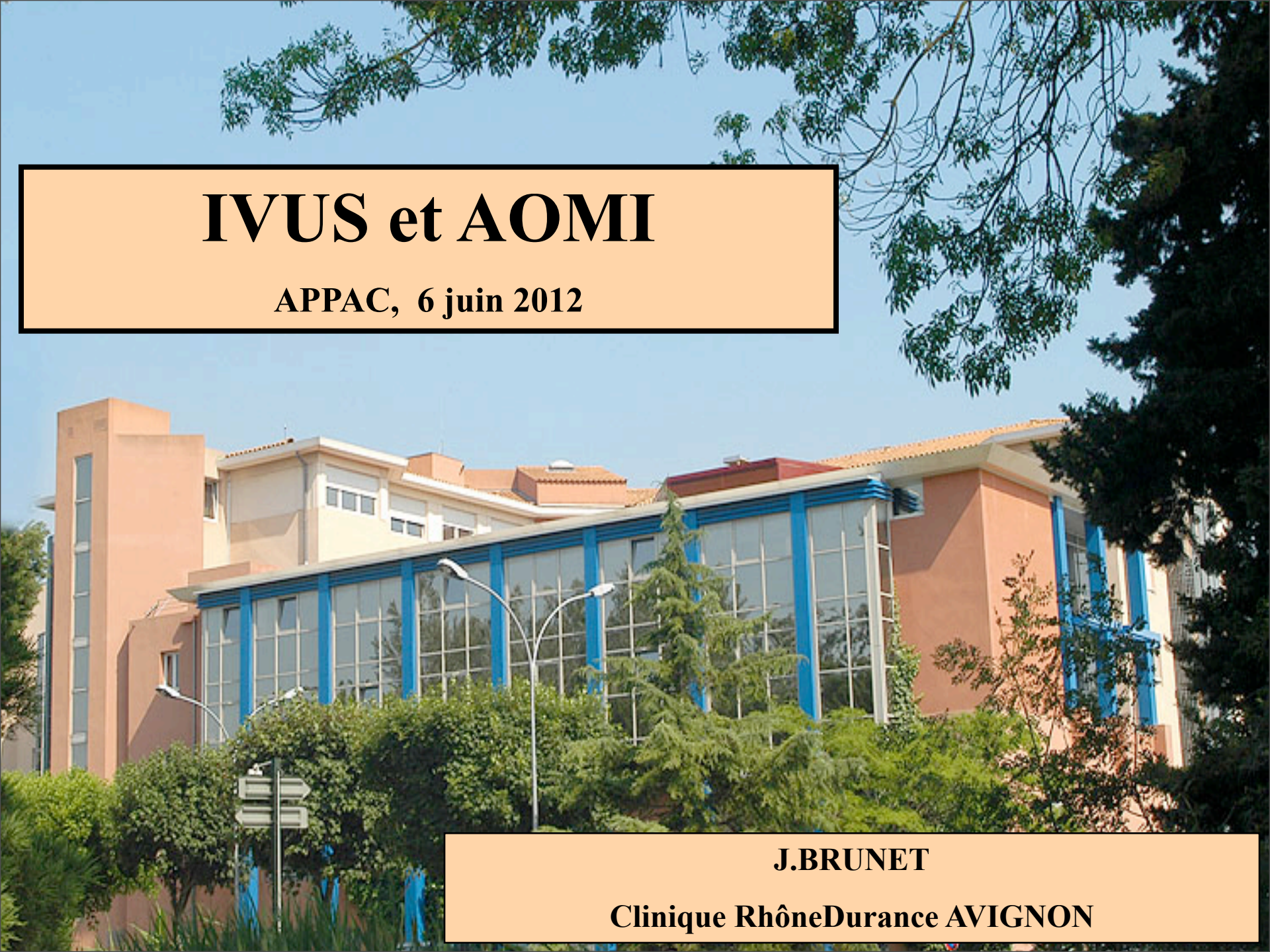


IVUS et AOMI

APPAC, 6 juin 2012



J.BRUNET

Clinique RhôneDurance AVIGNON

Angiographie : gold standard?

Méconnaissance de lésions
athéromateuses:

« faux négatif angiographique »
corrélations angio / anapath

– Coronaires:

- corrélation post mortem
- Vlodaver Circulation 1973

Angiographie : gold standard?

Méconnaissance de lésions
athéromateuses:

« faux négatif angiographique »

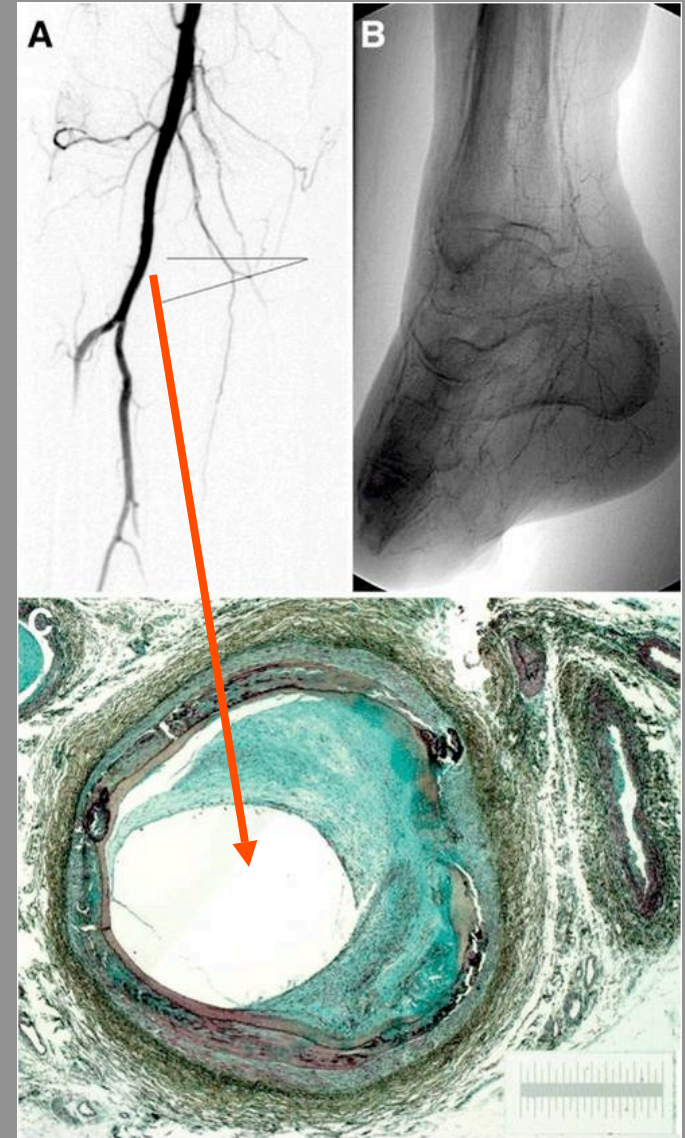
Corrélations angio / anapath

– Coronaires:

- corrélation post mortem
- Vlodaver Circulation 1973

– Vasculaire périphérique :

- corrélation post amputation
- Kashyap JET 2008



Angiographie : gold standard?

Méconnaissance de lésions athéromateuses:

Corrélations angio / anapath

« faux négatif angiographique »

- Coronaires:
 - corrélation post mortem
 - Vlodaver Circulation 1973
- Artério MI :
 - corrélation post amputation
 - Kashyap JET 2008

Sous-estimation des lésions

Corrélations angio / IVUS

- Sous-estimation diamètre de référence (1 à 2 mm)
- Sous-estimation de la longueur et de la diffusion de la maladie athéromateuse (ie faux négatif)
- Mauvaise corrélation sur la caractérisation de la plaque
- Corrélation globalement satisfaisante sur le degré de sténose
- Peu de données en vasculaire périphérique

Evaluation of Peripheral Atherosclerosis: A Comparative Analysis of Angiography and Intravascular Ultrasound

Zachary M. Arthurs, MD, Paul D. Bishop, MSEE, Lindsay E. Feiten, BS, Matthew J. Eagleton, MD, Daniel G. Clair, MD, and Vikram S. Kashyap, MD

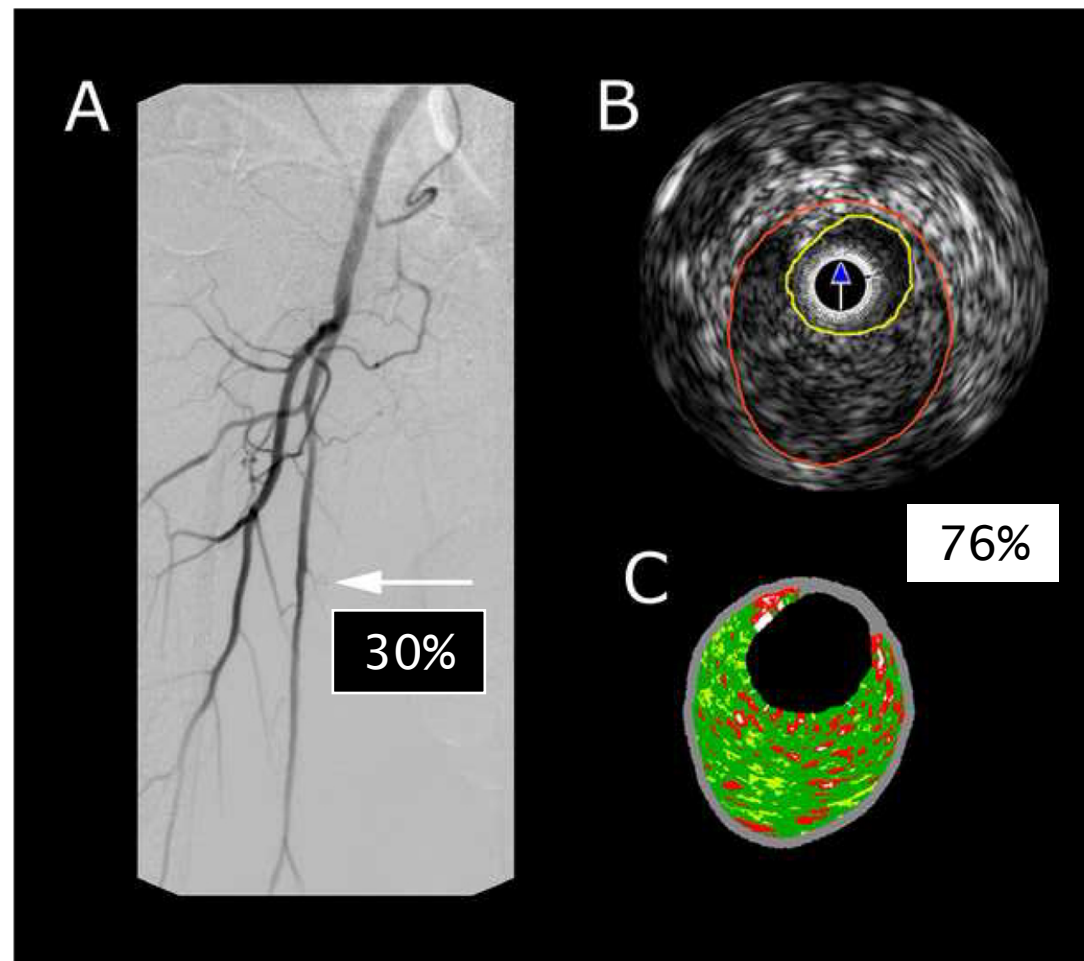
J Vasc Surg. 2010 April; 51(4): 933-939.

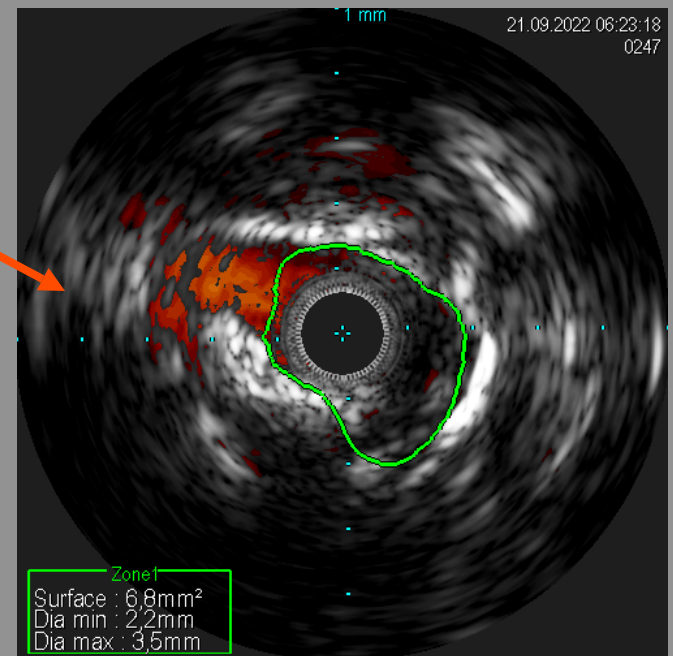
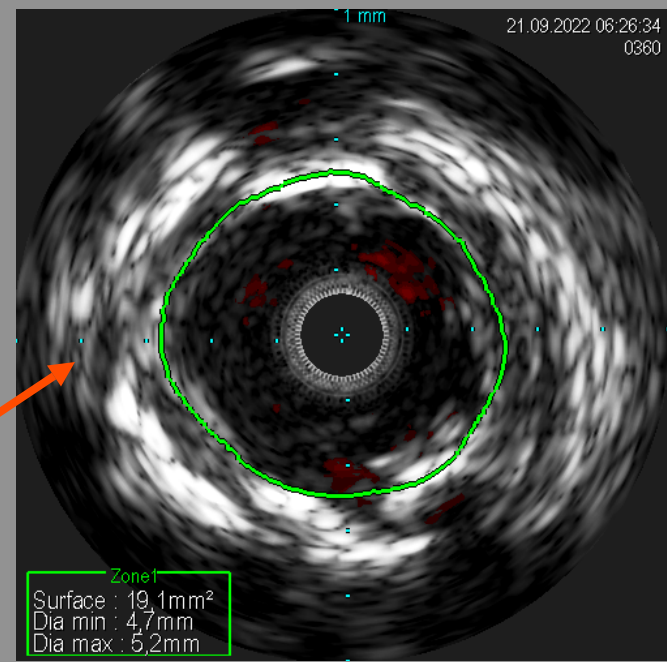
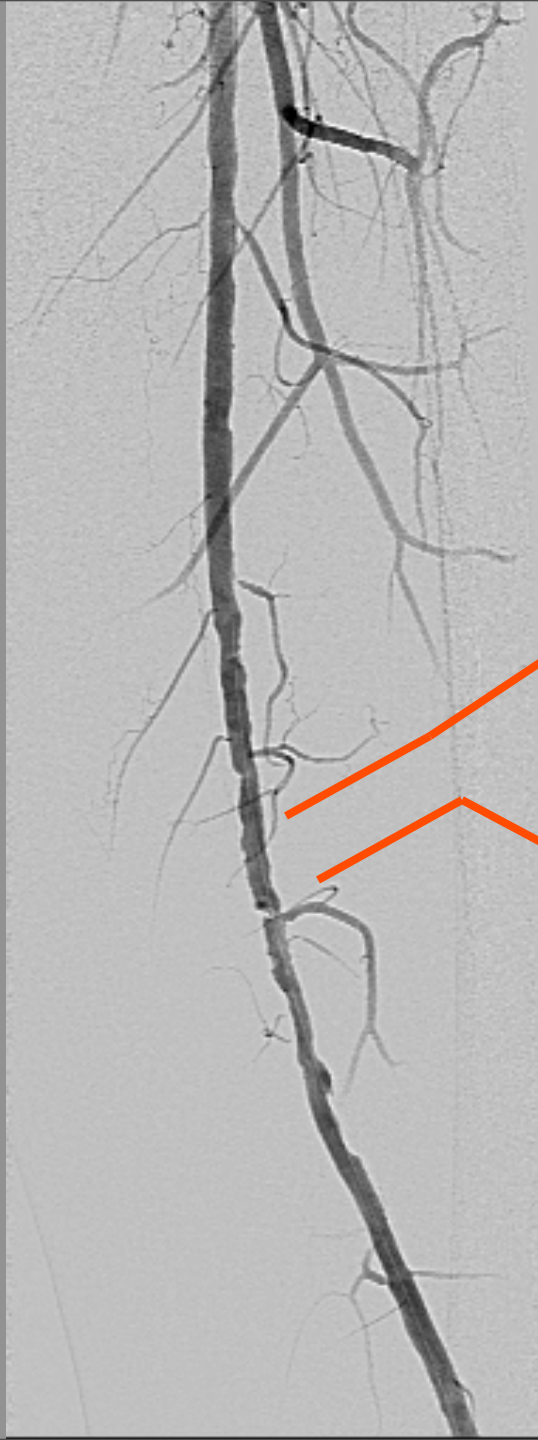
Variable	Angiographic Analysis	IVUS Analysis	P^a	r^b
Proximal diameter (mm)	5.5($\pm$ 0.7)	Lumen diameter 5.3($\pm$ 0.9)	0.45	0.95
		Outer wall diameter 7.0($\pm$ 0.7)	<0.05	0.28
Distal diameter (mm)	5.2($\pm$ 0.8)	Lumen diameter 5.2($\pm$ 0.9)	0.642	0.94
		Outer wall diameter 7.0($\pm$ 0.7)	<0.05	0.31
Stenosis (%)	46($\pm$ 27)	Diameter method 49($\pm$ 25)	0.61	0.84
		Area method 55($\pm$ 22)	<0.05	0.46

Evaluation of Peripheral Atherosclerosis: A Comparative Analysis of Angiography and Intravascular Ultrasound

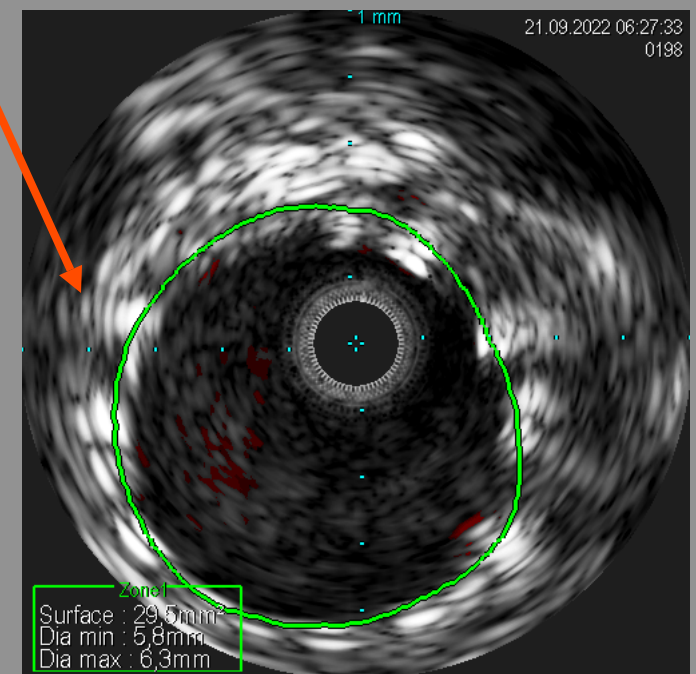
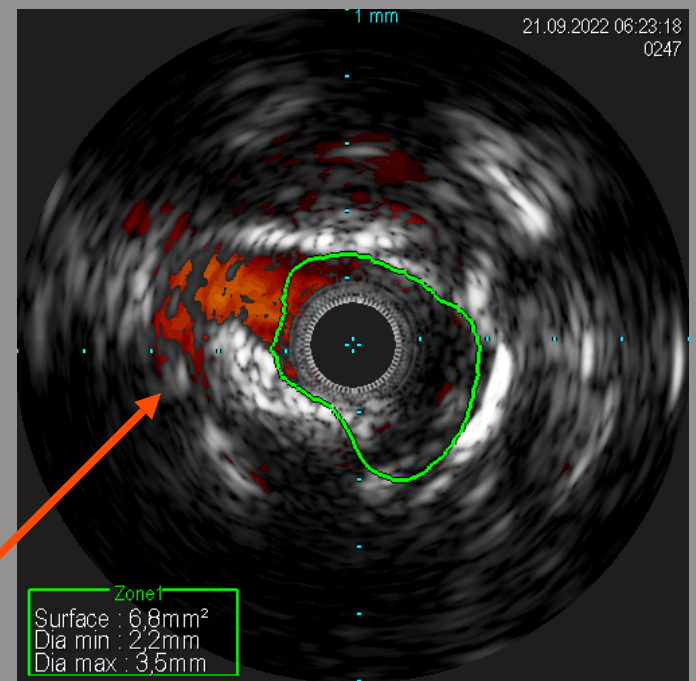
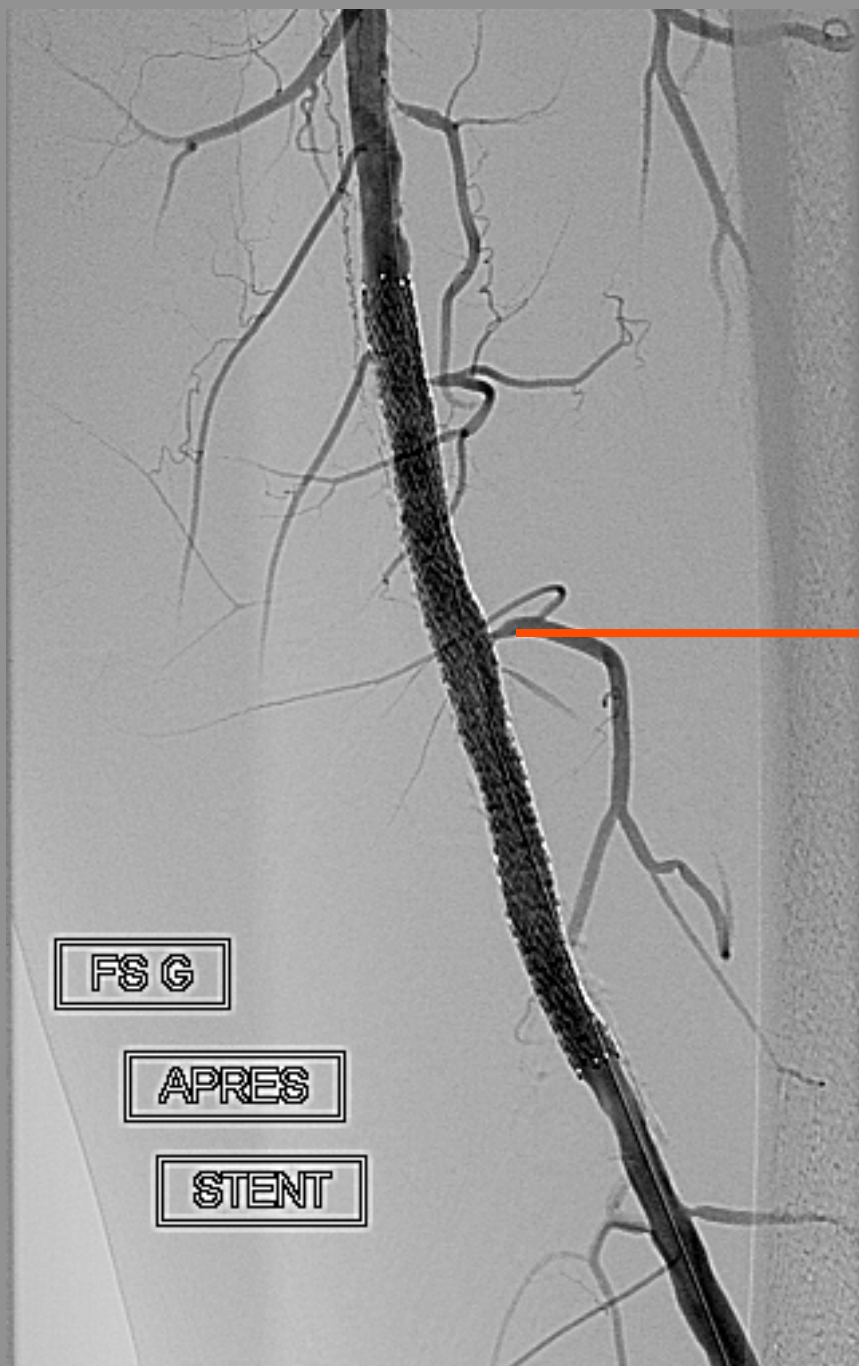
[Zachary M. Arthurs](#), MD, [Paul D. Bishop](#), MSEE, [Lindsay E. Feiten](#), BS, [Matthew J. Eagleton](#), MD, [Daniel G. Clair](#), MD, and [Vikram S. Kashyap](#), MD

[J Vasc Surg. 2010 April; 51\(4\): 933–939.](#)









Cas clinique n°1: Mme GRA. 64 ans

- 2007 : réfection carrefour aortique avec 2 stents en kissing pour claudication bilatérale
- Intervalle libre 4 ans puis claudication récurrente MI+fesse droite, décrite comme identique /2007
 - Doppler: pas de resténose donc claudication probablement neurologique
 - Scanner rachidien normal
 - Scanner AMI : stents en place sans resténose et infiltration non significative en aval du stent IPD
- Revue à rhône-Durance.
 - Doppler : pas de sténose ... mais chute de 4 points de l'IPS pour une épreuve à minima
 - Artério proposée

RA 9001R, Frame 12 48

Rot: LAO 15°

Inc.: Caud 5°

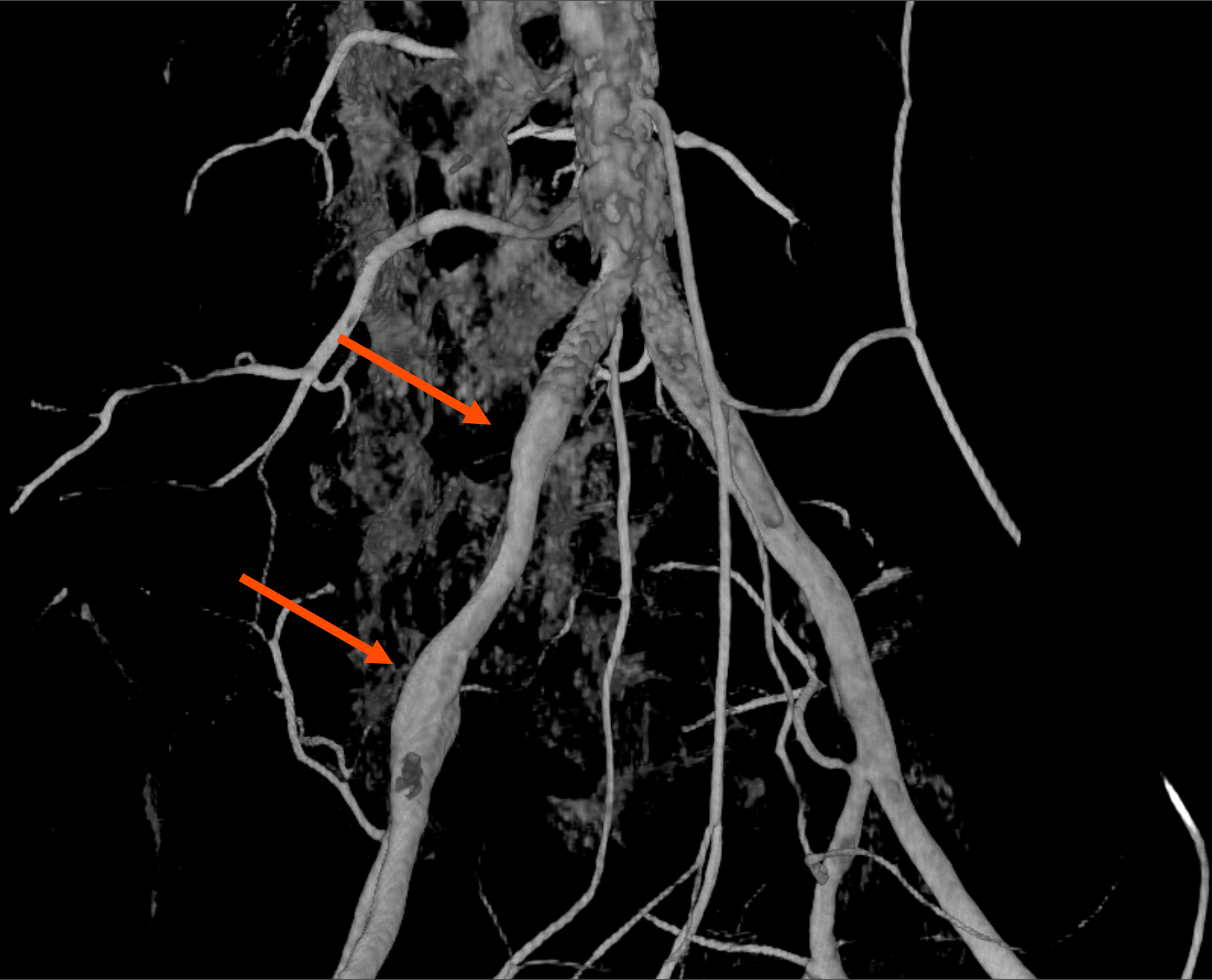
30 fps

- kV, mAs

Zoom 100%



09:54
2012-03-01

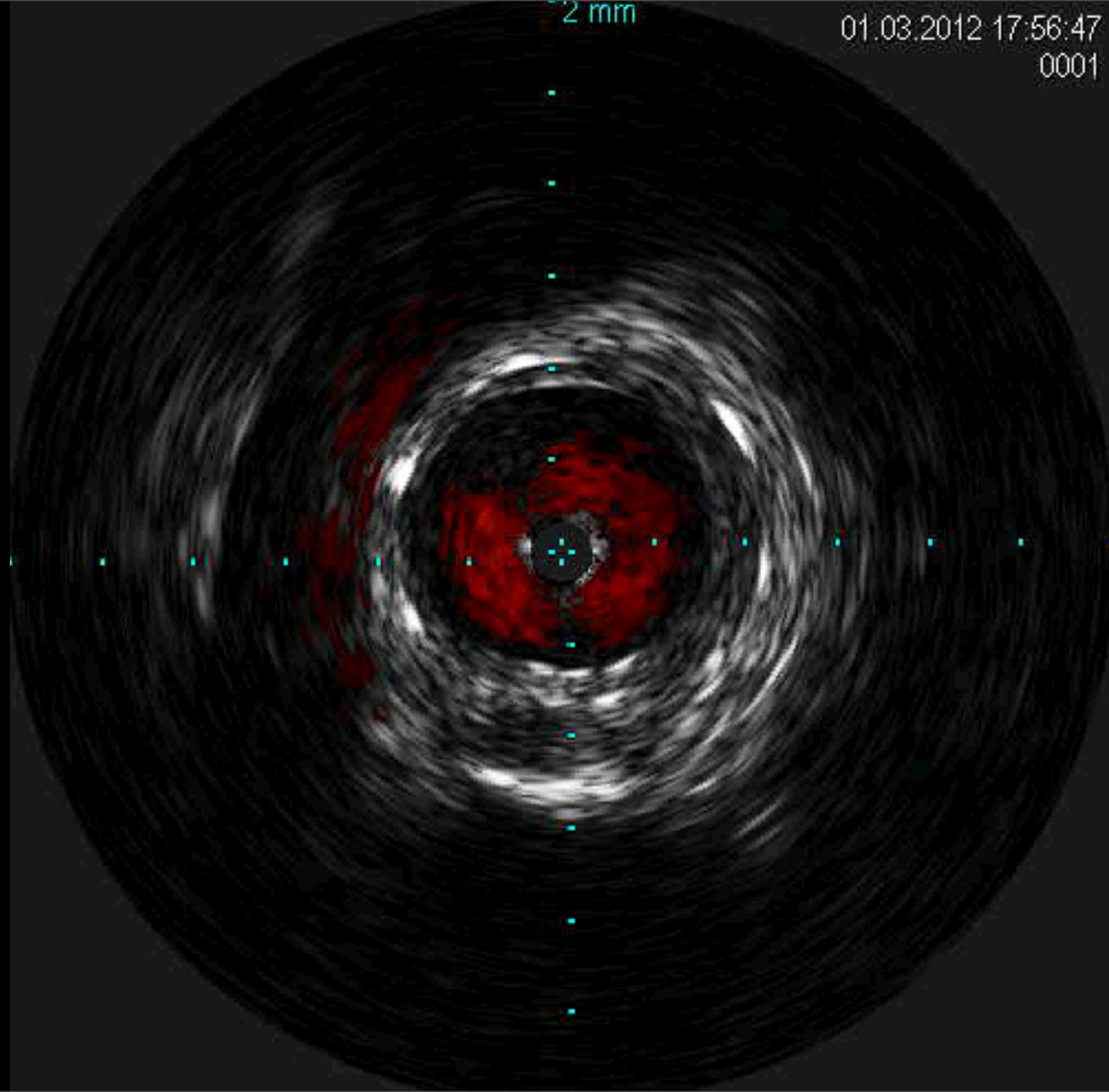


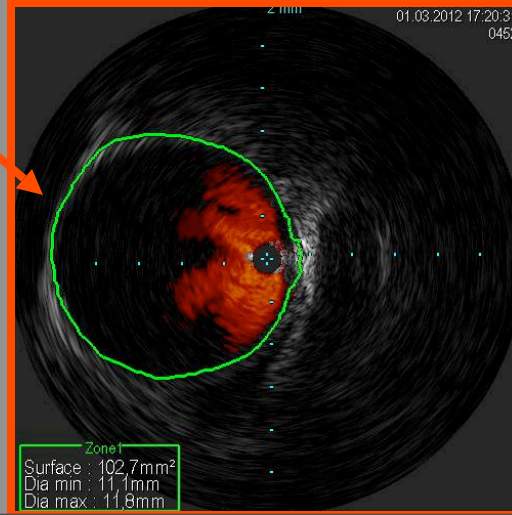
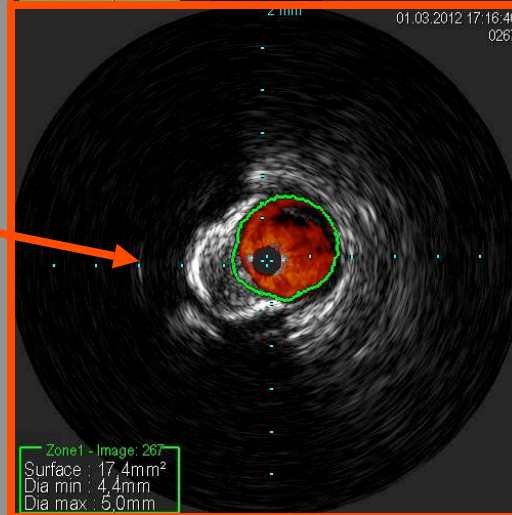
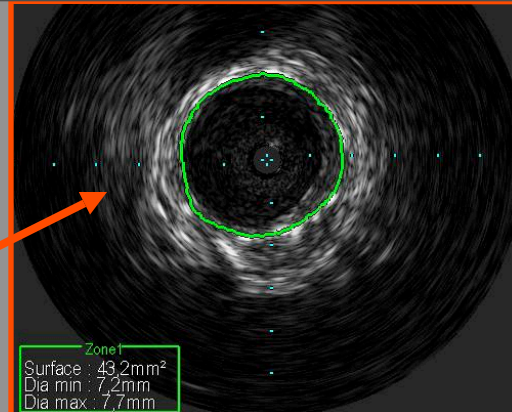
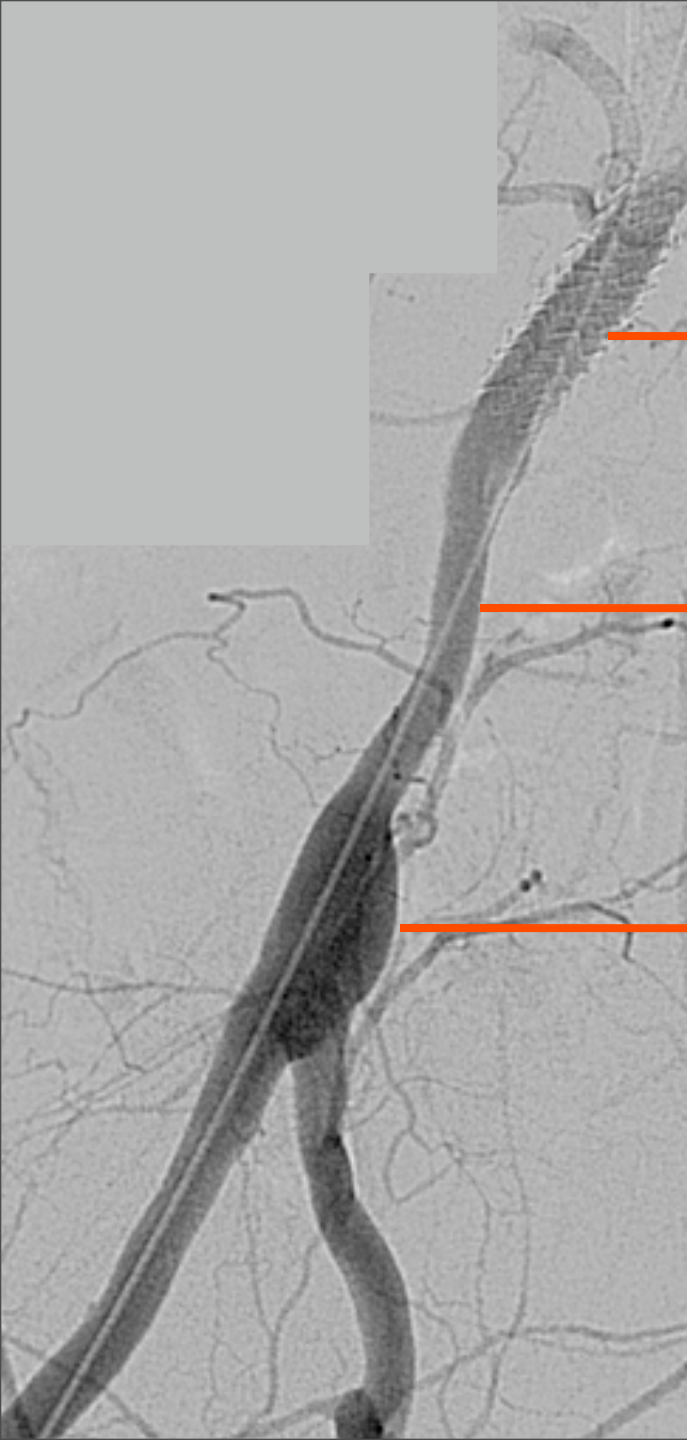


2 mm

01.03.2012 17:56:47

0001





Mr X 71 ans

Tabagique sevré

CM ischémique

FEVG 22%

DAI CRT-D

Claudication II fort
MIG

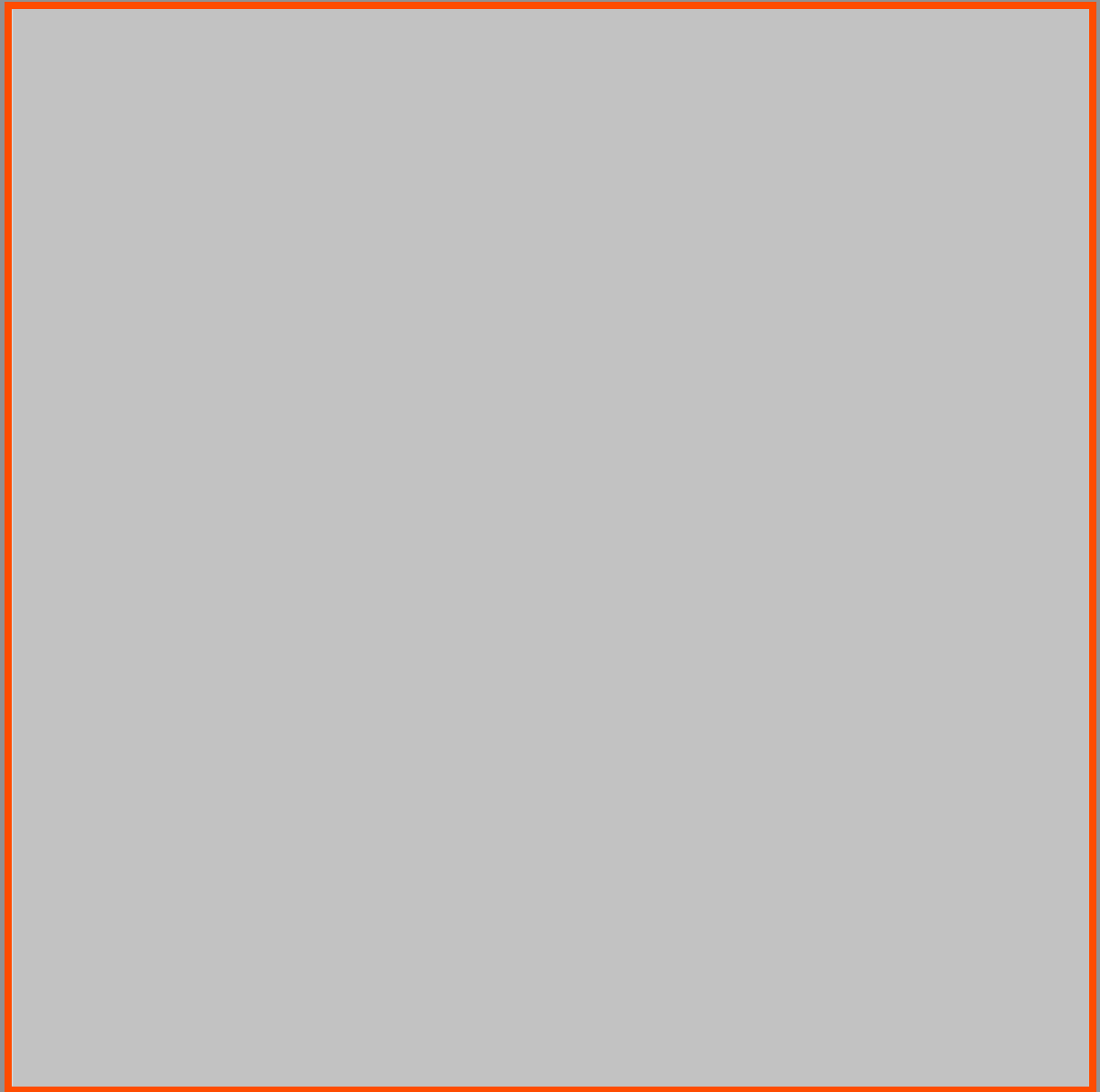
Angio: oblitération
longue SFA



Recanalisation sous-intimale



Recanalisation sous-intimale



Echec de re-entrée en vraie lumière

Système de ré-entrée

Pioneer (+)

Cathéter de ponction
intimale échoguidé

6Fr compatible sur guide
0.014

The image shows three medical catheters against a light blue background. Each catheter has a clear plastic outer sheath and a thin, flexible inner tube. The catheters are arranged diagonally from the bottom left towards the top right. The top catheter has a yellow and black striped section. The middle catheter has a yellow and black striped section and a curved needle housing. The bottom catheter has a yellow and black striped section and a curved needle housing. The catheters are connected to a control unit at the bottom left.

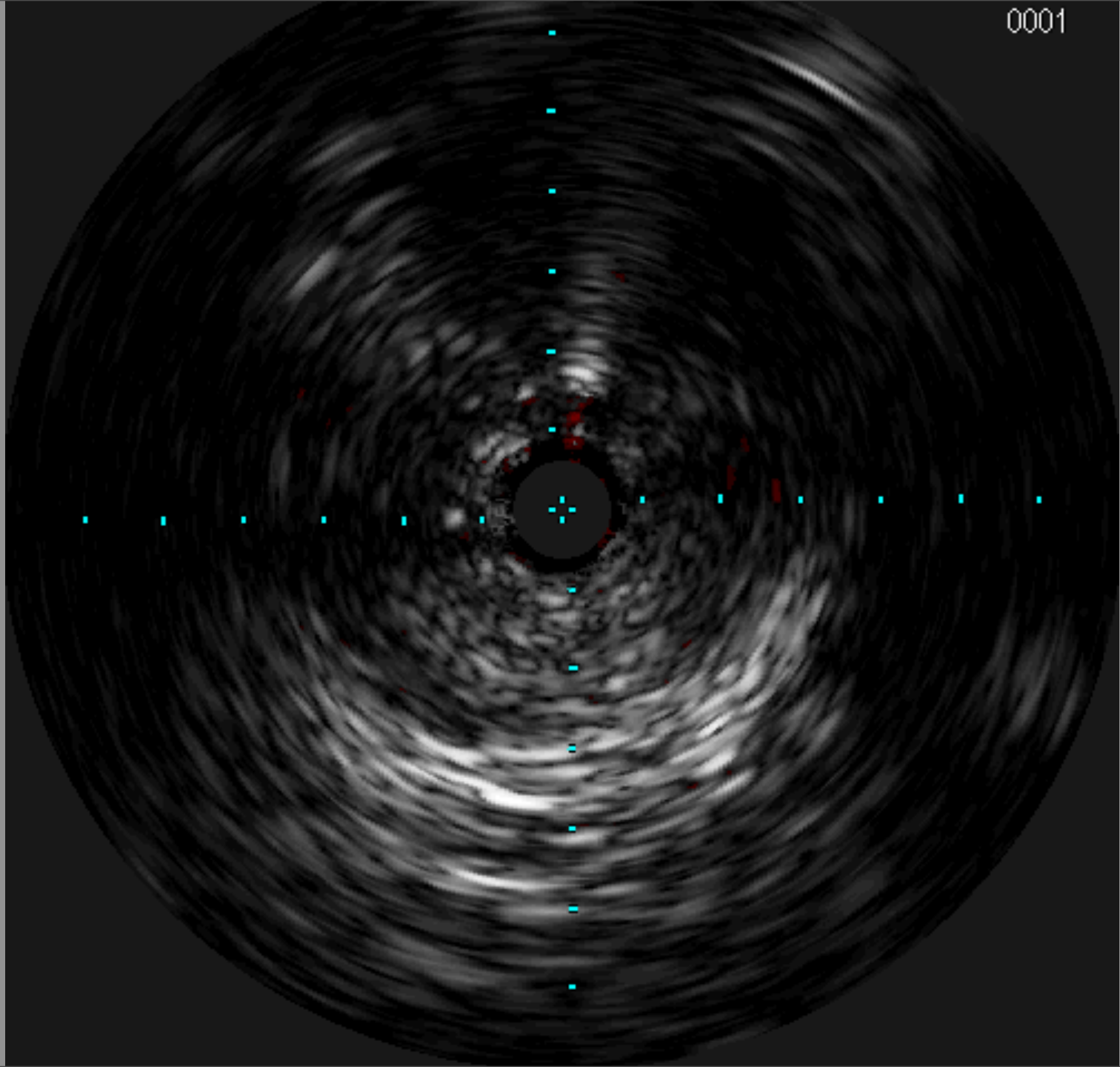
> Positioning
Dual-wire system

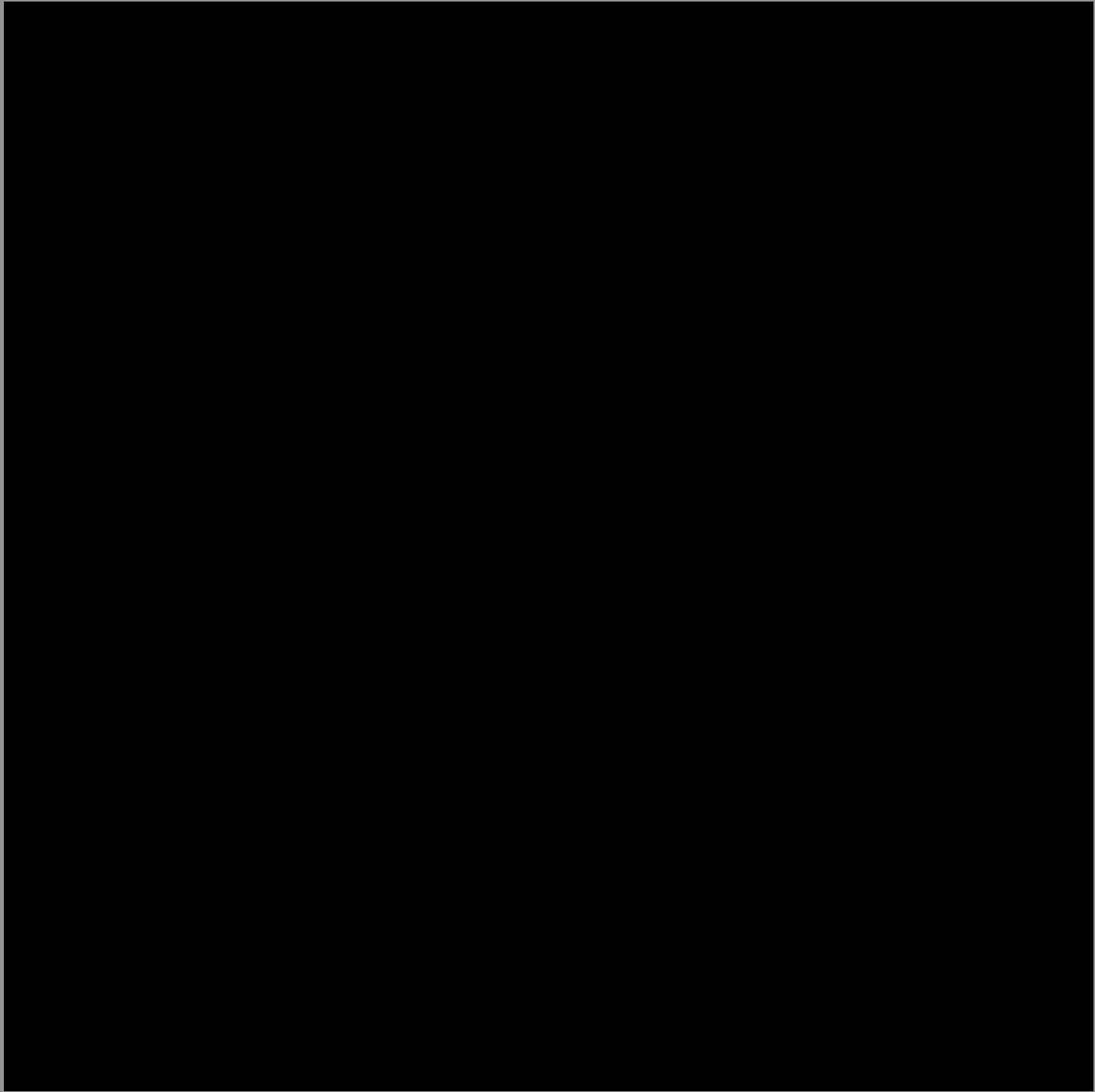
> Enhanced Imaging
IVUS transducer

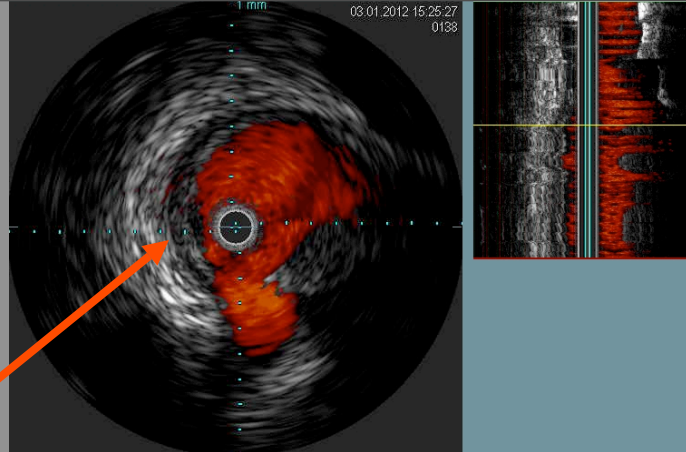
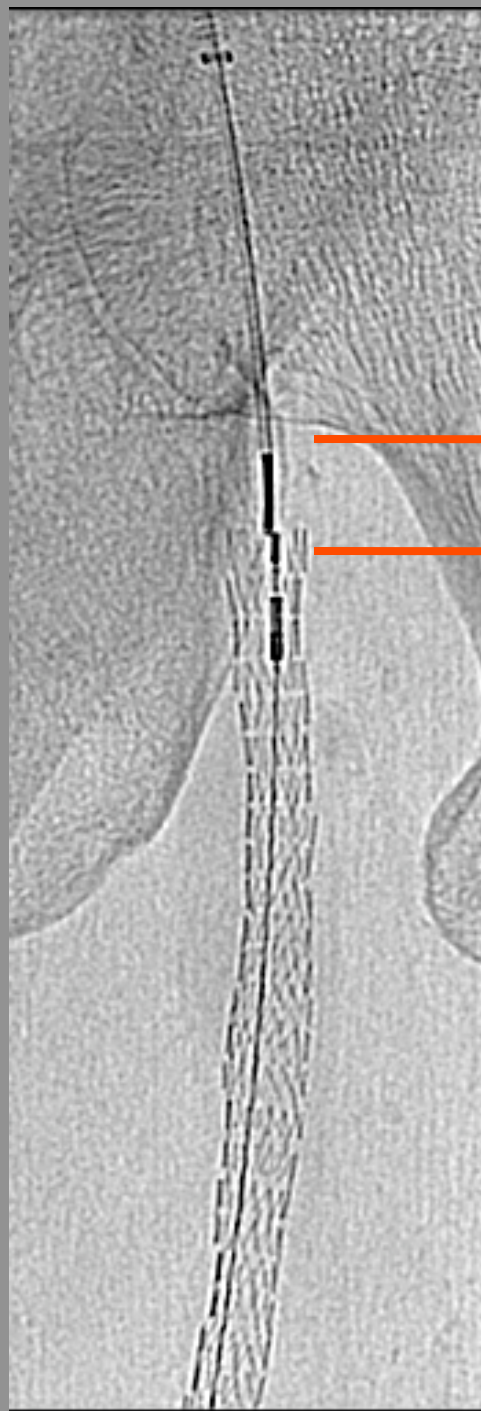
> Targeting
Curved-needle housing

> Accuracy
Adjustable needle depth (1-7)

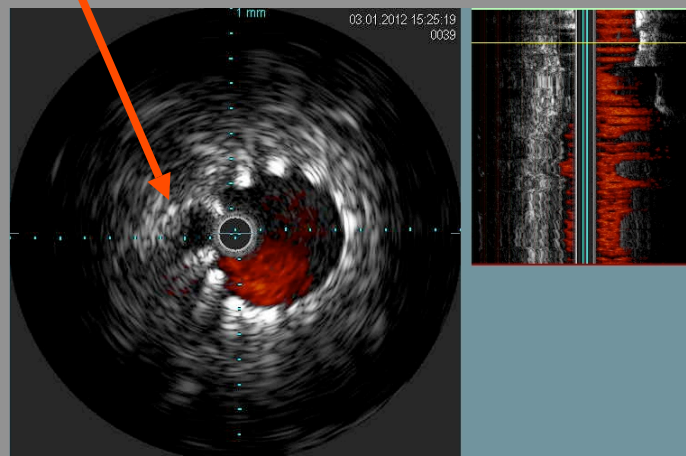
> Control



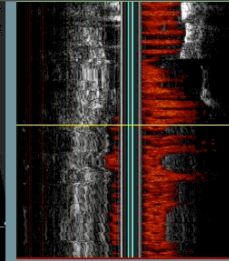
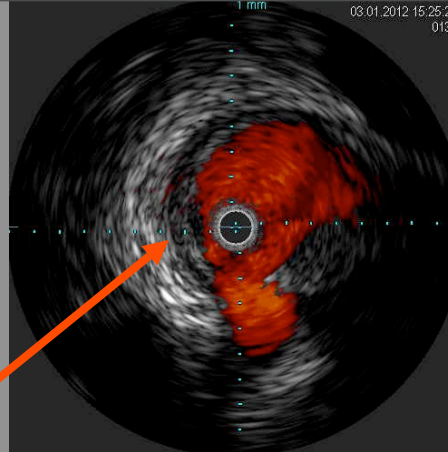
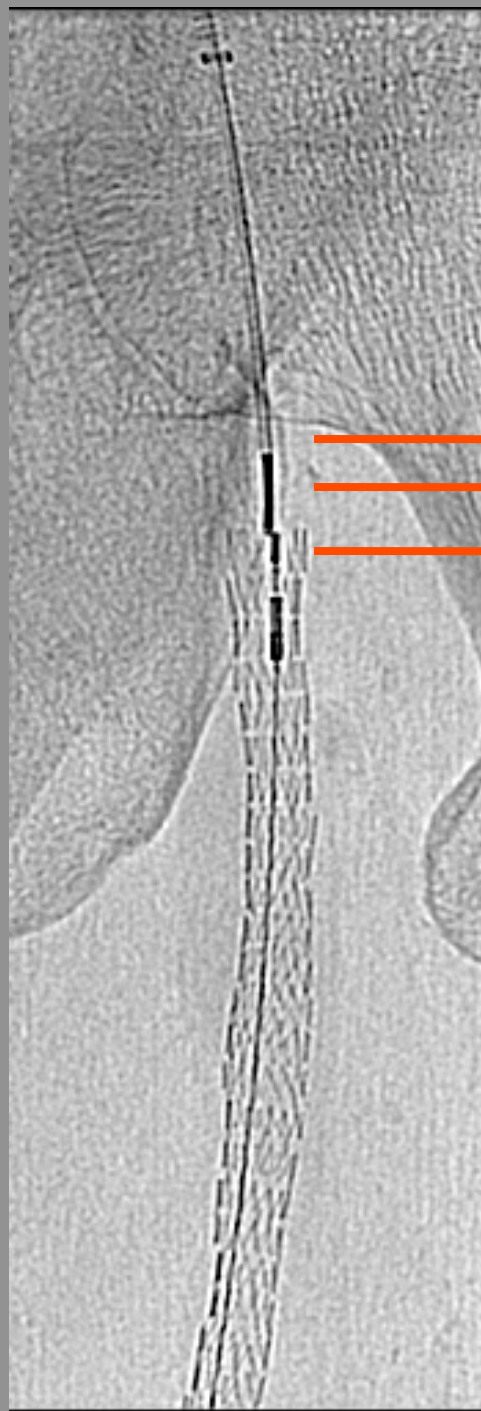




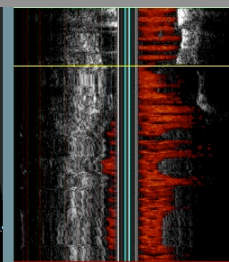
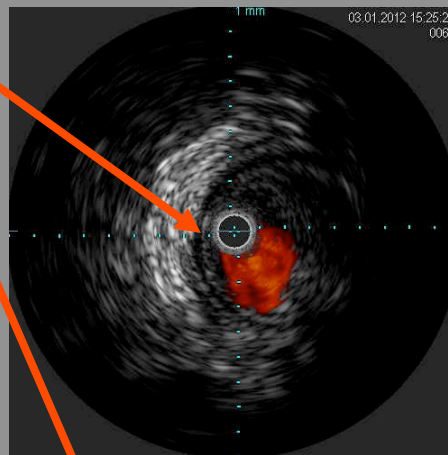
Trépied fémoral et
ostium fémorale
profonde



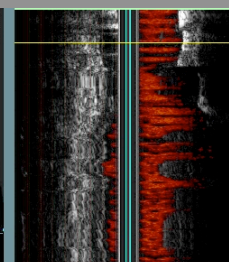
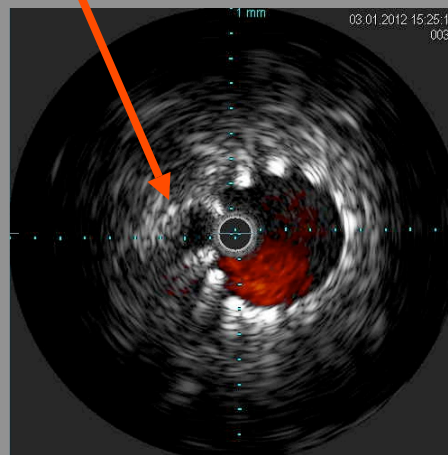
In-stent pôle
supérieur



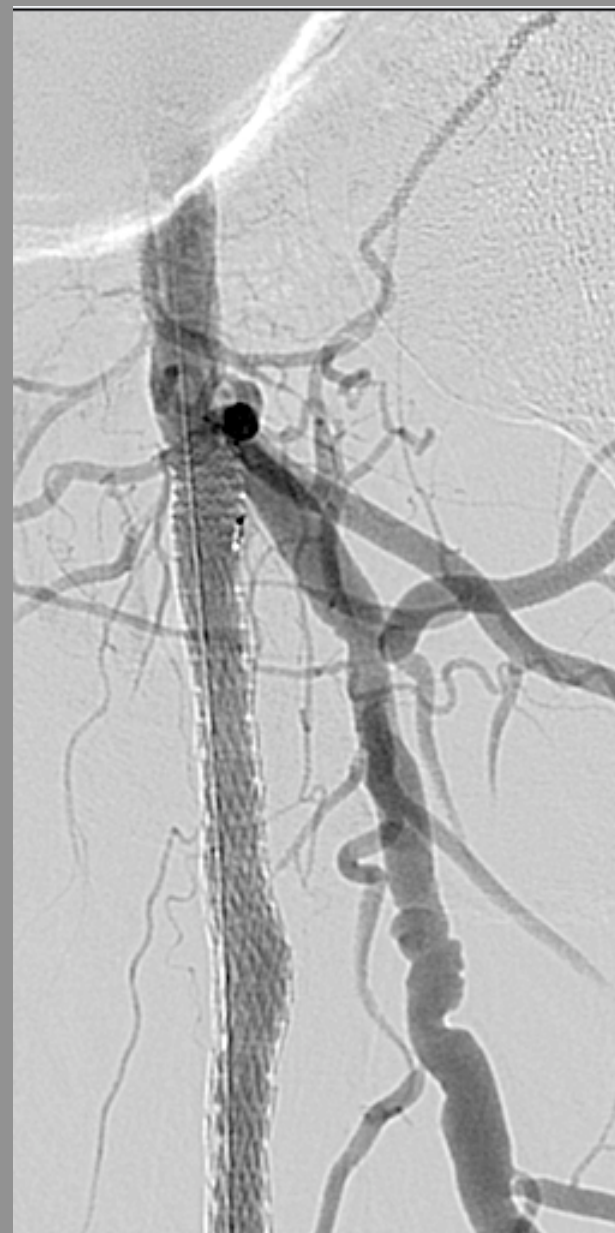
Trépied fémoral et
ostium fémorale
profonde



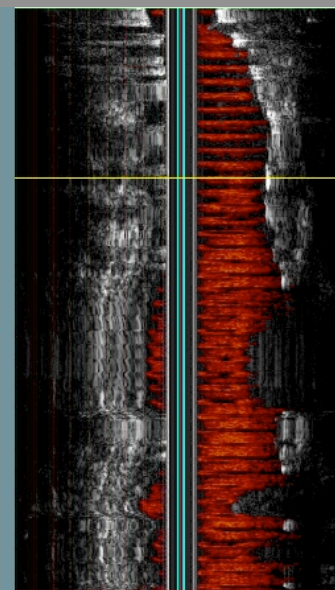
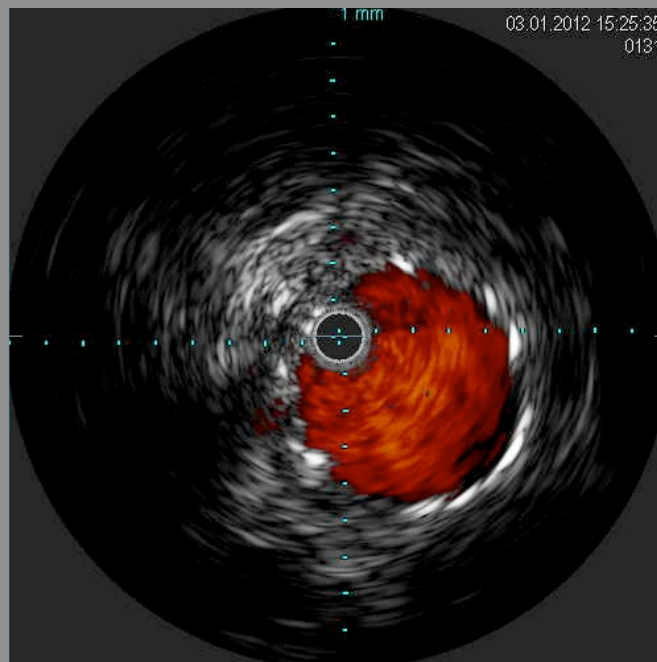
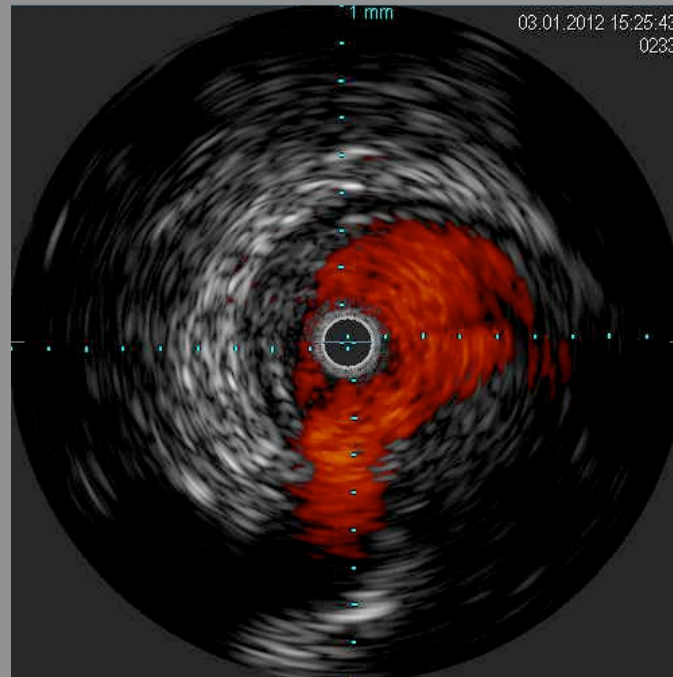
Sténose résiduelle
sur l'ostium FS



In-stent pôle
supérieur



OAG caudale 50°/25°



Mr X 67 ans

Diabétique

2010 recanalisation

SFA + stent

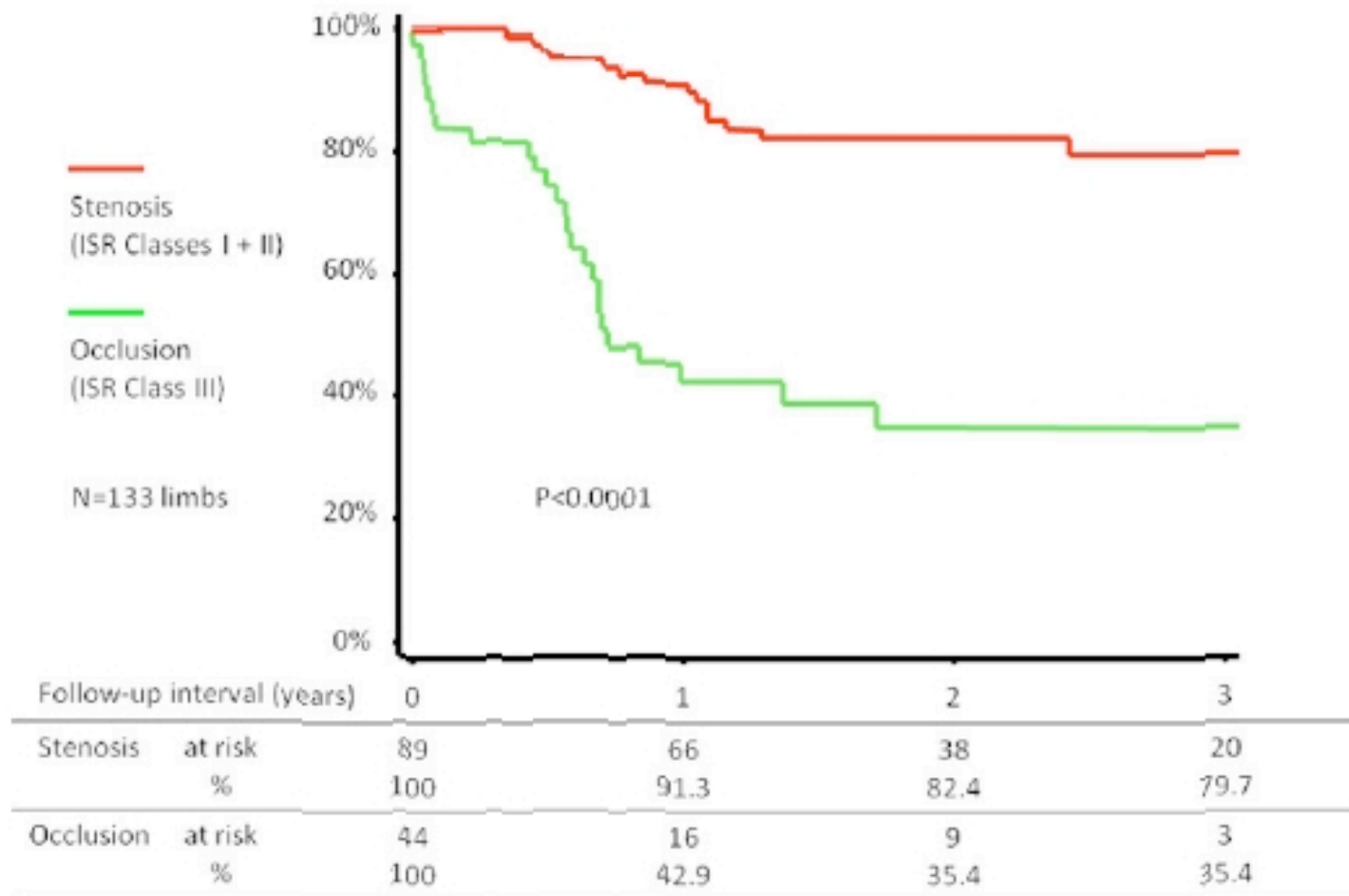
Claudication II fort

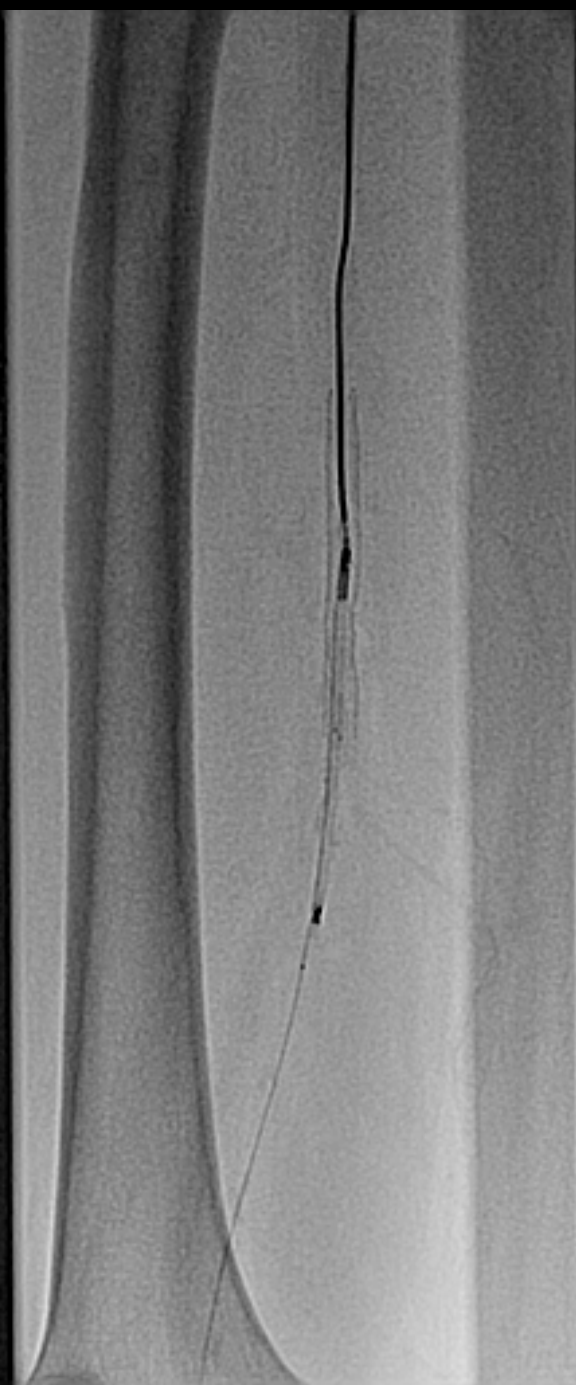
MID récurrente

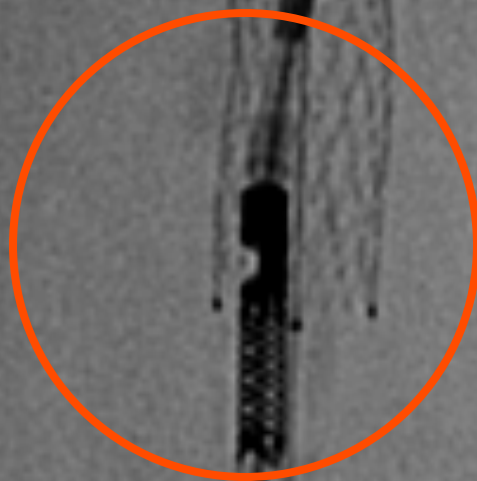
Angio: resténose

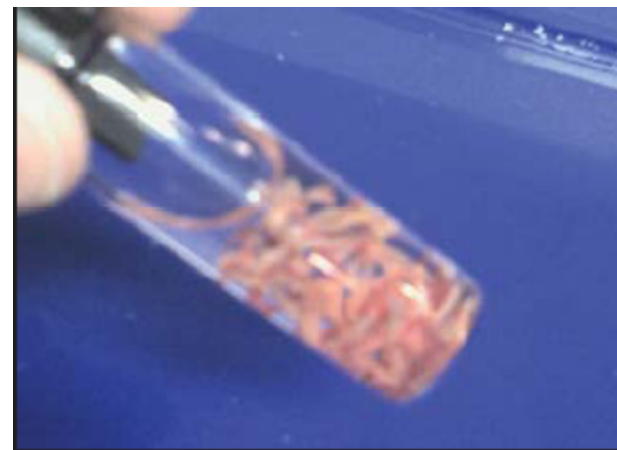
diffuse occlusive FSD

« Classification and clinical impact of restenosis after femoro-popliteal stenting »









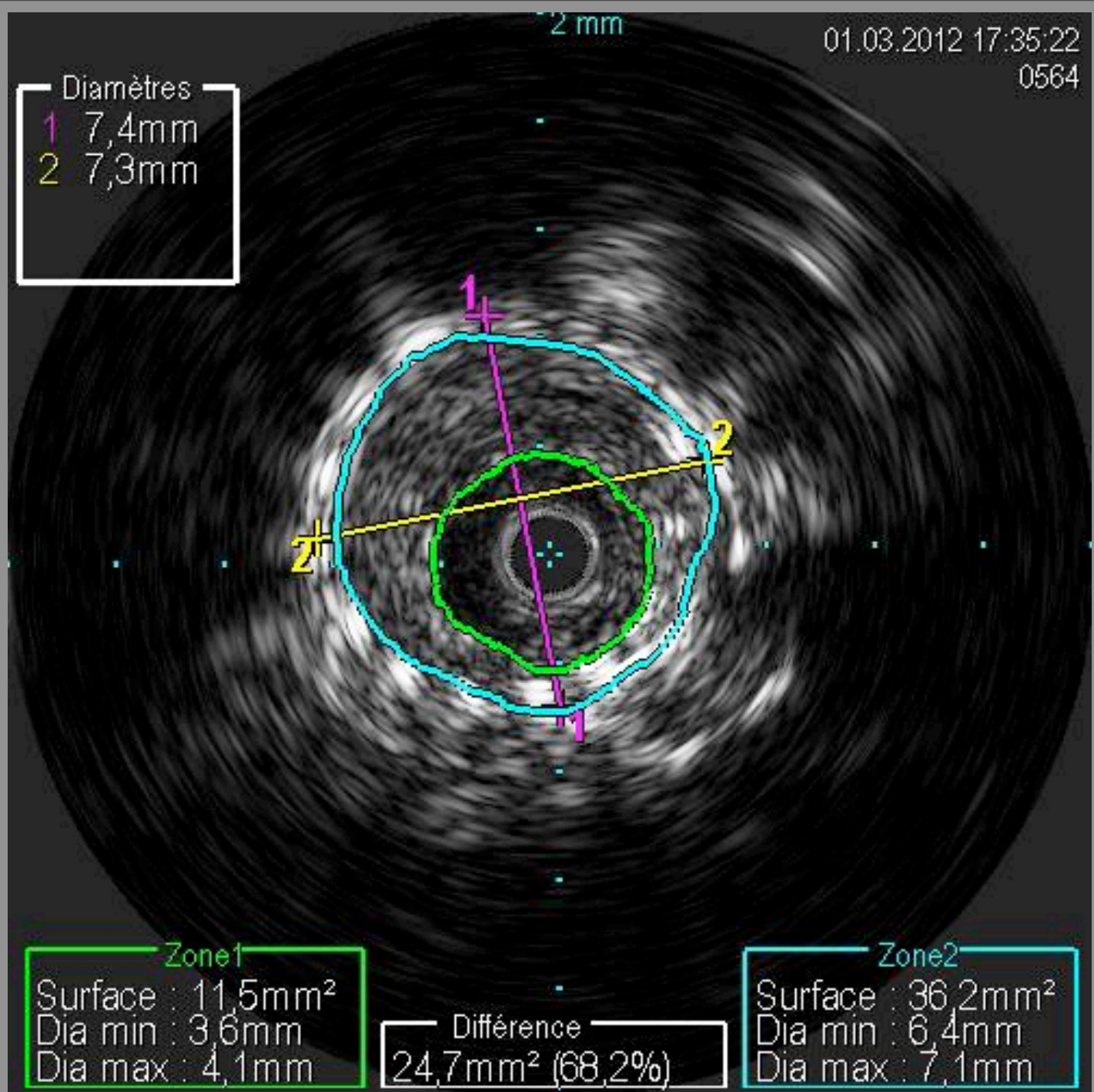
Cathéter d'athérectomie SILVERHAWK

2 mm

01.03.2012 17:35:22

0564

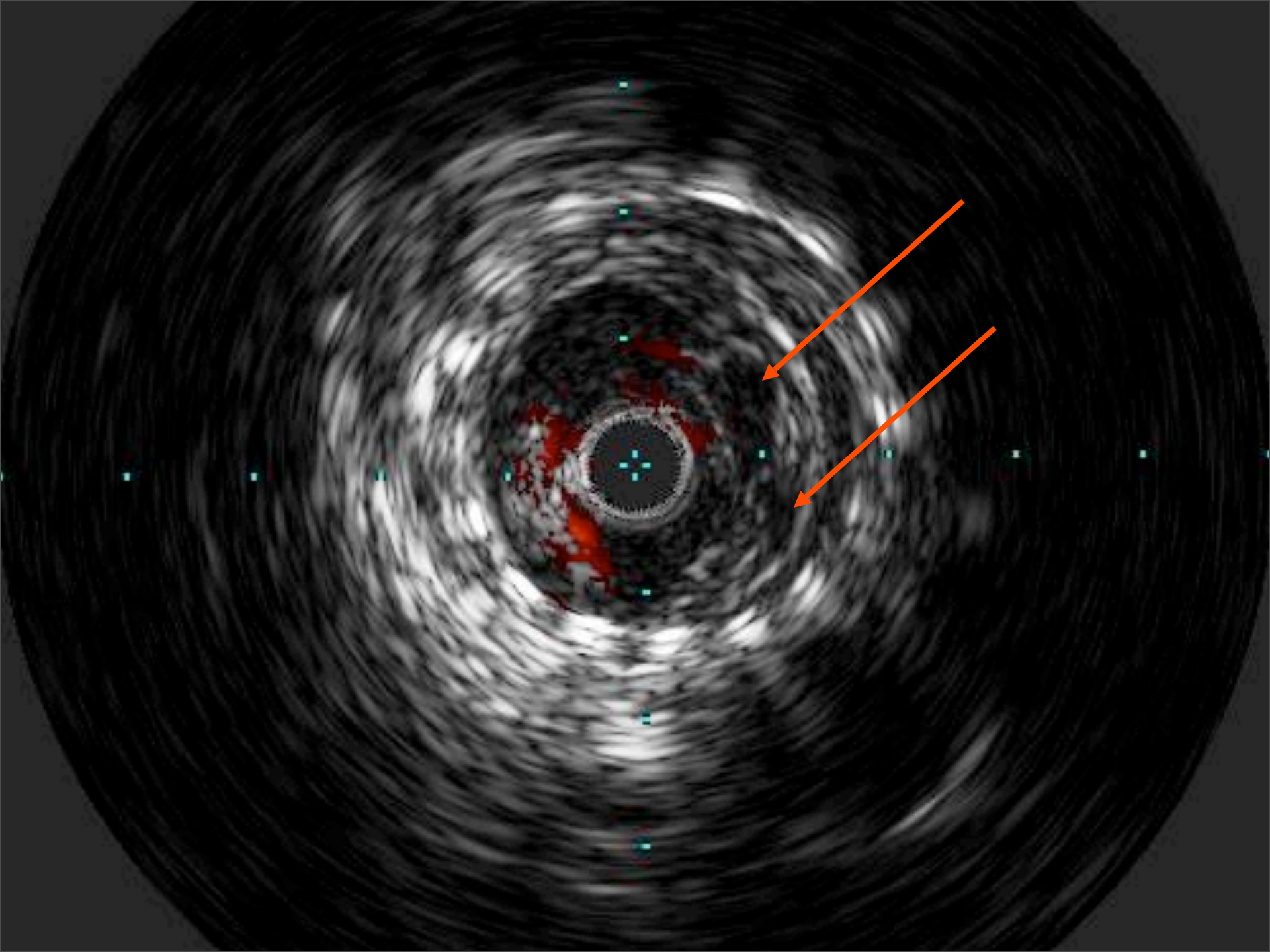
Diamètres
1 7,4mm
2 7,3mm



Zone1
Surface : 11,5mm²
Dia min : 3,6mm
Dia max : 4,1mm

Différence
24,7mm² (68,2%)

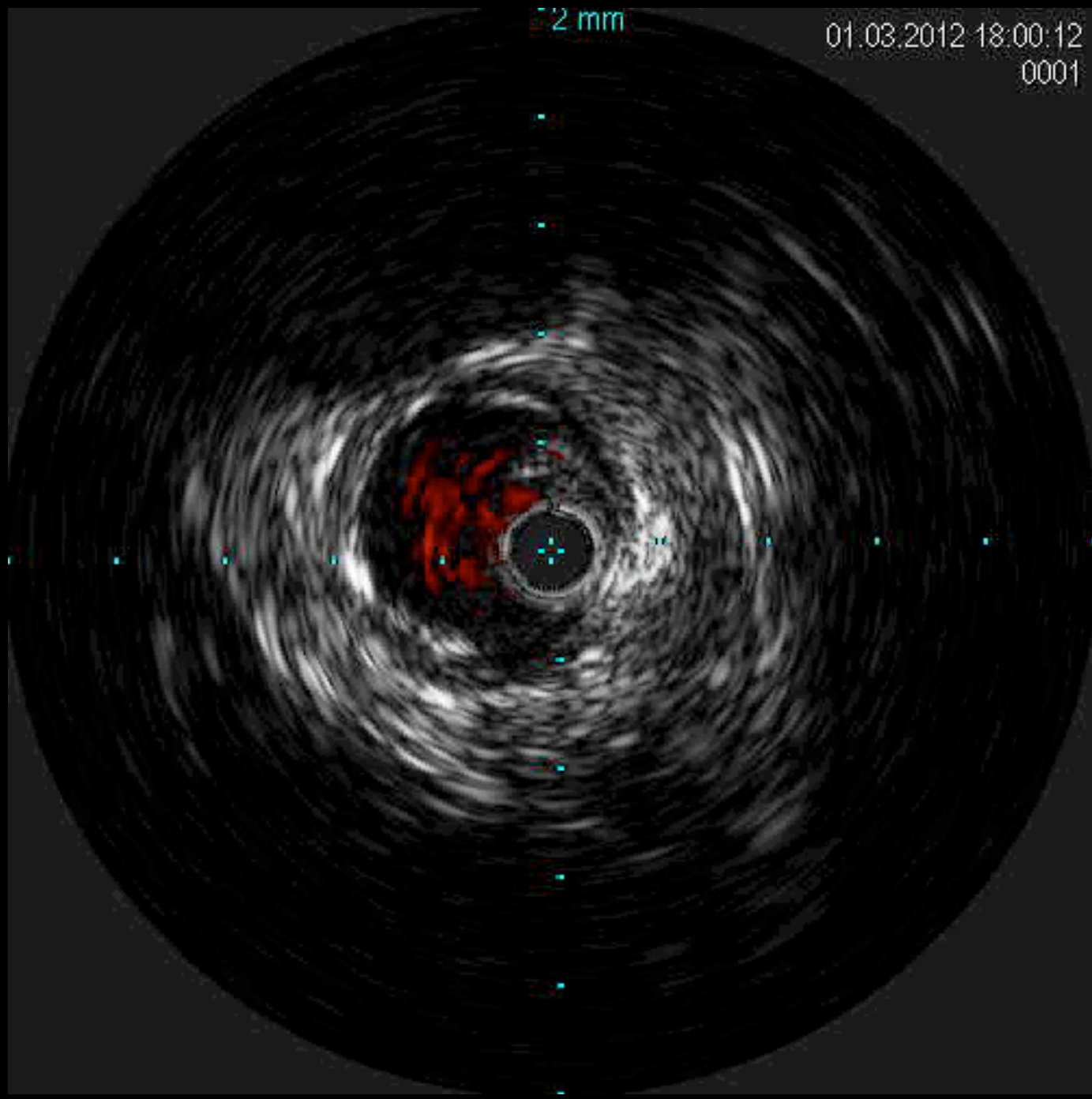
Zone2
Surface : 36,2mm²
Dia min : 6,4mm
Dia max : 7,1mm



2 mm

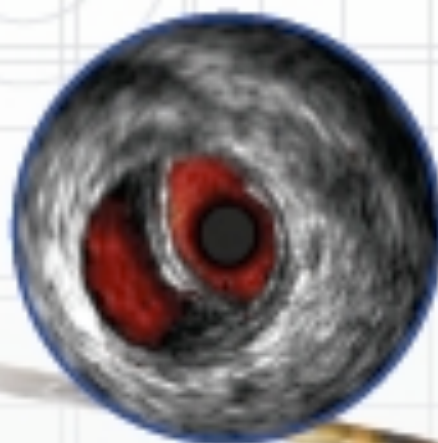
01.03.2012 18:00:12

0001





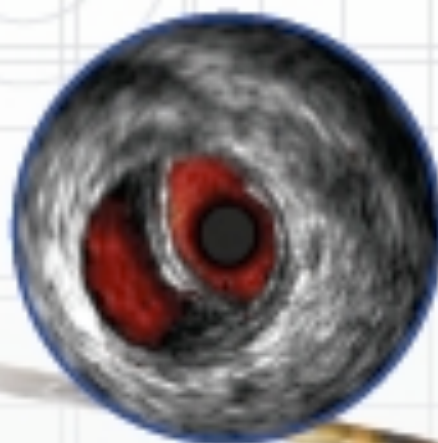
Eagle Eye® Platinum Catheter
0.014" Guide Wire Compatible



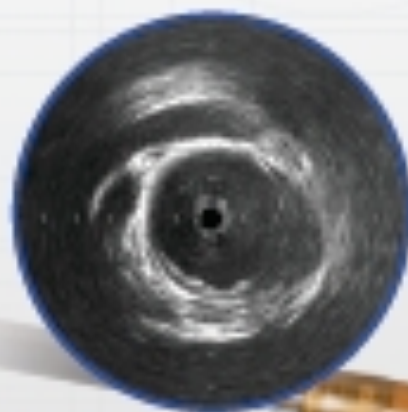
Visions® PV .018 Catheter
0.018" Guide Wire Compatible



Eagle Eye® Platinum Catheter
0.014" Guide Wire Compatible



Visions® PV .018 Catheter
0.018" Guide Wire Compatible



Visions® PV 8.2 Catheter
0.035" Guide Wire Compatible

	EAGLE EYE Platinum	VISION PV .018	VISION PV 8.2
Grayscale IVUS	+	+	+
Chromaflow	+	+	
VH IVUS	+		
Fréquence	20 MHz	20 MHz	10 MHz
Diamètre max	20 mm	24 mm	60 mm
Longueur shaft	150 cm monorail	135 cm monorail	90 cm OTW
Guide wire (max)	.014	.018	.038
Introducteur	5 F	6 F	9 F
KT guide	5 F	6 F	-

AOMI et IVUS : quelles indications

- Diagnostique:
 - discordance clinique et échodoppler vs angiographie
- Thérapeutique
 - Sizing (diamètre/longueur)
 - Contrôle post stenting
 - lésion résiduelle
 - collatérales
 - Resténose intrastent : après ballon/athérectomie et avant de délivrer la drogue via le ballon actif)
 - Système de ré-entrée (recanalisation sous-intimale)
 - Etude des anastomoses prothétiques

Série JB/RhôneDurance : résultats préliminaires

- Série consécutives 100 procédures CTO-SFA 2010/2011
- Longueur moyenne de l'occlusion 200mm
- Succès angiographique 97%
 - échec de franchissement 0%
 - échec de ré-entrée 0% (9% de re-entry devices)
 - 1 échec d'entrée
 - 2 échecs de dilatation de l'espace sous-intimal
- 2 thromboses précoces < 1mois
 - Dissection non couverte
 - Arrêt intempestif Plavix

Pourquoi IVUs

- Diagnostique
 - Sévérité sténose
 - Diamètre artère
 - Caractérisation lésion : thrombus, calcification,
 - Etude branches collatérales
 - Longueur lésion
- Thérapeutique
 - vraie/fausse lumière
 - Lésion résiduelle
 - Apposition stent
 - Athérectomie
- Contraste