

Une (presque) mort subite sportive

F.Chagué, C.Guenancia, Y.Cottin
Service de cardiologie
CHU Dijon



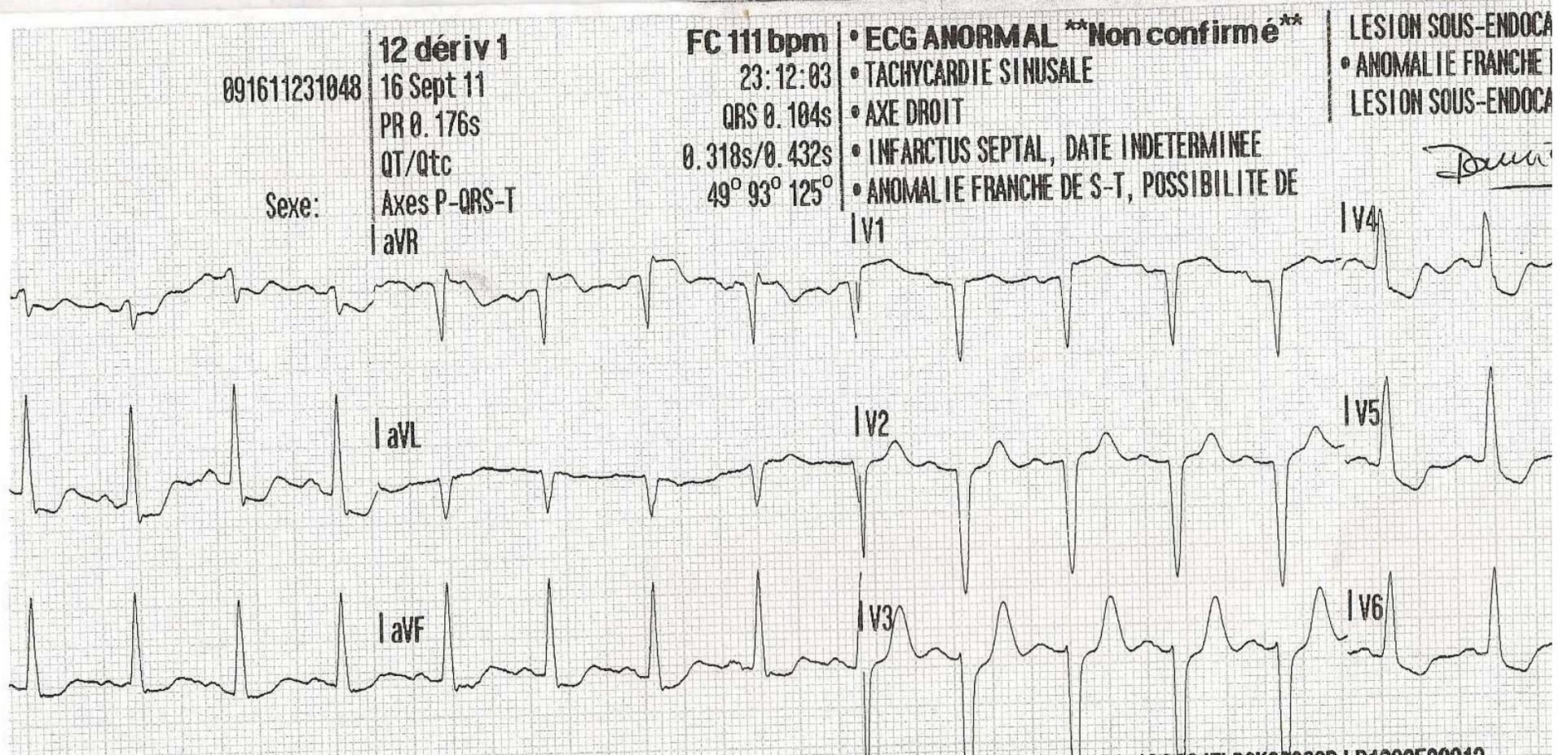
Histoire clinique

- Damien P., 21 ans
 - Sportif régulier (3-4 heures/semaine)
 - Absence d'histoire familiale suspecte
 - Absence d'antécédent personnel
 - Absence de symptômes
-
- Arrêt cardiaque lors d'un entraînement de foot

Réanimé...

- ... par ses coéquipiers
- Précocement défibrillé par les pompiers
- Amené au CHU par le SAMU

ECG post-défibrillation



Que faites-vous?

Ostium coronaire droit

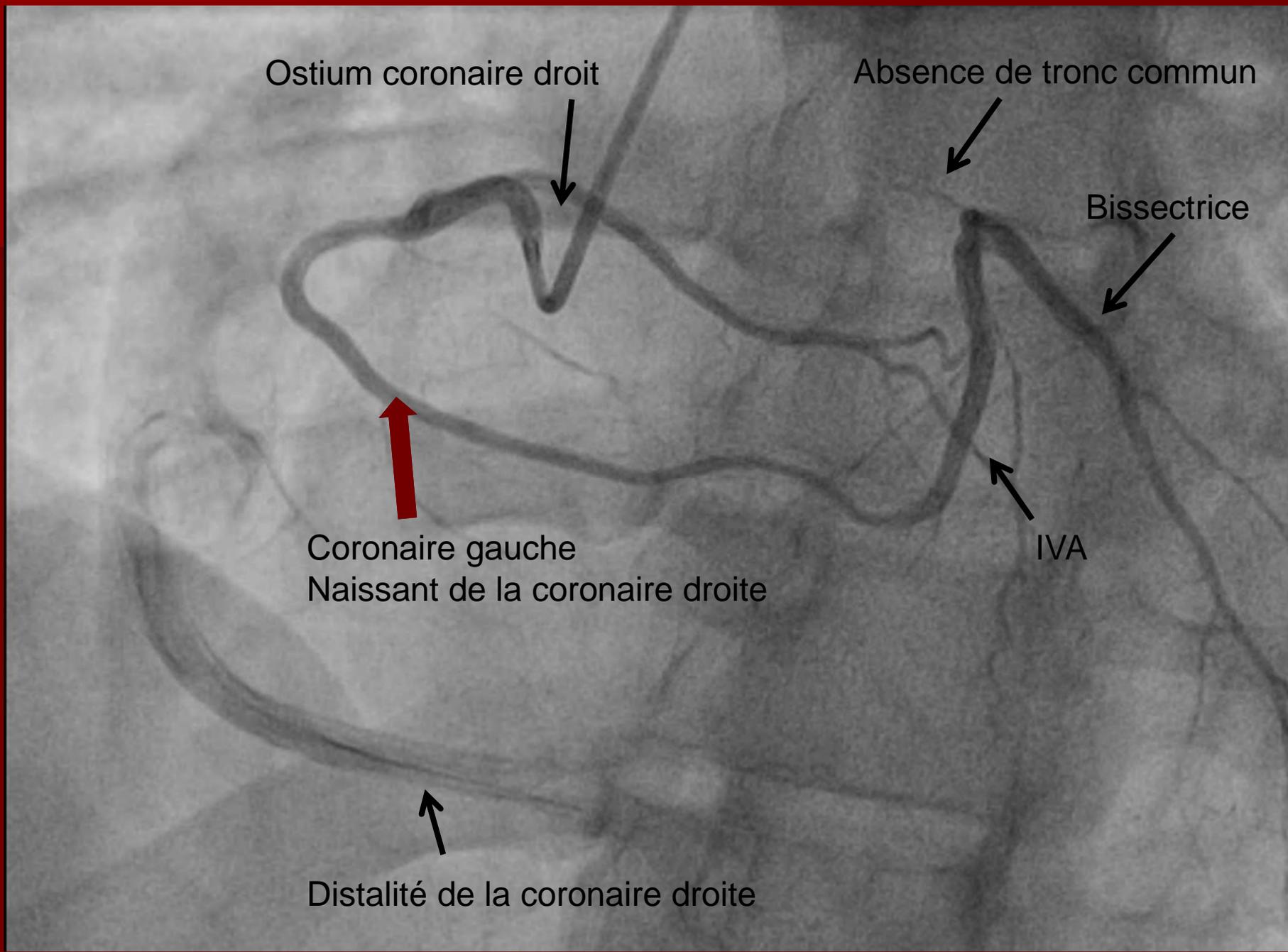
Absence de tronc commun

Bissectrice

Coronaire gauche
Naissant de la coronaire droite

IVA

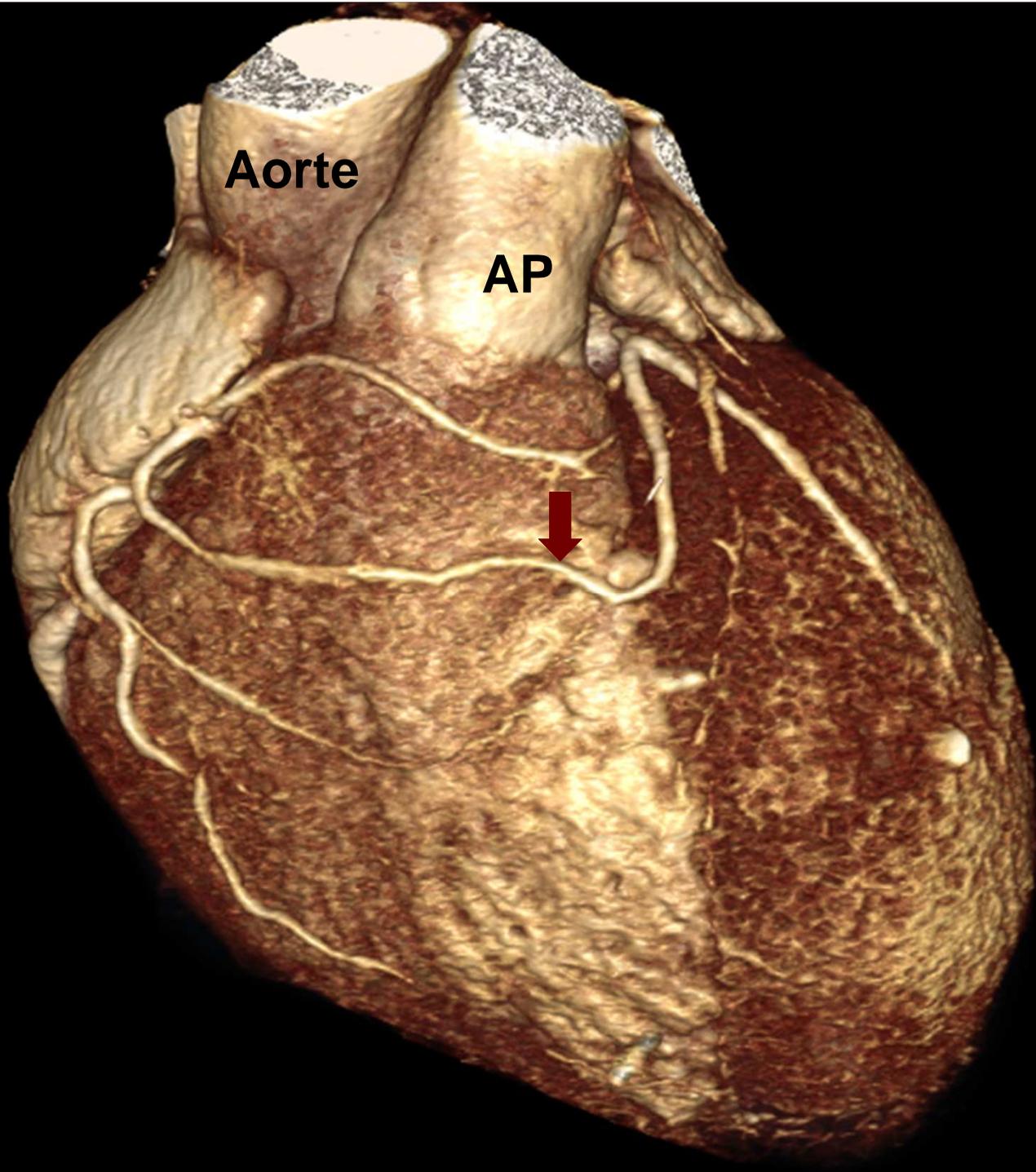
Distalité de la coronaire droite



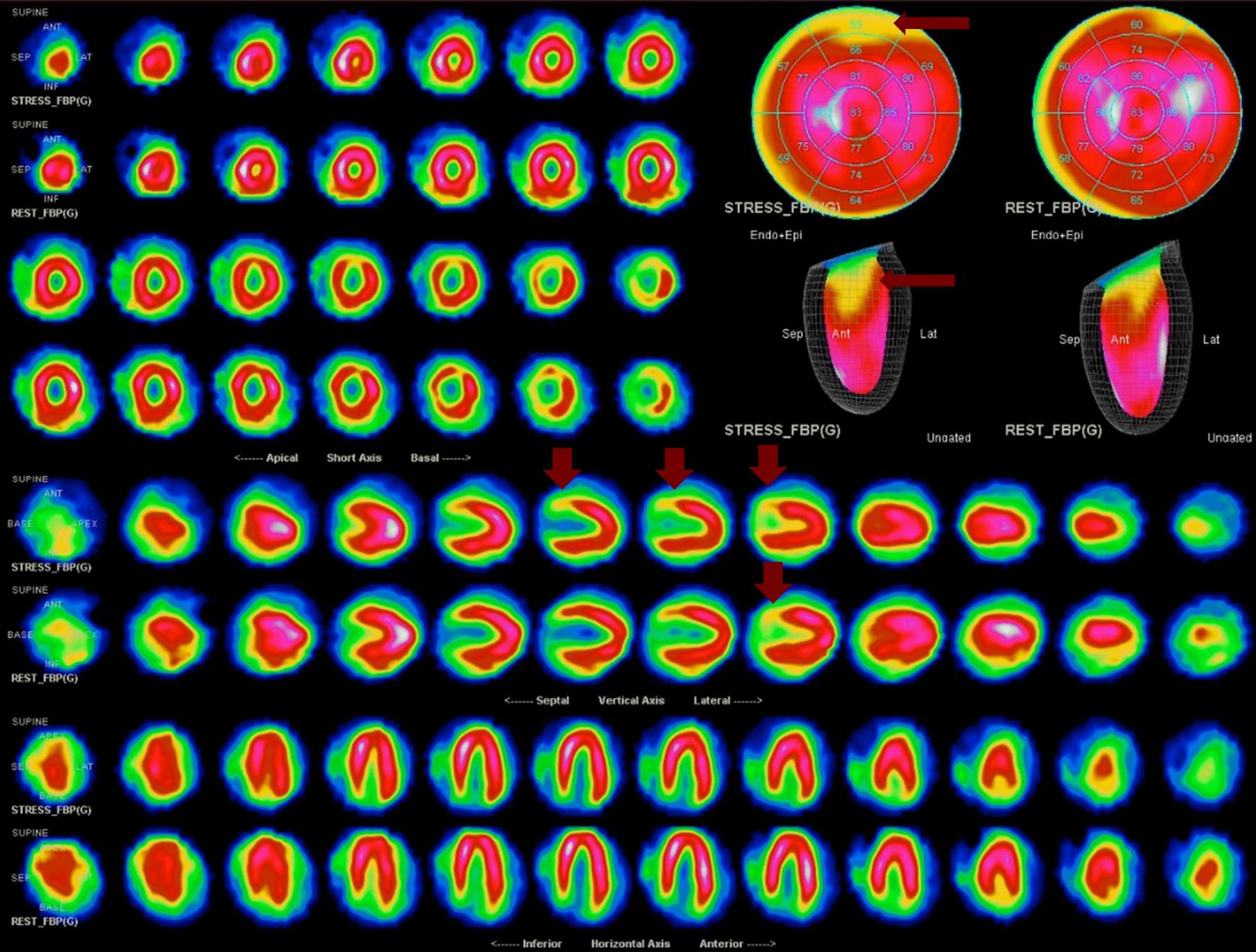
Que faites-vous?

Aorte

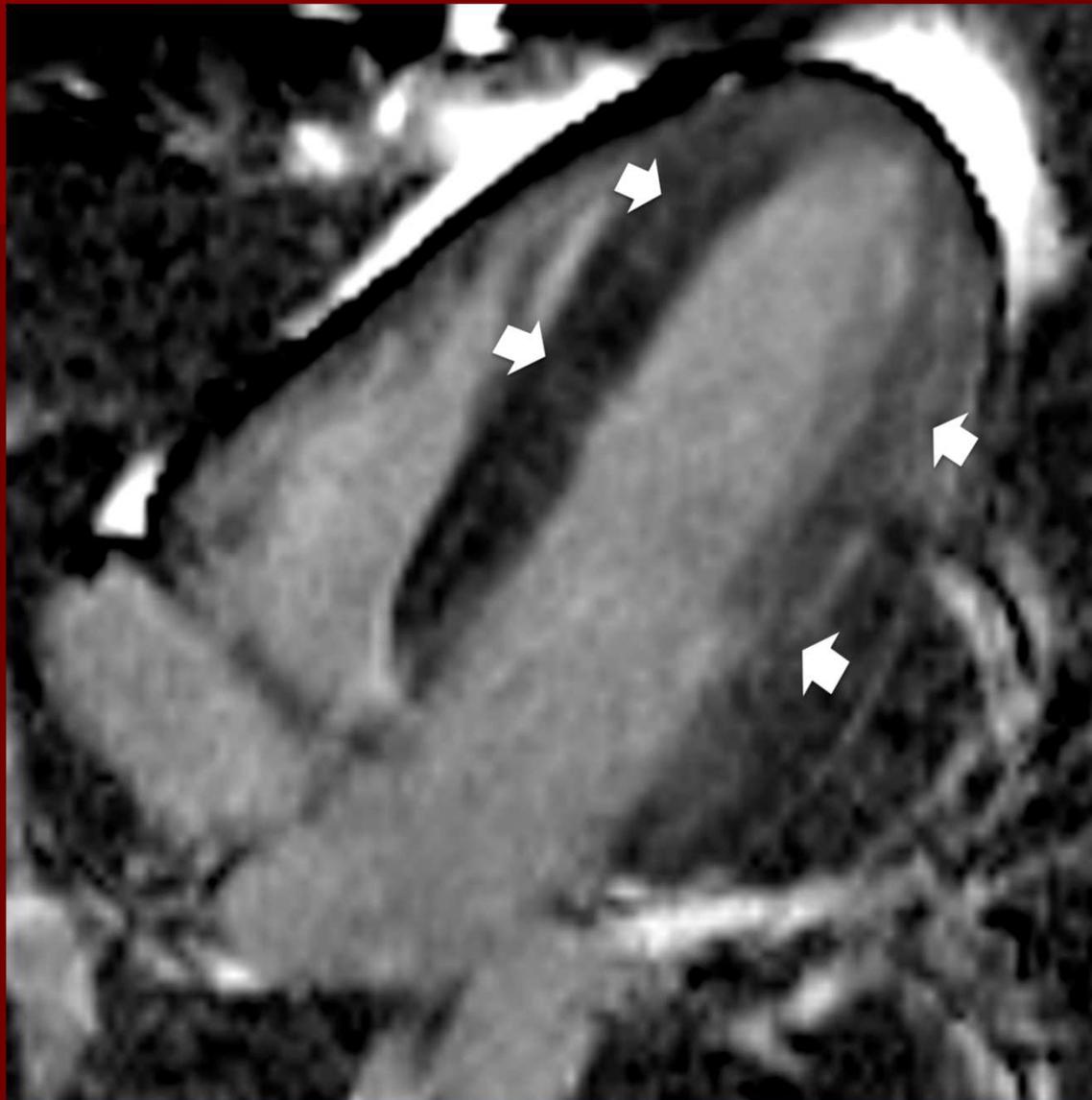
AP



Que faites-vous?



Que faites-vous?



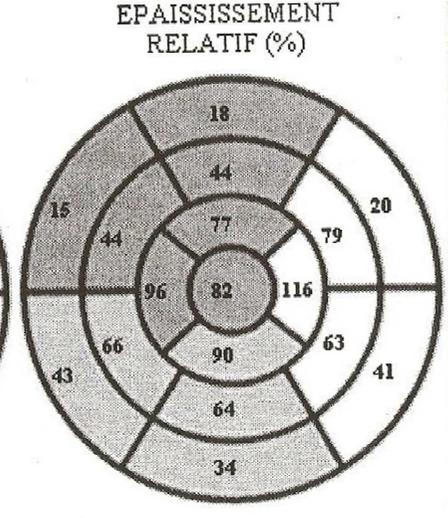
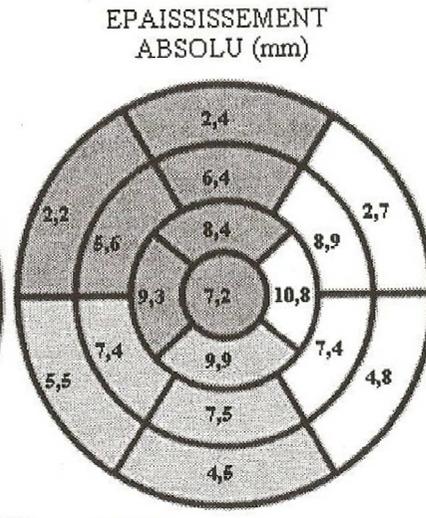
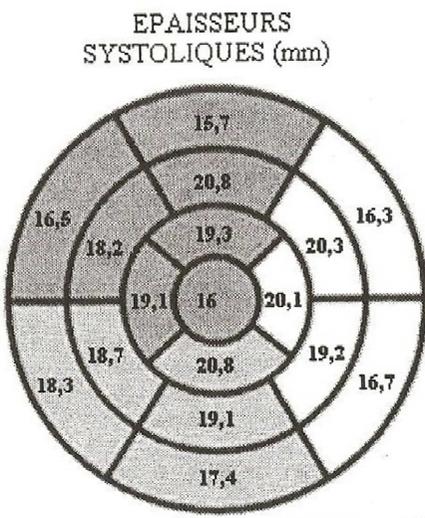
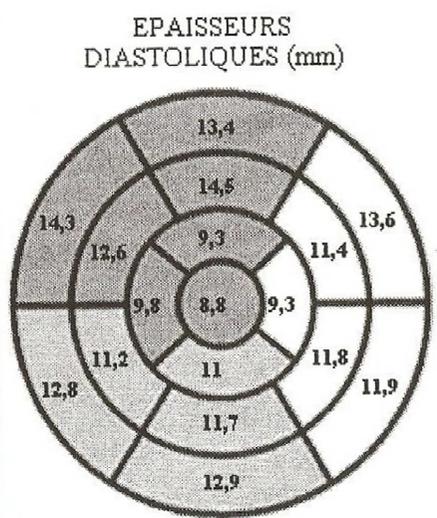
CENTRE HOSPITALIER UNIVERSITAIRE DE DIJON

EXPLORATION I.R.M CARDIAQUE

NOM : DAMIEN

DATE EXAMEN : 30/09/2011

VTD	VTS	FE (%)
170 mL	53 mL	69
90 mL/m ²	28 mL/m ²	



IVA
 Droite
 Circ.

Surface corporelle (m²) = 1,88
 Epaisseur de coupe (mm) = 5
 Espace intersigne (mm) = 5

Masse myocardique (g) = 245
Masse myocardique (g/m ²) = 130



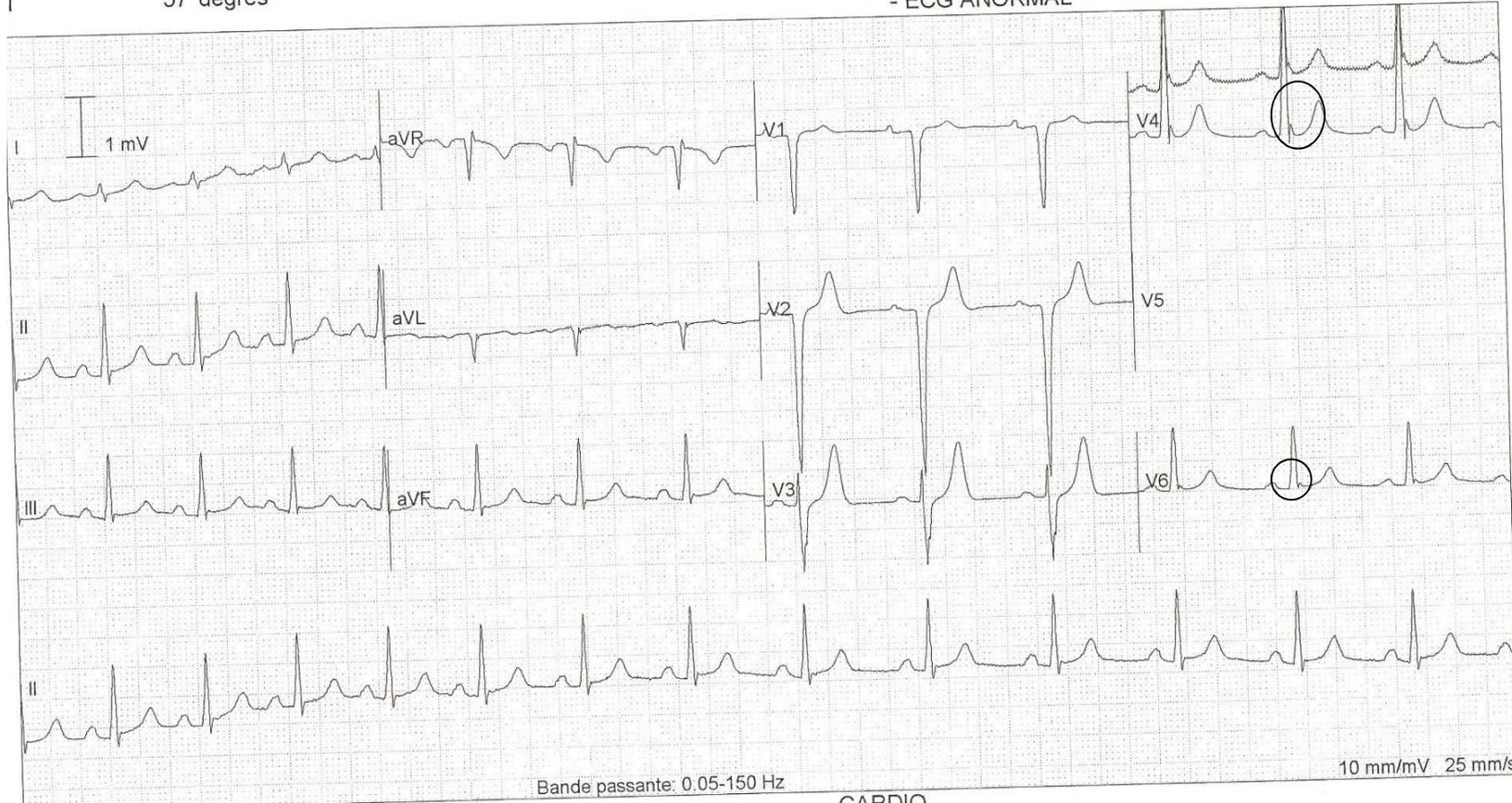
17/09/2011 07:27:13
21 ans

Fréquence 84 b/min
PR 176 ms
QRS 98 ms
QT 376 ms
QTc 444 ms

Axe
P 71 degrés
QRS 81 degrés
T 57 degrés

- ECG ANORMAL -

Interprétation non validée



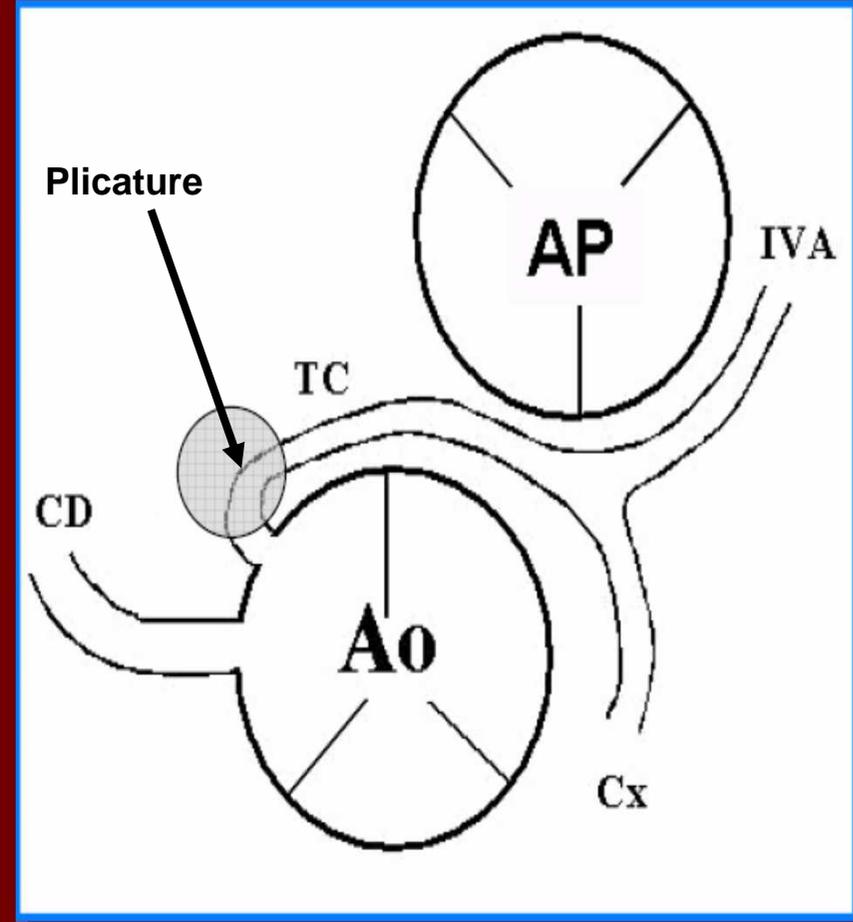
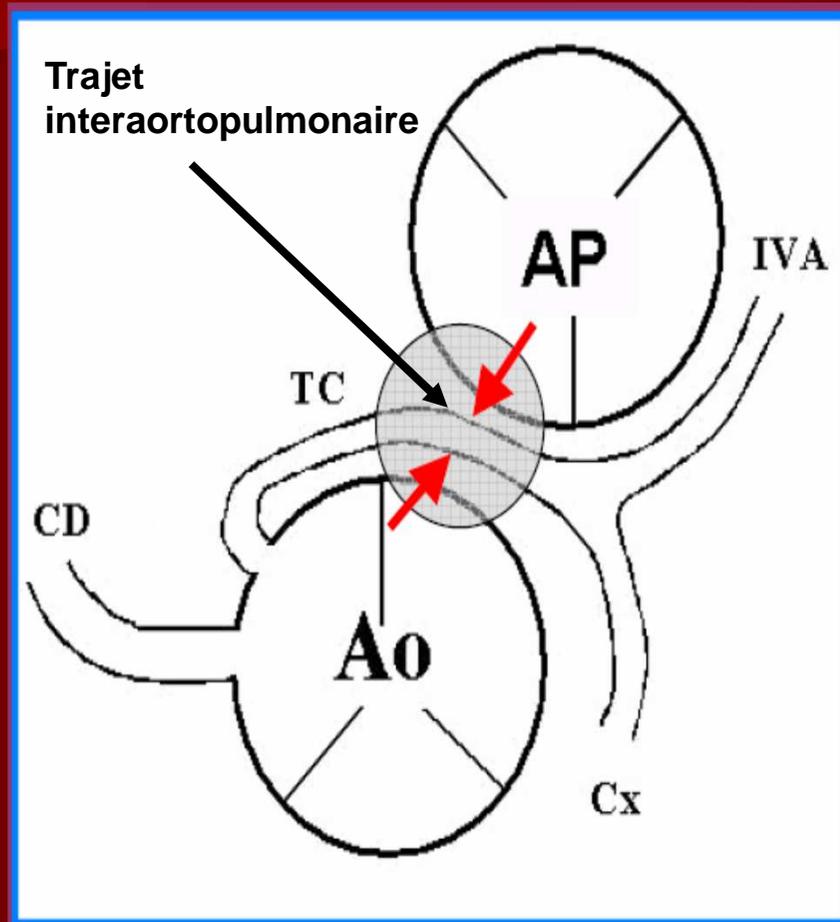
Que faites-vous?

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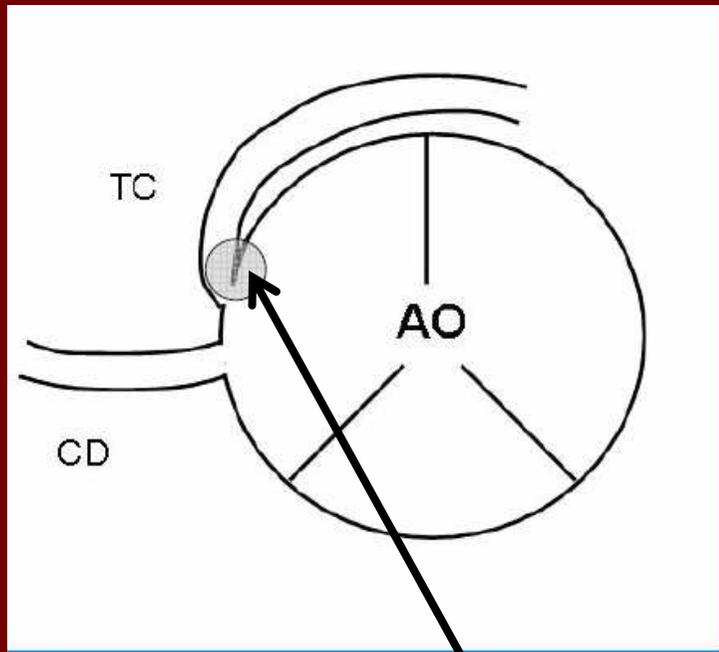
- Arrêt cardiaque
- Anomalie de naissance de coronaires
- Ischémie limitée
- Hypertrophie myocardique
- Repolarisation précoce

Pontage?

Danger (1)

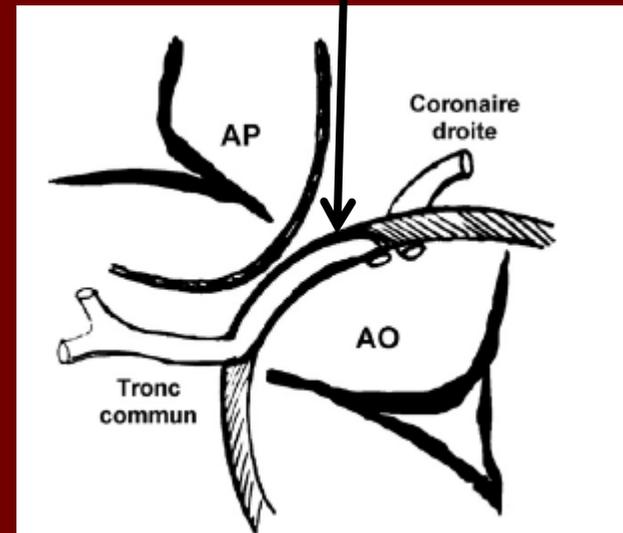


Danger (2)

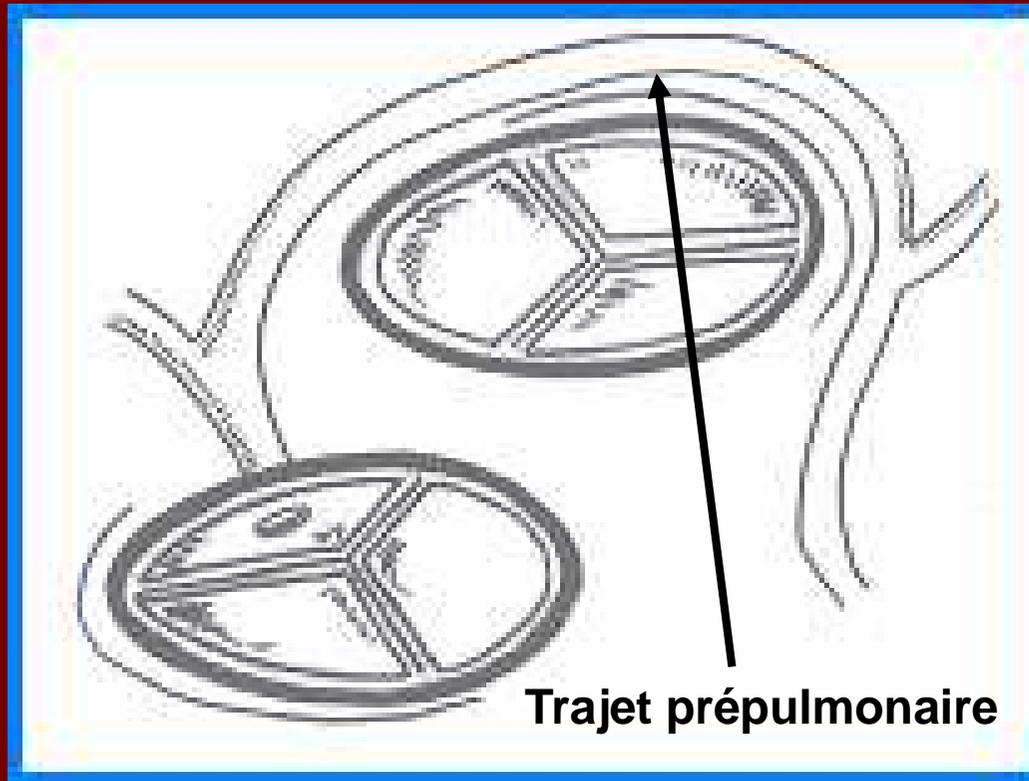


Repli fibreux

Trajet intramural



Damien



Défibrillateur implantable?

Décision

- Absence de revascularisation
- Défibrillateur implantable

Et le sport?

Recommendations



Recommendations for competitive sports participation in athletes with cardiovascular disease

A Consensus document from the Study Group of Sports Cardiology of the Working Group of Cardiac Rehabilitation and Exercise Physiology and the Working Group of Myocardial and Pericardial diseases of the European Society of Cardiology

Eur Heart J 2005; 26:1422–1445.



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36th Bethesda Conference

Eligibility Recommendations for
Competitive Athletes With Cardiovascular Abnormalities



Recommendations for participation in leisure-time physical activity and competitive sports of patients with arrhythmias and potentially arrhythmogenic conditions Part II: Ventricular arrhythmias, channelopathies and implantable defibrillators

Hein Heidbüchel, Domenico Corrado, Alessandro Biffi, Ellen Hoffmann, Nicole Panhuyzen-Goedkoop, Jan Hoogsteen, Pietro Delise, Per Ivar Hoff, Antonio Pelliccia and on behalf of the Study Group on Sports Cardiology of the European Association for Cardiovascular Prevention and Rehabilitation

European Journal of Cardiovascular Prevention & Rehabilitation 2006 13: 676

Table 1 Classification of sports

	A. Low dynamic	B. Moderate dynamic	C. High dynamic
I. Low static	Bowling Cricket Golf Riflery	Fencing Table tennis Tennis (doubles) Volleyball Baseball ^a /softball ^a	Badminton Race walking Running (marathon) Cross-country skiing (classic) Squash ^a
II. Moderate static	Auto racing ^{a,b} Diving ^b Equestrian ^{a,b} Motorcycling ^{a,b} Gymnastics ^a Karate/Judo ^a Sailing Archering	Field events (jumping) Figure skating ^a Lacrosse ^a Running (sprint)	Basketball ^a Biathlon Ice hockey ^a Field hockey ^a Rugby ^a Soccer ^a Cross-country skiing (skating) Running (mid/long) Swimming Tennis (single) Team handball ^a
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Adapted and modified after Mitchell et al.⁵

^aDanger of bodily collision.

^bIncreased risk if syncope occurs.

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Recommandations

- Anomalie de naissance des coronaires



Unrecognized CHD

Most of CHD lesions are diagnosed during childhood (provided a good health care system); nevertheless, late diagnosis of ASD, CoA, and LV outflow tract obstructions is not uncommon. A structured screening programme of all athletes would probably identify most of these cases.² Abnormal coronary arteries, in contrast, are unlikely to be diagnosed during life, despite extensive screening.



Detection of coronary anomalies of wrong sinus origin in which a coronary artery passes between great arteries should result in exclusion from all participation in competitive sports.

Recommendations

■ Myocardiopathie hypertrophique



Athletes with definite diagnosis of HCM	History, PE, ECG Echo		No competitive sports	
Athletes with definite diagnosis of HCM but low risk profile	History, PE, ECG, Echo, ET, 24 h Holter	No SD in the relatives, no symptoms, mild LVH, normal BP response to exercise, no ventricular arrhythmias	Low dynamic, low static sports (I A)	Yearly

Athletes with a probable or unequivocal clinical diagnosis of HCM should be excluded from most competitive sports, with the possible exception of those of low intensity (class IA). This recommendation is independent of age, gender, and phenotypic appearance, and does not differ for those athletes with or without symptoms, LV outflow obstruction, or prior treatment with drugs or major interventions with surgery, alcohol septal ablation, pacemaker, or implantable defibrillator.



(1) The placement of an ICD in an HCM patient does not change the recommendations for this disease (as previously noted), namely, that restriction from participation in contact and non-contact sports is advisable; such individuals may eventually engage only in low-intensity competitive sports (class IA, see Table 6).

(2) The presence of a free-standing automated external defibrillator (AED) at sporting events should not be considered either absolute protection against sudden death, or treatment strategy for known cardiovascular disease, nor a justification for participation in competitive sports in athletes with previously diagnosed HCM.

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Recommandations

■ Défibrillateur



Implantable cardioverter defibrillator	ECG, Echo, ET, 24 h Holter	No malignant VTs, normal cardiac function, at least 6 months after the implantation, or the last ICD intervention	Low-moderate dynamic and low static sports (I A,B), except those with risk of bodily collision	Yearly
----------------------------------------	----------------------------	-------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	--------

Athletes with a probable or unequivocal clinical diagnosis of HCM should be excluded from most competitive sports, with the possible exception of those of low intensity (class IA). This recommendation is independent of age, gender, and phenotypic appearance, and does not differ for those athletes with or without symptoms, LV outflow obstruction, or prior treatment with drugs or major interventions with surgery, alcohol septal ablation, pacemaker, or implantable defibrillator.



NB

The presence of a free-standing automated external defibrillator (AED) at sporting events should not be considered either absolute protection against sudden death, a prospectively designed treatment strategy for known cardiovascular disease, nor a justification for participation in competitive sports in athletes with previously diagnosed HCM. Athletes with HCM using drugs such as anabolic steroids or energy stimulant drinks may in fact increase their risk of arrhythmias, although definitive data are lacking.

Recommendations for participation in leisure-time physical activity and competitive sports of patients with arrhythmias and potentially arrhythmogenic conditions Part II: Ventricular arrhythmias, channelopathies and implantable defibrillators

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No competitive sports, except when low cardiovascular demand and no risk for patient or others due to (pre)syncope (from 6 weeks after implant)

Leisure-time sports allowed from 6 weeks after implant, with assessment of expected maximal sinus rate and/or preponderance for atrial fibrillation, with prophylactic institution of antiarrhythmic or bradycardic therapy

sudden death, ICD implantation should not be regarded as a substitute for such a recommendation [62]. The efficacy of the ICD to interrupt malignant ventricular arrhythmias during intense exercise is unknown and from theoretical considerations probably suboptimal (given the associated metabolic, autonomic and potentially ischemic conditions). Specific data on the benefits and risks of ICD in physically active patients are lacking, explaining a large variability in current recommendations made by physicians to their patients [63].



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Décision prise

- Contre-indication au football :
 - CMH
 - Défibrillateur (risque de collision)
- Autorisation à une activité de loisir
« raisonnable »

La vraie vie...

Montigny-Mornay-Villeneuve **Damien revient sur le terrain**

le 08/03/2012 à 05:07 Vu 197 fois

Cinq mois après son accident cardiaque, Damien a retrouvé le chemin du stade. Un retour en compétition très attendu par le jeune sportif.

Après avoir échappé à la mort, sauvé par ses camarades du club, le 16 septembre (voir éditions des 21 et 24 septembre et celle du 23 octobre) et avoir subi une opération du cœur, Damien faisait dimanche son retour sur le terrain. Le feu vert pour reprendre la compétition, tant attendu, est arrivé le 1^{er} mars.

« Je n'ai pas joué de match en championnat depuis début septembre, confie Damien. J'attendais ce moment avec impatience. J'ai repris mon travail chez [redacted] et que les entraînements de foot. Je joue normalement [redacted] j'essaie de ne pas me fatiguer inutilement. J'ai un mal [redacted] l'entraînement, j'ai un peu d'appréhension avant le ma [redacted] Damien a joué toute la première mi-temps à son poste [redacted] et en particulier de ses parents. Corinne, sa maman, [redacted] d'anxiété subsisterait à chaque match de Damien. [redacted] applaudissant ses gestes techniques et ses frappes, mé [redacted] rendez-vous. Damien aurait pu marquer un but à deux [redacted] sur une des frappes de Damien.

Soulagés et heureux



Intérêt

- Rappel sur la prévention de la MSS
 - Visite de non contre-indication...
 - Avec ECG...
 - Échocardiographie :
 - La CMH
 - Chercher les coronaires+++
- Diffusion des DAE
- Qui veut jouer rejoue...

Intérêt

- « gestes qui sauvent »
- Quel(s) coupable(s)?
- Le défibrillateur...

- Qui veut jouer rejoue...