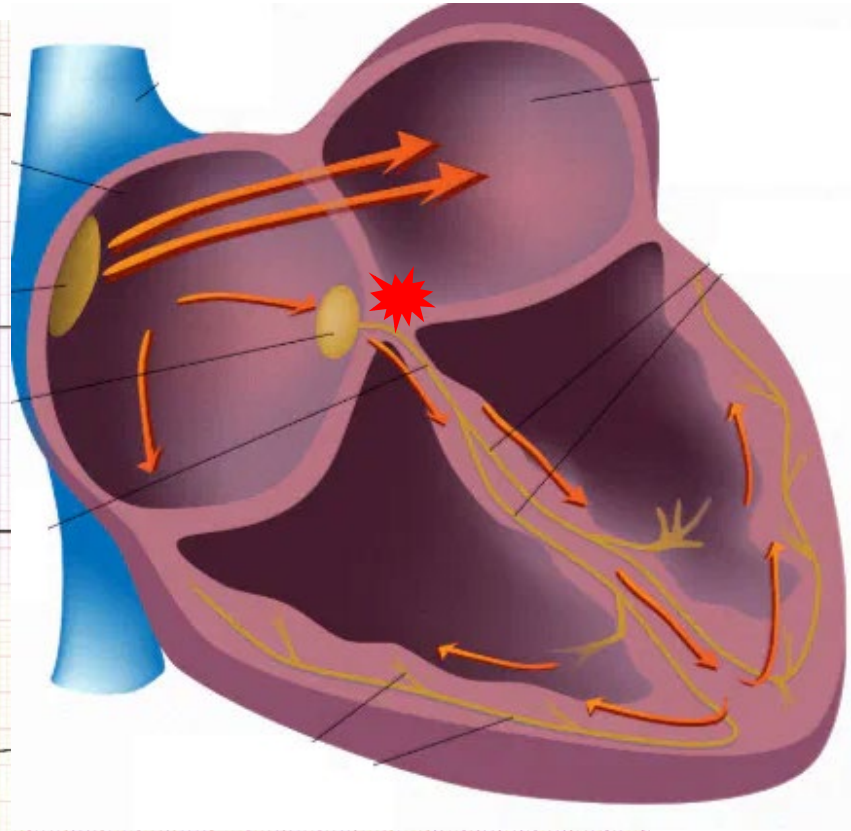
Conflits d’intérêts

Aucuns

♀ 37 ans, BSH

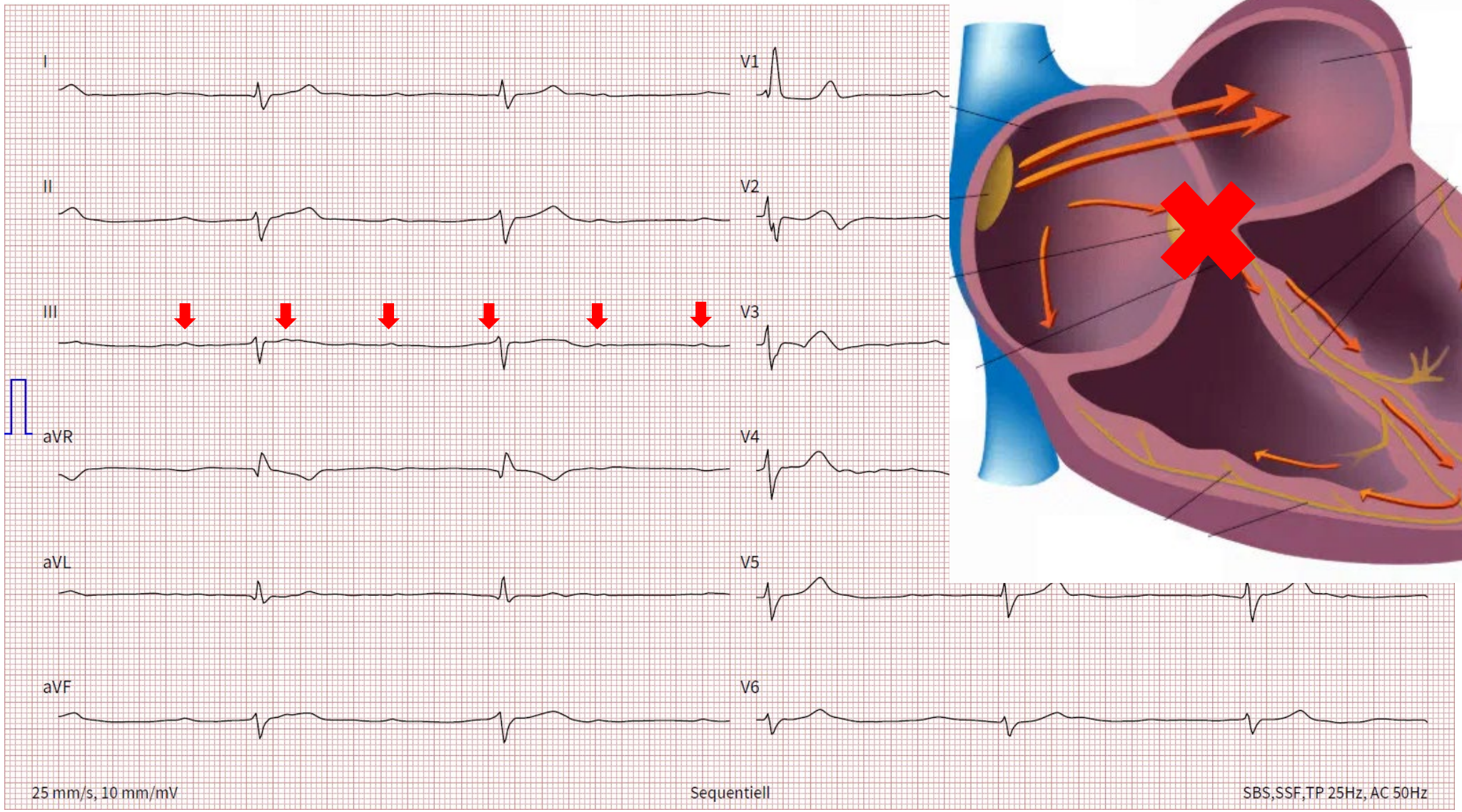
Dissociation AV isorythmique

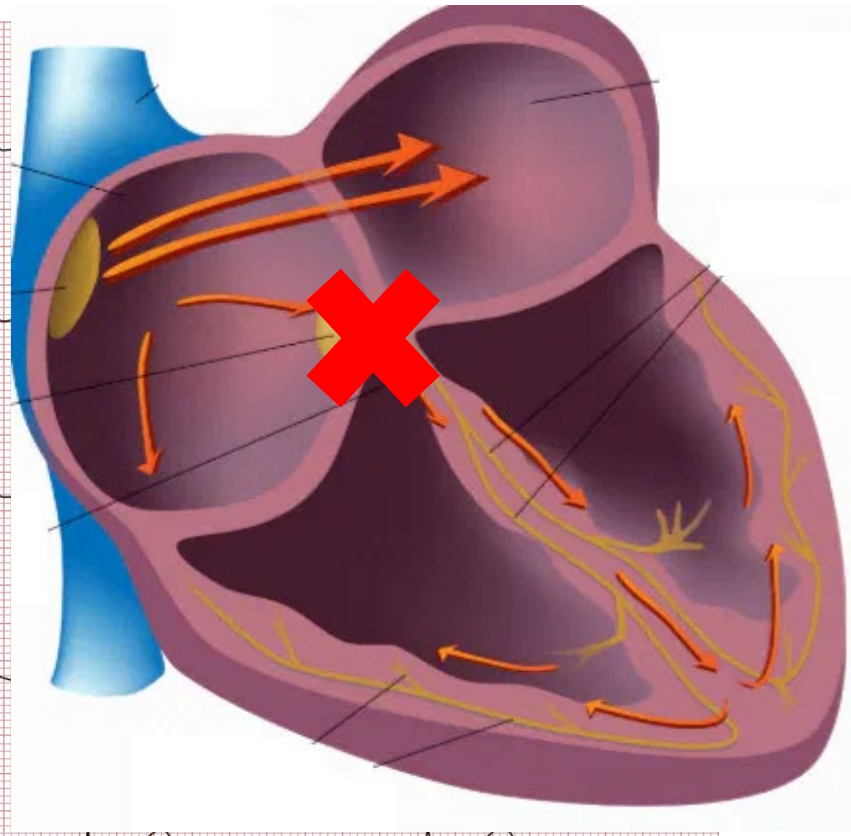




♂ 80 ans, fatigue

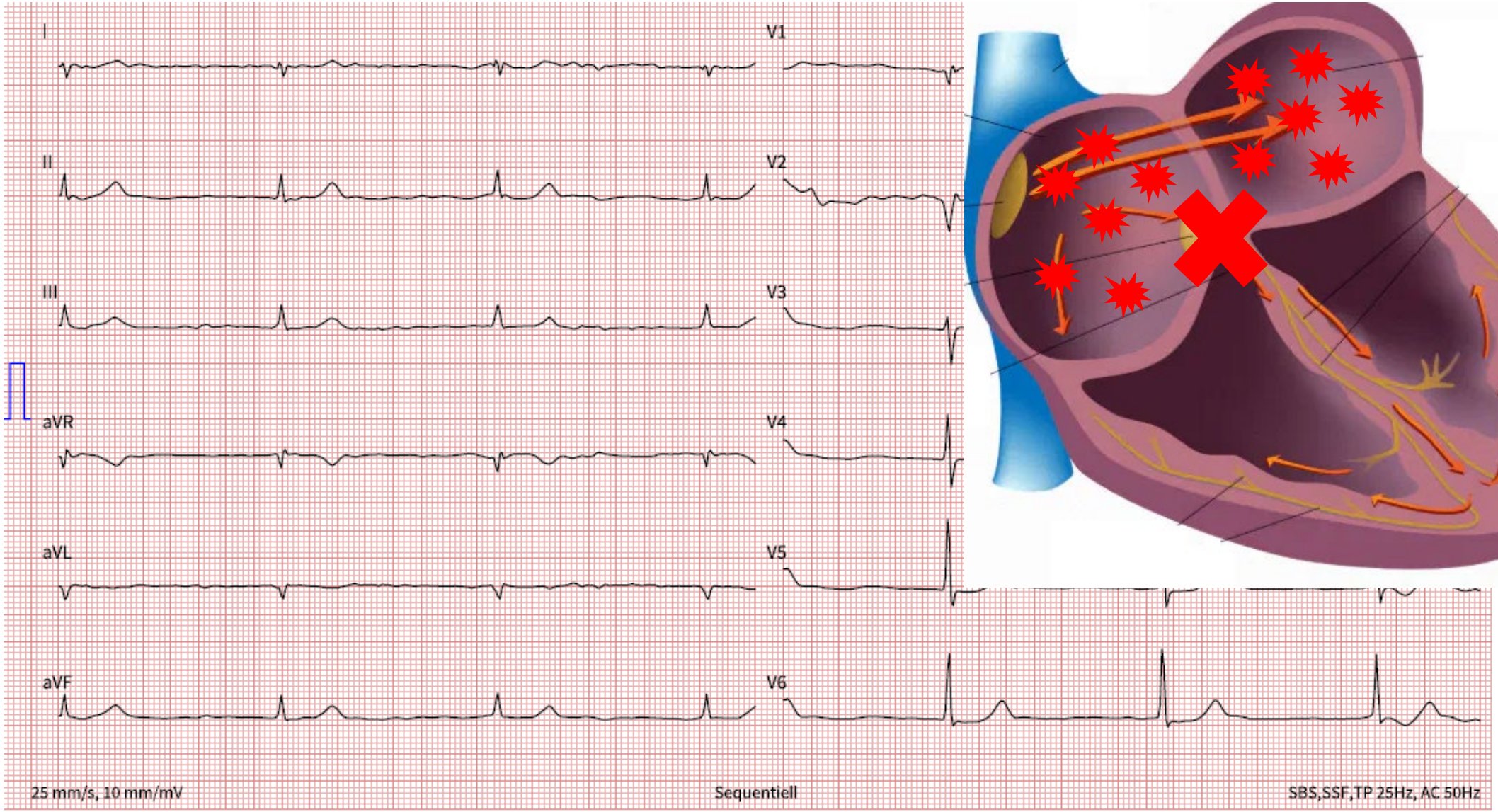
BAV complet avec échappement ventriculaire
→ Pacemaker

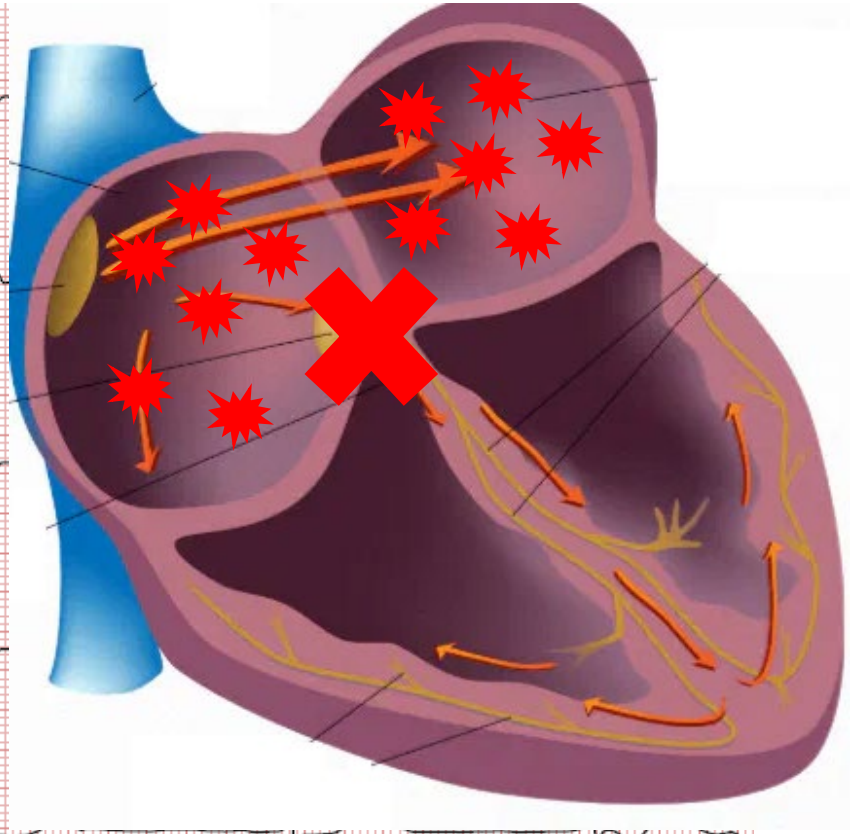




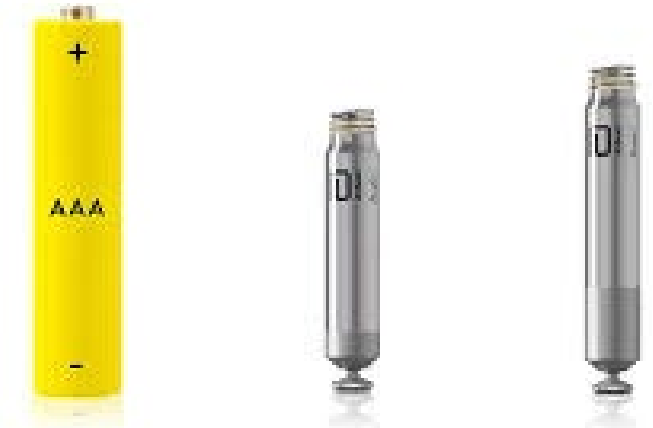
♂ 88 ans, asymptomatique

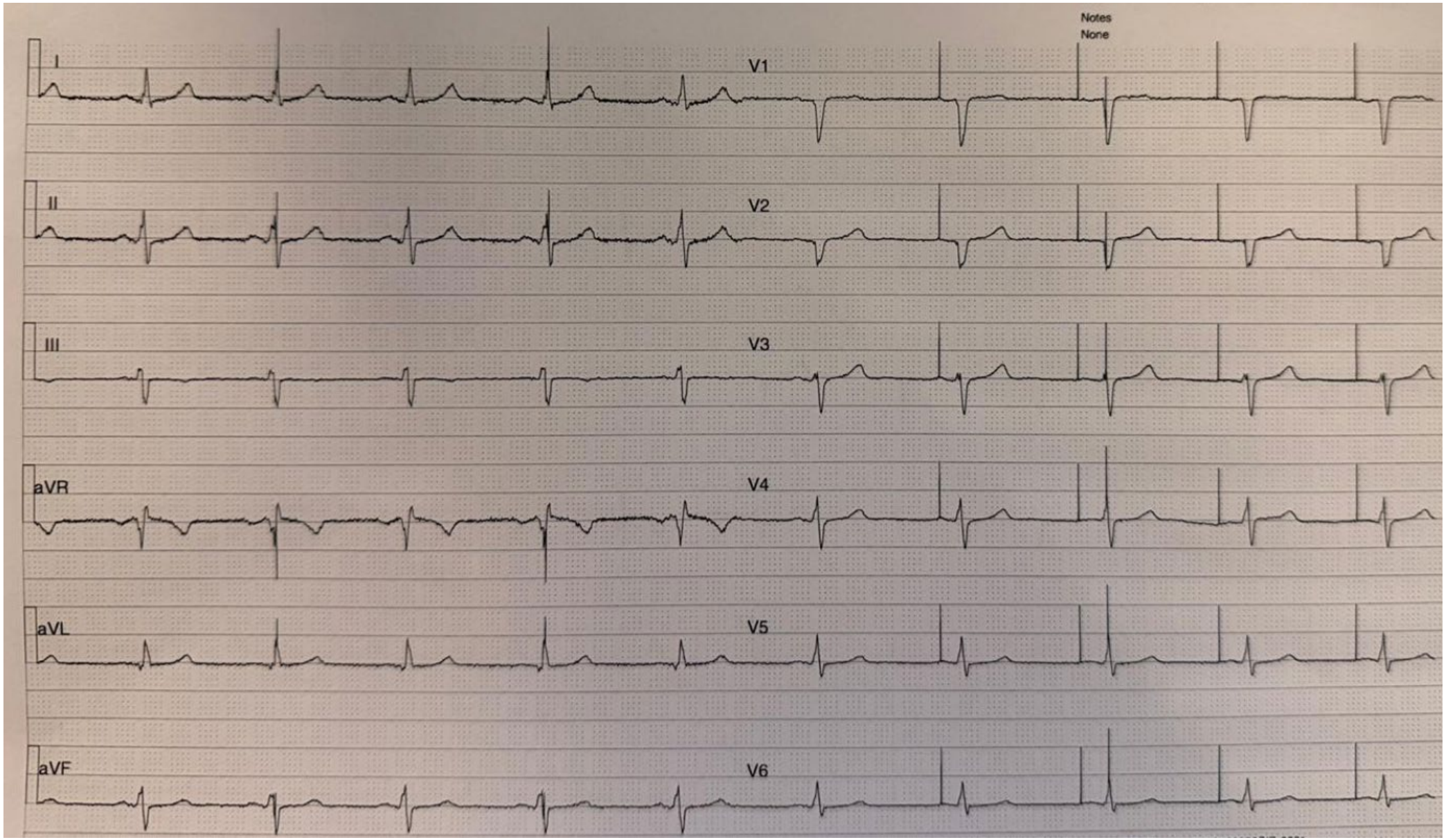
FA avec QRS réguliers =
<u>BAV complet</u> avec échappement (jonctionnel)
→ Pacemaker

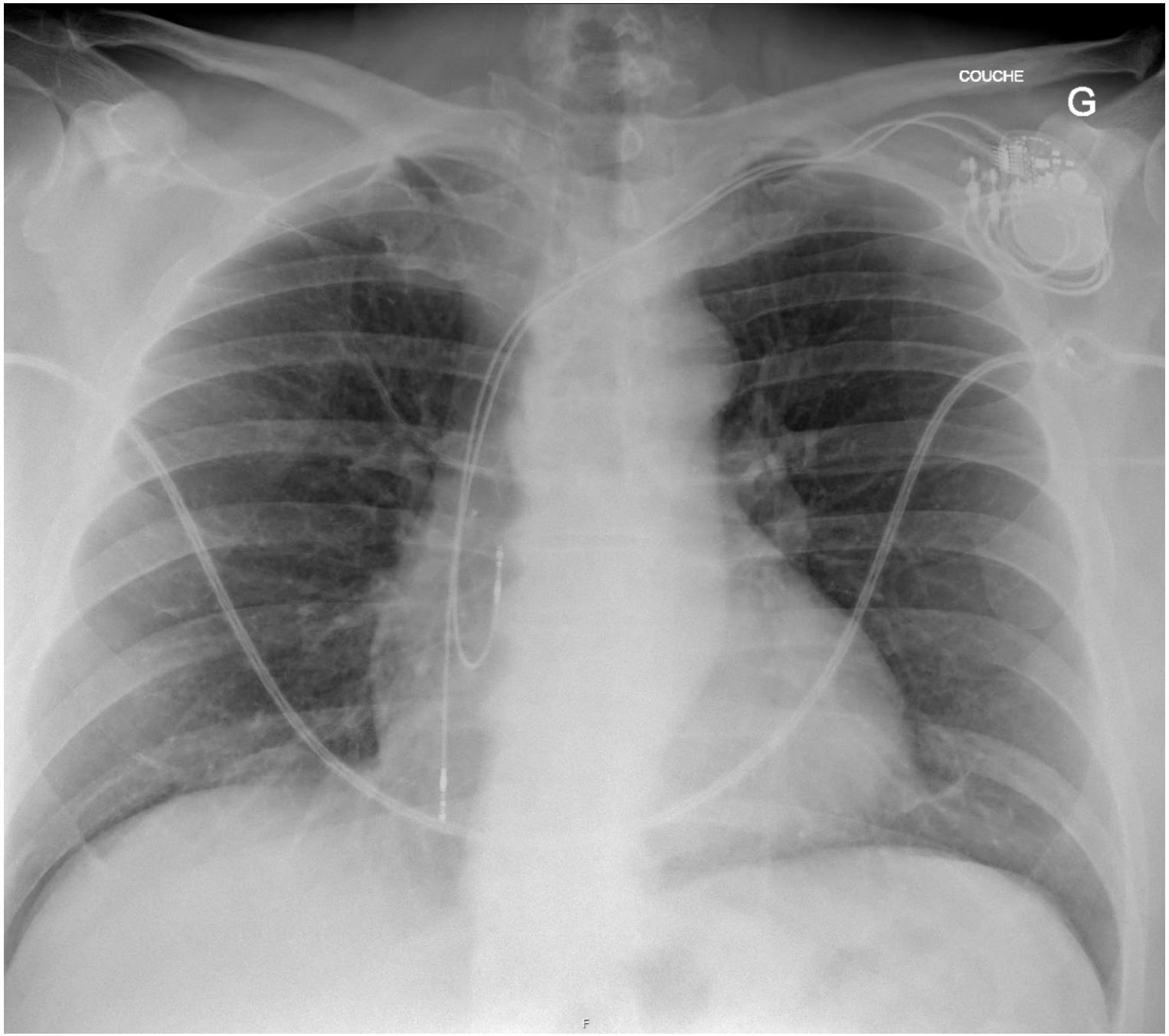




Pacemakers




Notes
None
I
V1
II
V2
III
V3
aVR
V4
aVL
V5
aVF
V6


COUCHE
G

Effets de l'aimant sur les PM / DCI

Pacemaker

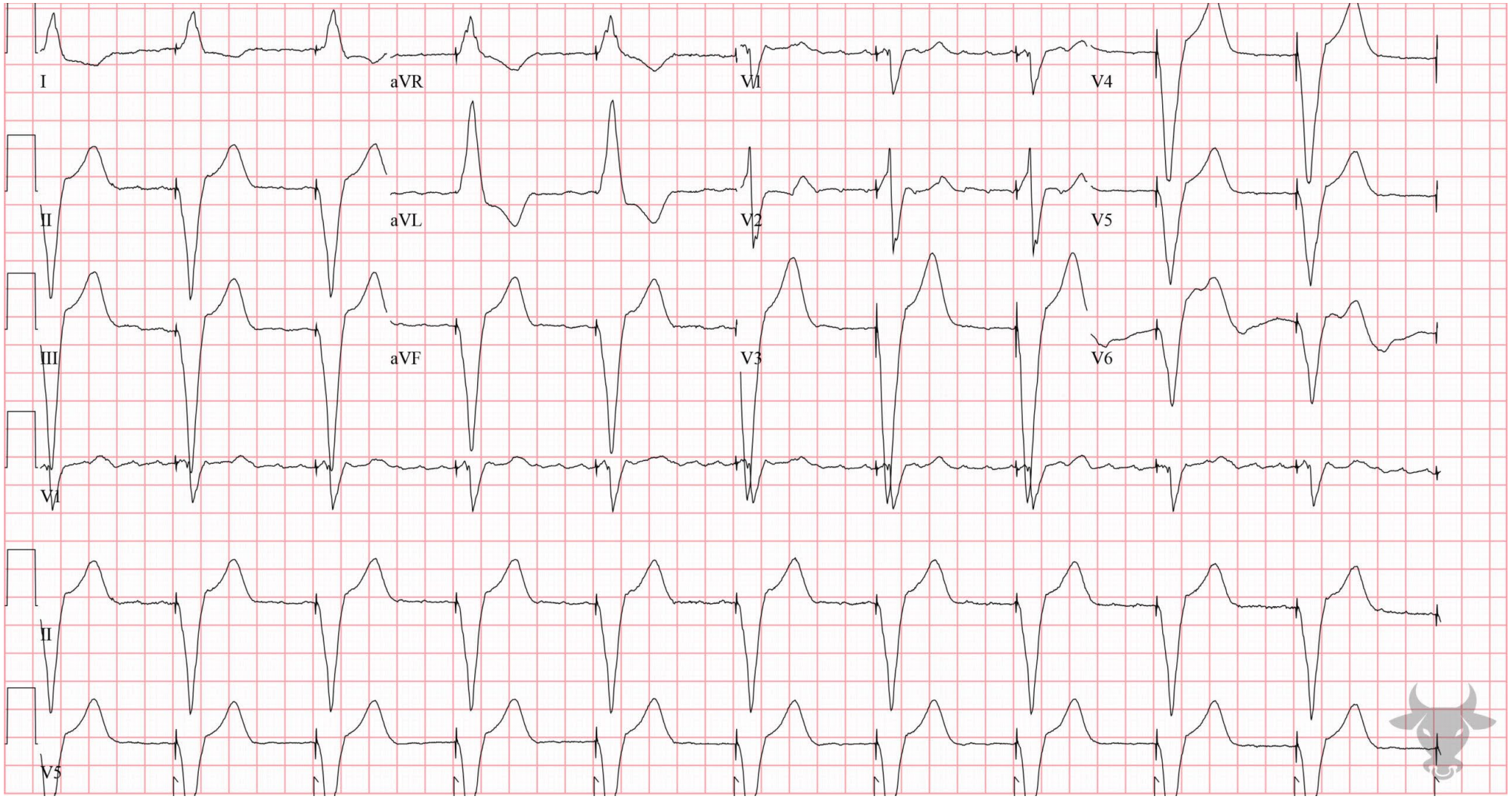
- L'aimant modifie le mode de stimulation en asynchrone (VOO ou DOO), à une FC pré-déterminée par le fabriquant (85-100 bpm), tant que l'aimant est en place sur le boîtier

Défibrillateur

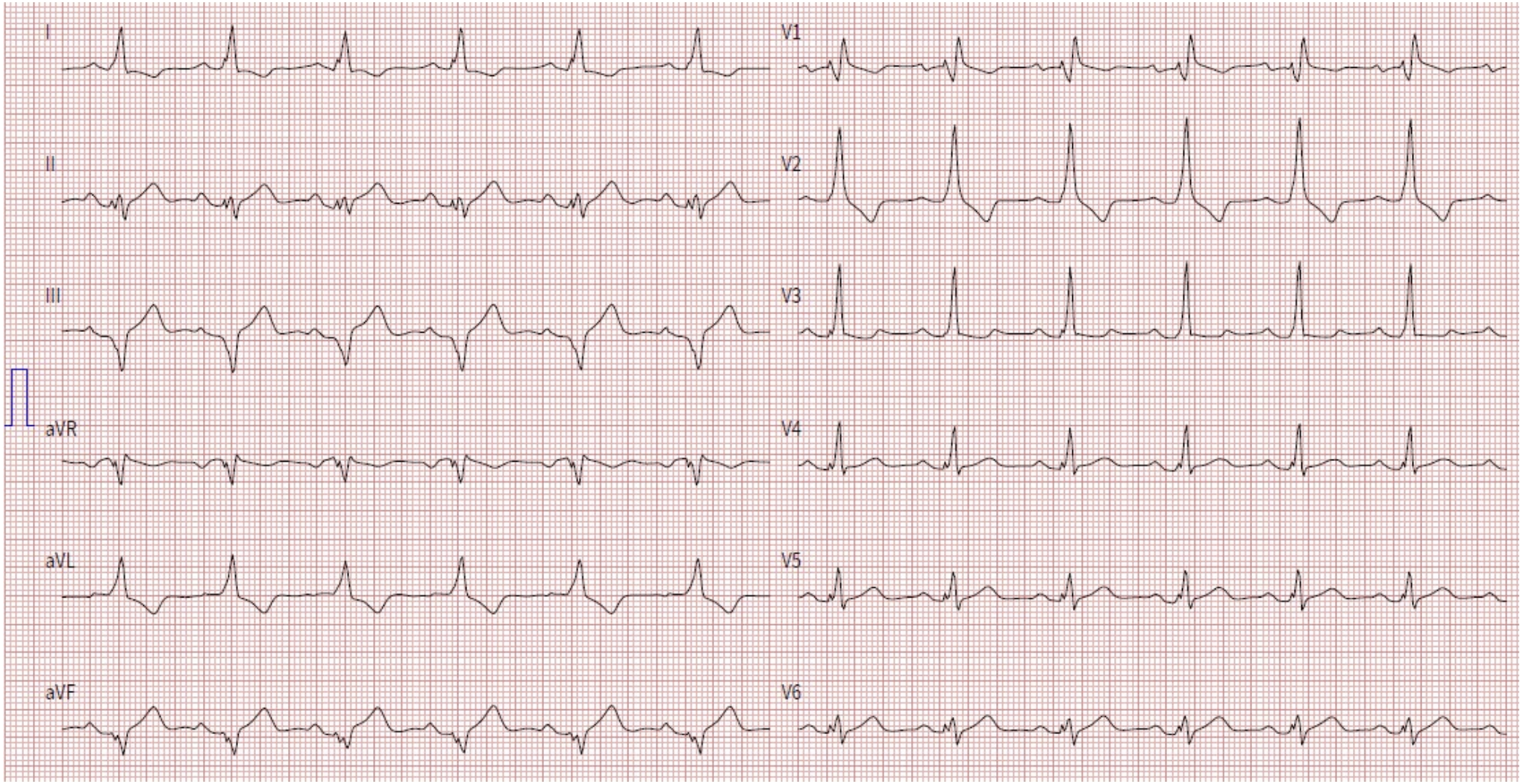
- Désactivation des thérapies de défibrillation mais pas de modification du pacing

thierry.offner@abbott.com

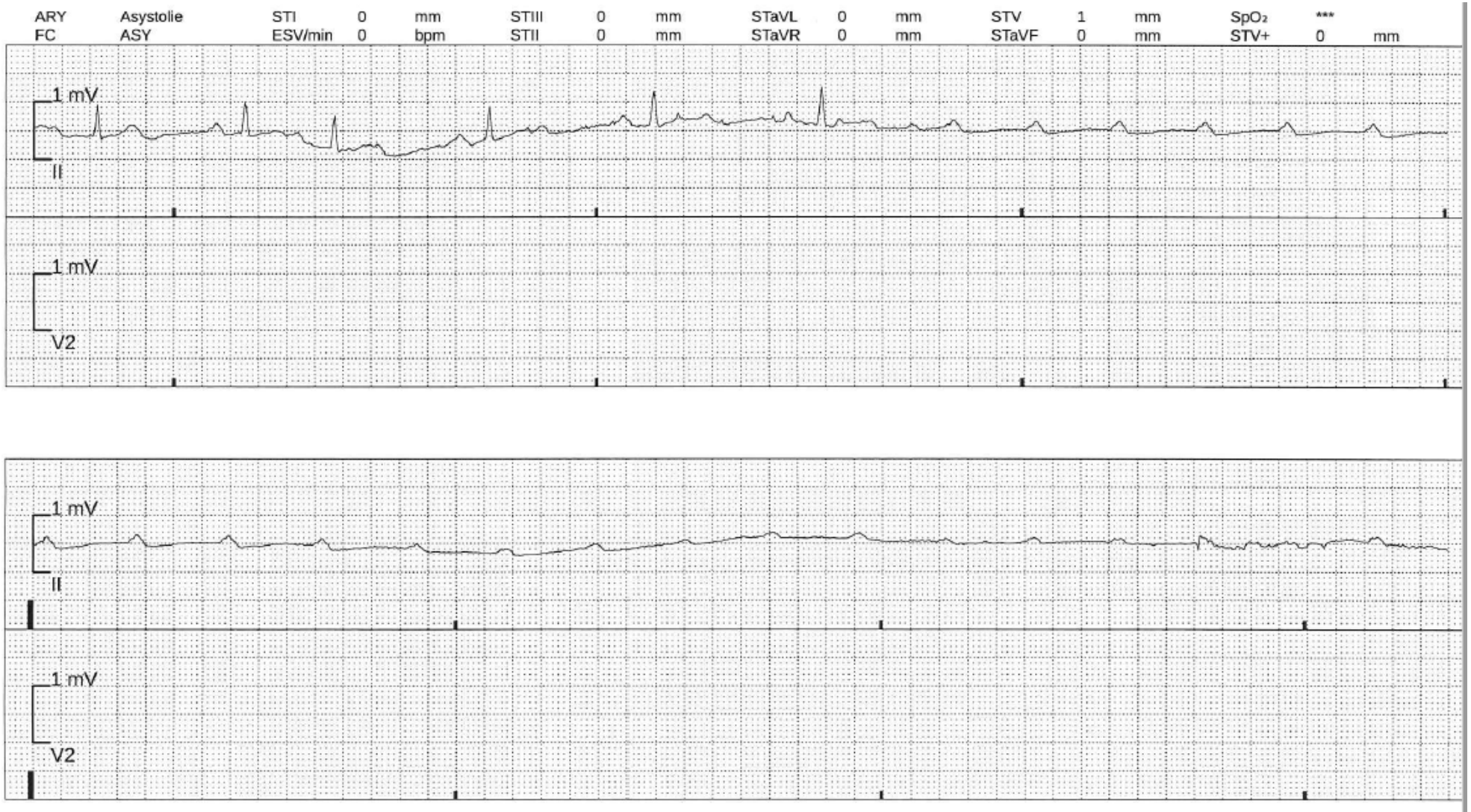
Pacing ventriculaire droit «classique»



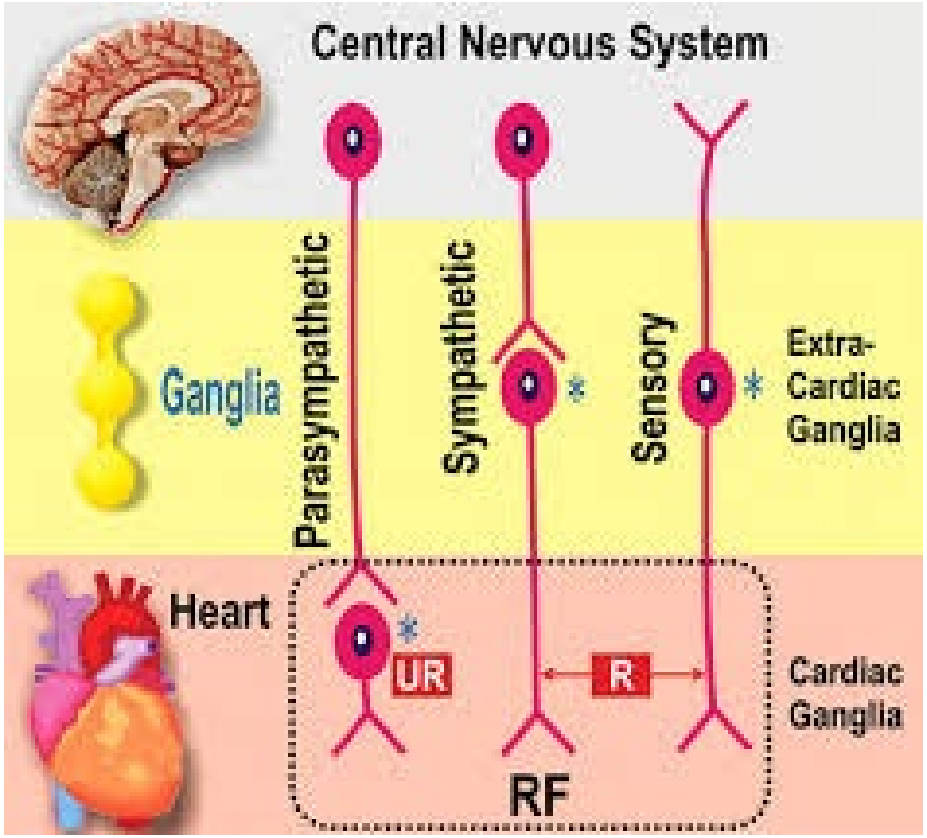
Stimulation «physiologique» : Capture de de branche gauche

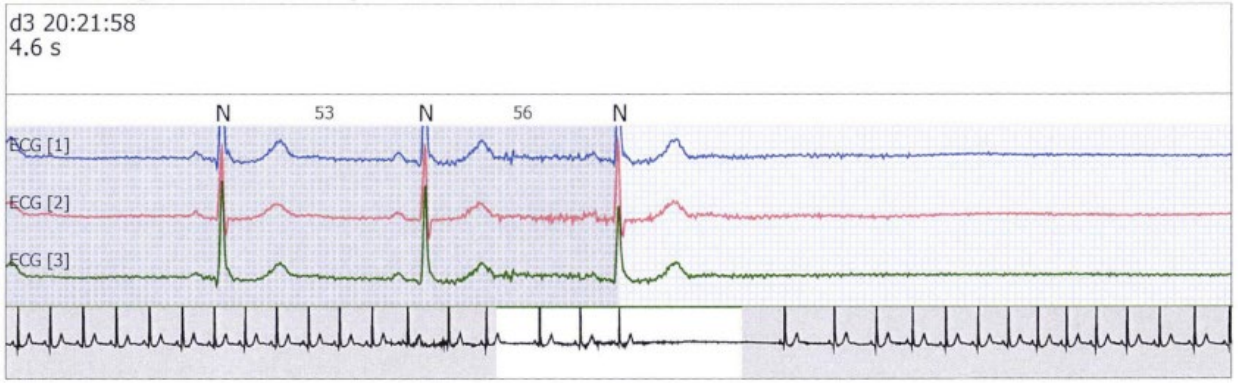


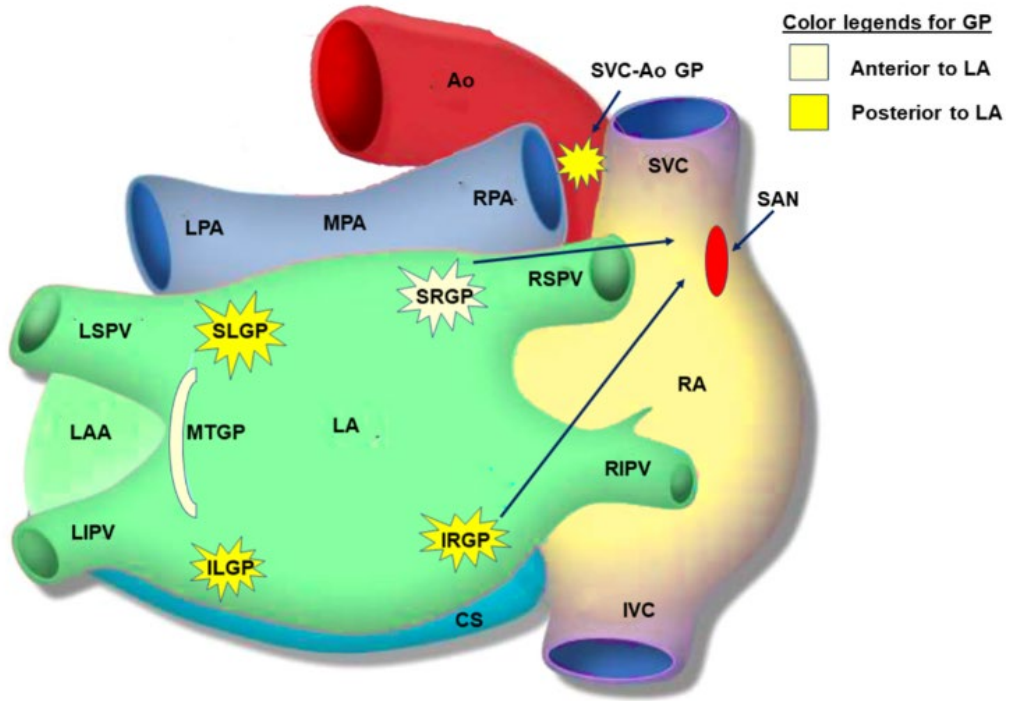
Télémétrie aux soins intensifs



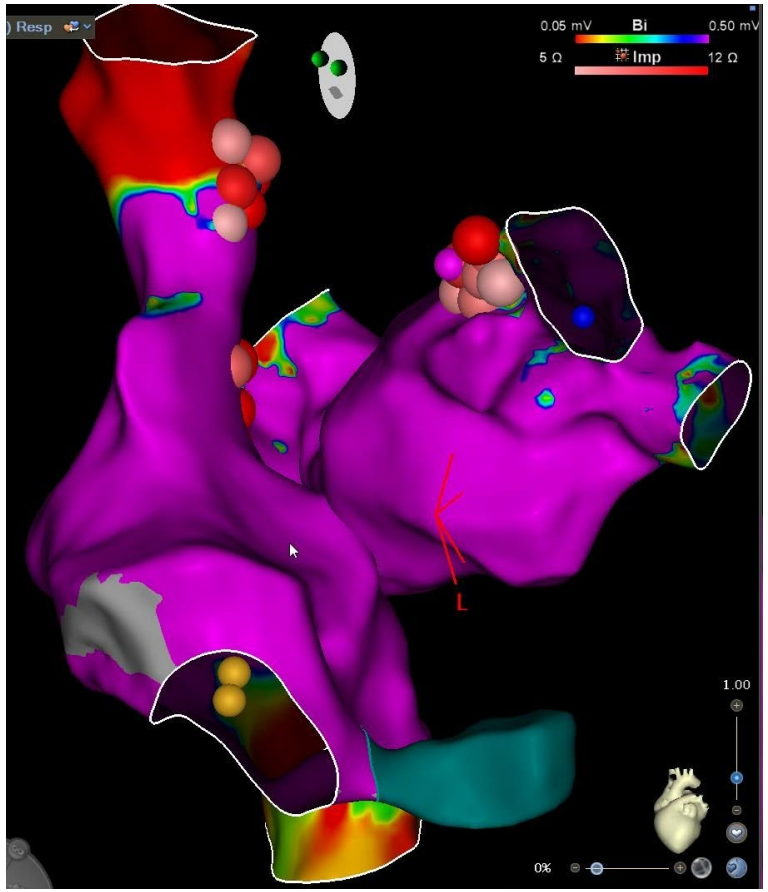
Syncope vaso-vagale → Cardio-neuroablation

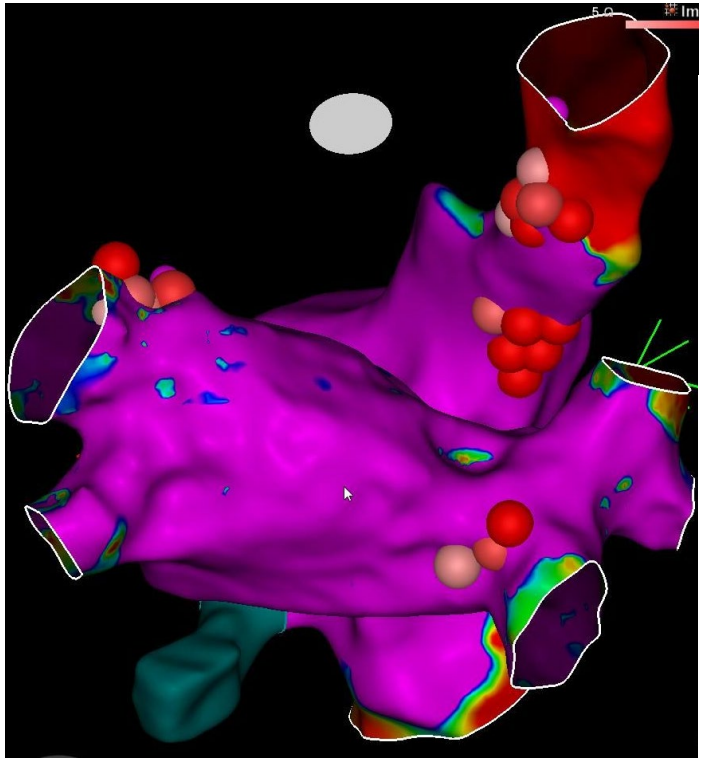


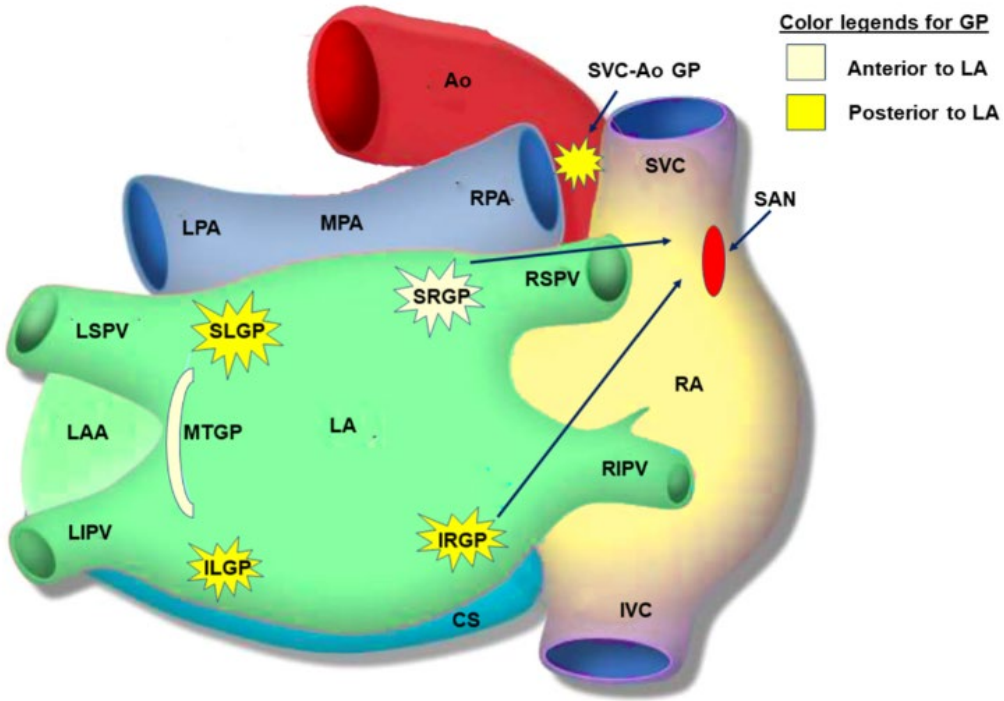




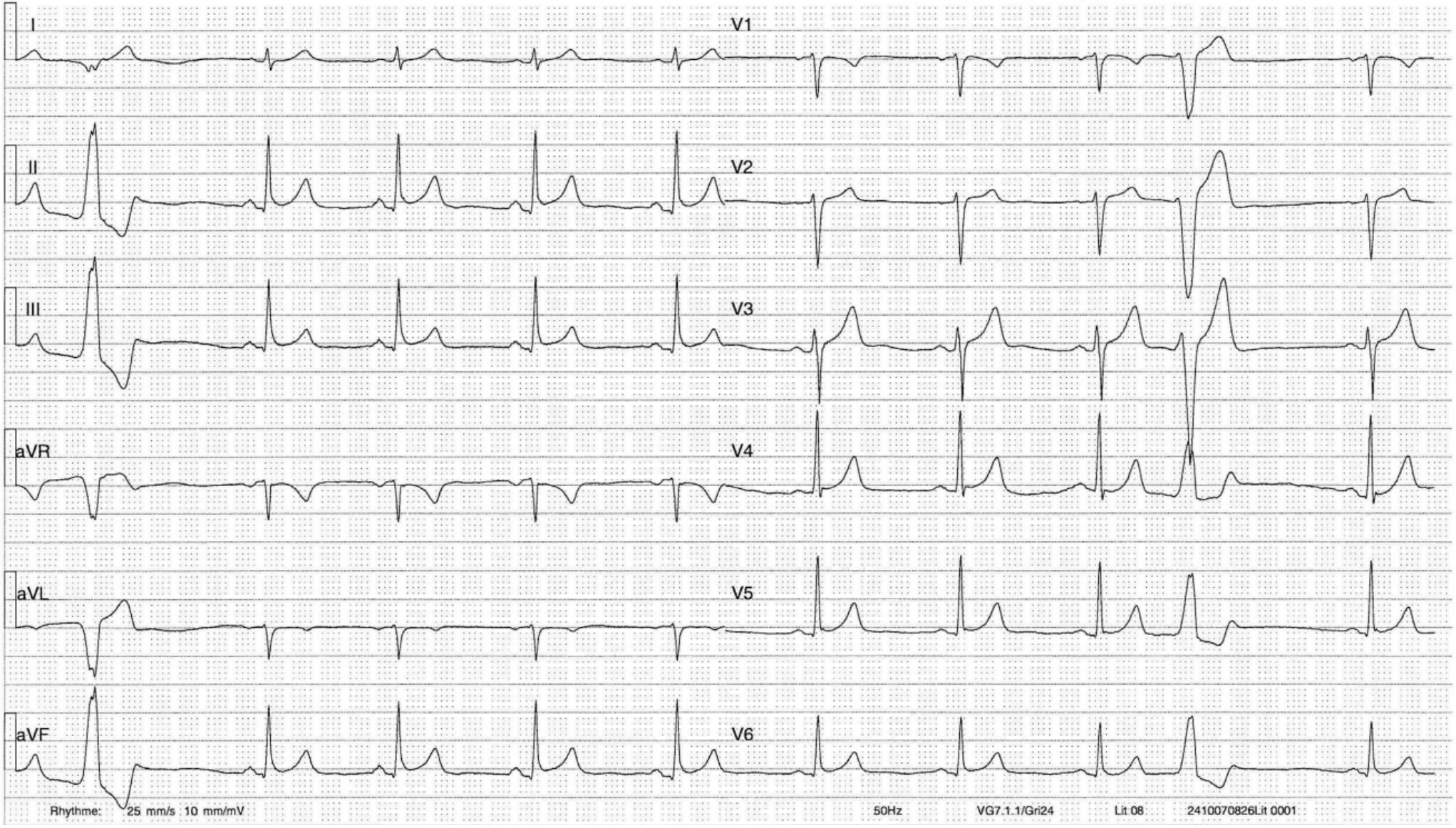
Pré-requis: syncope récurrente, imprévisible, réponse cardio-inhibitrice, < 40 ans ou 40-60 ans







H 34 ans, palpitations

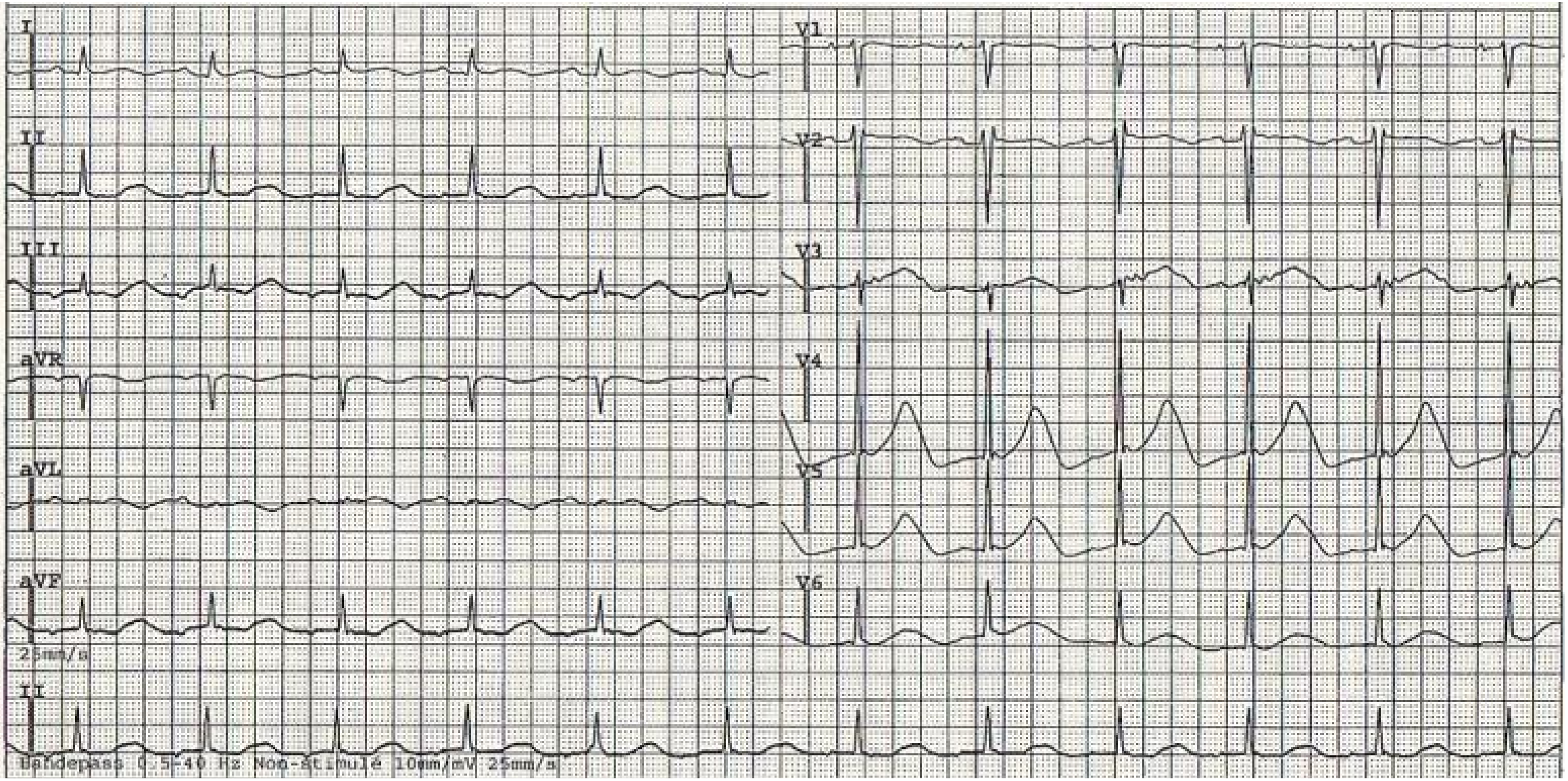


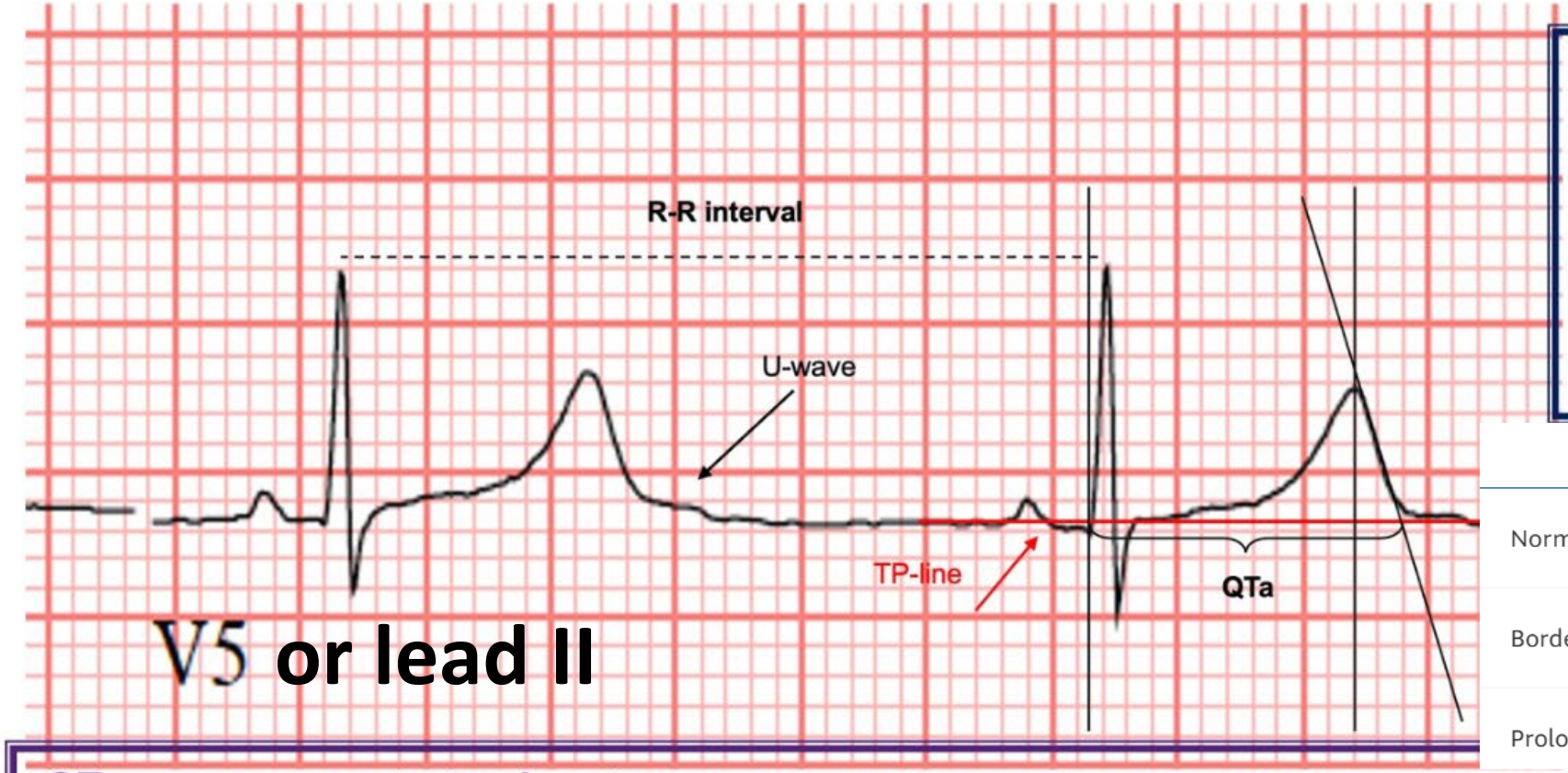
H 71 ans, asymptomatique…

H 71 ans, asymptomatique… mais FEVG nouvellement à 30%

30 ans, asymptomatique

Syndrome du QT long → Bilan cardiaque et génétique





Tips and tricks

1. Make sure rhythm is regular
2. Make sure QRS < 110 ms
3. Don't include U-waves in the QT measurement

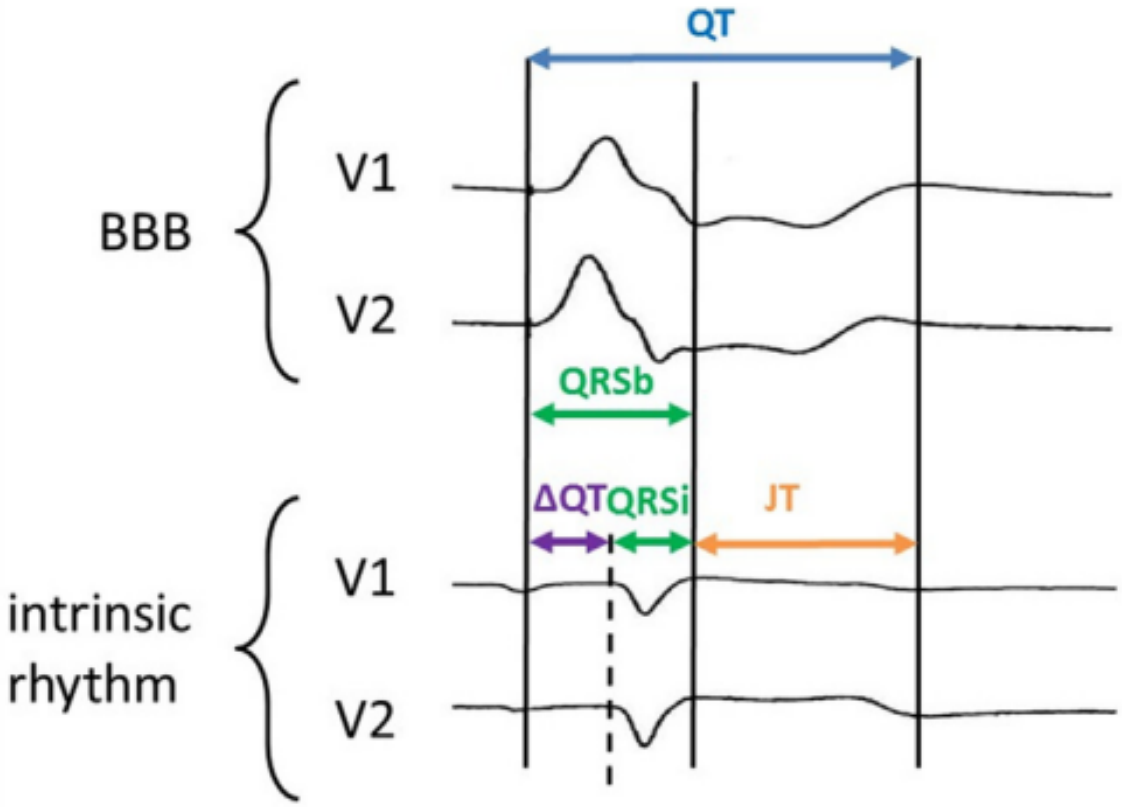
	Female (puberty to age 65)	Male (puberty to age 65)
Normal ms	< 460	< 450
Borderline ms	460-479	450-469
Prolonged ms	≥ 480	≥ 470

QTc measurement step-by-step

1. Determine the baseline (= TP line)
2. Draw perpendicular lines crossing the TP line at the Q-wave and the peak of the T-wave
3. Draw a tangent at the maximum slope of the T-wave crossing the TP-line and the peak of the T-wave → **QTa**
4. Enter QTa and the preceding **R-R** interval into **Bazett's** formula → **QTc**

Davies R et al. The 2023 CCS Clinical Practice Update on Management of the Patient With a Prolonged QT Interval. Canadian Journal of Cardiology, 39, 1285-1301.

Correction du QT en cas de QRS large



Soustraire la moitié du QRS du QT mesuré

$$\text{corrected QT in BBB} = \frac{\text{QRSb}}{2} + \text{JT}$$

SIMPLIFIED FORMULA FOR BBB: $QT_m = QT_{BBB} - 50\% * QRS_{BBB}$

Davies R et al. The 2023 CCS Clinical Practice Update on Management of the Patient With a Prolonged QT Interval. Canadian Journal of Cardiology, 39, 1285-1301.

https://crediblemeds.org/

Table 4. Intraclass differences in risk of QTc prolongation

Drug class	Higher risk	Lower risk	Minimal risk
SSRI antidepressants	Citalopram	Fluoxetine	Sertraline
	Escitalopram	Fluvoxamine	Paroxetine
Antipsychotic drugs	Amisulpride	Haloperidol	Aripiprazole
	Asenapine	Risperidone	Clozapine
	Iloperidone	Quetiapine	Droperidol
	Sertindole	Olanzapine	Lurasidone
	Thioridazine		
	Ziprasidone		
Macrolide antibiotics	Erythromycin	Clarithromycin	Azithromycin
Fluroquinolone antibiotics	Moxifloxacin	Levofloxacin Ciprofloxacin	
5-HT3 antagonist antiemetics	Ondansetron	Granisetron	
		Palonosetron	

5-HT3, 5-hydroxytryptamine 3 receptor antagonist; QTc, QT interval corrected for heart rate; SSRI, selective serotonin reuptake inhibitor.

Davies R et al. The 2023 CCS Clinical Practice Update on Management of the Patient With a Prolonged QT Interval. Canadian Journal of Cardiology, 39, 1285-1301.

Table 5. Drug interactions that increase the risk of acquired long QT syndrome and torsades de pointes

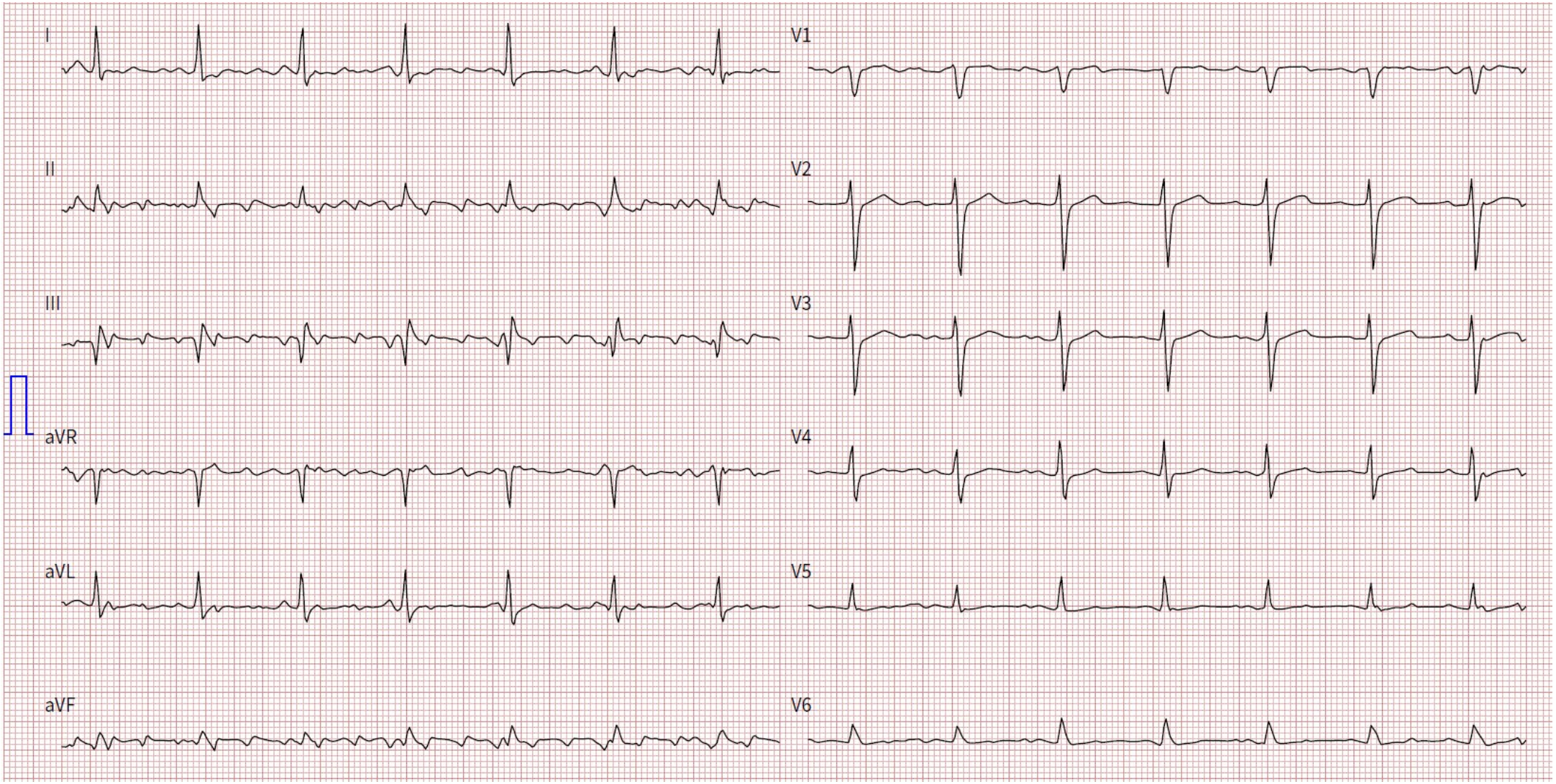
Mechanism	Examples
Pharmacodynamic	
Concomitant use of 2 drugs that independently prolong QTc	i) Methadone with ondansetron ii) Sotalol with moxifloxacin iii) Fluoxetine with clarithromycin
Concomitant use of drugs that prolong QTc by different mechanisms	i) Ziprasidone with a thiazide or loop diuretic (ziprasidone prolongs QTc; diuretics might promote K^+ or Mg^{2+} wasting) ii) Itraconazole with cisplatin (itraconazole prolongs QTc; cisplatin might promote Ca^{2+} or K^+ wasting)
Pharmacokinetic	
Concentration of a QTc-prolonging drug increased by another drug	i) Flecainide metabolism (CYP2D6) inhibited by bupropion, paroxetine or terbinafine ii) Pimozide metabolism (CYP3A4) inhibited by verapamil
Mixed	
More than 1 mechanism	i) Quetiapine with itraconazole (both drugs can prolong QTc; itraconazole inhibits quetiapine metabolism via CYP3A4) ii) Sotalol with a proton pump inhibitor (sotalol directly prolongs QTc; PPIs can lead to hypomagnesemia, especially in combination with loop diuretics)

CYP, cytochrome P450; PPI, proton pump inhibitor; QTc, QT interval corrected for heart rate.

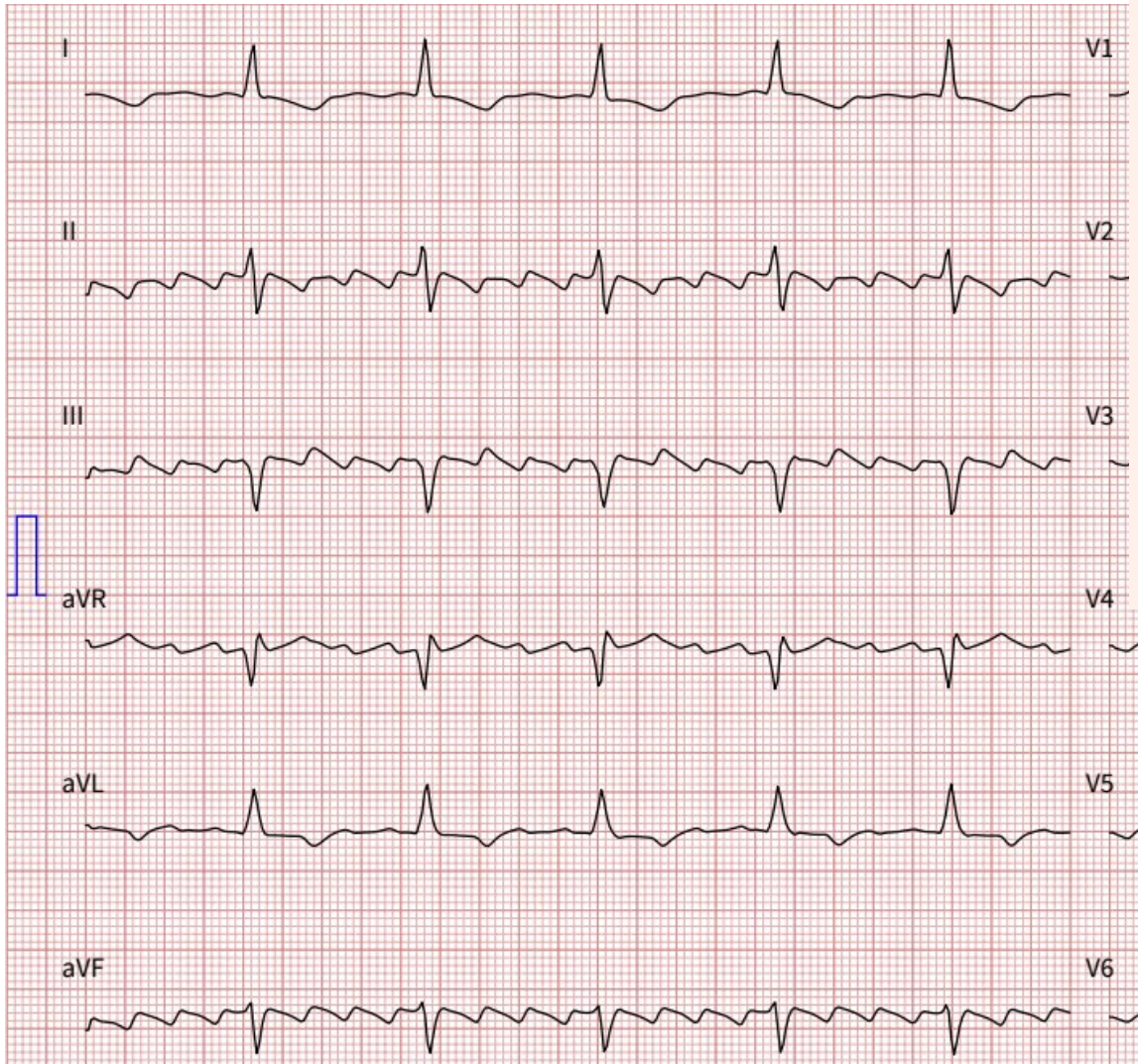
Davies R et al. The 2023 CCS Clinical Practice Update on Management of the Patient With a Prolonged QT Interval. Canadian Journal of Cardiology, 39, 1285-1301.

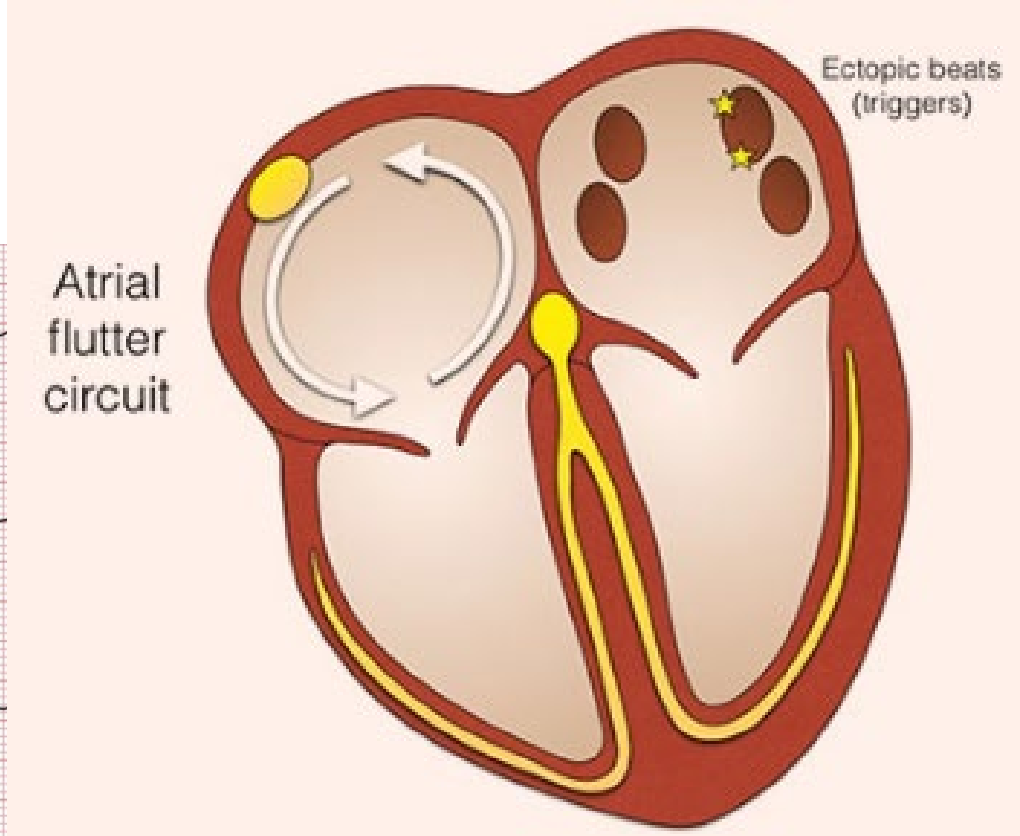
F 75 ans, palpitations

Artefacts sur tremblements (maladie de Parkinson)

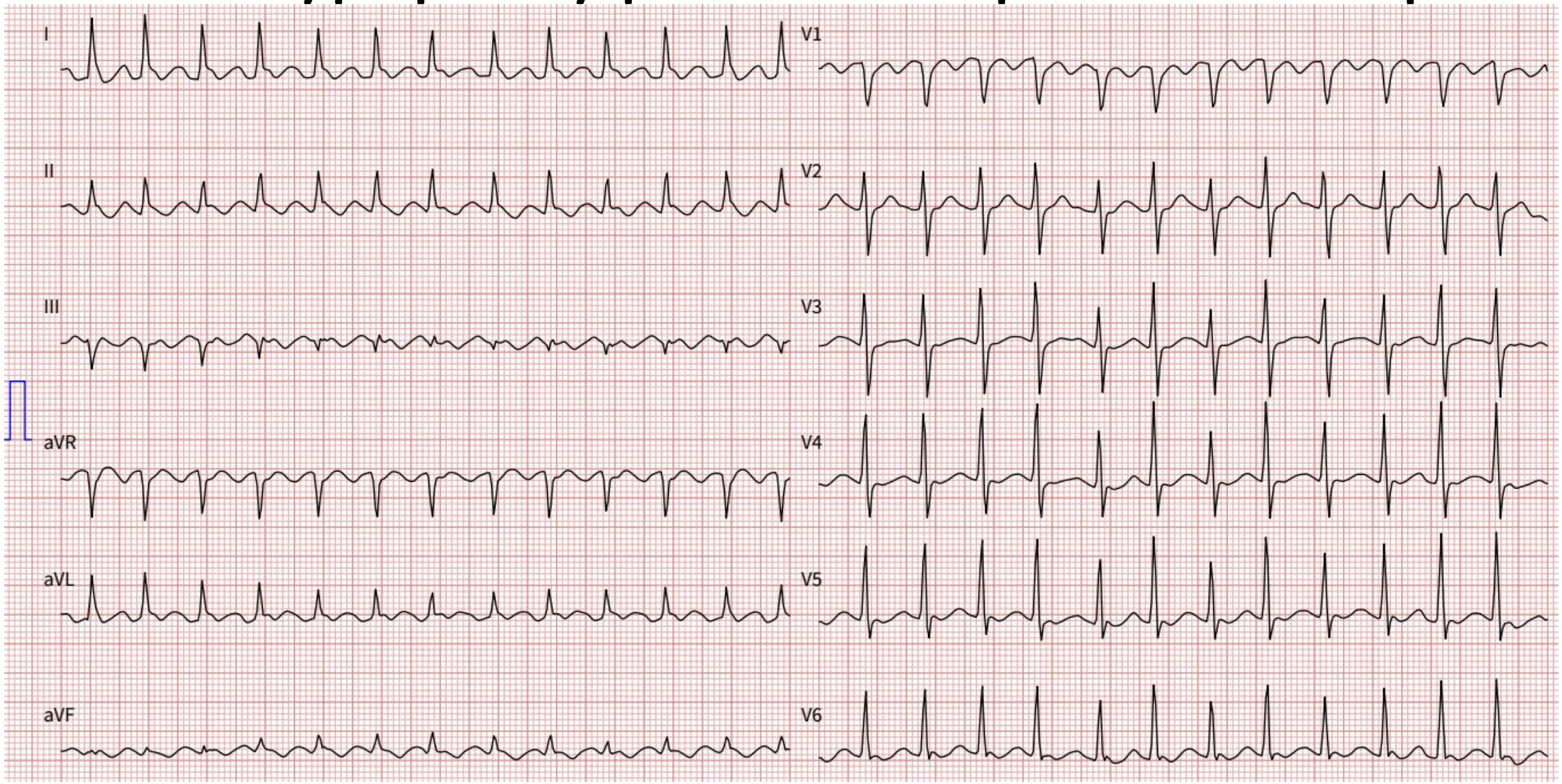


Flutter typique

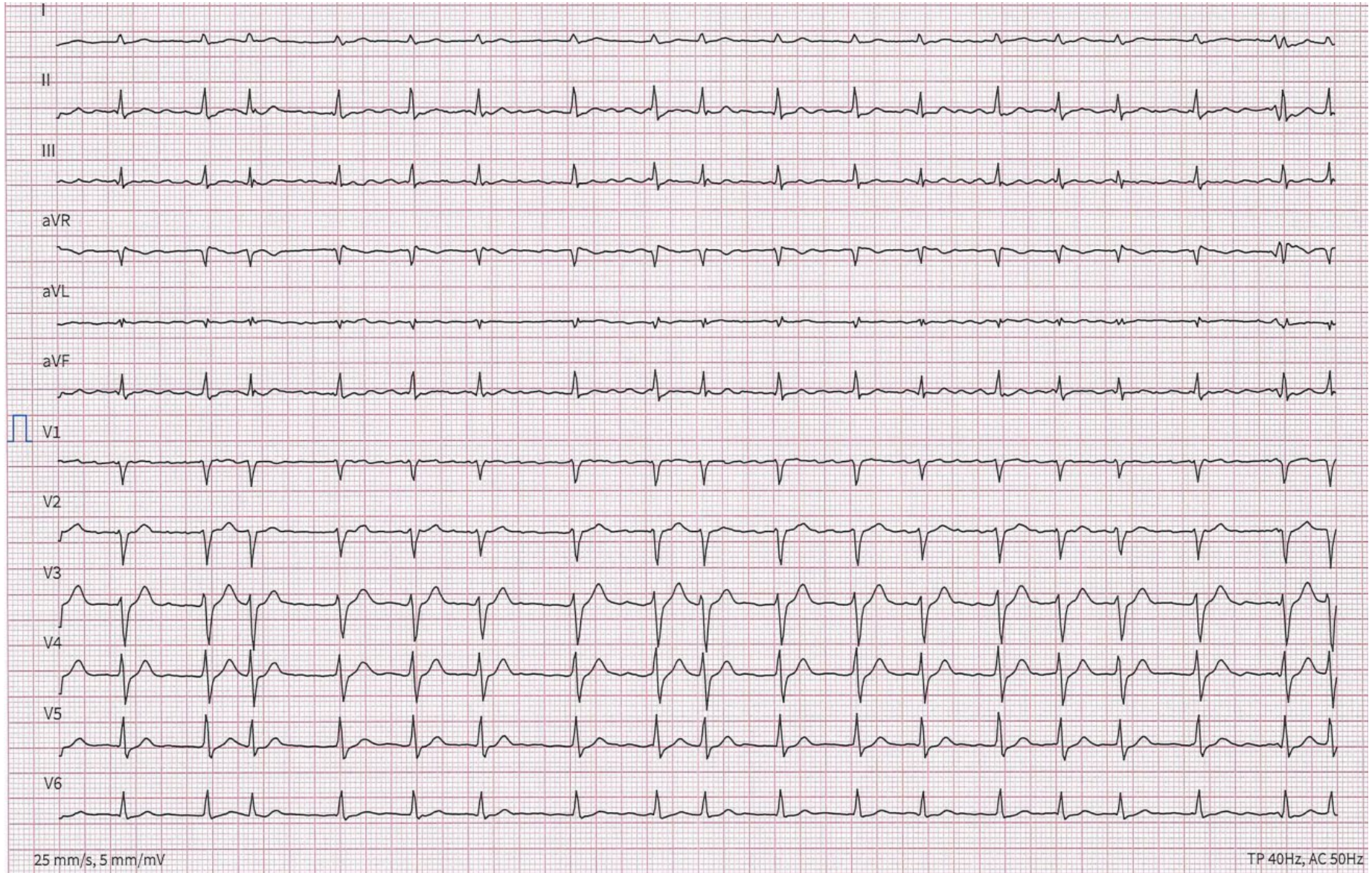




Flutter typique - y penser lorsque FC ~150bpm



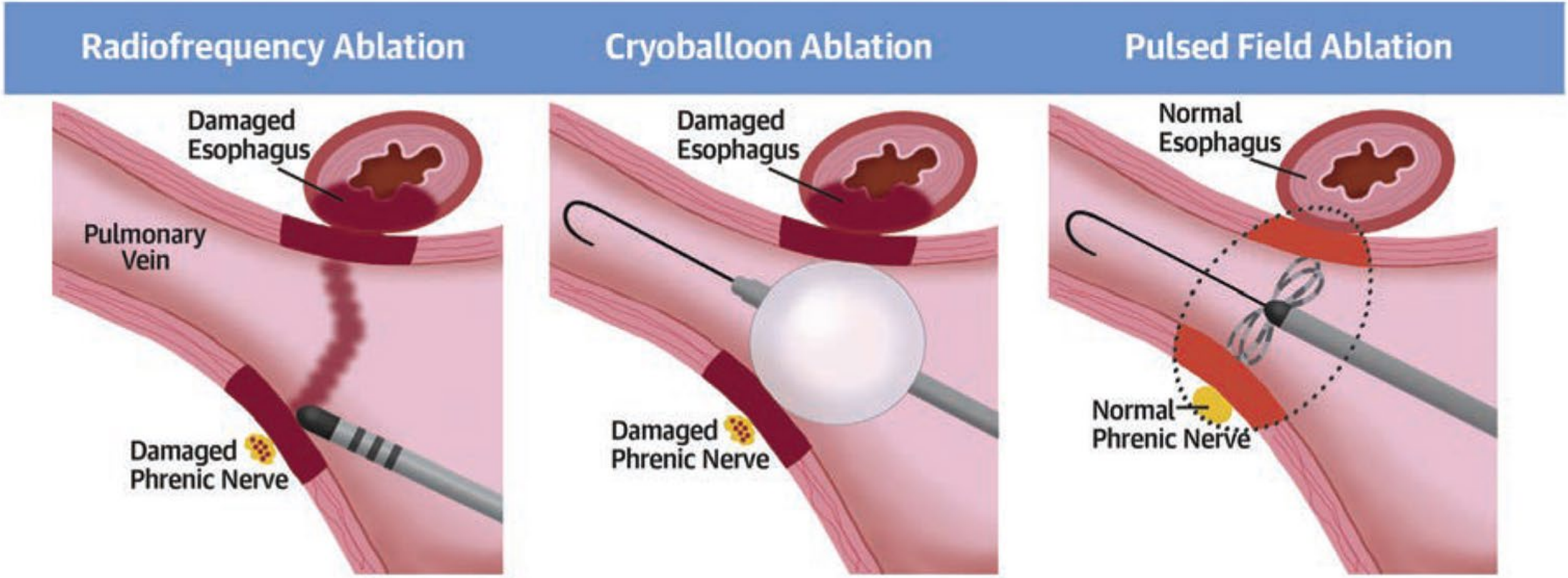
Fibrillation auriculaire



Que faire au cabinet ?

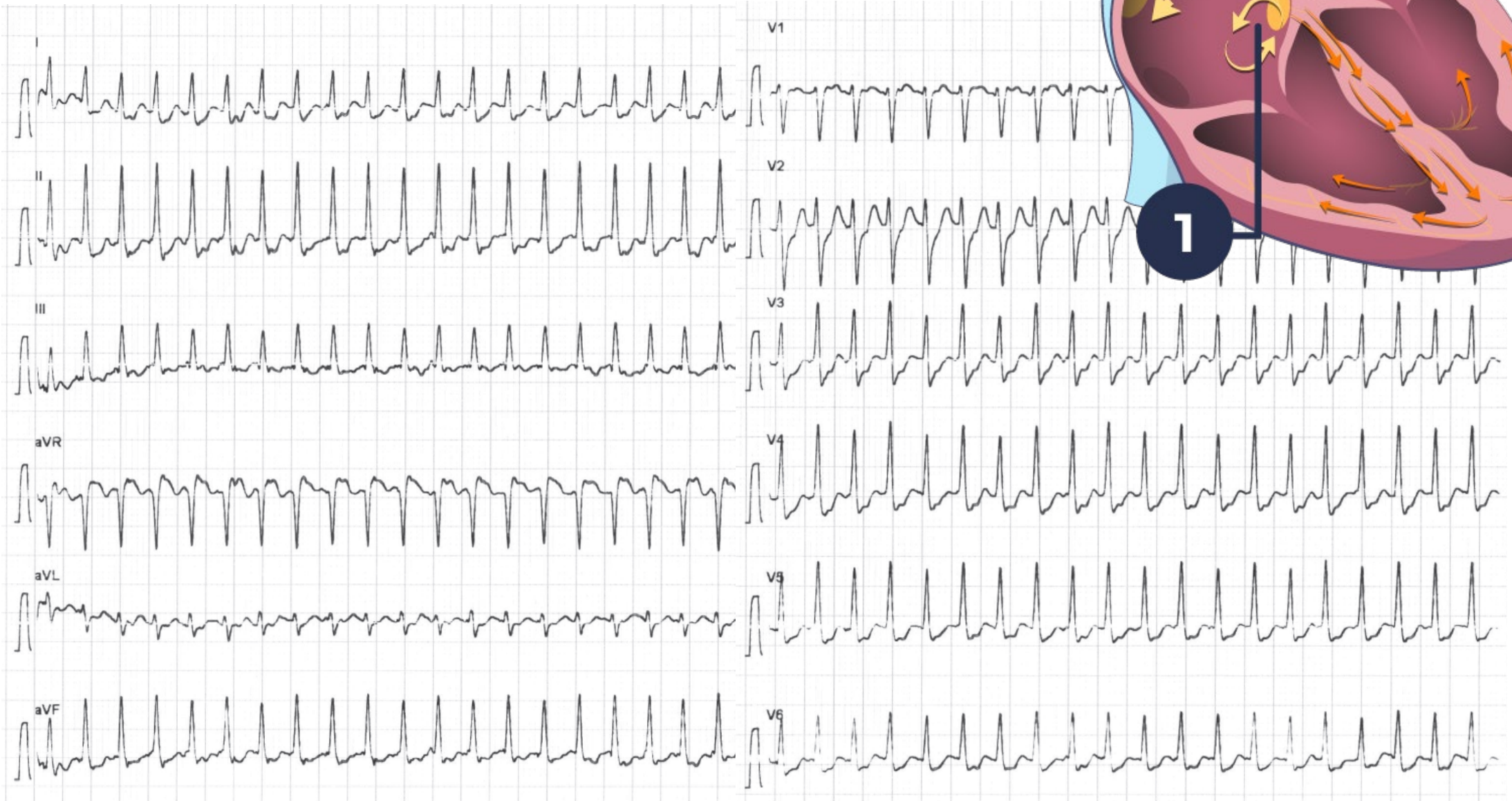
- Privilégier contrôle du rythme (Amiodarone) - sauf cas particuliers
- ACO à dose adaptée indépendamment du CHA2DS2-VA (anticipation pour éventuelle cardioversion/ablation) + Amiodarone en principe après 4 semaines d'ACO (CAVE QTc)
- Bilan cardio : ETT et décision rhythm vs rate-control, avec éventuel changement de l'anti-arythmique

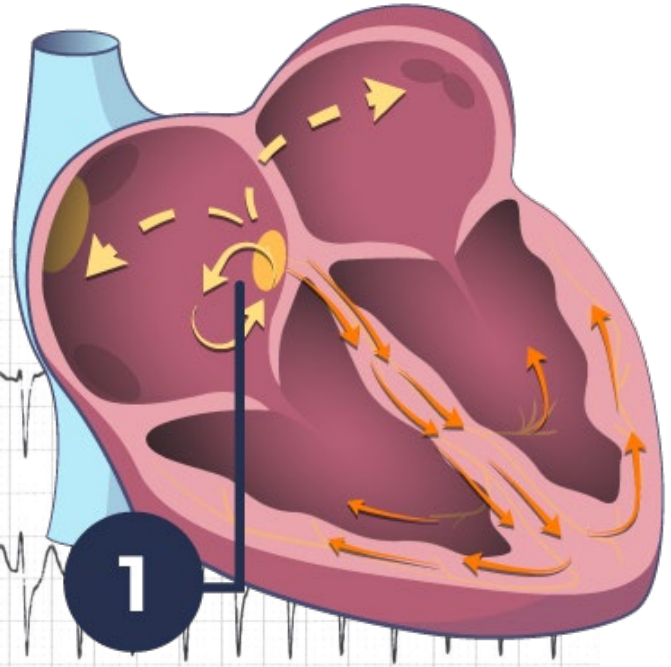
Technologies disponibles pour l'IVP à l'HFR



Reddy VY, et al. *J Am Coll Cardiol* 2019;74:315-26.

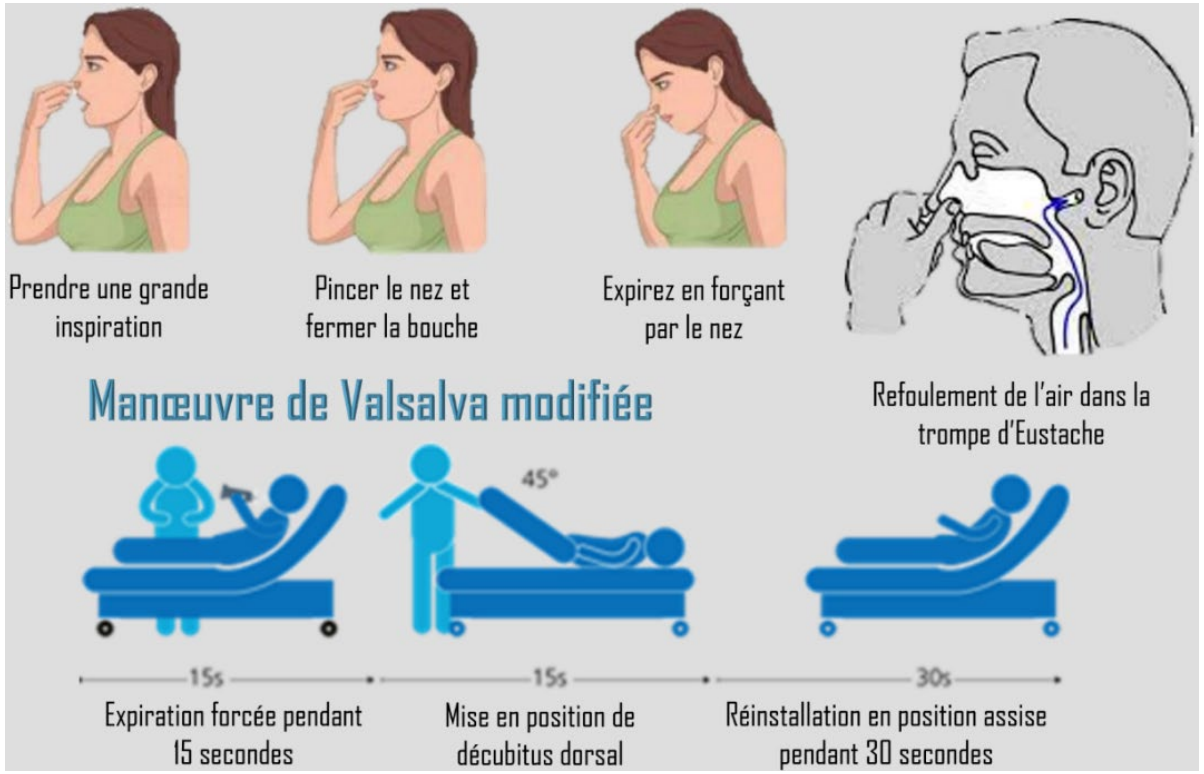
♀ 25 ans, oppression thoracique

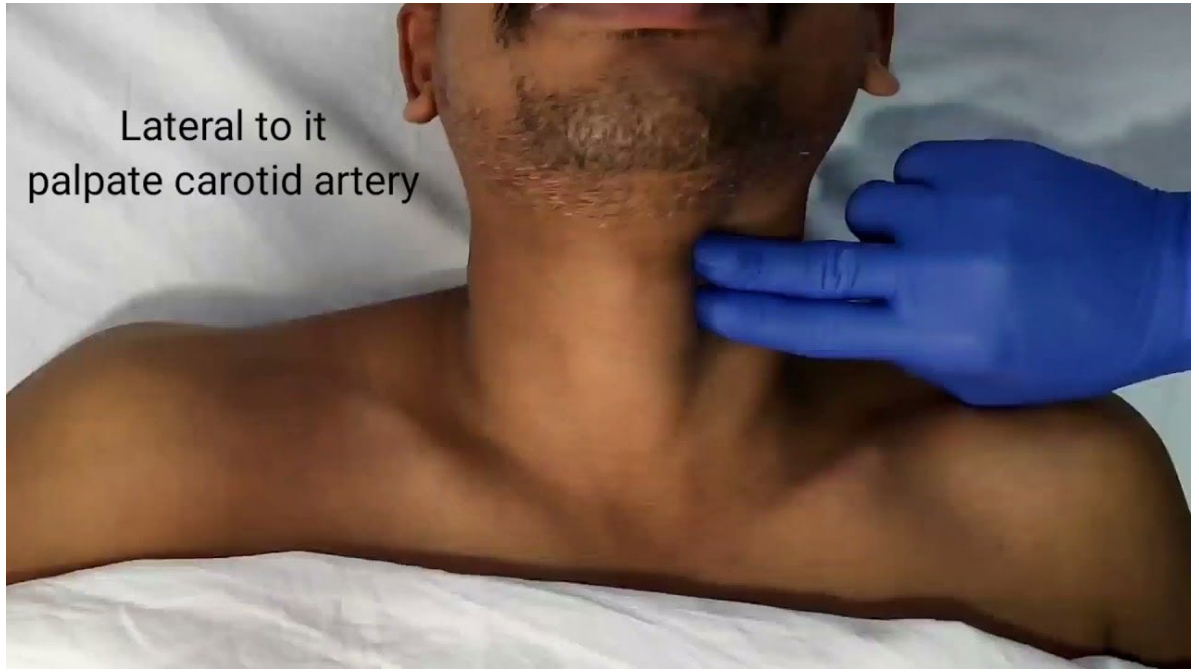




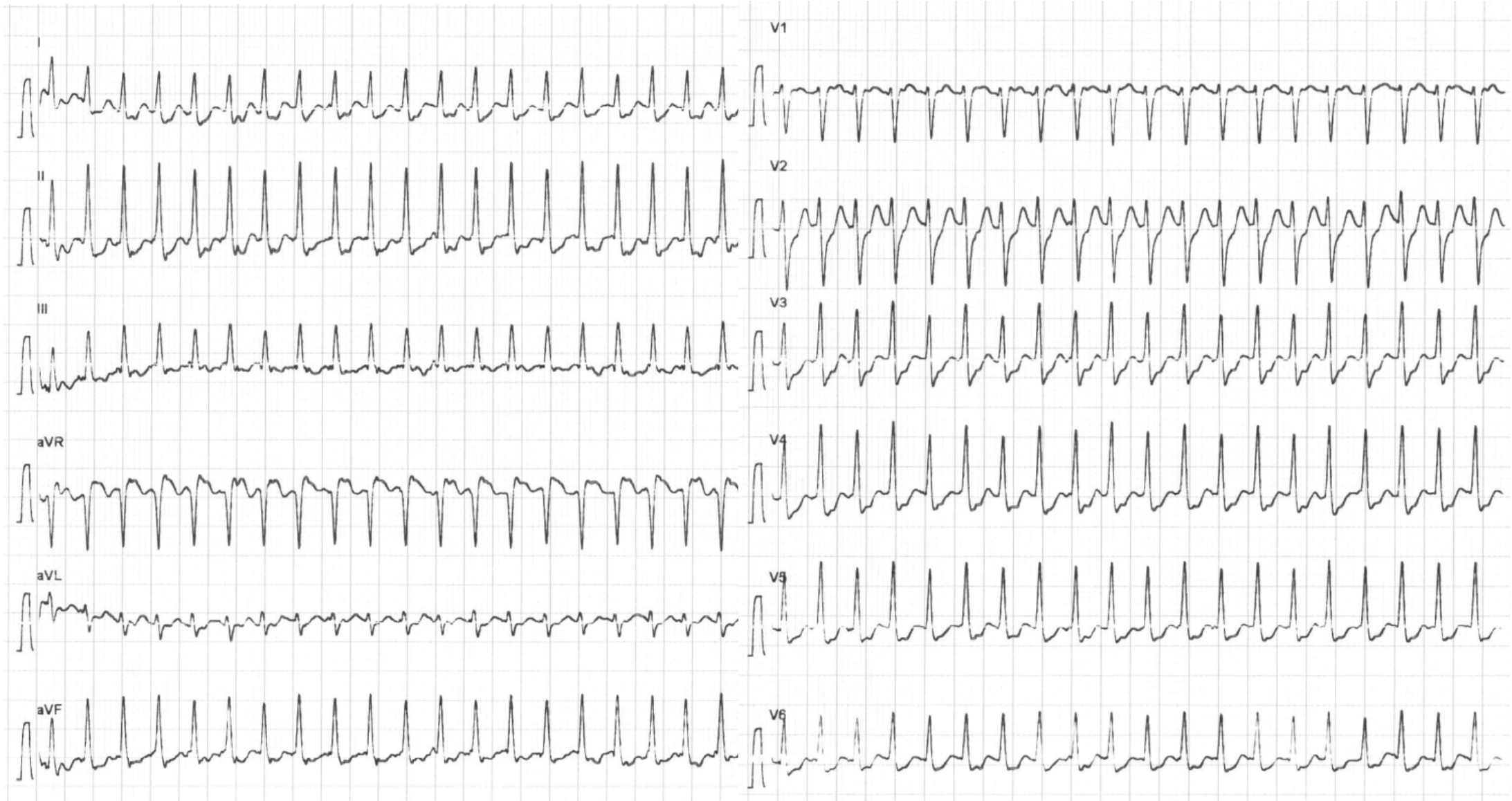
Que faire au cabinet ?

Manœuvres de Valsalva (modifié) / massage du sinus carotidien **G**





♀ 25 ans, oppression thoracique

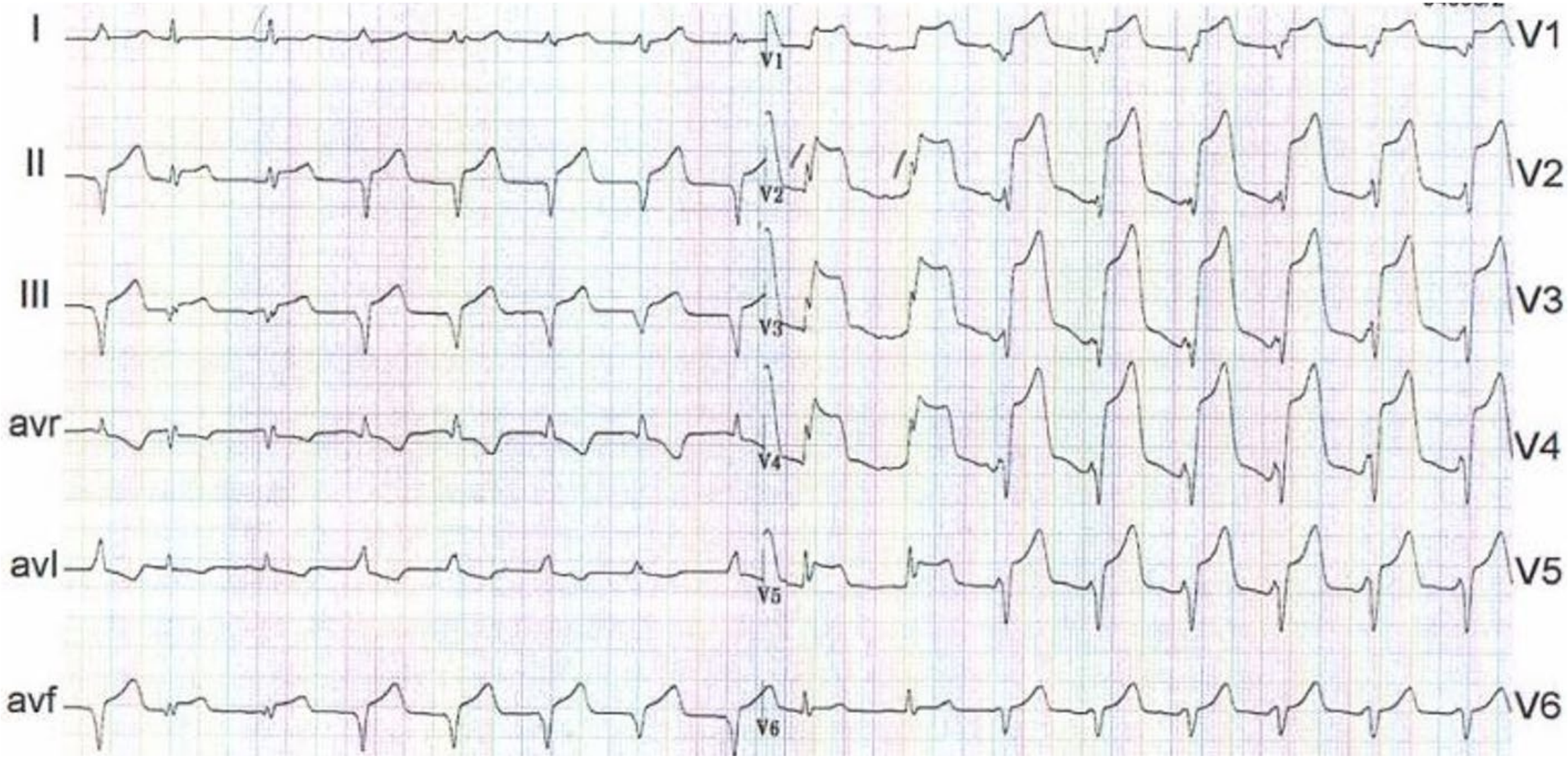


Sous-décalage ST durant TSV ≠ test d'effort

Using ST-segment deviations during supraventricular tachyarrhythmias, particularly during re-entrant atrioventricular tachycardias, per se, as reliable evidence of obstructive CAD, is not recommended.[80–84]	III	B

ESC Guidelines for the management of patients with supraventricular Tachycardia
(European Heart Journal; 2019)

STEMI

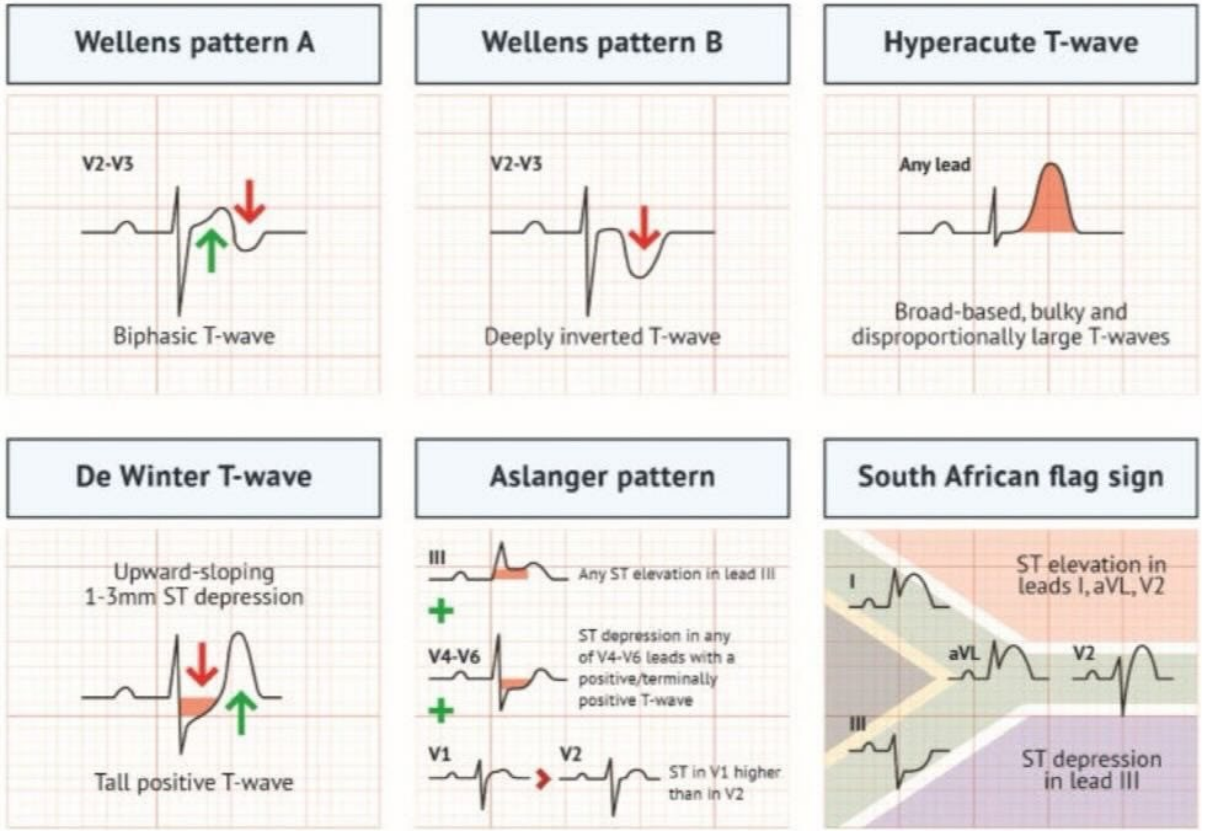


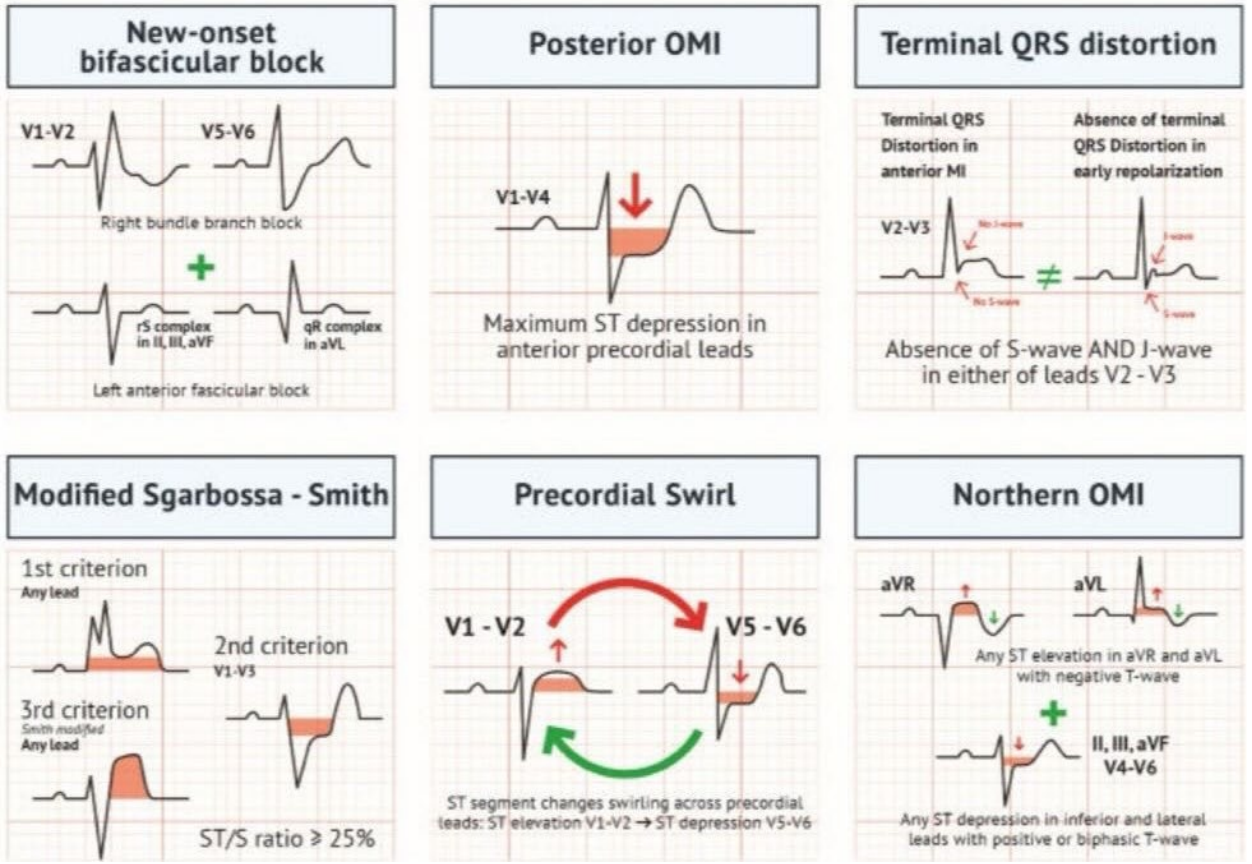
Que faire au cabinet ?

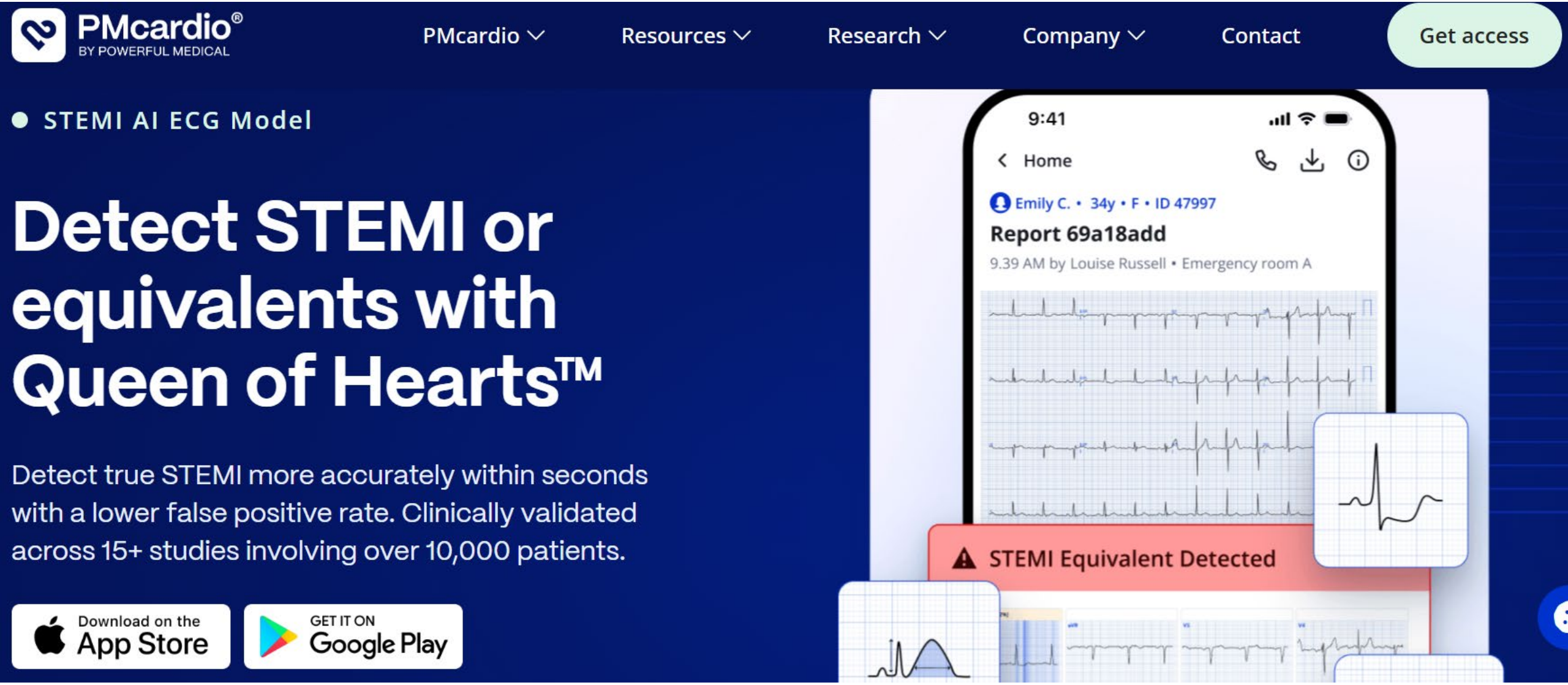
144
pour tous
les cas d'urgences sanitaires
en suisse

- VVP
- Aspirine cardio 500 mg po ou iv (si possible), Héparine 5000 UI iv
- 026 30**6 32 00** (HOTLINE STEMI = garde des soins intensifs)

Equivalents STEMI







Code pour rabais : **DRSMITH20**

Merci de votre attention !

Dr. med. Hari Vivekanantham

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