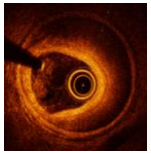
CLERMONT-FERRAND
CENTRE HOSPITALIER UNIVERSITAIRE
UNIVERSITÉ Clermont Auvergne
Pascal Motreff, MD, PhD

13ÈME CARDIO RUN 2021
CONGRÈS DE PATHOLOGIE CARDIO-VASCULAIRE
29-30 SEPTEMBRE & 1 OCTOBRE 2021
HÔTEL SAINT ALEXIS - ÎLE DE LA RÉUNION, FRANCE

Dissection Coronaire Spontanée de la femme jeune (SCAD)

L'accouchement est douloureux
Heureusement, la femme tient la main de l'homme. Ainsi, il souffre moins.

Pierre Desproges

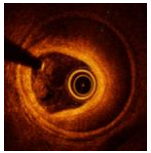


Les SCA au féminin

Quelques chiffres contre les idées reçues

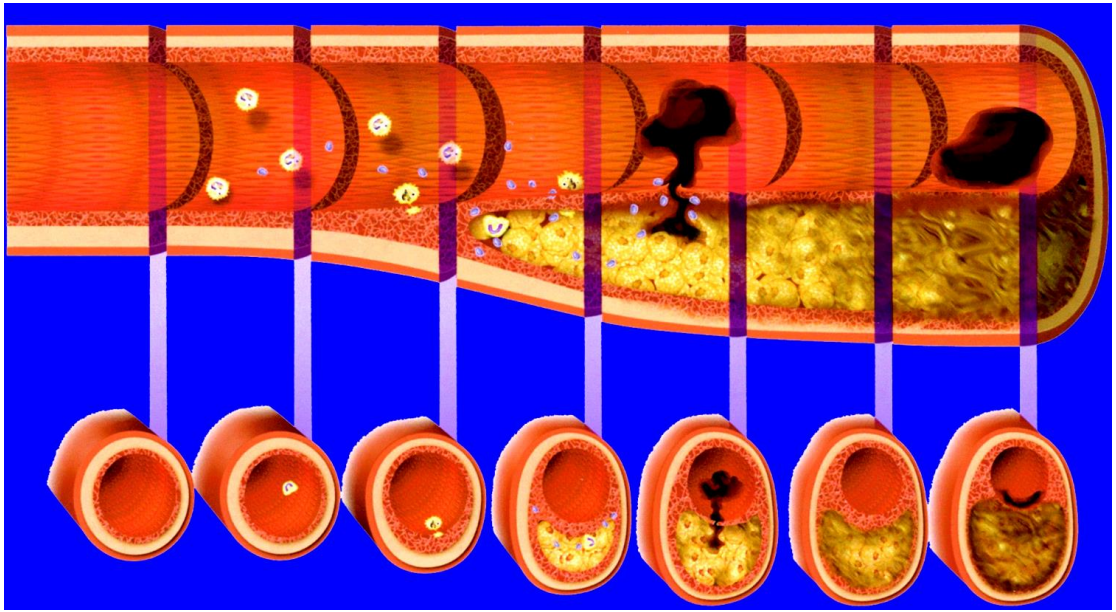
- Pathologies CV = 1ère cause de mort prématurée (<65ans)
  - 38% mortalité de l'homme
  - **42% mortalité de la femme**

- **Mortalité x 8 cancer du sein**

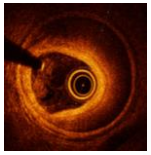


SCAD de la femme jeune

Complication thrombotique de l'athérome coronaire



Augmentation des facteurs de risque cardio-vasculaire

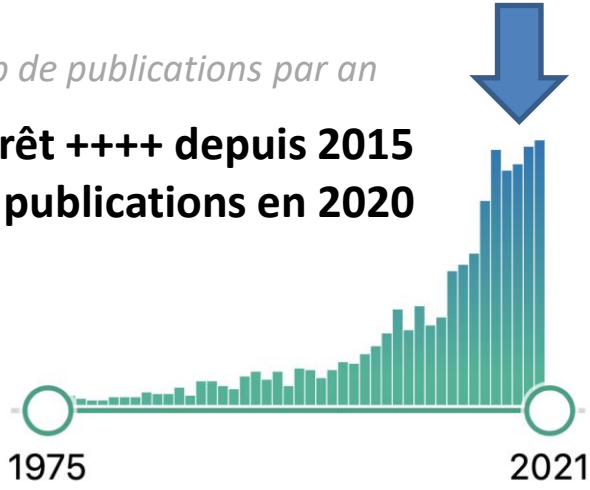


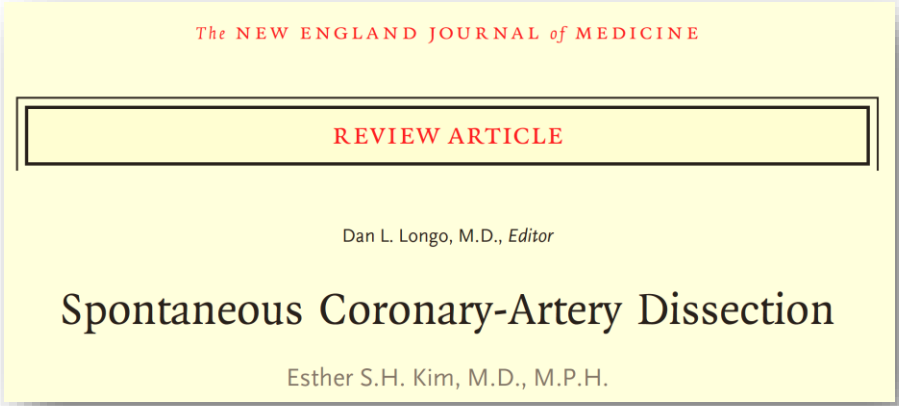
Les SCA au féminin

- **SCA athéromateux** : rupture de plaque, érosion, spasme
- **SCA non athéromateux**

Nb de publications par an

Intérêt ++++ depuis 2015
163 publications en 2020





The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

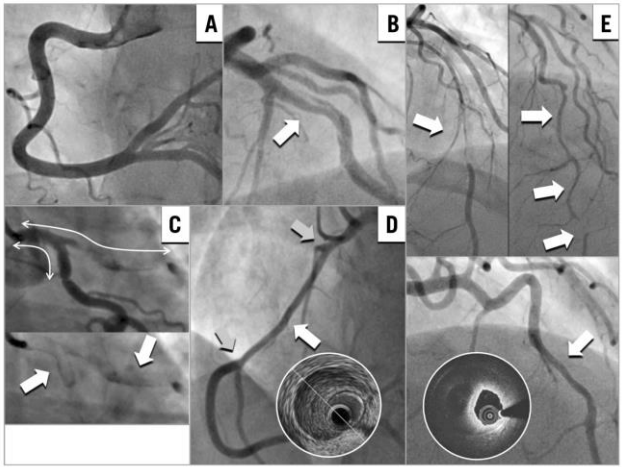
Dan L. Longo, M.D., *Editor*

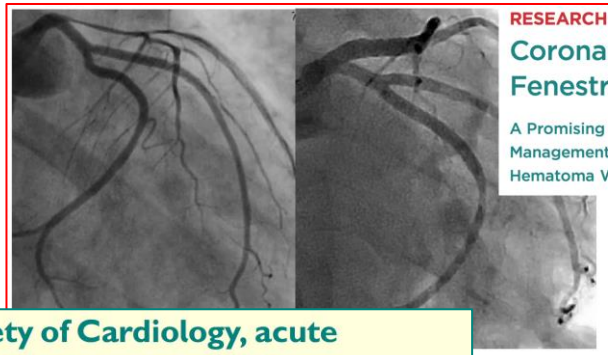
Spontaneous Coronary-Artery Dissection

Esther S.H. Kim, M.D., M.P.H.

Dernière mise au point Décembre 2020

How and when to suspect spontaneous coronary artery dissection: novel insights from a single-centre series on prevalence and angiographic appearance





RESEARCH CORRESPONDENCE

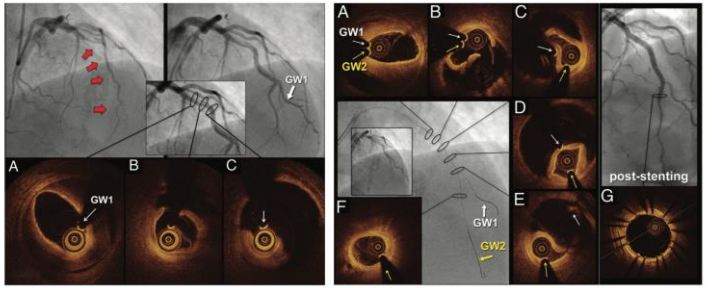
Coronary Artery Fenestration

A Promising Technique for Rescue Management of Spontaneous Intramural Hematoma With Luminal Compression

European Society of Cardiology, acute cardiovascular care association, SCAD study group: a position paper on spontaneous coronary artery dissection

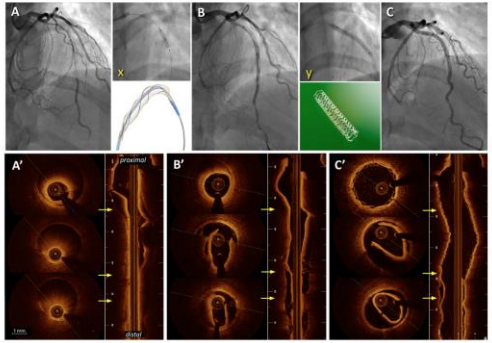
ESC-ACCA Position Paper on spontaneous coronary artery dissection

Contribution of guidance by optical coherence tomography (OCT) in rescue management of spontaneous coronary artery dissection

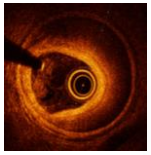


Coronary Artery Fenestration Guided by Optical Coherence Tomograhy Before Stenting

New Interventional Option in Rescue Management of Compressive Spontaneous Intramural Hematoma



Combaret N, Eur Heart J Cardiovasc Imaging. 2013
Motreff P, Circ Cardiovasc Interv. 2015
Motreff P Eurointervention. 2017
Adlam D, European Heart J. 2018
Motreff P, JACC Cardiovasc Interv. 2018



SCAD de la femme jeune

DISCO

61 Centres Français - 424 inclusions

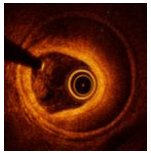
373 SCAD validées (2ème série mondiale)

Caractéristiques de la population

Analyses angiographiques

Analyses génétiques

Recherche DFM



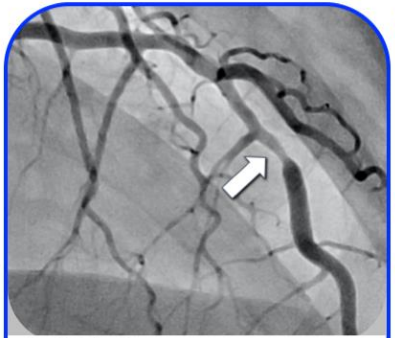
SCAD de la femme jeune

DISCO *French National Registry of SCAD (n=373)*

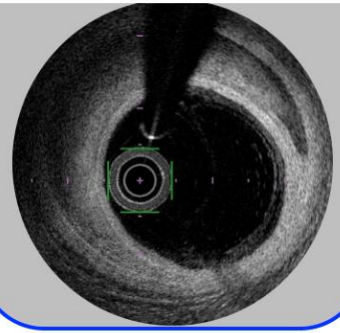
90%

51y/o

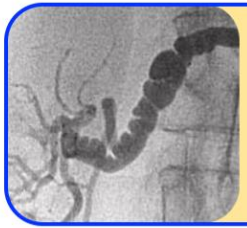
Few CVRF



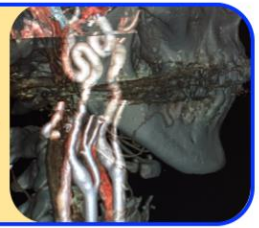
84% Haematoma



Conservative Therapy 79%



FMD 45%



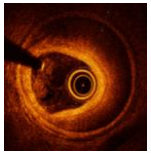
SCAD FMD

PHACTR1

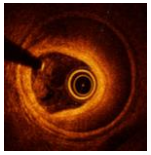
Genetic Variant rs9349379-A

+66%

Combaret N, Motreff P, Eurointervention 2021

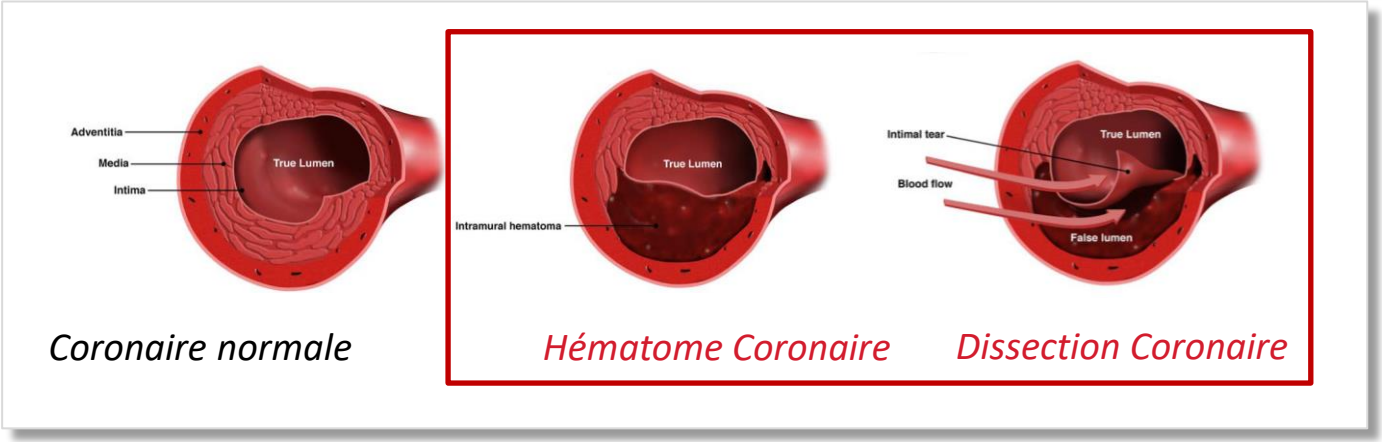


- Avancées dans la physiopathologie
- Avancées dans le diagnostic
- Avancées dans le traitement

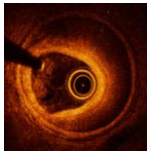


SCAD de la femme jeune

- **Forme de SCA non athéromateux, rare mais non exceptionnelle**



- **SCA illégitime** : femme jeune sans FRCV
- **Diagnostic difficile et sous-estimé**
- **Pronostic initial sévère, Prise en charge « challenging »**
- **Physiopathologie longtemps mal connue**



SCAD de la femme jeune

SCA non athéromateux :
« SCA illégitime de la femme jeune »

Nonatherosclerotic Coronary Artery Disease in Young Women

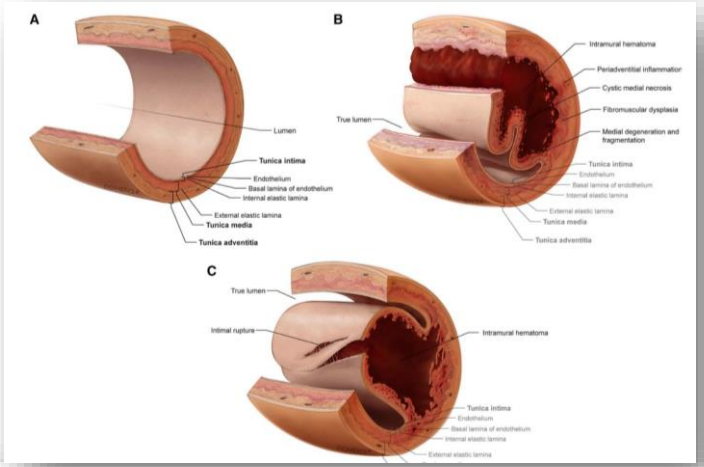
Saw J., Canadian Journal of Cardiology 2014

Spontaneous Coronary Artery Dissection
Revascularization Versus Conservative Therapy

Tweet MS., Circ Cardiovasc Interv 2014

Spontaneous Coronary Artery Dissection
Association With Predisposing Arteriopathies and Precipitating Stressors and Cardiovascular Outcomes

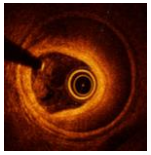
Saw J., Circ Cardiovasc Interv 2014



SCAD non exceptionnelle chez la femme jeune :
25-30% des SCA

Contemporary Review on Spontaneous Coronary Artery Dissection

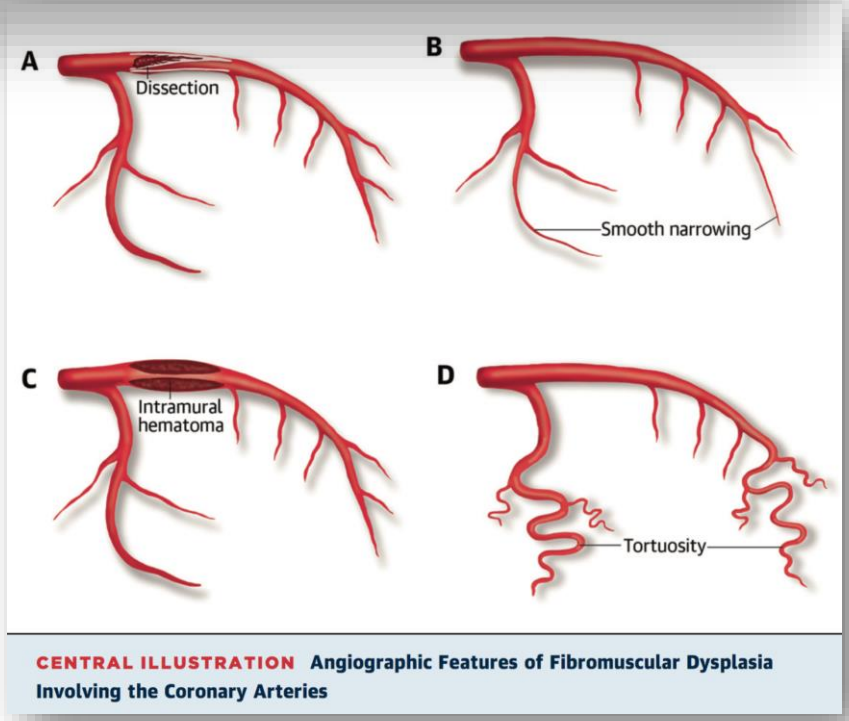
Saw J., J Am Coll Cardiol 2016



SCAD de la femme jeune

Coronary Artery Manifestations of Fibromuscular Dysplasia

Michelis KC, J Am Coll Cardiol 2014



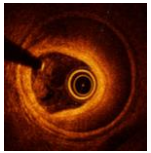
CENTRAL ILLUSTRATION **Angiographic Features of Fibromuscular Dysplasia Involving the Coronary Arteries**

Relation FMD - SCAD

Prévalence FMD? inconnue avant 2005

Mêmes profils : 95% femmes, 50 ans

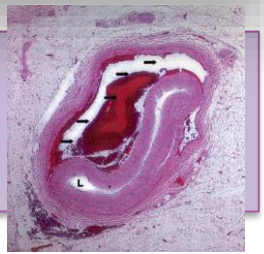
Récentes études : 50-86% FMD !



SCAD de la femme jeune

Registre Clermont- Ferrand

Femmes < 60 ans
«SCA illégitime »



Prévalence de la SCAD

Coronarographies pour SCA (ST+ et non ST+) **1%**

↓

Femmes **3,5%**

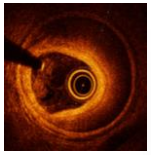
↓

Moins de 60 ans **11%**

↓

Moins de 60 ans & ≤ 2 FRCV **≈ 35%**

Motreff P, Eurointervention 2017



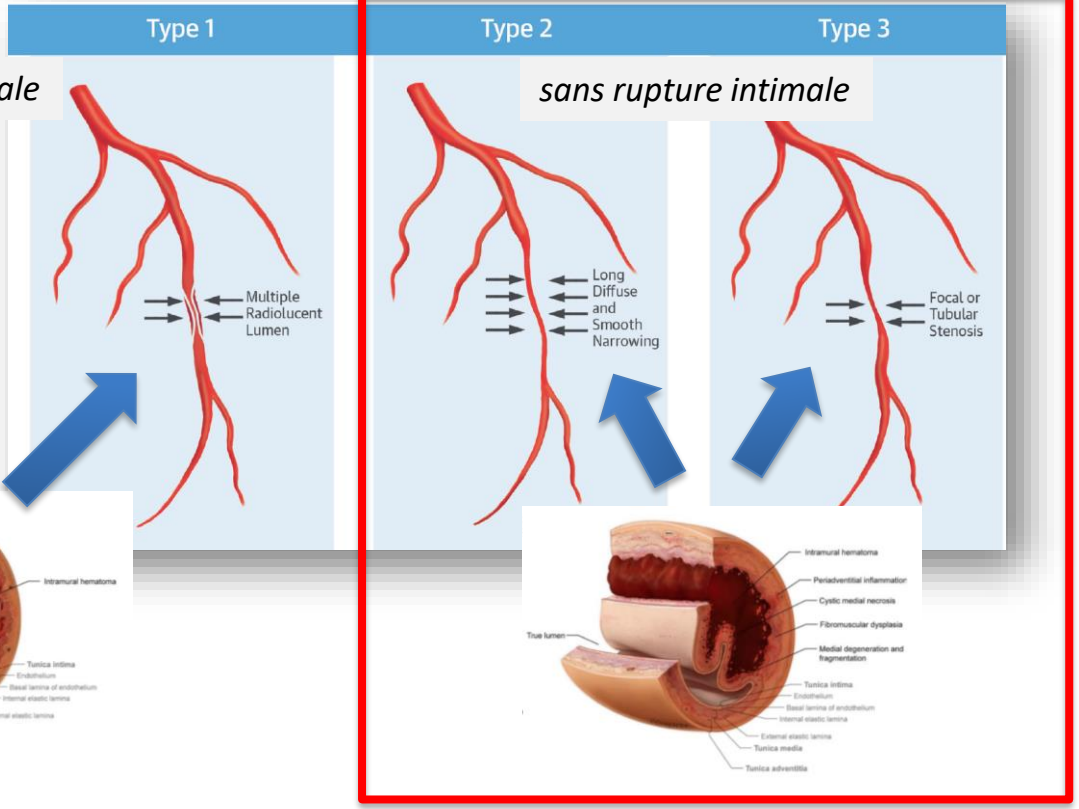
SCAD de la femme jeune

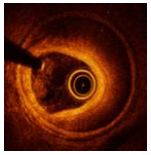
Diagnostic souvent méconnu

Saw J., J Am Coll Cardiol 2017
Vijayaraghavan R , Circulation 2014

avec rupture intimale

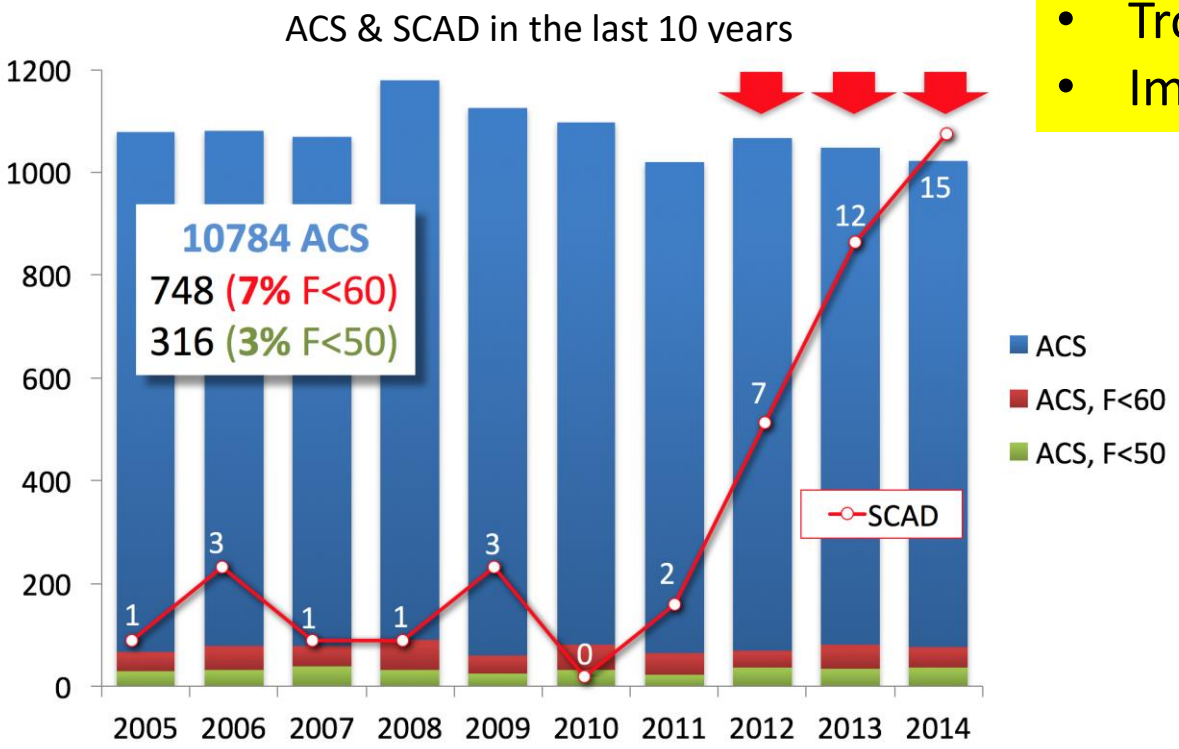
sans rupture intimale

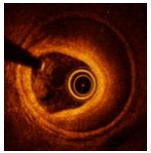




Clermont-Ferrand registry

- Connaissances
- Troponines
- Imagerie



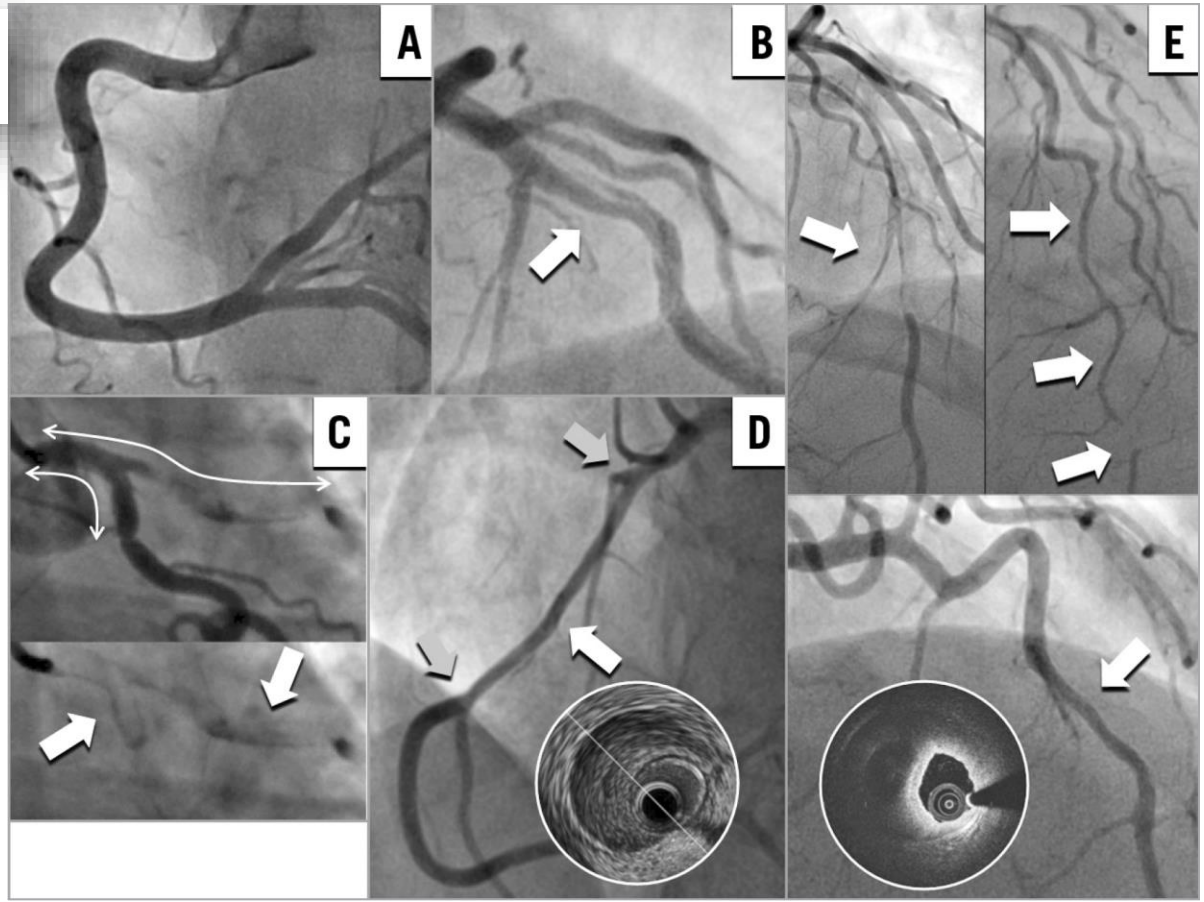


SCAD de la femme jeune

- **Présentation clinique**
  - Mort subite
  - SCA +/- instabilité hemodynamique
  - **Douleur thoracique**
  - Symptômes atypiques ? **(NON, seul le profil du patient l'est)**
  - ECG, Échocardiographie, **troponines** +++
- **Diagnostic**
  - Expérience, signes angiographiques, imagerie endocoronaire
- **Traitement**
  - Conservateur +++, interventionnel seulement en sauvetage

Motreff P, Eurointervention 2017

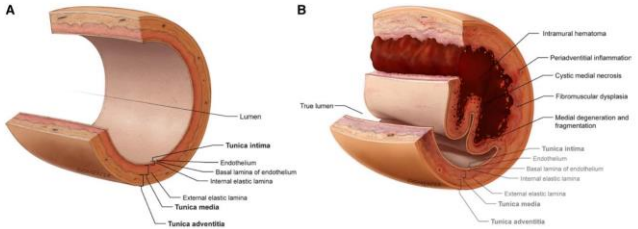
How and when to suspect spontaneous coronary artery dissection: novel insights from a single-centre series on prevalence and angiographic appearance

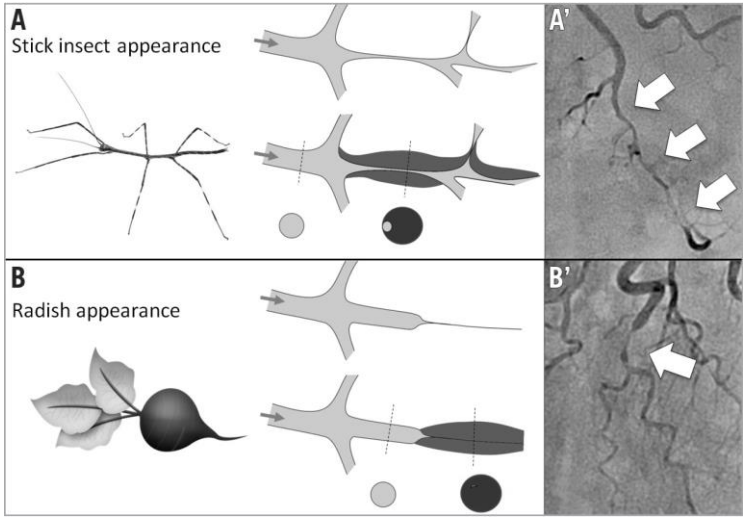


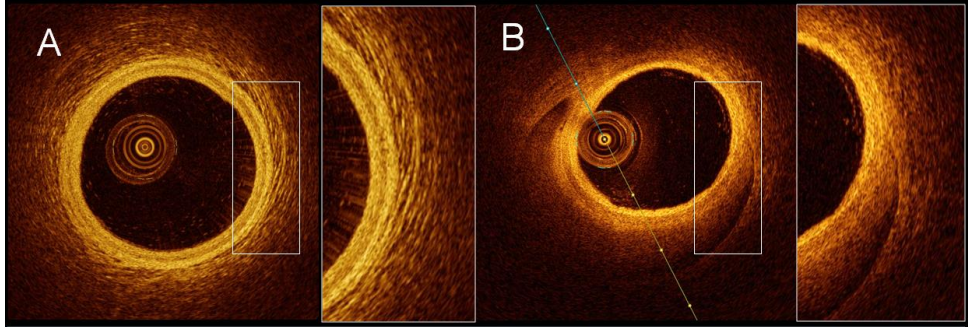
5 signes angiographiques

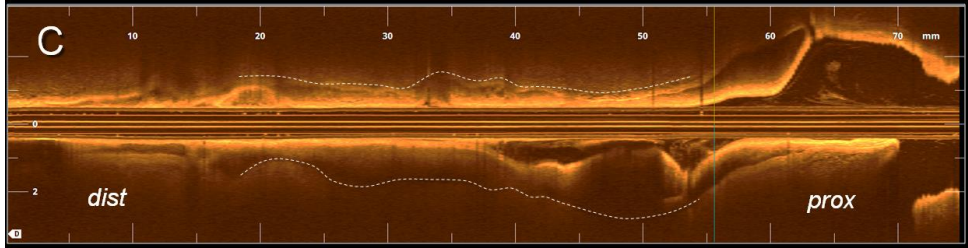
A. Absence d'athérome
B. Flap intimal
C. Tatouage du contraste
D. Début et/ou fin sur collatérales
E. Réduction longue et lisse du calibre

Motreff P, Eurointervention 2017


A
Lumen
Tunica intima
Endothelium
Basal lamina of endothelium
Internal elastic lamina
External elastic lamina
Tunica media
Tunica adventitia
B
True lumen
Intramural hematoma
Periadventitial inflammation
Cystic medial necrosis
Fibromuscular dysplasia
Medial degeneration and fragmentation
Tunica intima
Endothelium
Basal lamina of endothelium
Internal elastic lamina
External elastic lamina
Tunica media
Tunica adventitia
C
True lumen
Intimal rupture
Intramural hematoma
Tunica intima
Endothelium
Basal lamina of endothelium
Internal elastic lamina
External elastic lamina
Tunica media
Tunica adventitia


A
Stick insect appearance
A'
B
Radish appearance
B'


A
B


C
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70
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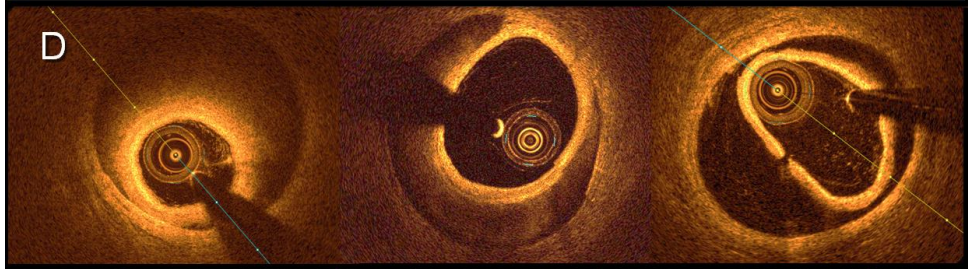
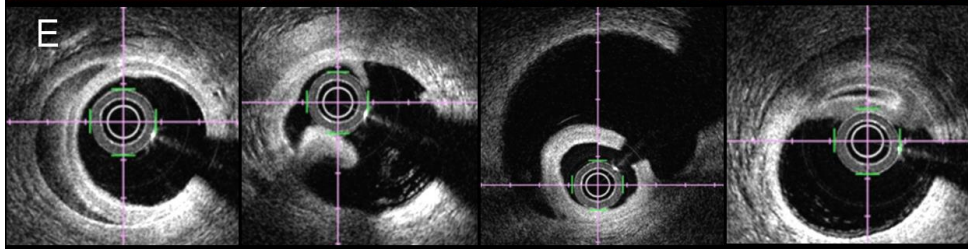
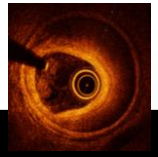
prox

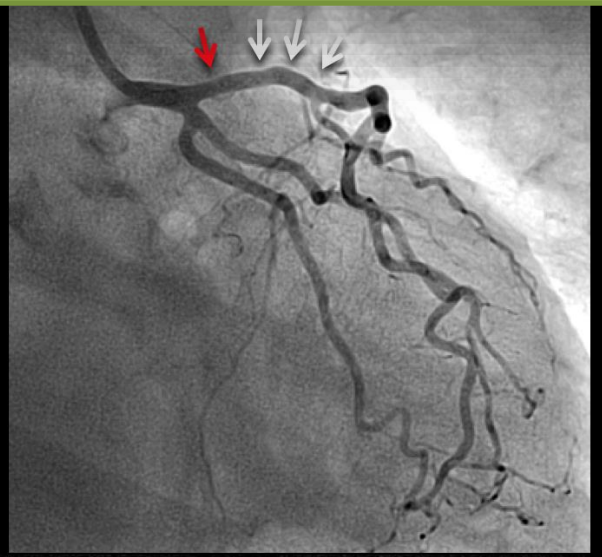

D

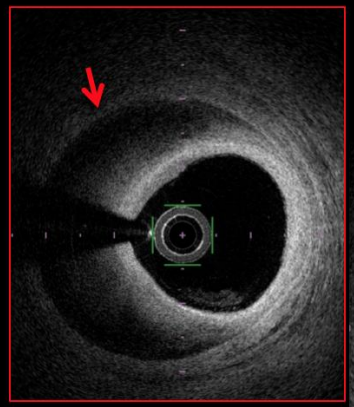

E

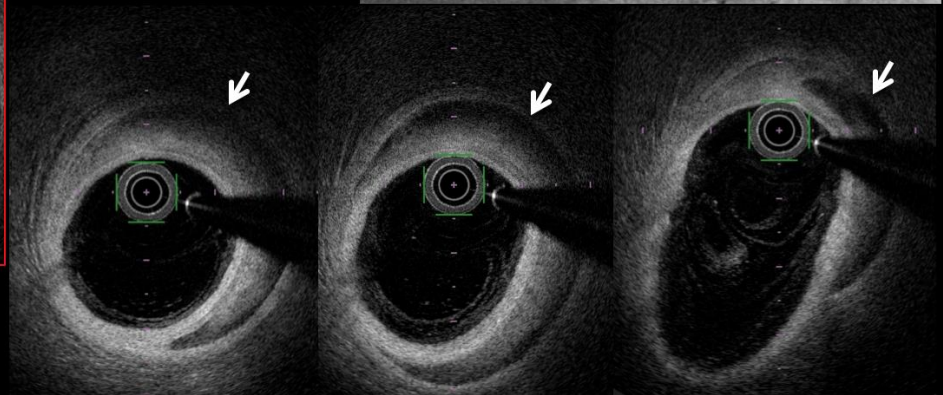


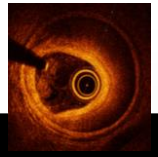
Mme F. 52 ans

Pas de FRCV
Douleur thoracique
SCA non ST +
Hématome coronaire spontané



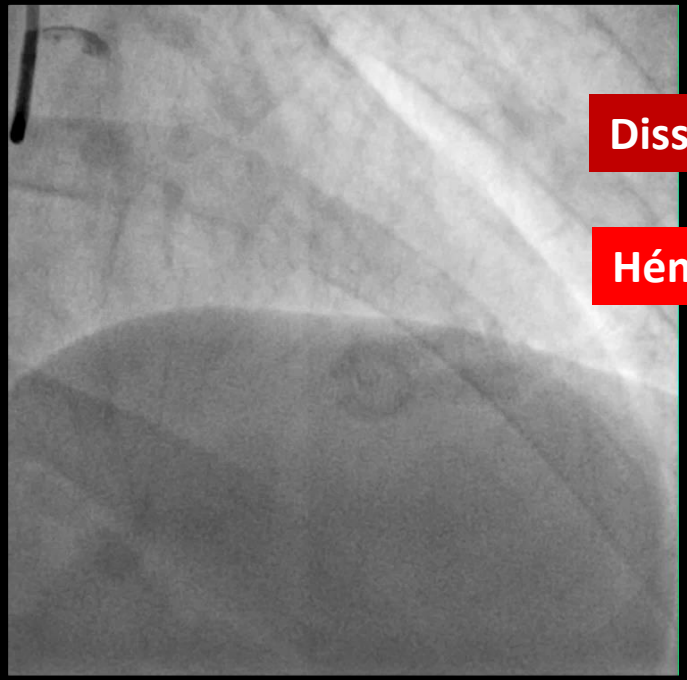


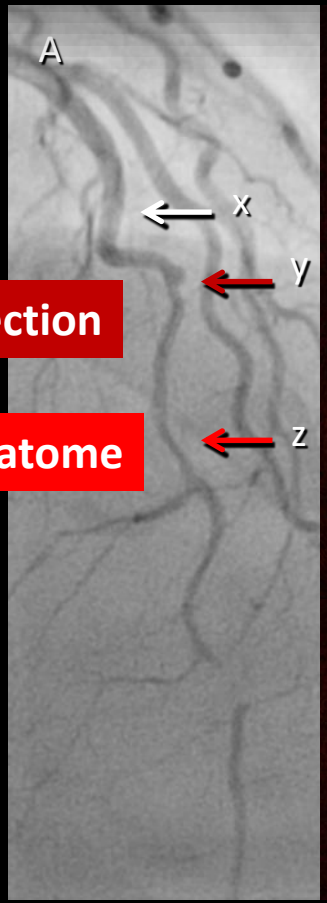




SCAD de la femme jeune

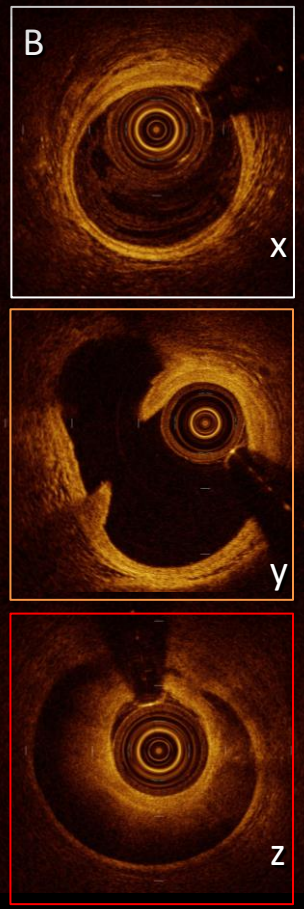
Mme D. 43 ans, SCA ST+
aucun FRCV

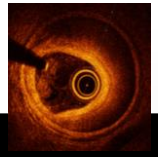




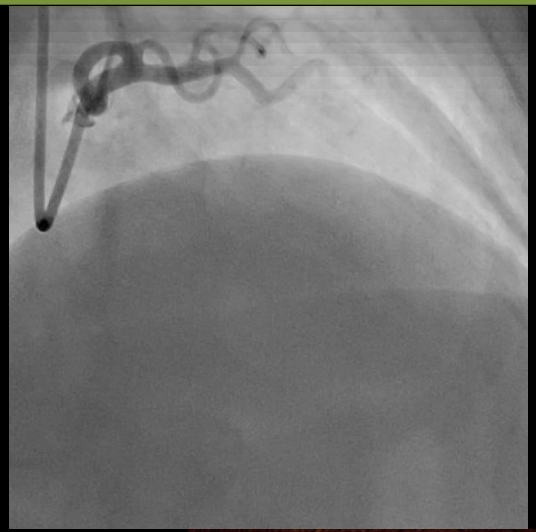
Dissection

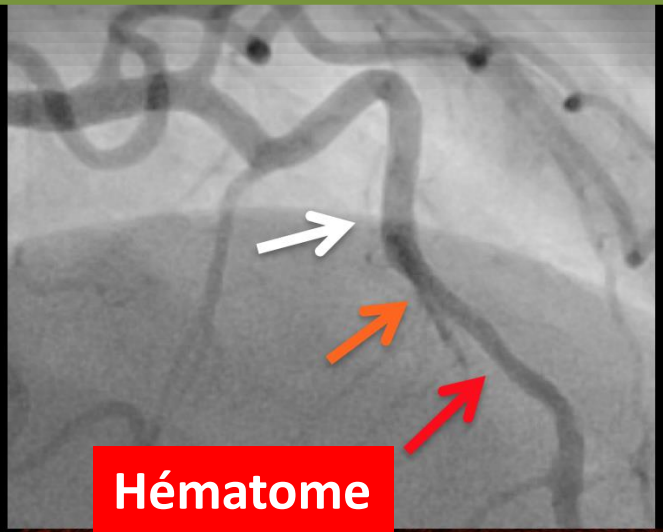
Hématome





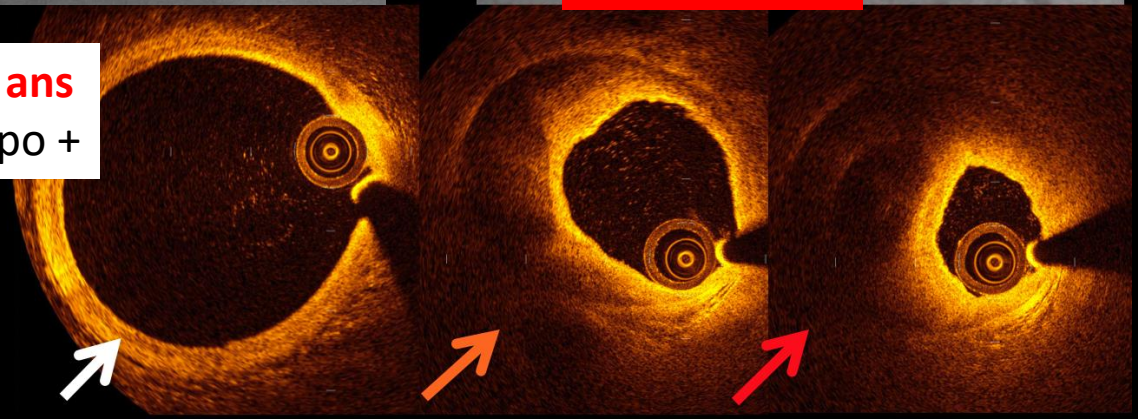
SCAD de la femme jeune

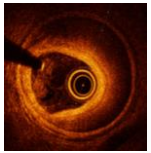




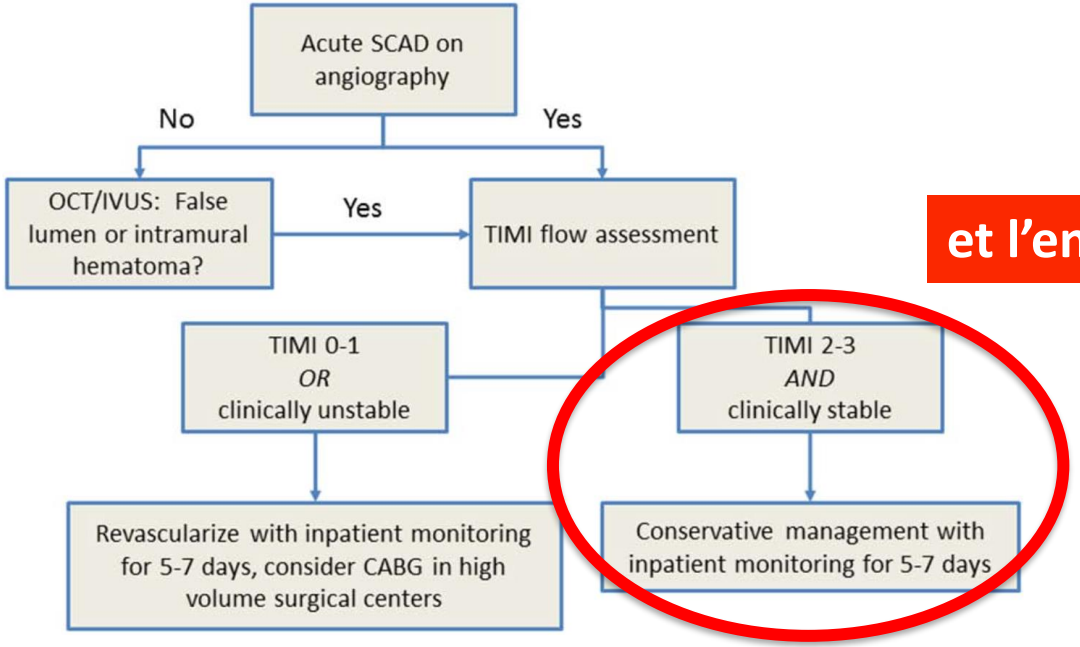
Hématome

Mme D. 64 ans
SCA ST- Tropo +



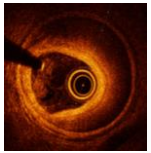


Prise en charge la moins agressive possible



et l'enseigner !

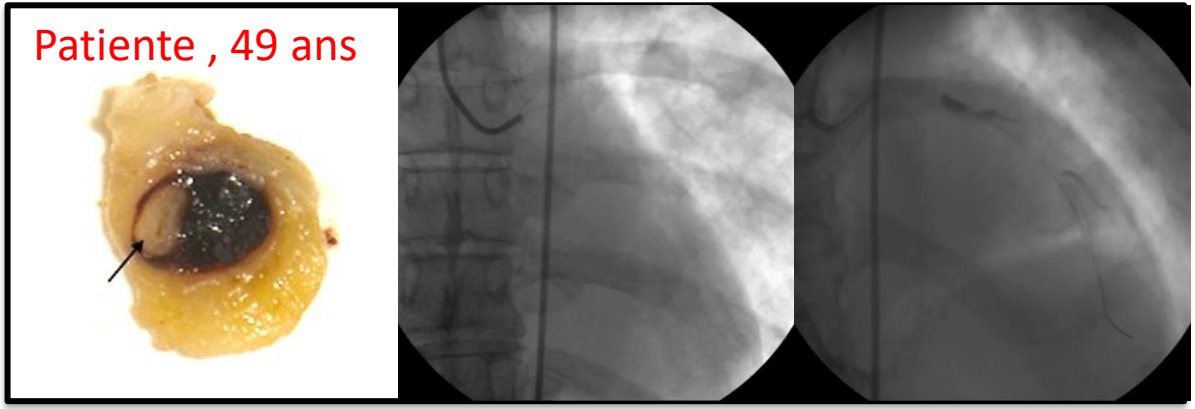
Tweet M, Circ Cardiovasc Interv. 2014



SCAD de la femme jeune

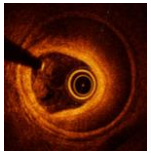
- Mortalité > 70% *(50% mort subite, 20% premières*

Cano O., International Journal Cardiology 2007



- Mortality ≈ 20% … bon pronostic après phase aiguë

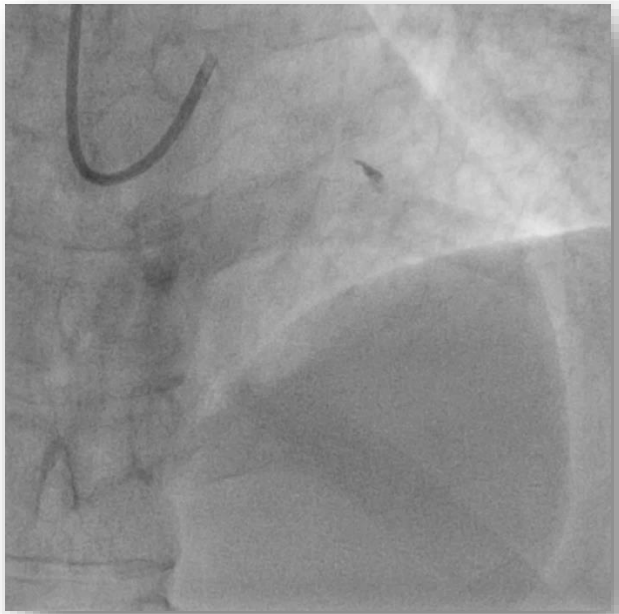
Motreff P., Cardiology 2010

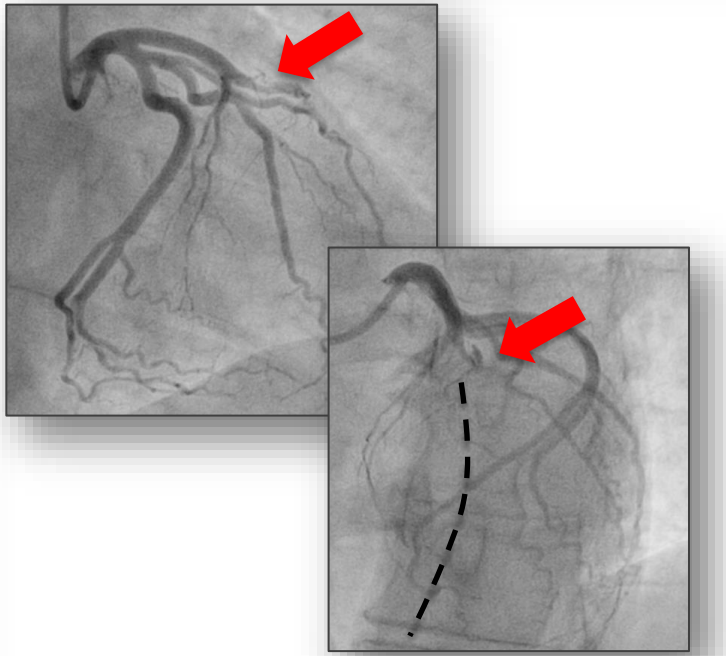


SCAD de la femme jeune

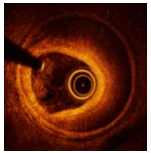
Mme B. 42 ans, pas de FRCV
SCA ST+ antérieur, Killip 4

Angioplastie de sauvetage à H3





Combaret N, Eur Heart J Card Imaging 2013

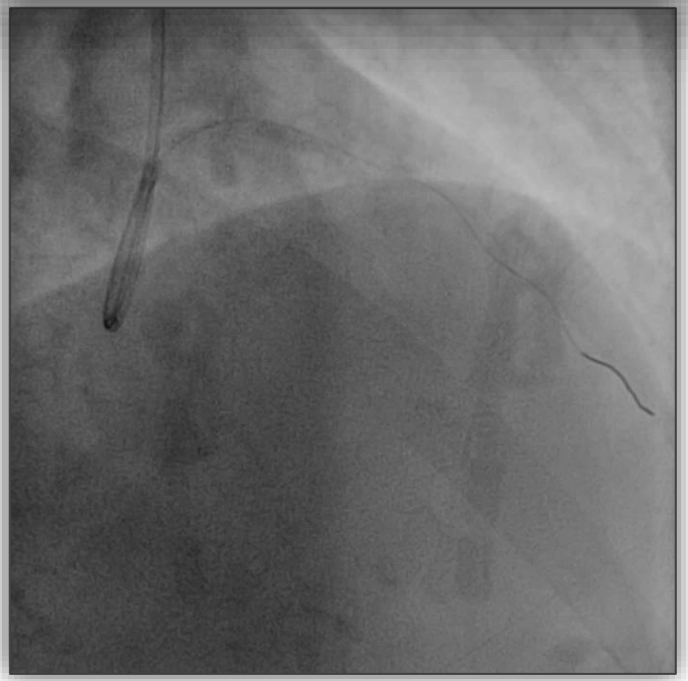


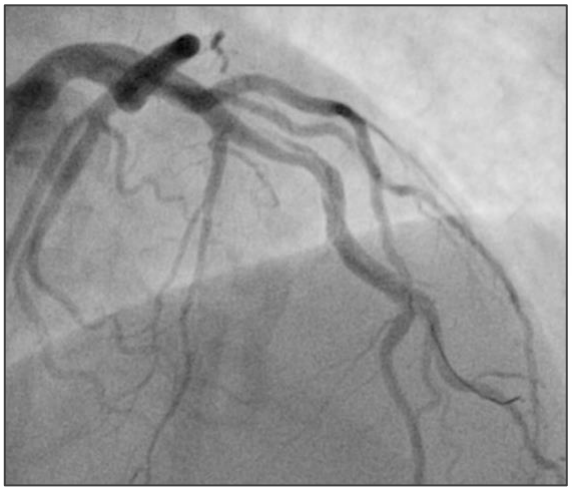
SCAD de la femme jeune

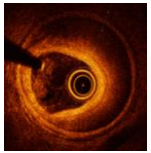
Recanalisation difficile
(>30mn) avec guide (GW1)

Diagnostic de Dissection Coronaire Spontanée

Stenting direct IVA ?
(3.5 x 20mm)

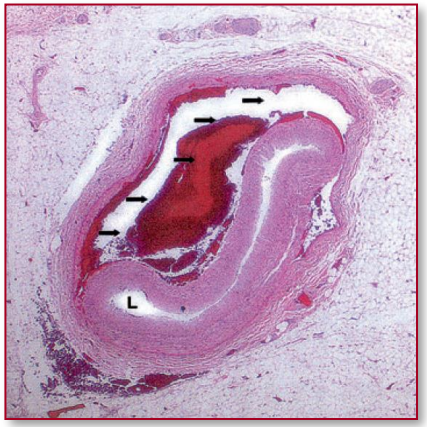




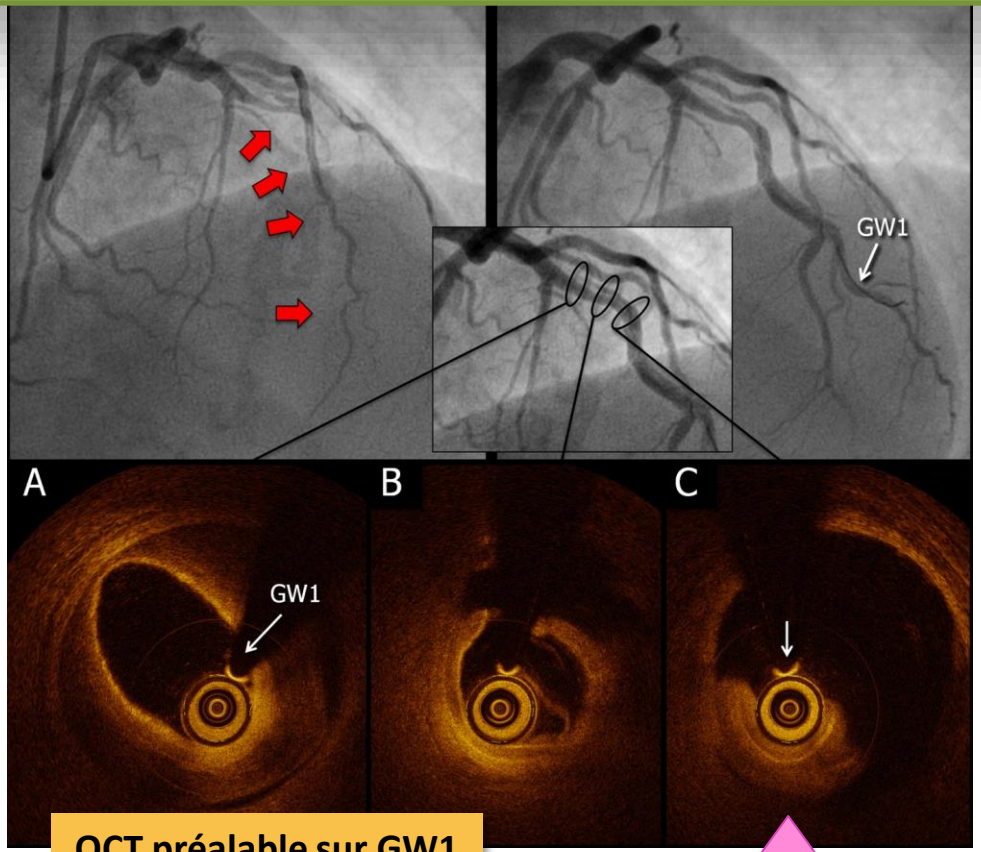


SCAD de la femme jeune

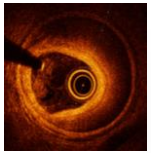
Guide dans fausse lumière !



Al-Daraji, Histopathology 2005



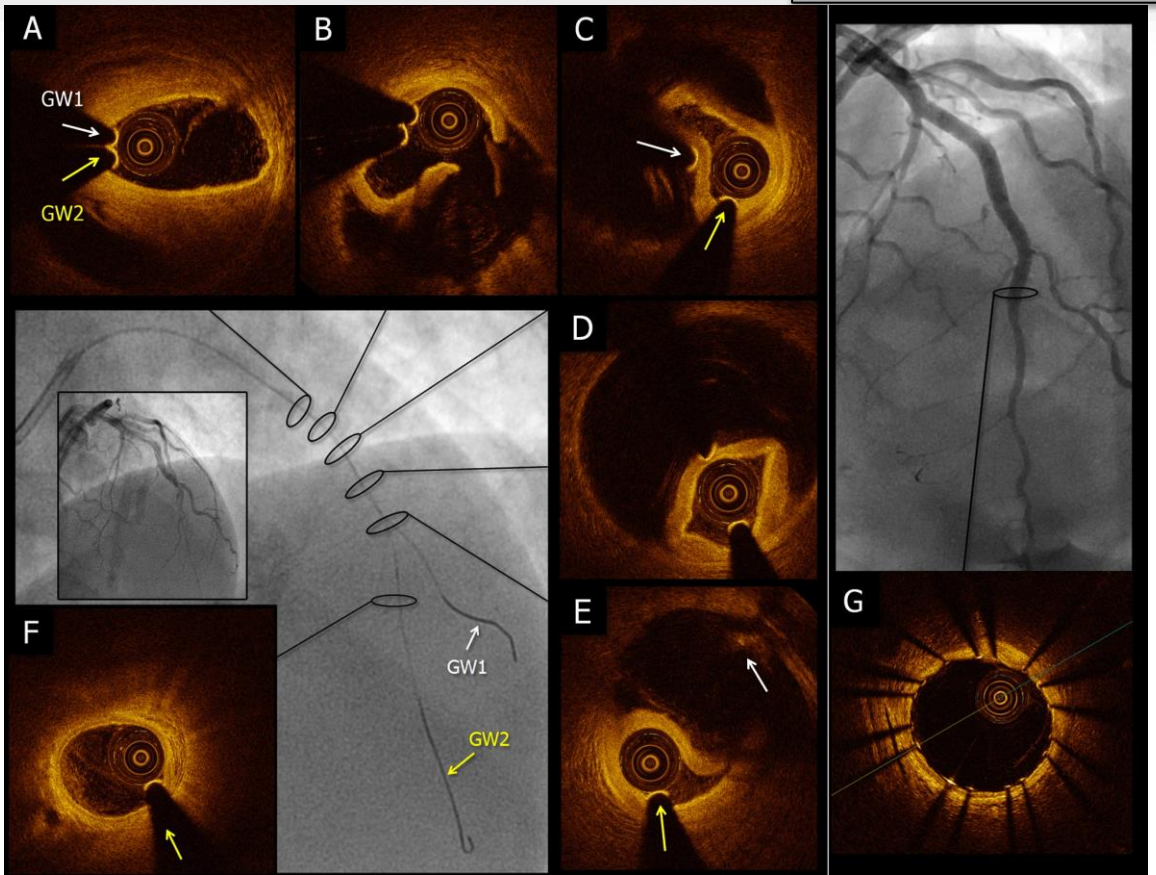
OCT préalable sur GW1

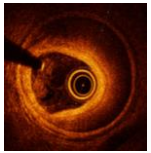


SCAD de la femme jeune

Stenting sur GW2 guidé par OCT

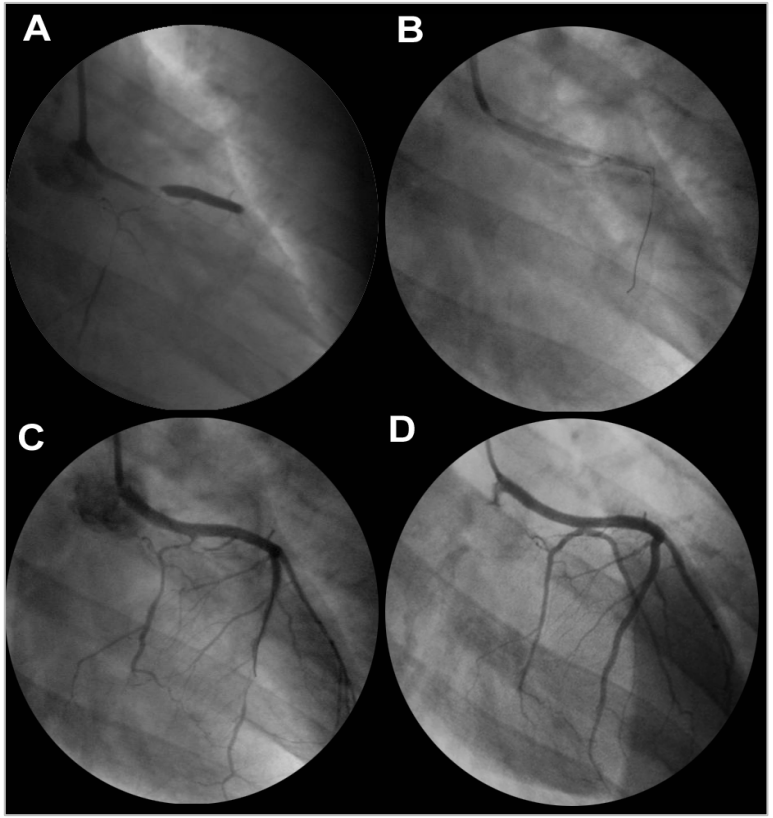
Contrôle post-stenting



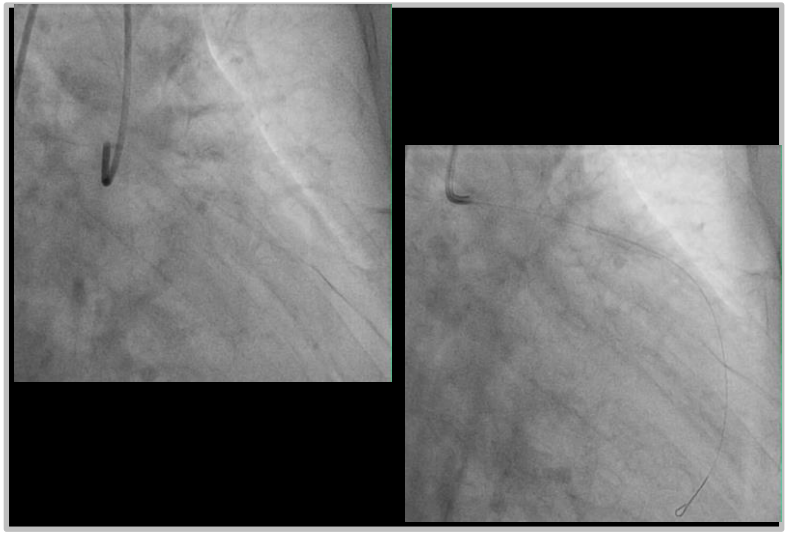


SCAD de la femme jeune

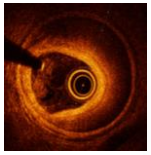
Mme D., 40 ans



Risque de stenter en fausse lumière

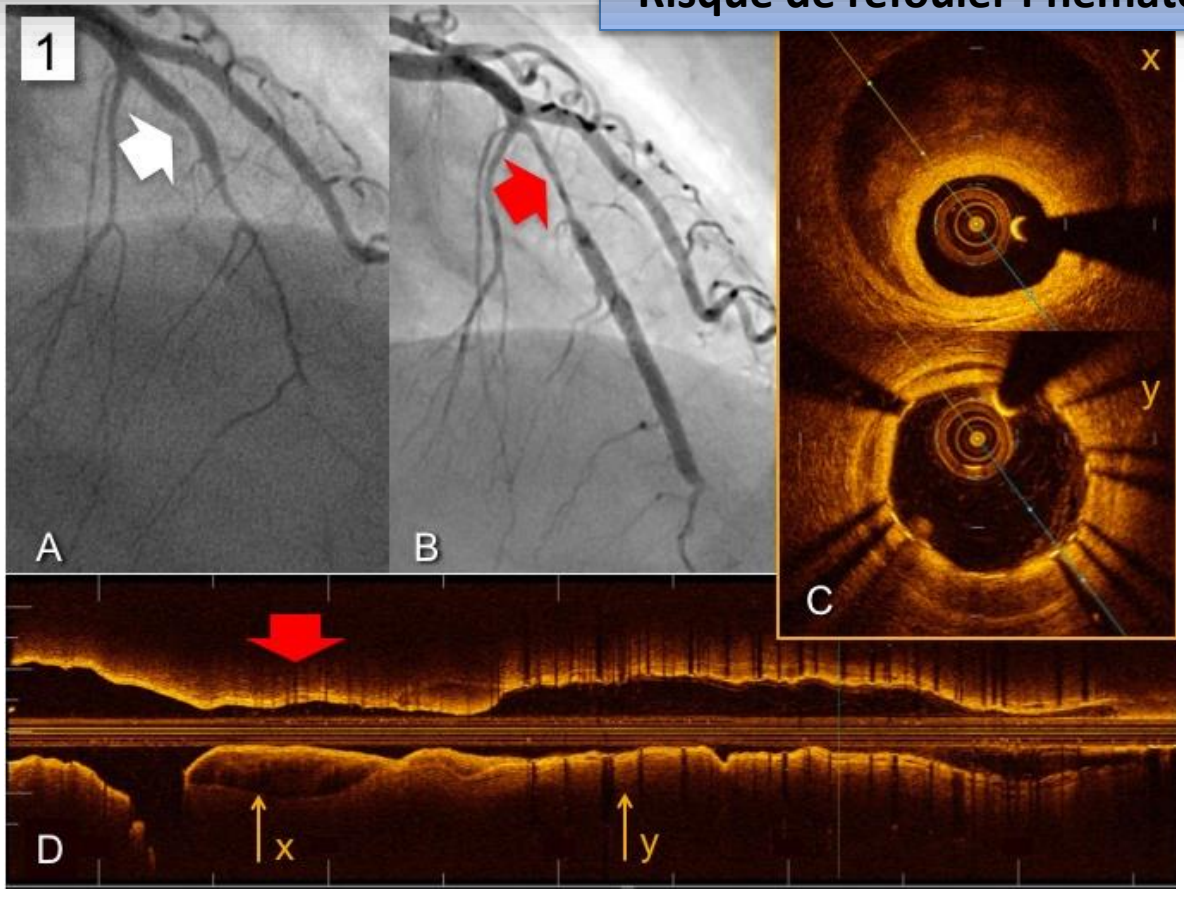


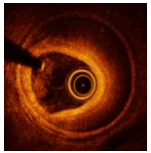
Mme I., 59 ans…
assistance puis transplantation



SCAD de la femme jeune

Risque de refouler l'hématome

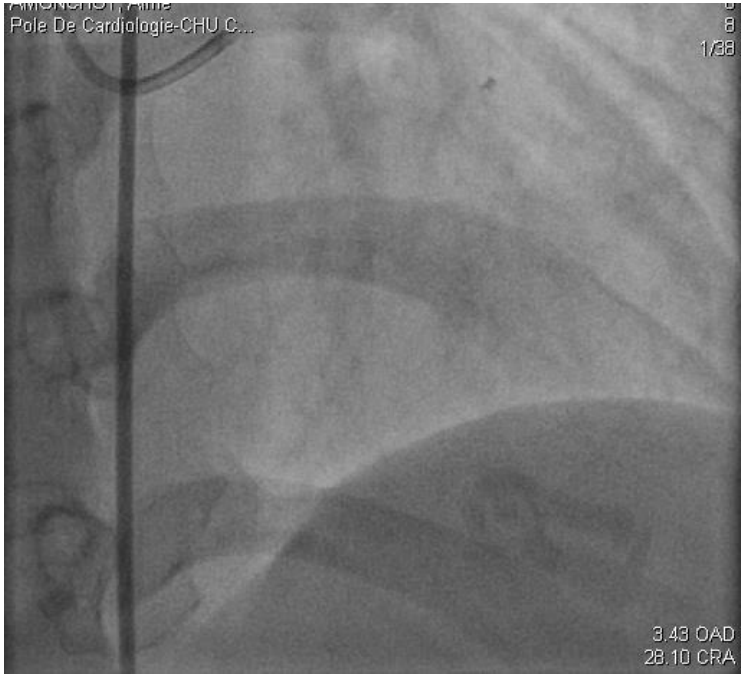


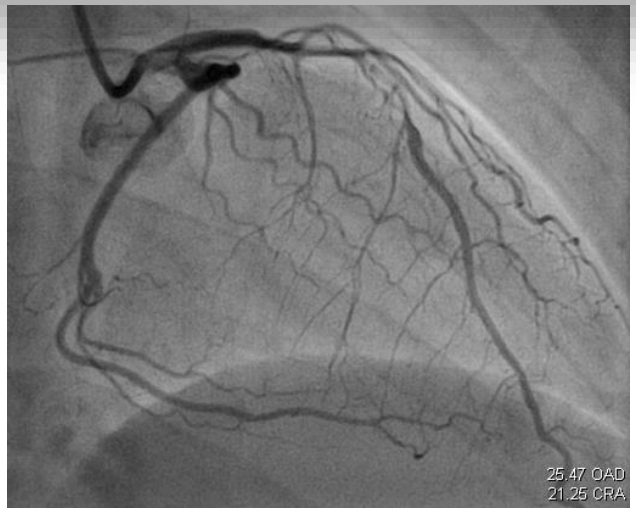


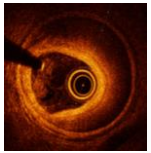
SCAD de la femme jeune

Mme J, 42 ans

NSTEMI

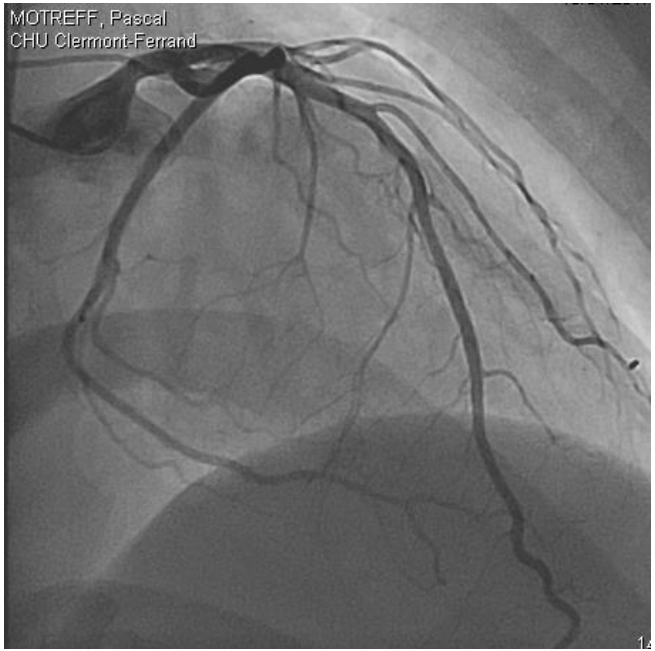


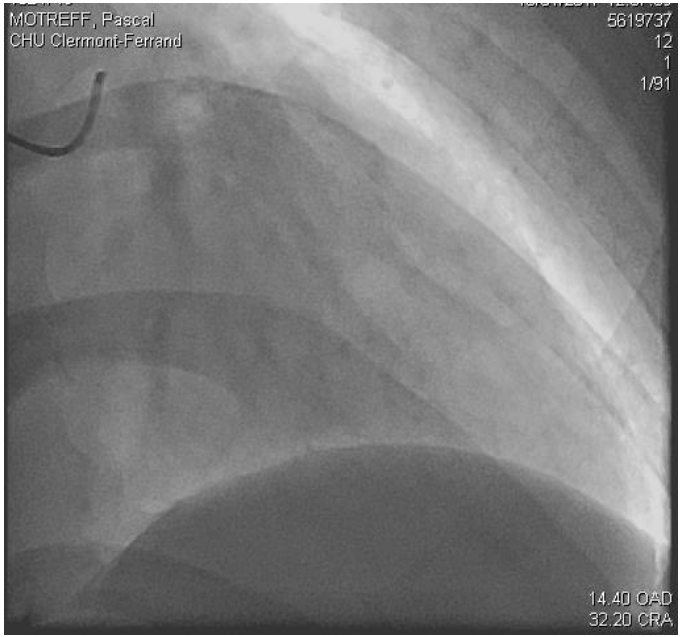


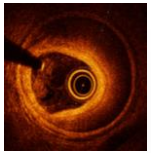


Mme J, 42 ans

Contrôle à J40, asymptomatique, FEVG=70%





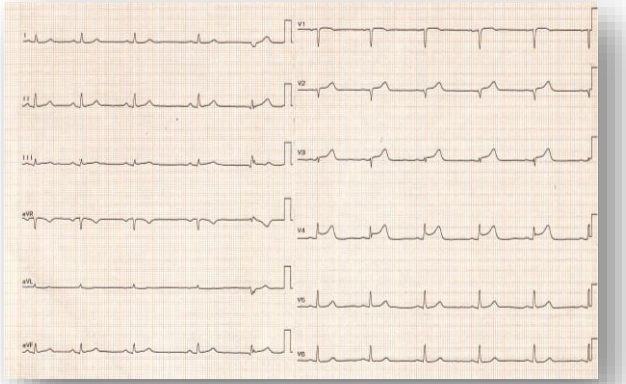


SCAD de la femme jeune

Mme P., 46 ans, Astrologue…

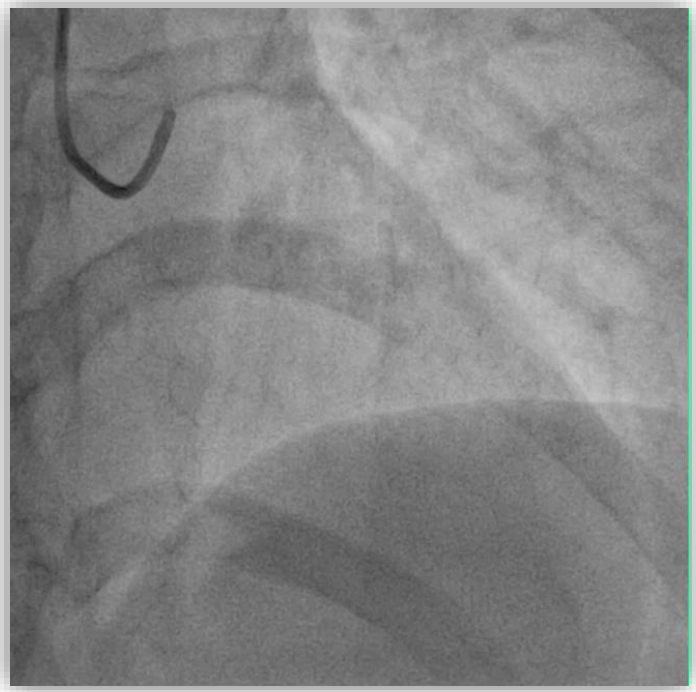
FRCV : Tabac 10 PA

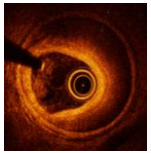
HDLM : Douleur thoracique intense + malaise au décours effort modéré



Hématome ou Dissection Coronaire Spontanée

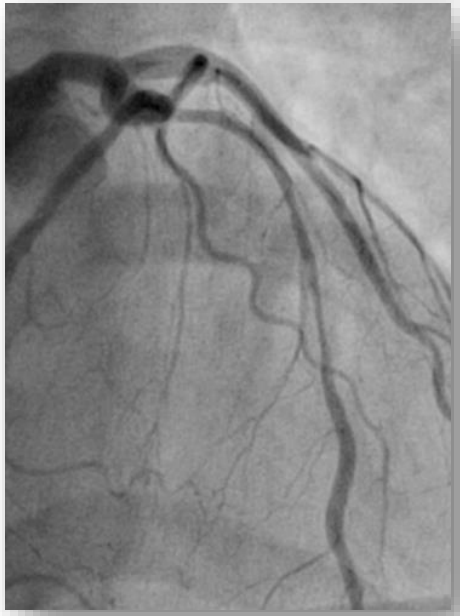
- Contexte clinique
- Aspect angiographique

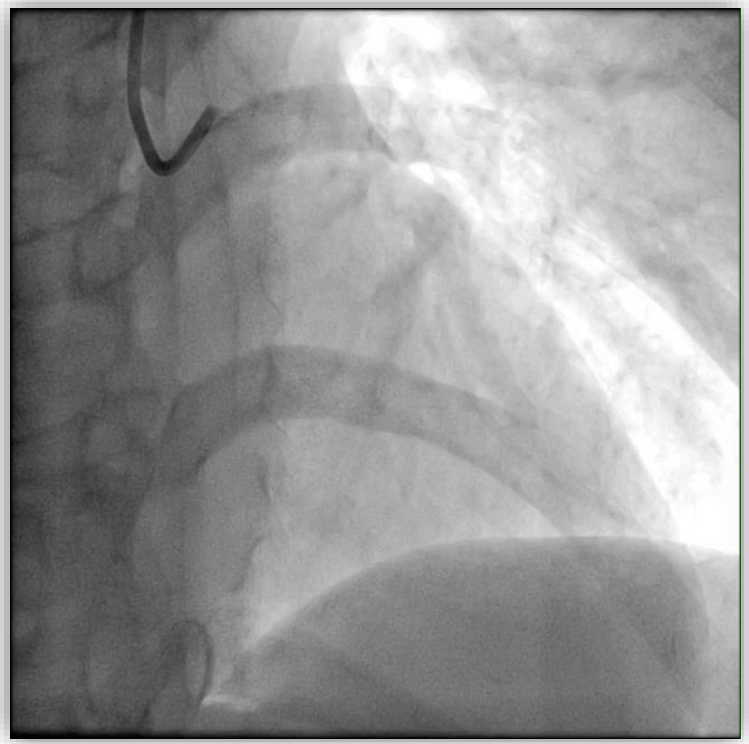




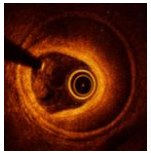
SCAD de la femme jeune

Mme P., 46 ans



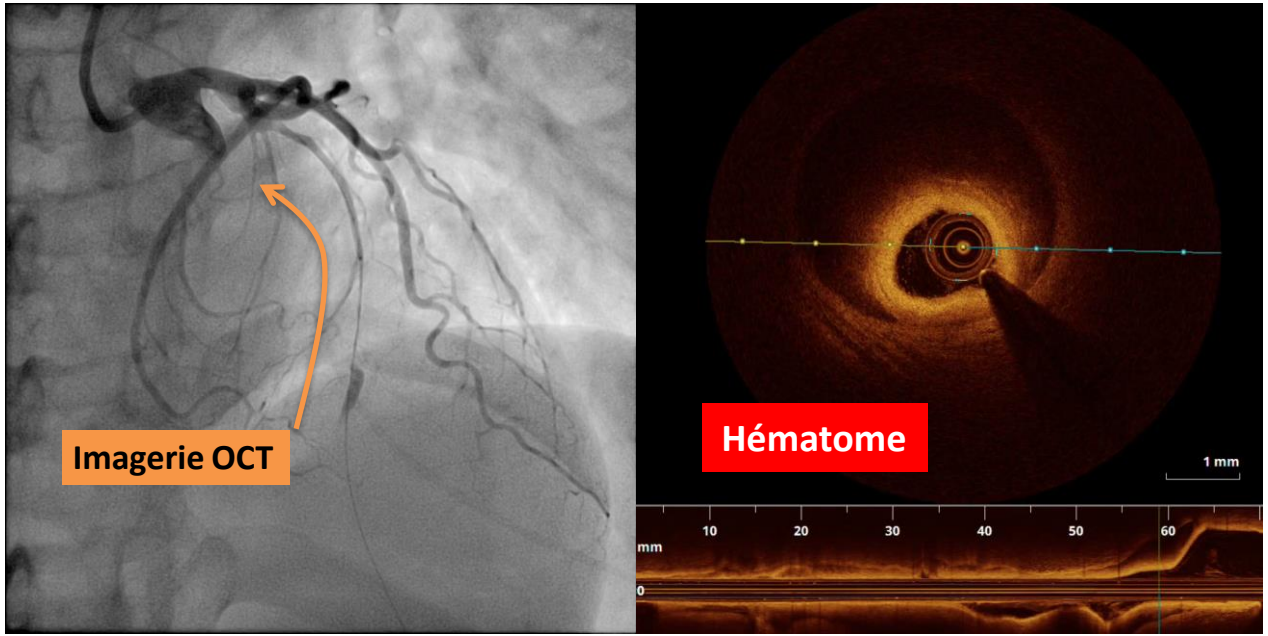


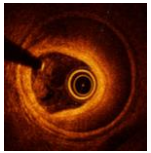
Surveillance en USIC
Reprise de symptômes à J3
Contrôle anticipé



Mme P., 46 ans

Hématome intramural confirmé par OCT

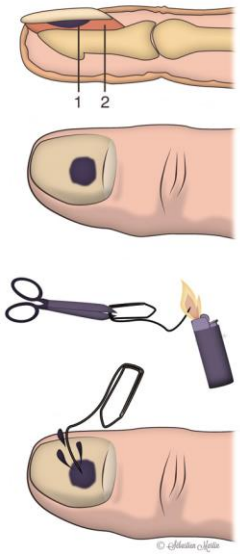


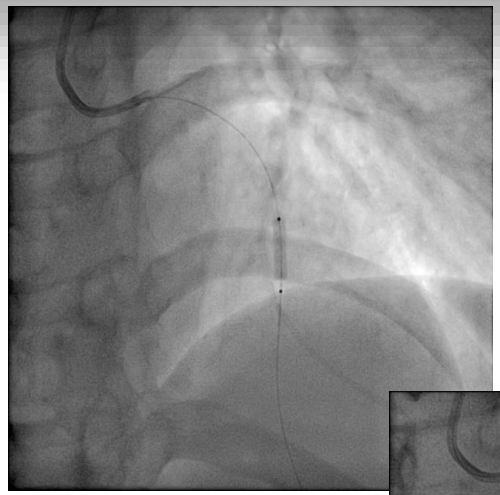


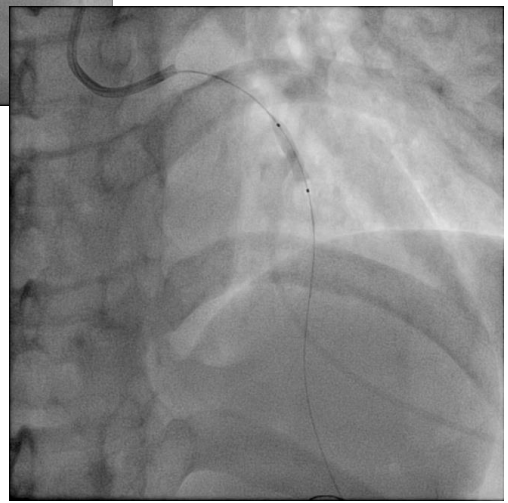
SCAD de la femme jeune

Mme P., 46 ans

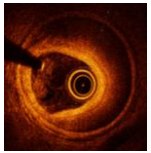
Décompresser l'hématome sous contrôle OCT ?





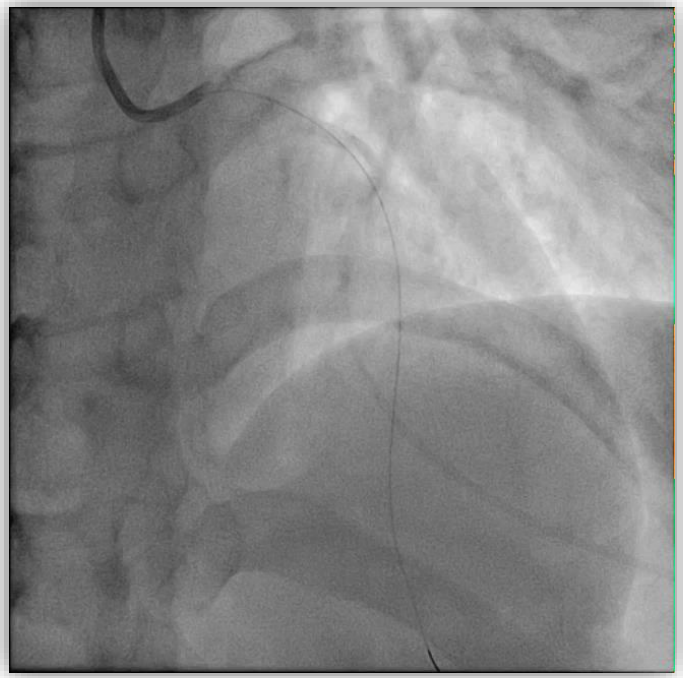


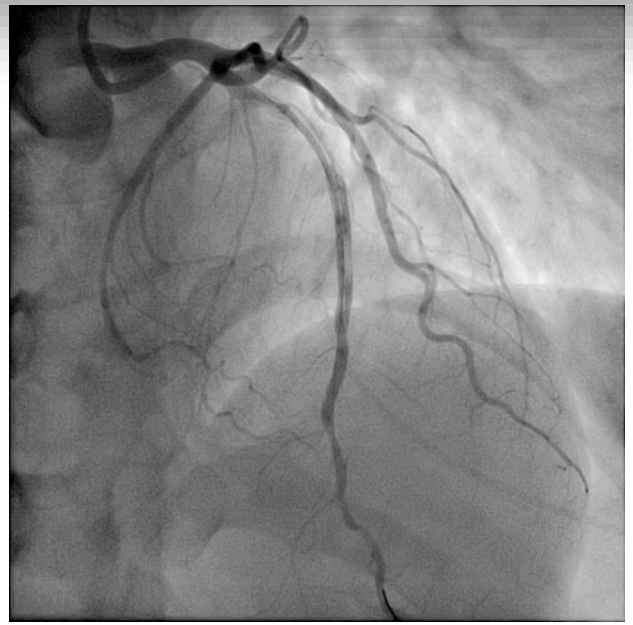
Angiosculpt® Biotronik 3.0x15mm à 14 atm



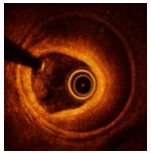
SCAD de la femme jeune

Mme P., 46 ans



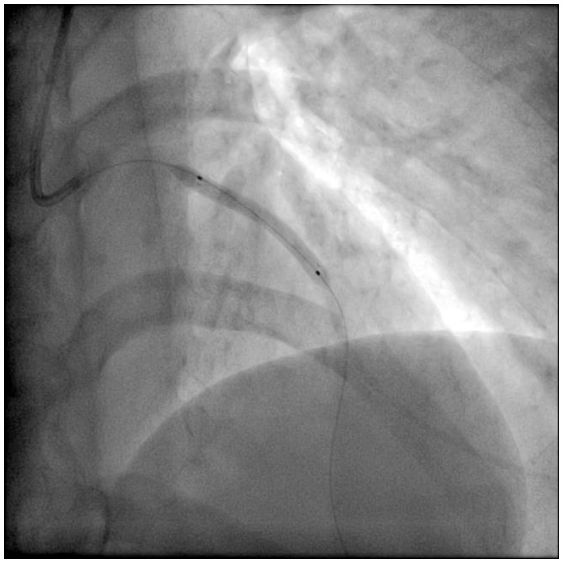


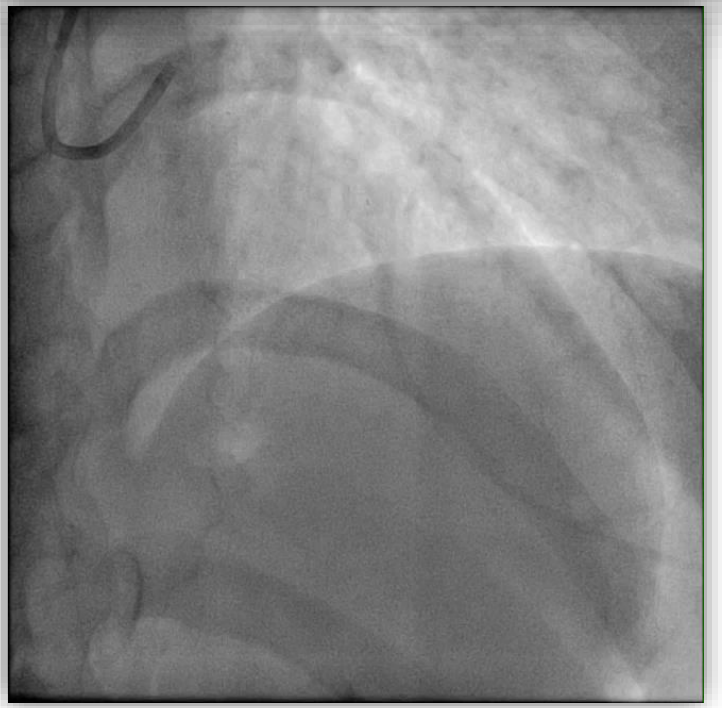
Transformation hématome en dissection



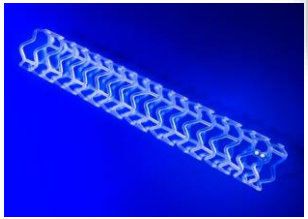
SCAD de la femme jeune

Mme P., 46 ans





Absorb®, Abbott
3.5x28mm, 12 atm



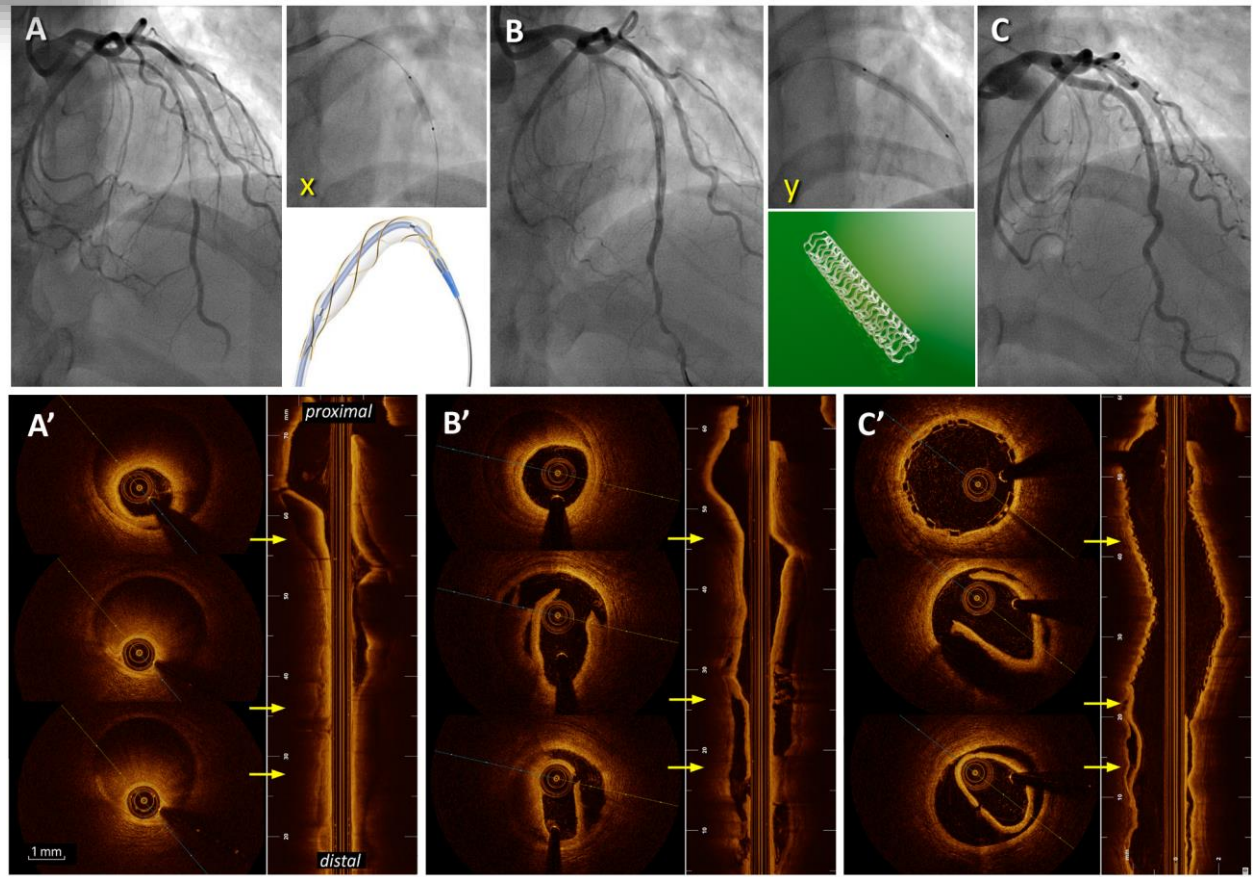
Stenting proximal avec BVS
Respect de la dissection d'aval
Excellente évolution à 4 ans !

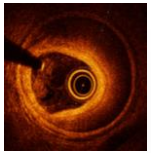
Coronary Artery Fenestration Guided by Optical Coherence Tomograhy Before Stenting

New Interventional Option in Rescue Management of Compressive Spontaneous Intramural Hematoma

Pascal Motreff, MD, PhD; Nicolas Barber-Chamoux, MD; Nicolas Combaret, MD; Géraud Souteyrand, MD

Circ Cardiovasc Interv 2015

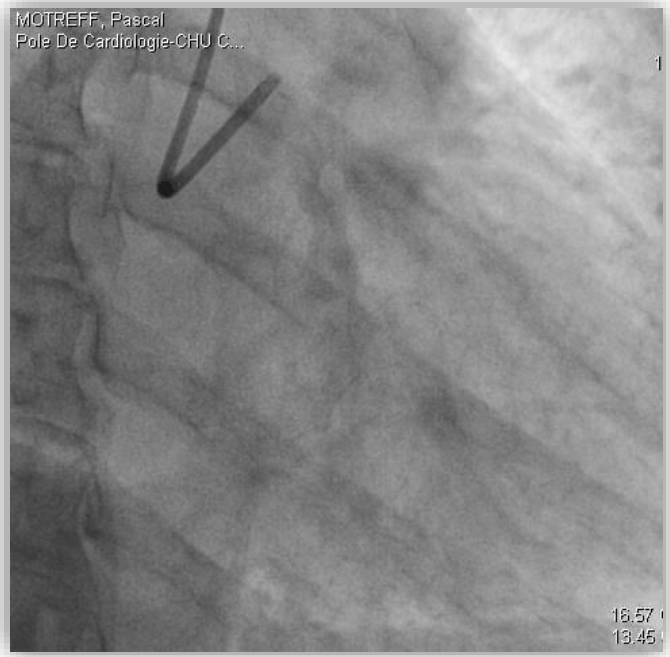


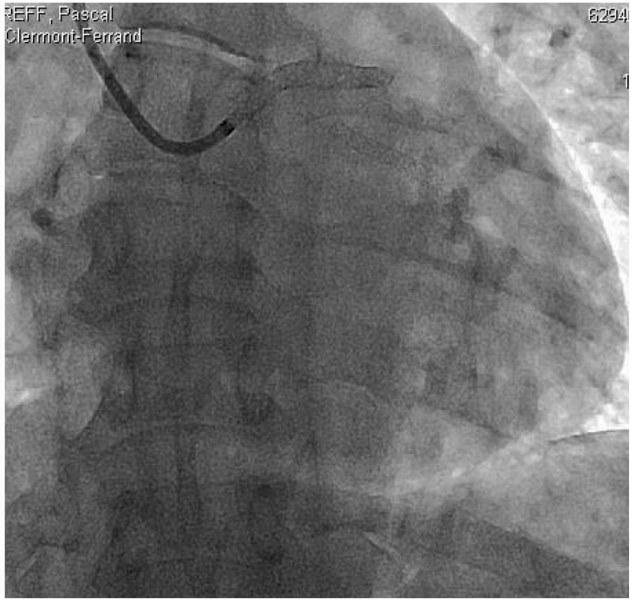


11 cas de fenestrations 2015-2017 (5 centres)

Mme G., 45 ans
SCA non ST+

Fenestrations IVA, Diagonale, **Stenting IVA**
Reprise de symptômes à J5, Dissections TC et Cx
Stenting Cx et TC guidé par OCT





Motreff P, JACC Interv 2018

Spontaneous Coronary Artery Dissection

Miss B., 37 years old

No CVRF

Admitted in secondary hospital for **NSTEMI**

troponines +, anterior severe hypokinesia, 40% LVEF, inconstant ST elevation (aVR)

Angiography : **chest pain and hemodynamic instability** during left main catheterism

Spontaneous coronary angiography suspected :

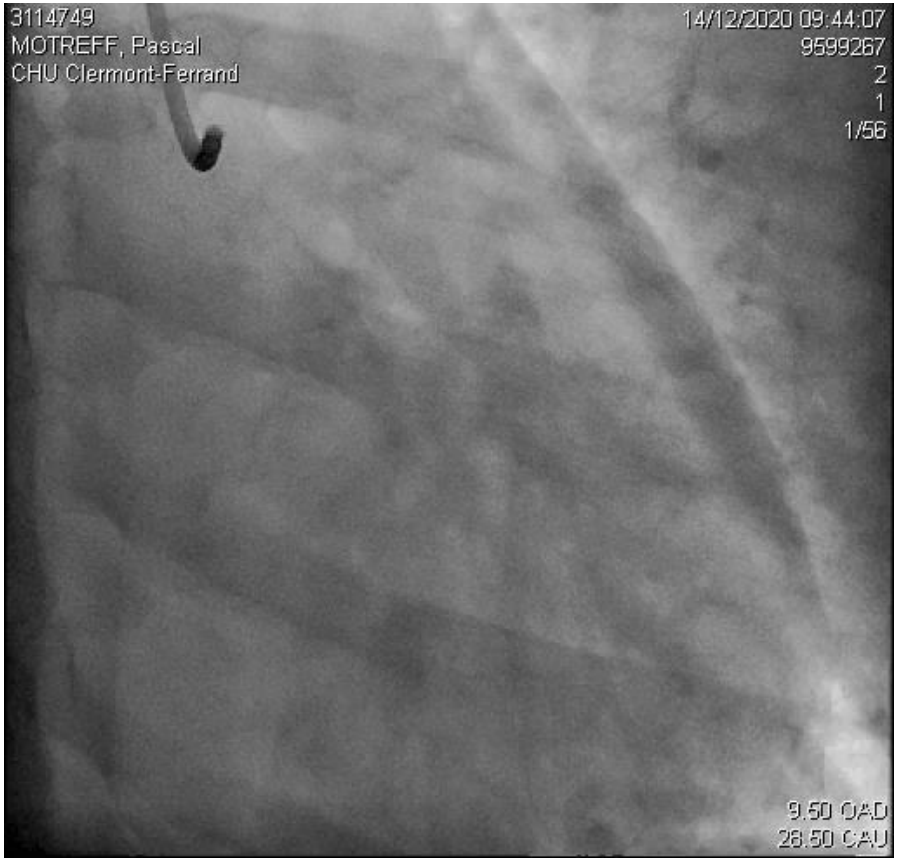
transfer to University hospital of Clermont-Ferrand

Spontaneous Coronary Artery Dissection

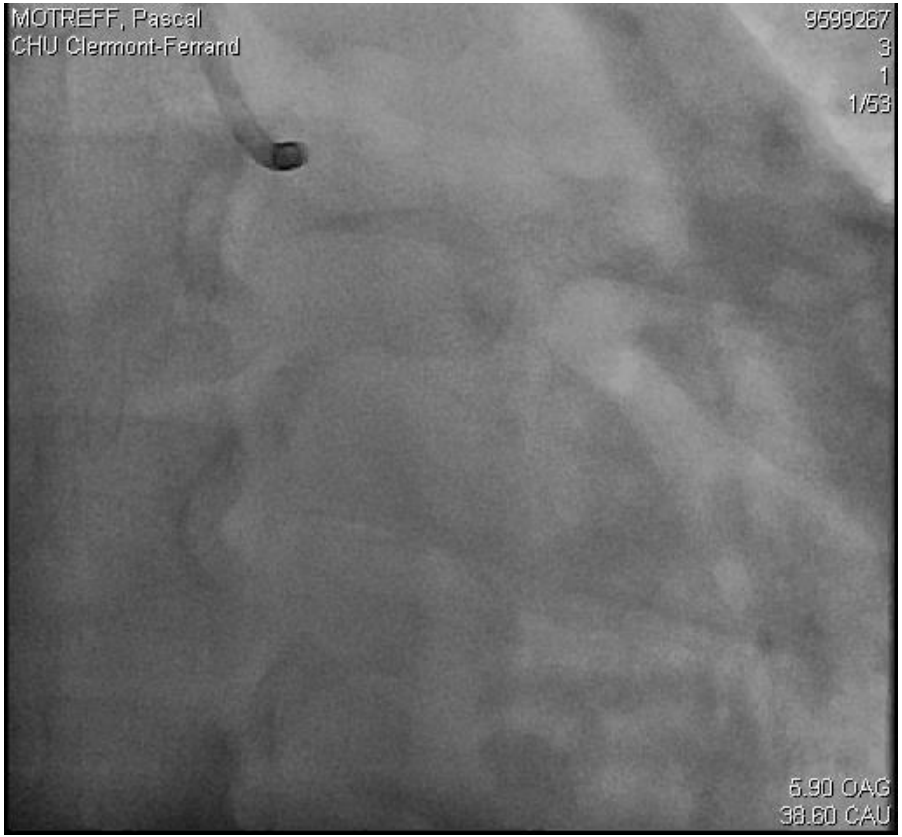
Miss B., 37 years old

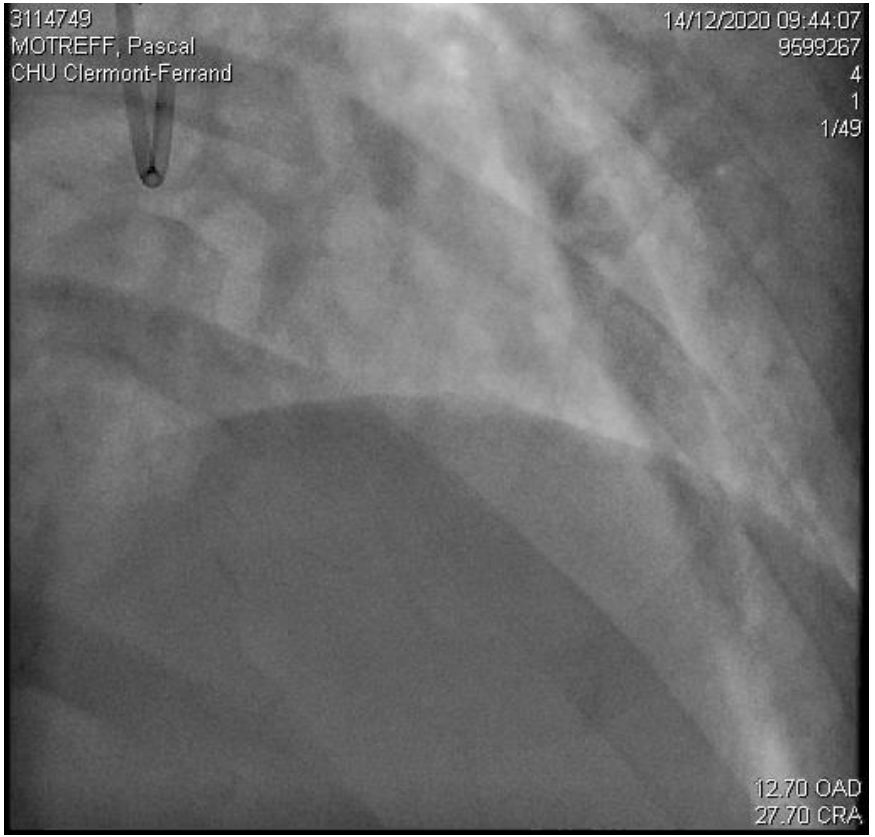
No pain, better LV function (EF=50%)

New angiography



Spontaneous Coronary Artery Dissection

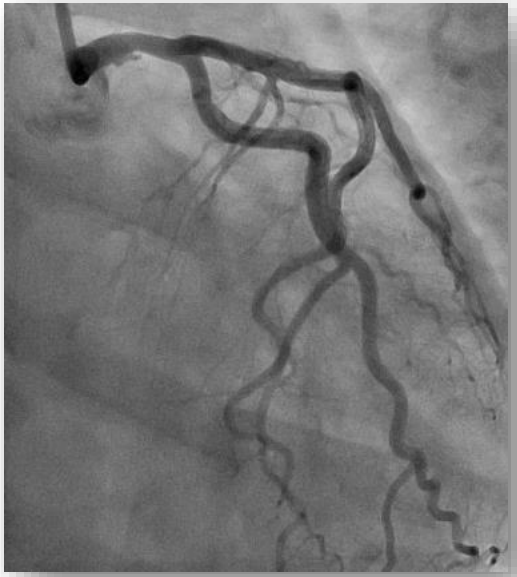


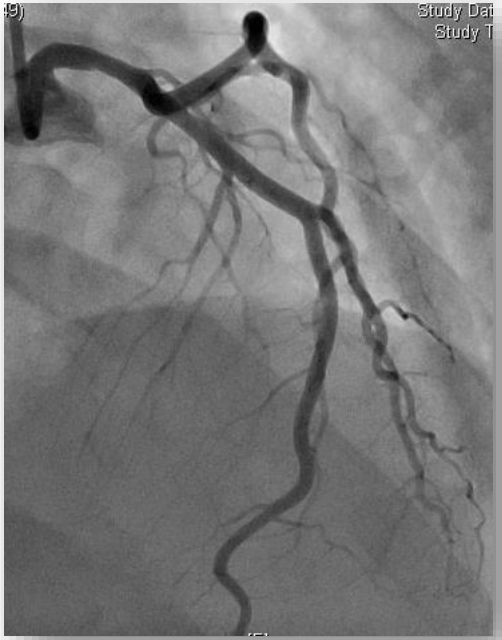


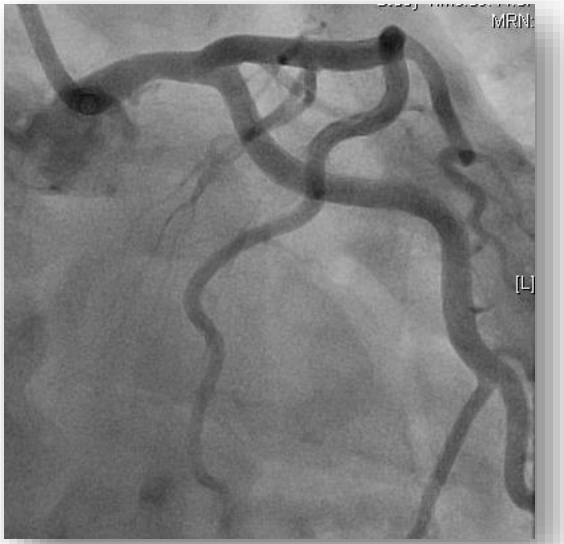
Spontaneous Coronary Artery Dissection

CLERMONT-FERRAND
CENTRE HOSPITALIER UNIVERSITAIRE

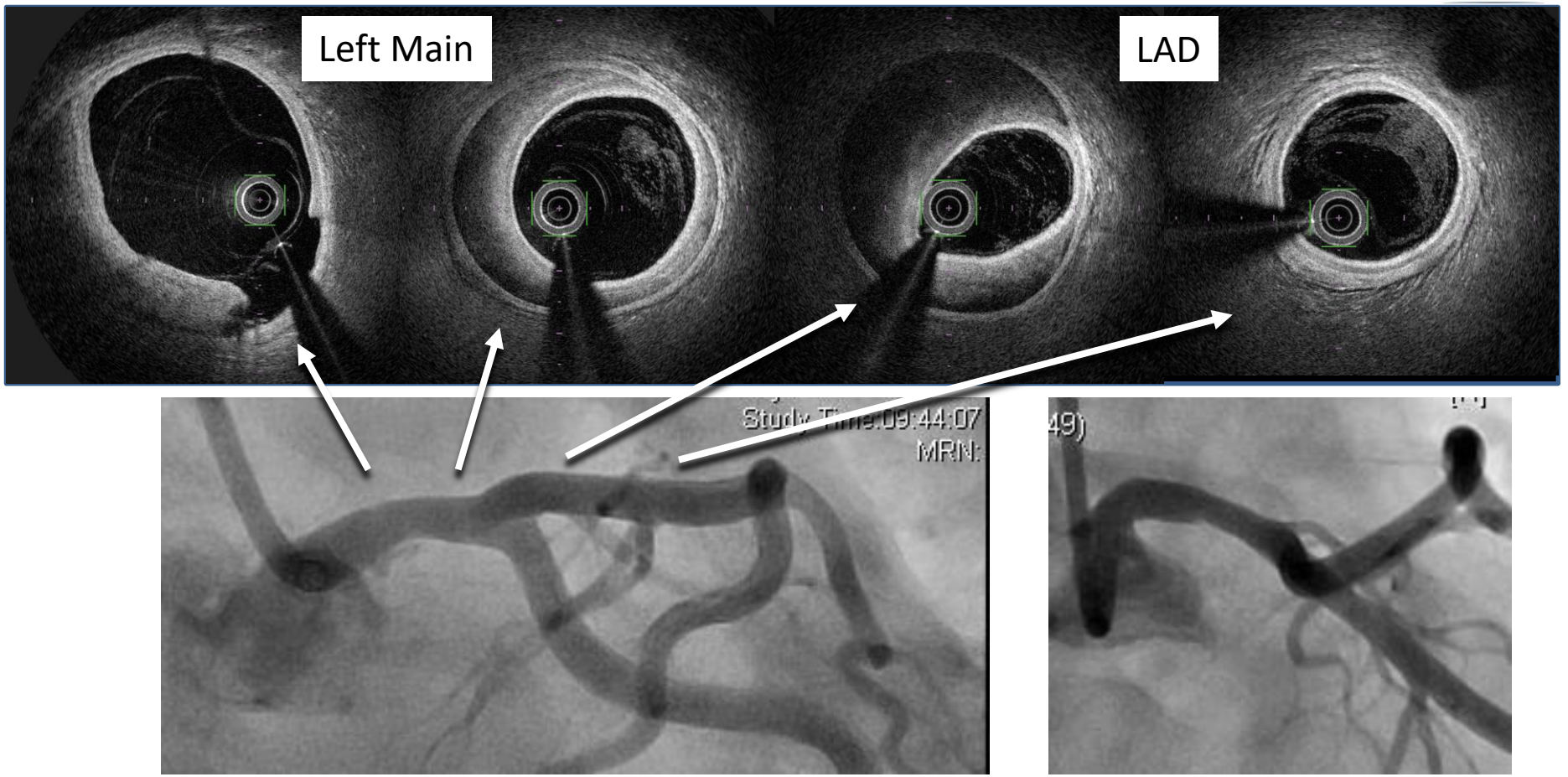
Diagnostic ambiguity ?



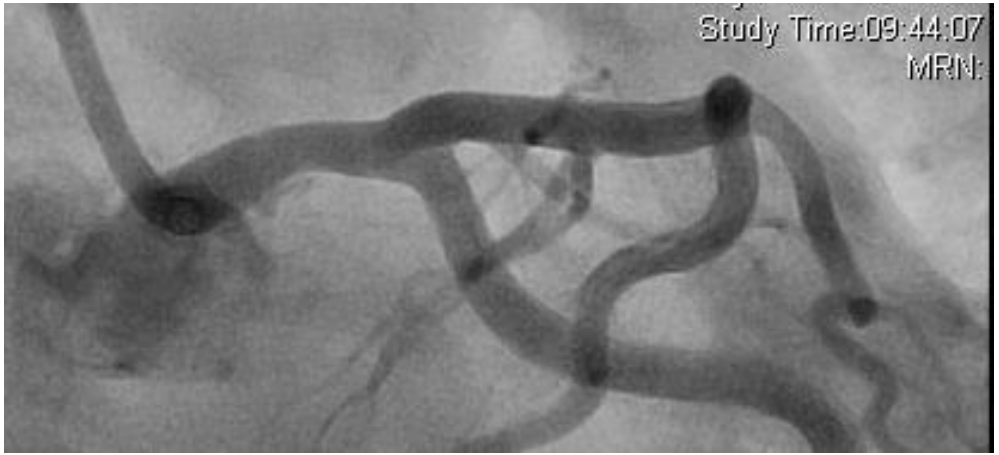




Spontaneous Coronary Artery Dissection



Spontaneous Coronary Artery Dissection



Conservative therapy : Betablocker + Aspirine

Spontaneous Coronary Artery Dissection

Miss B., 37 years old

12h later….middle of the night

Intense Chest Pain, Cardiogenic schock, LVEF=20%

Emergent angiography

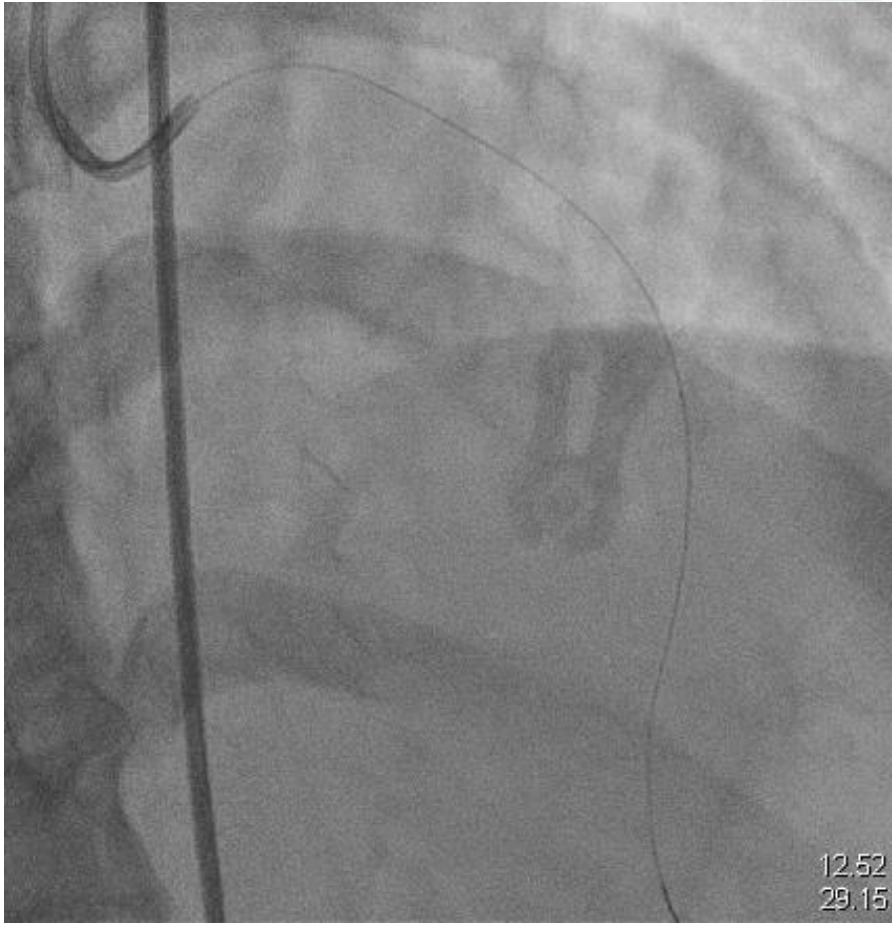
Spontaneous Coronary Artery Dissection

Miss B., 37 years old

12h later….middle of the night

Intense Chest Pain, Cardiogenic schock

Emergent angiography



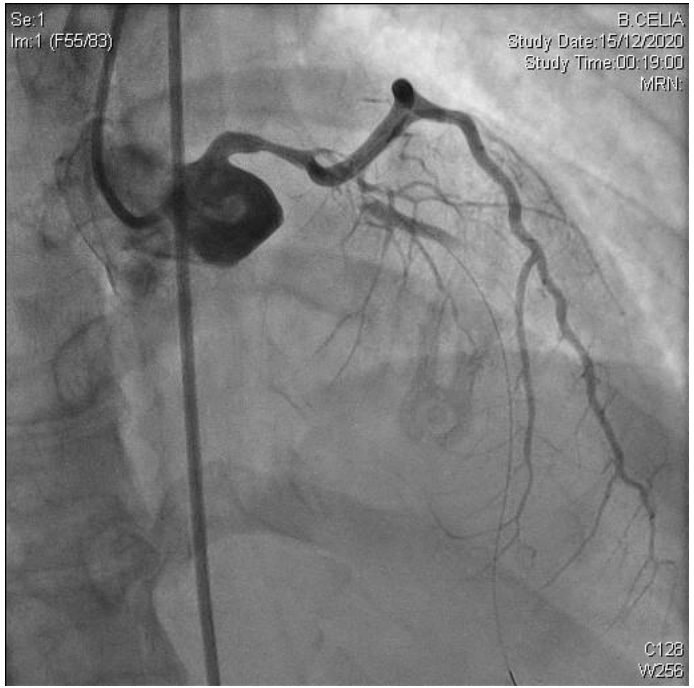
Spontaneous Coronary Artery Dissection

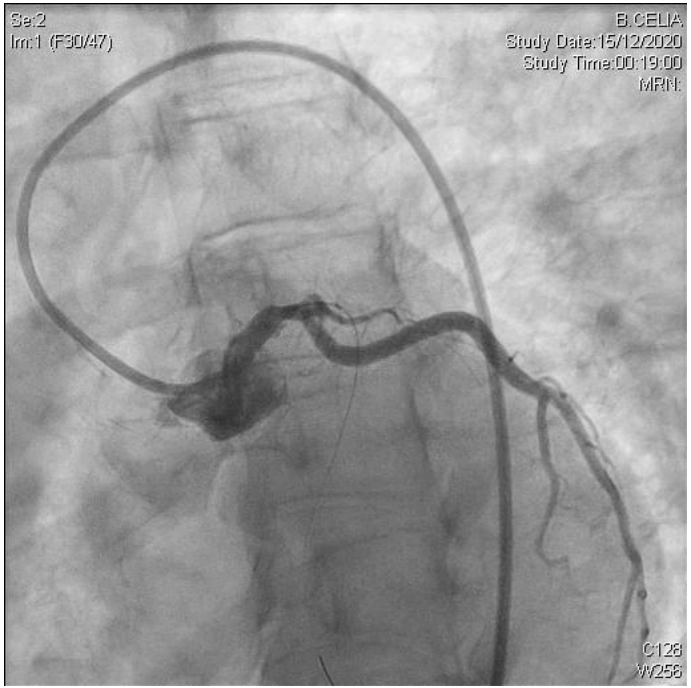
Miss B., 37 years old

12h later….middle of the night

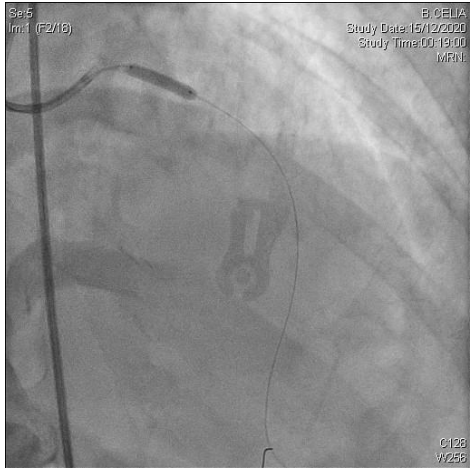
Intense Chest Pain, Cardiogenic schock

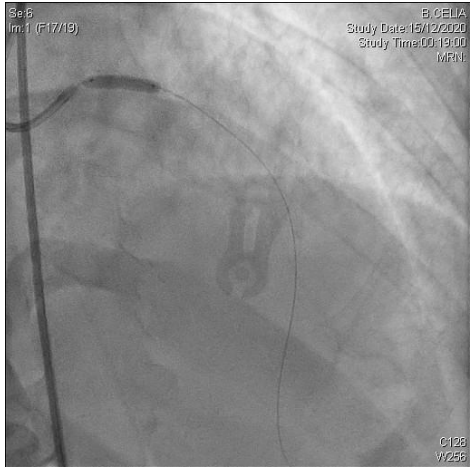
Rescue PCI

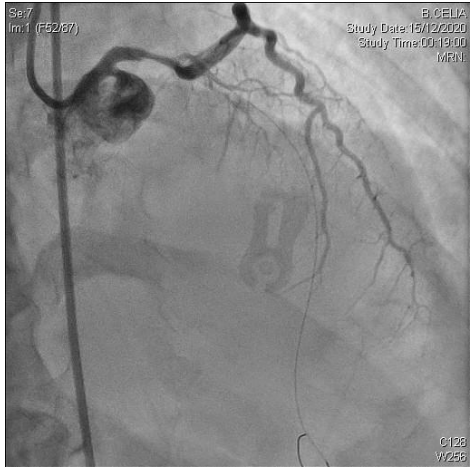


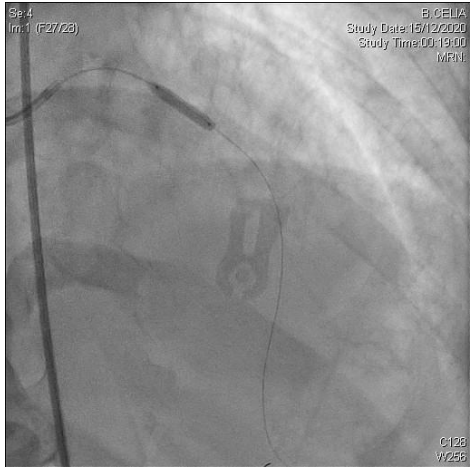


Spontaneous Coronary Artery Dissection

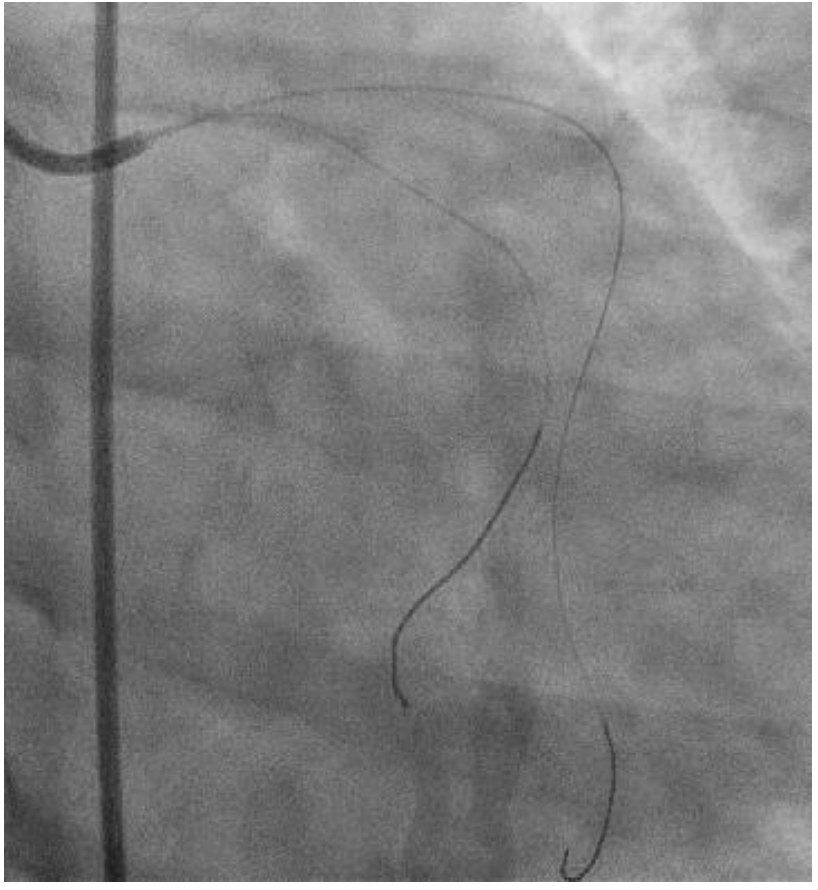




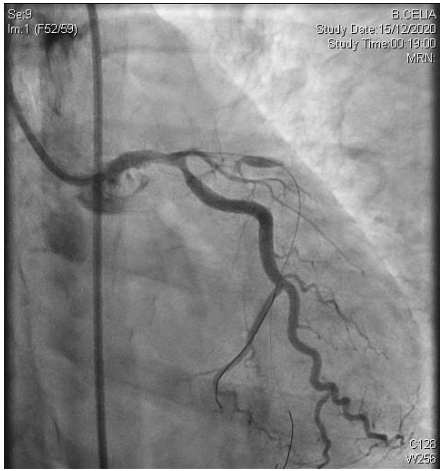


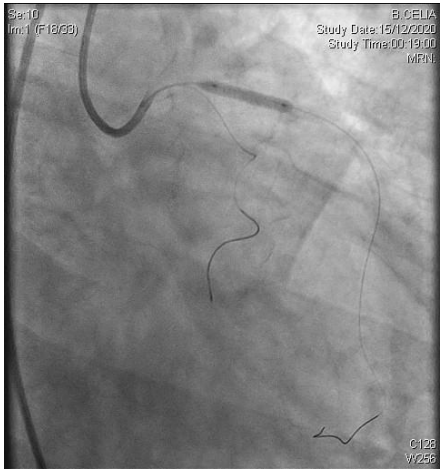


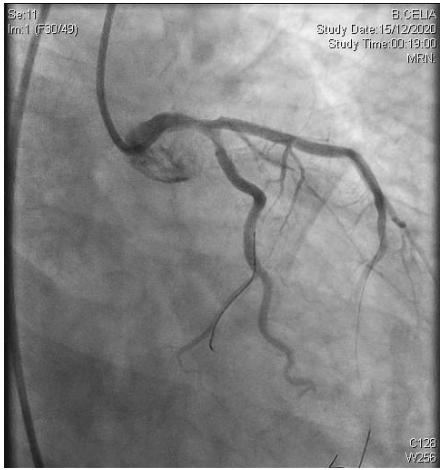
LAD and LM fenestrations



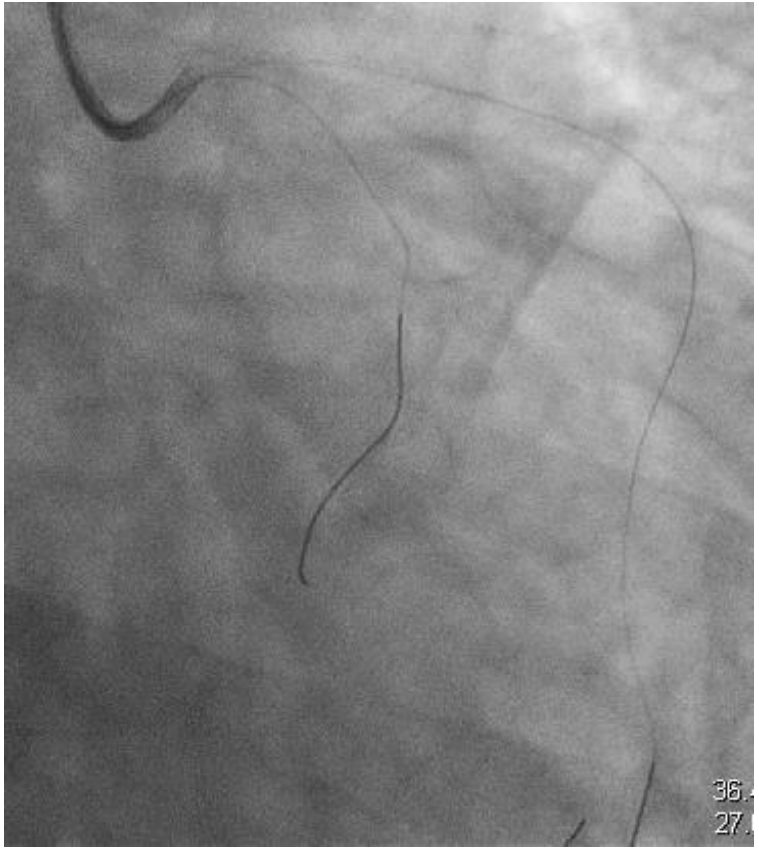
Spontaneous Coronary Artery Dissection



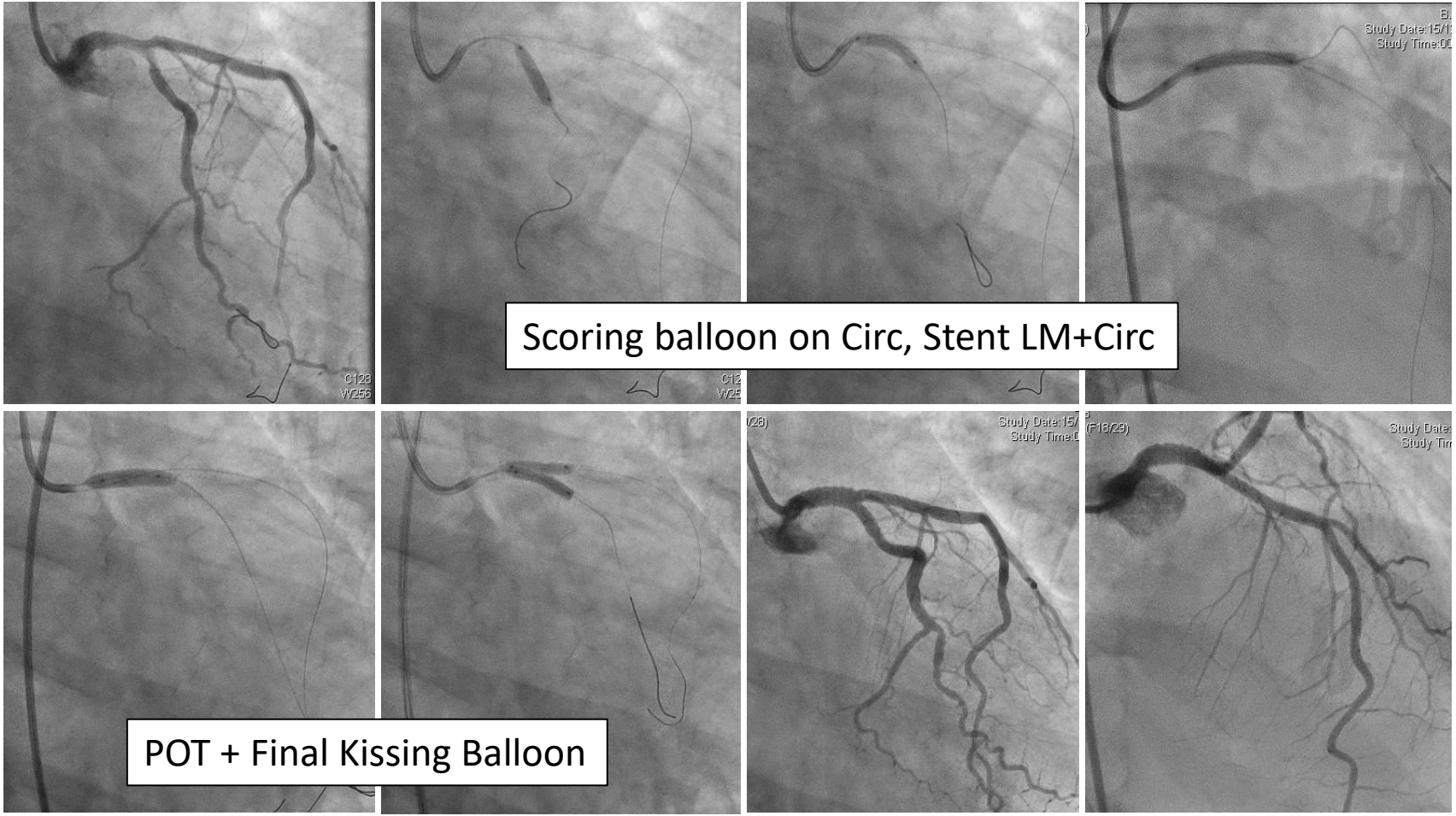




Stenting of Proximal LAD

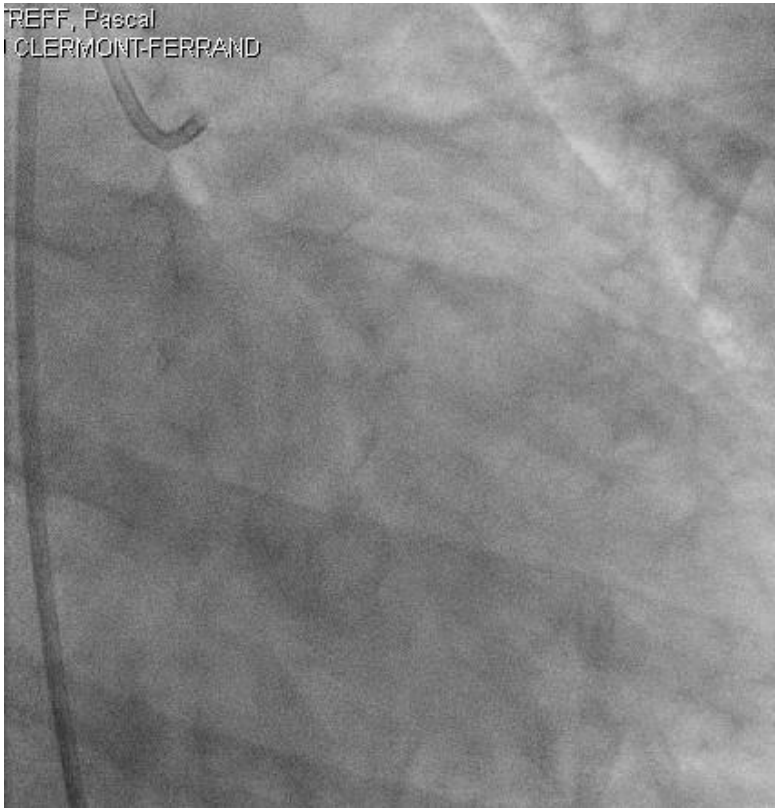


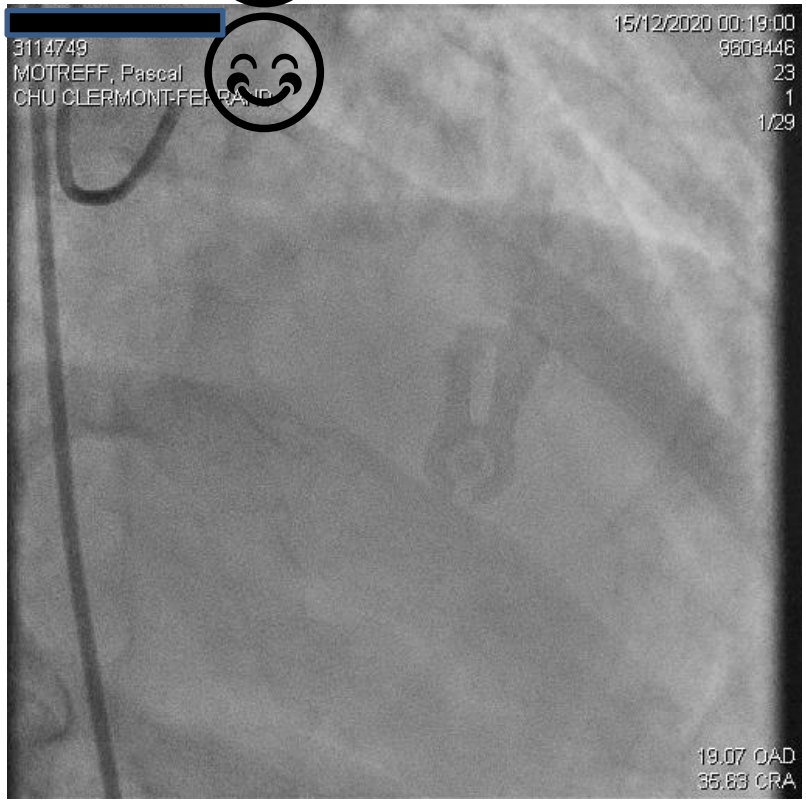
Spontaneous Coronary Artery Dissection



Spontaneous Coronary Artery Dissection

Final result



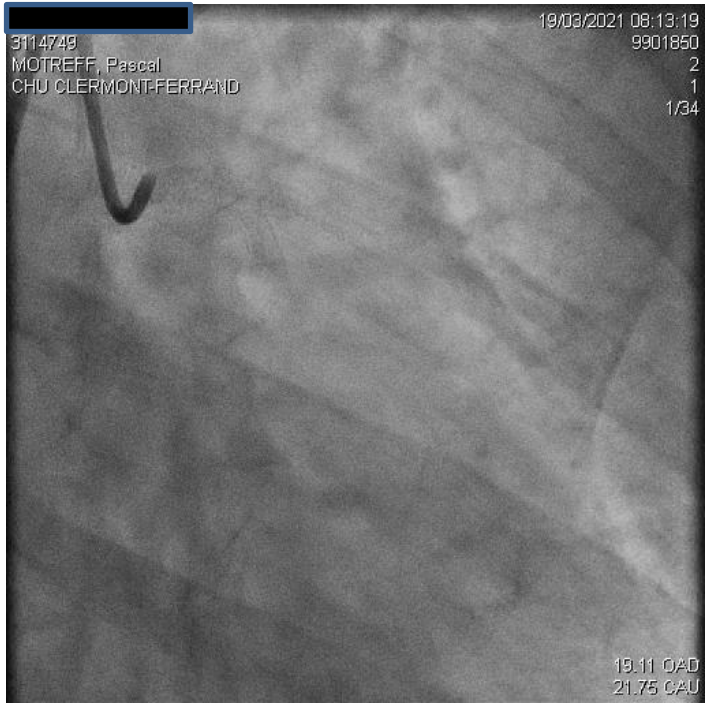


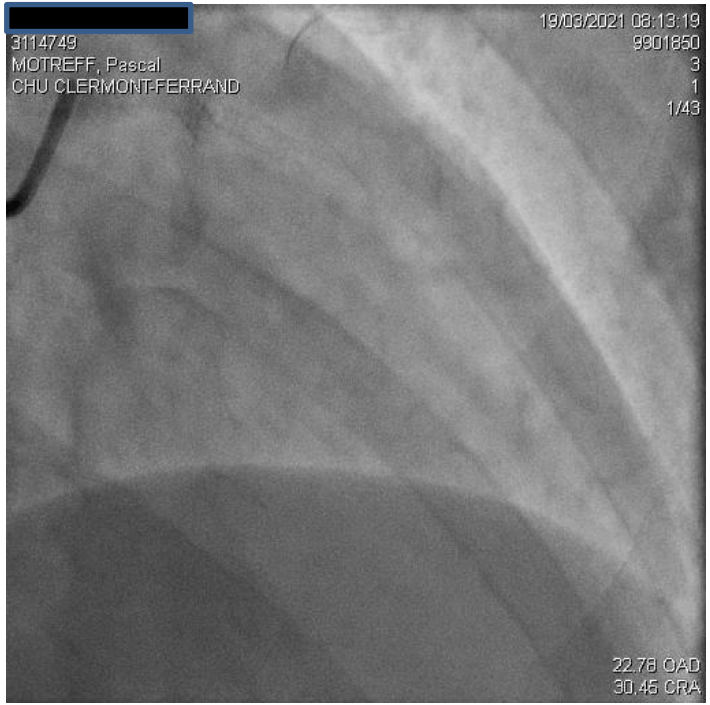
Spontaneous Coronary Artery Dissection

Miss B., 37 years old

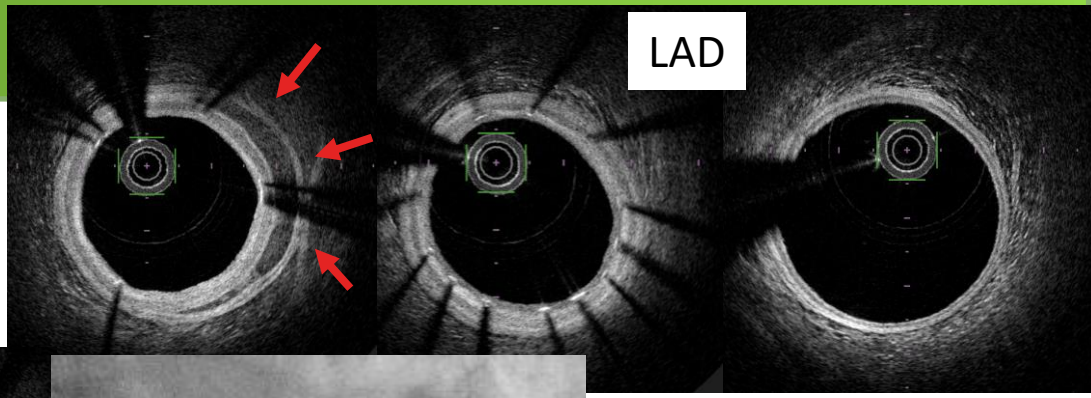
Excellent evolution, asymptomatic, LVEF=55%

3 months later

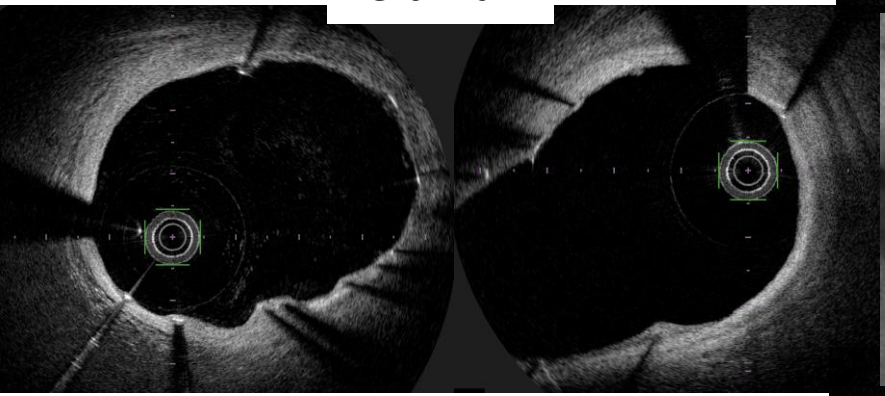


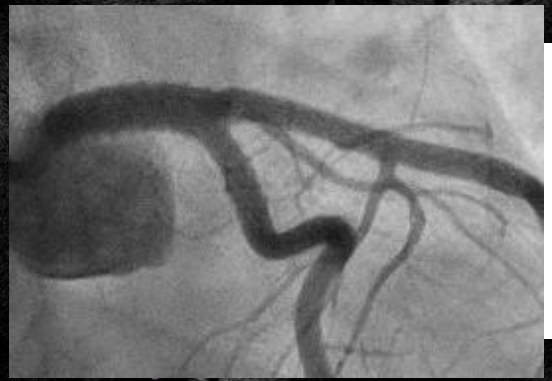


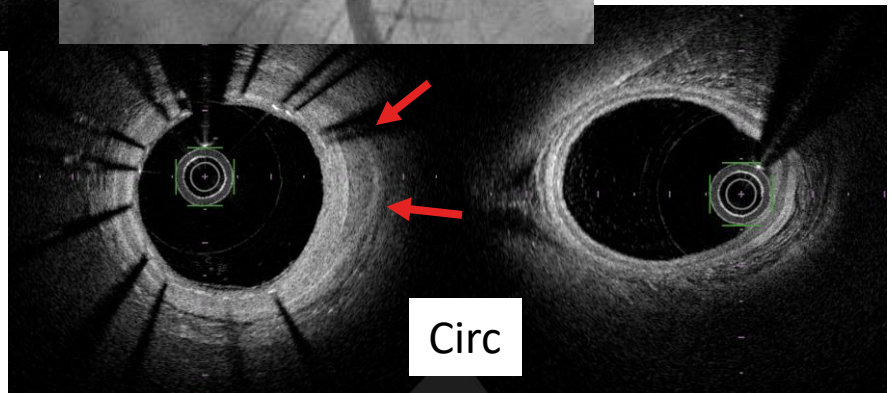
OFDI follow-up @ 3 months

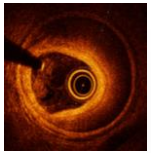


Left Main



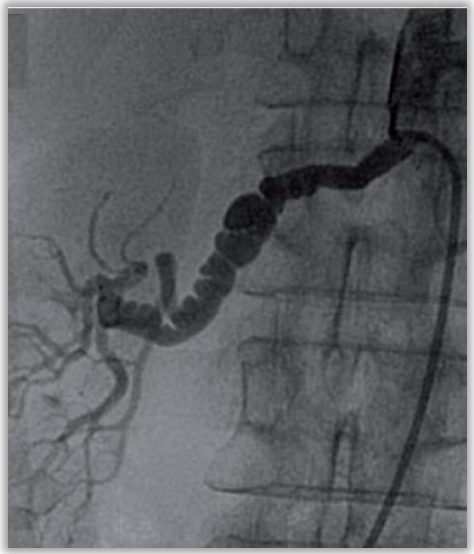


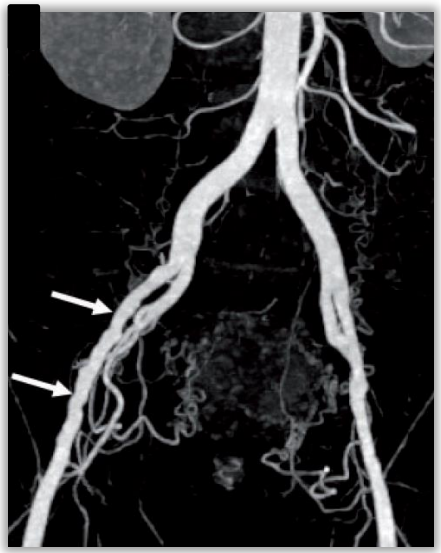


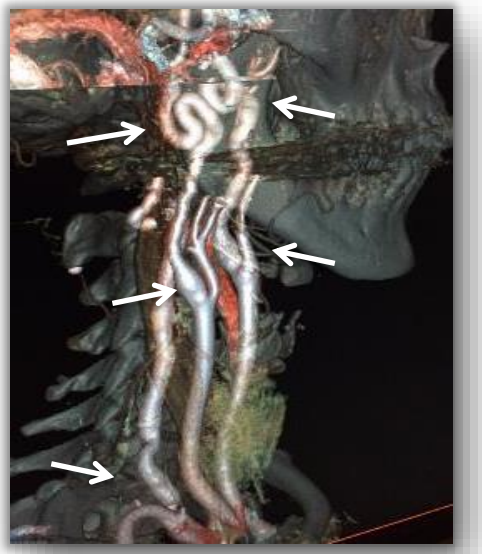


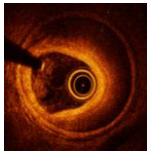
Recherche de Dysplasie Fibromusculaire

artériographie, angioscanner (artères rénales, TSA, iliaques, viscérales)





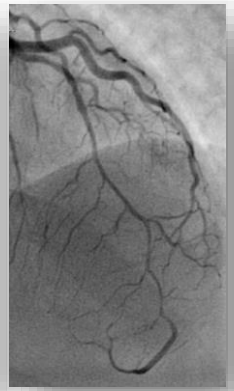


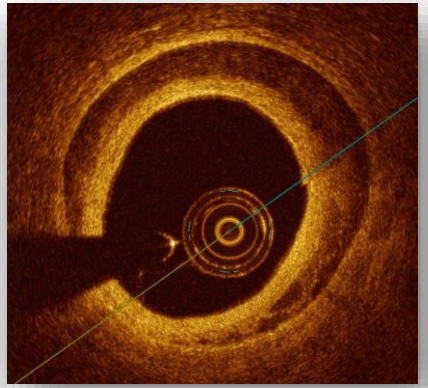


Take Home Message

SCAD de la femme jeune

« forme sévère et encore sous-estimée de SCA chez la femme »





- Non exceptionnelle +++ (**1/3 SCA «illégitimes» au féminin**)
- Particularités diagnostiques (apport de l'imagerie)
- Pronostic transformé ces dernières années!
- Traitement conservateur le plus souvent, sinon guidé par l'OCT
- Recherche de **dysplasie fibromusculaire**

pmotreff@chu-clermontferrand.fr

Merci pour votre attention