

**XXII Jornadas SOLACI**  
*7° Región Cono Sur*

**21 / 22 de Noviembre 2013**



# Intervencionismo Coronario de Alto Riesgo

**XXII Jornadas SOLACI**  
**7° Región Cono Sur**

**21 / 22 de Noviembre 2013**



**NO TENGO CONFLICTO DE INTERESES  
RESPECTO A ESTA PRESENTACIÓN**

## Como definimos riesgo?

- ✓ Edad
- ✓ IR
- ✓ FE%
- ✓ Dbt
- ✓ EPOC
- ✓ Comorb

Presentación  
Clínica

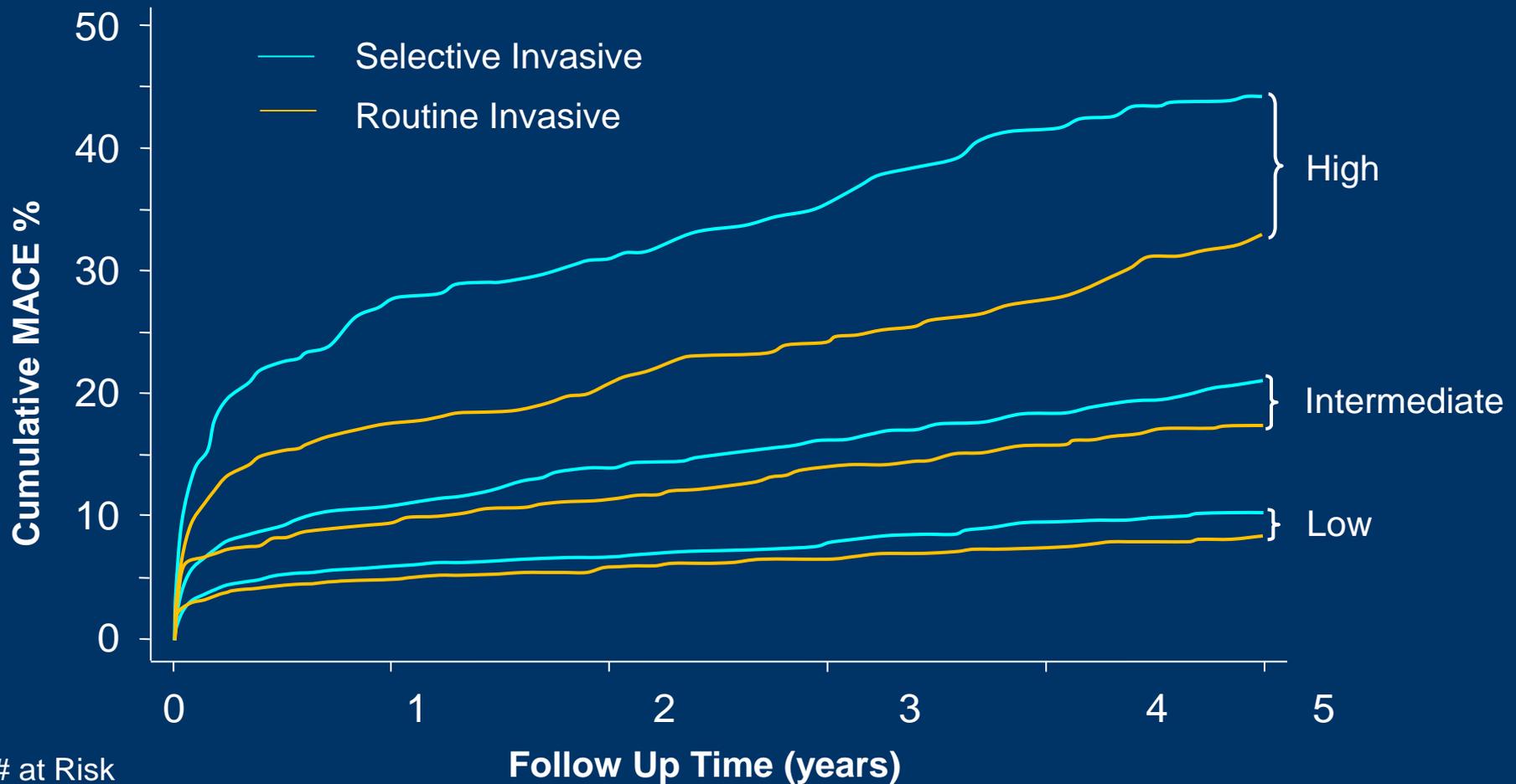
Riesgo  
de sangrado

COMPLEJIDAD  
ANATÓMICA  
(SYNTAX)

RIESGO CLÍNICO  
(EuroScore-STS)  
(TACTICS)

- ✓ CTO
- ✓ Ca+
- ✓ Tortuosidad extrema
- ✓ Enfermedad difusa

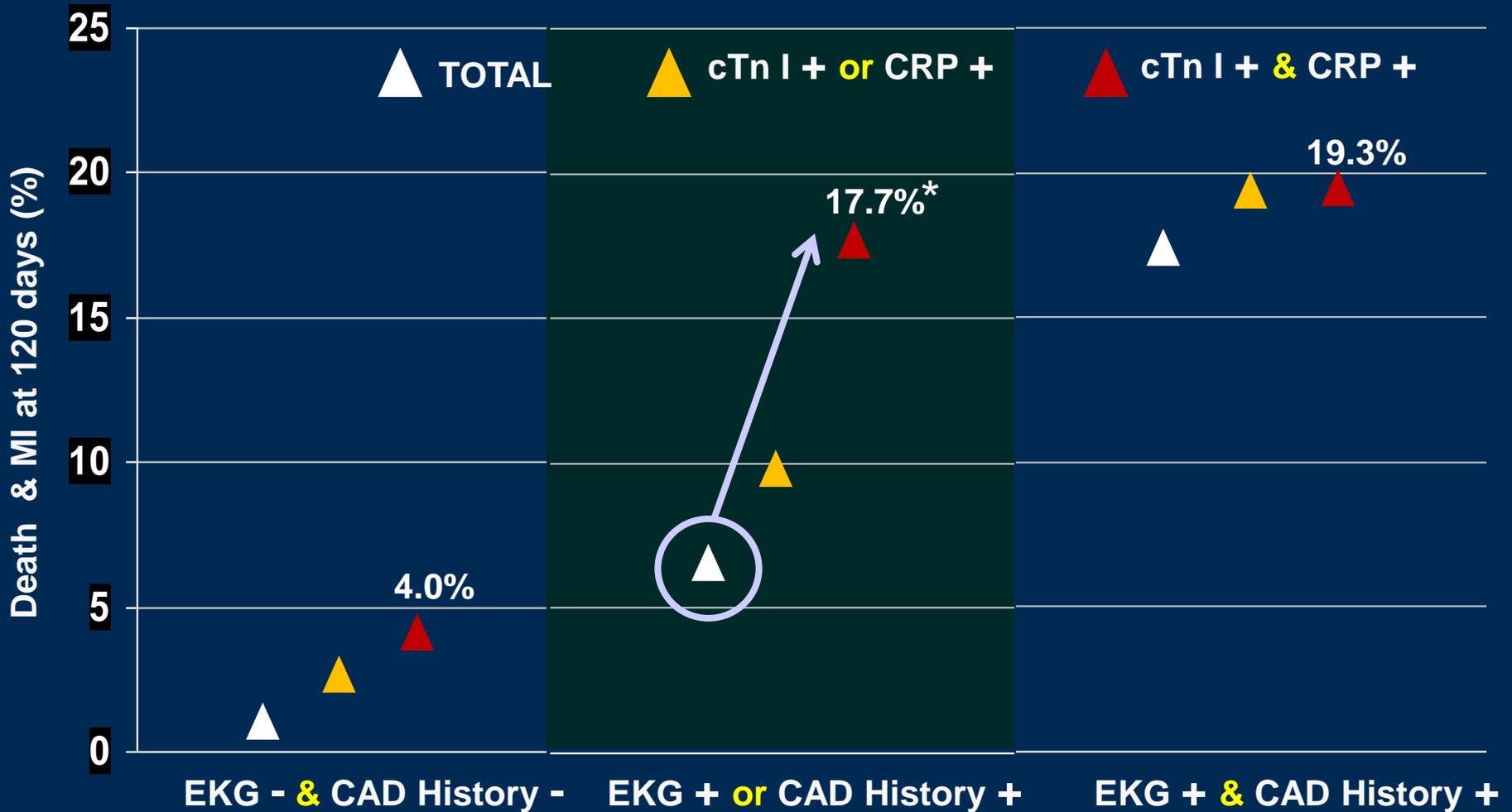
# Cumulative risk of CV death or MI by risk group



# at Risk

	0	1	2	3	4	5
<b>Selective Invasive</b>	2746	2452	2351	2178	2077	1880
<b>Routine Invasive</b>	2721	2485	2410	2235	2166	1952

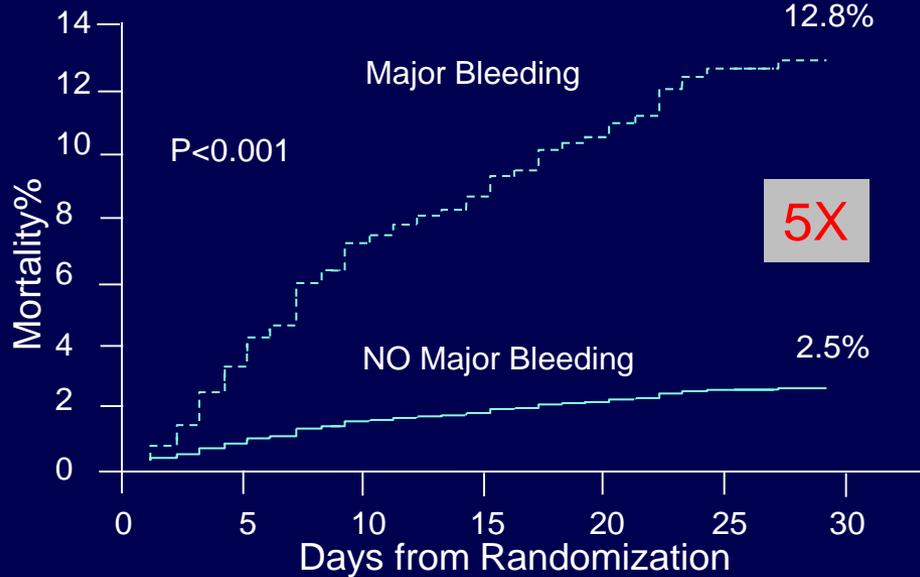
# Prognostic value of early cTnI and CRP in Chest Pain Unit



Risk stratification by EKG, prior history of IHD and humoral markers \*p<0.01

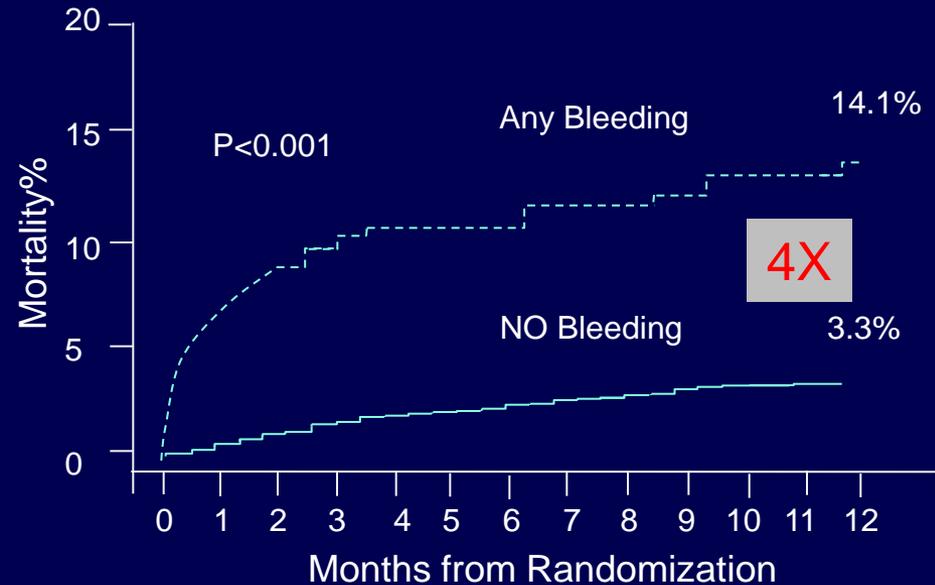
# Bleeding and Mortality

Meta-analysis OASIS & CURE  
(N=34,146)



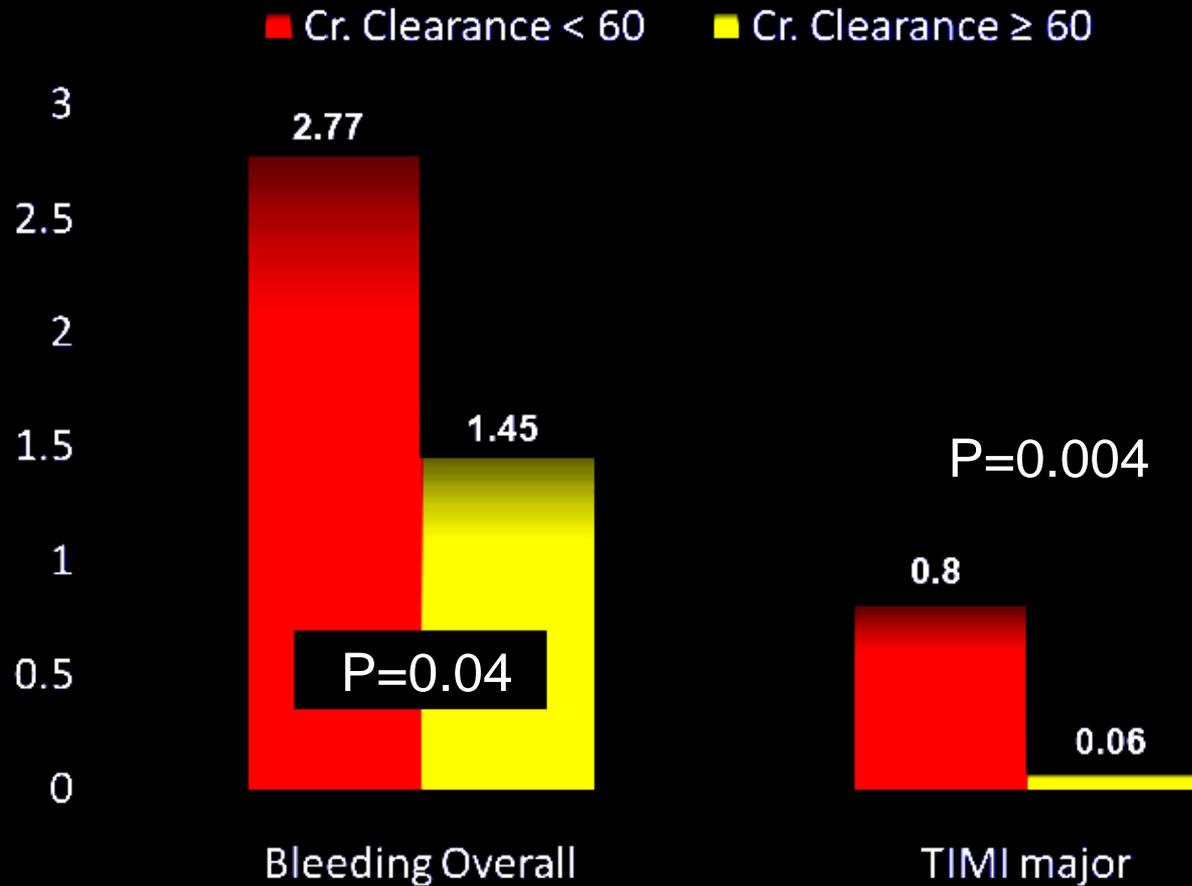
Eikelboom JW et al. *Circulation* 2006. 114:774-782

Pooled analysis ISAR-REACT, ISAR-SWEET,  
ISAR-SMART-2, and ISAR-REACT-2  
(N=5,384)



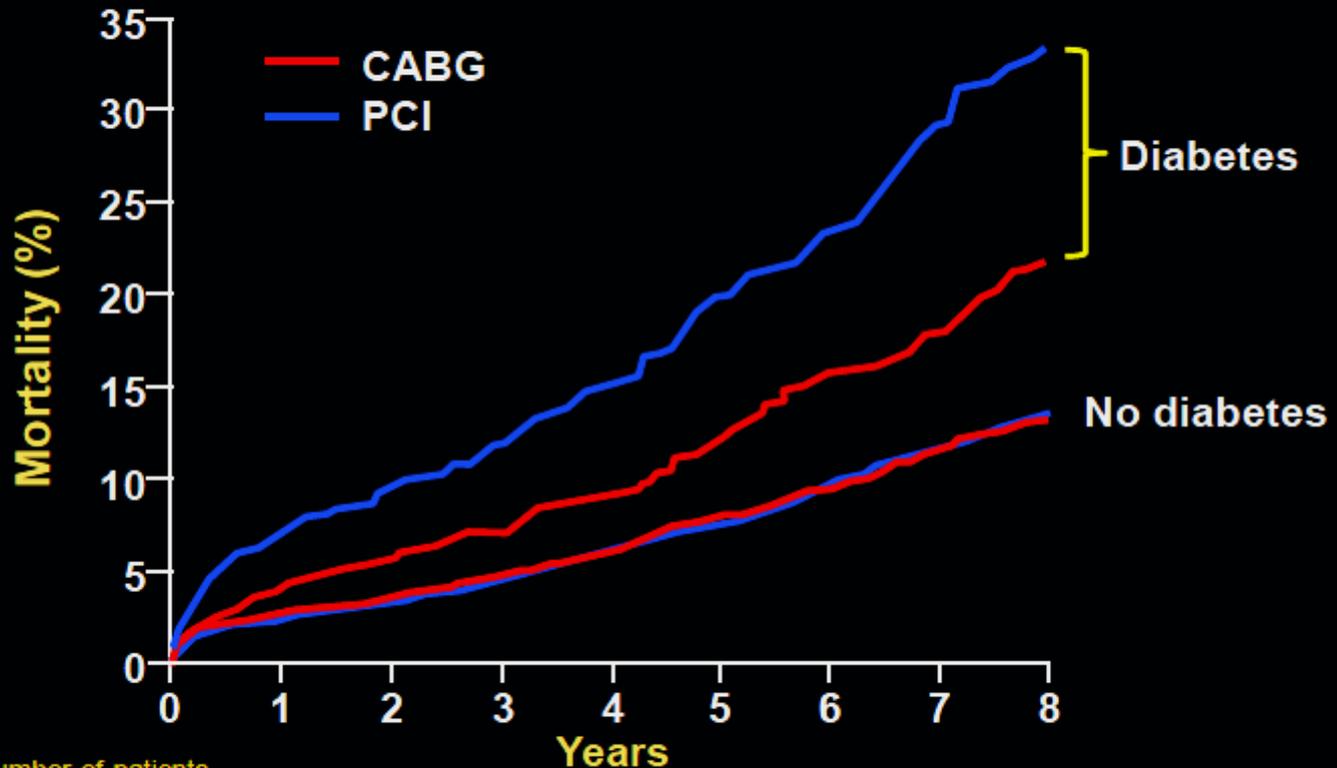
Ndrepepa G et al. *JACC* 2008. 51:690-697

## *In-Hospital Bleeding Events*



# CABG vs PCI for MVD (10 RCTs, n=7,812)

## - Impact of diabetes on mortality -

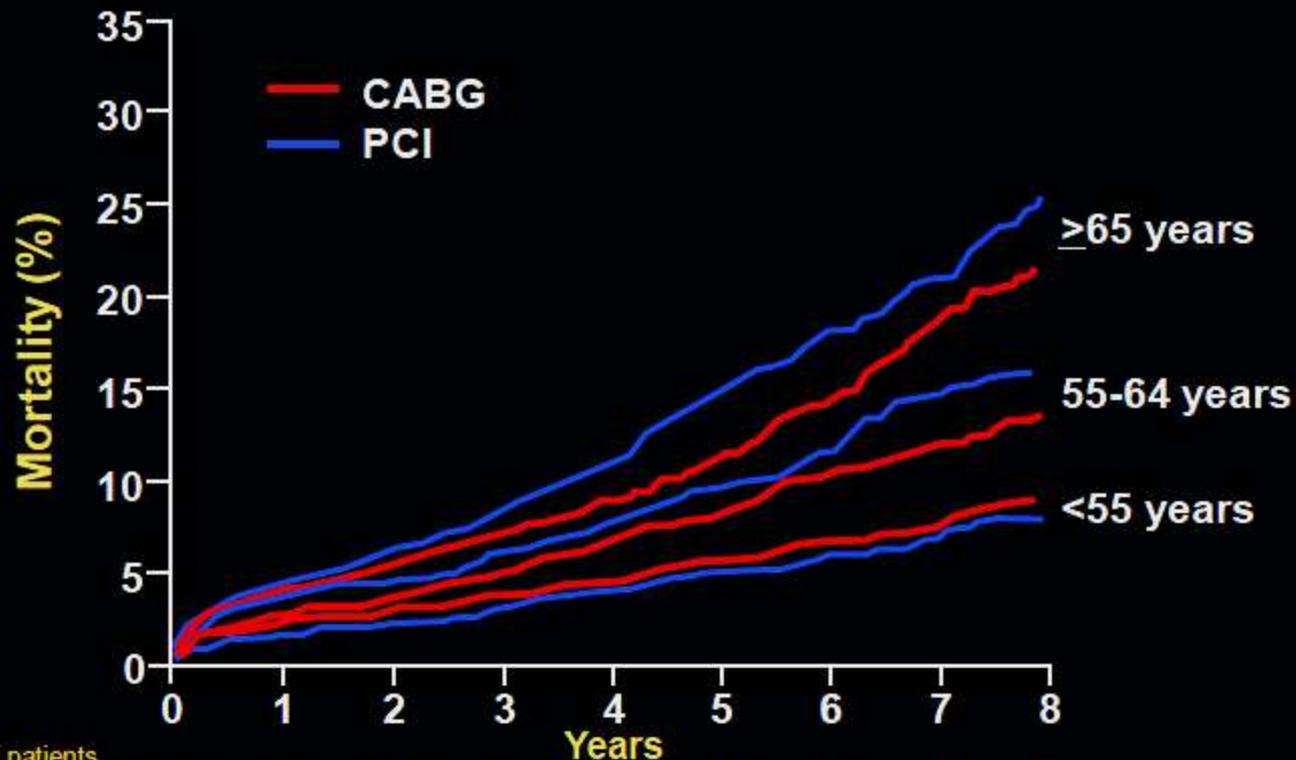


### Number of patients

CABG no diabetes	3263	3169	3089	2877	2677	2267	1592	1380	1274
CABG diabetes	615	587	575	532	498	421	257	225	200
PCI no diabetes	3298	3217	3148	2918	2725	2281	1608	1393	128
PCI diabetes	618	574	555	508	475	373	218	179	160

# CABG vs PCI for MVD (10 RCTs, n=7,812)

## - Impact of age on mortality -

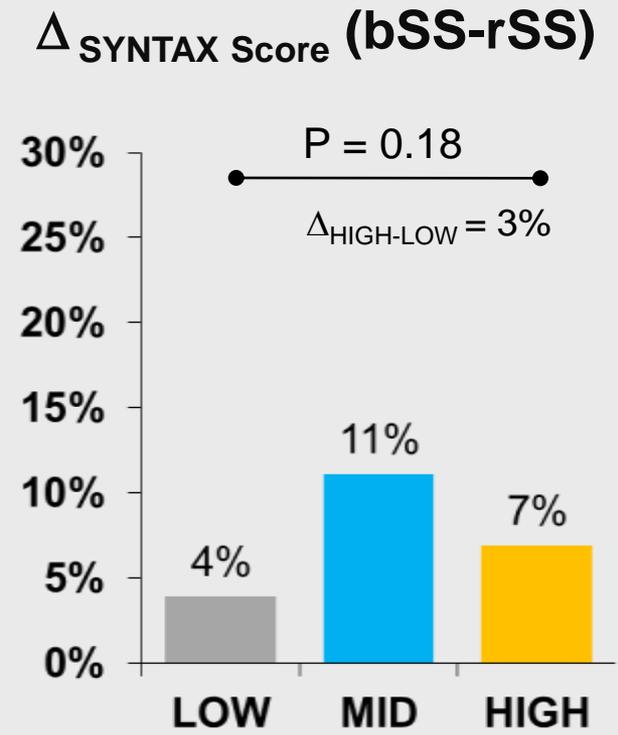
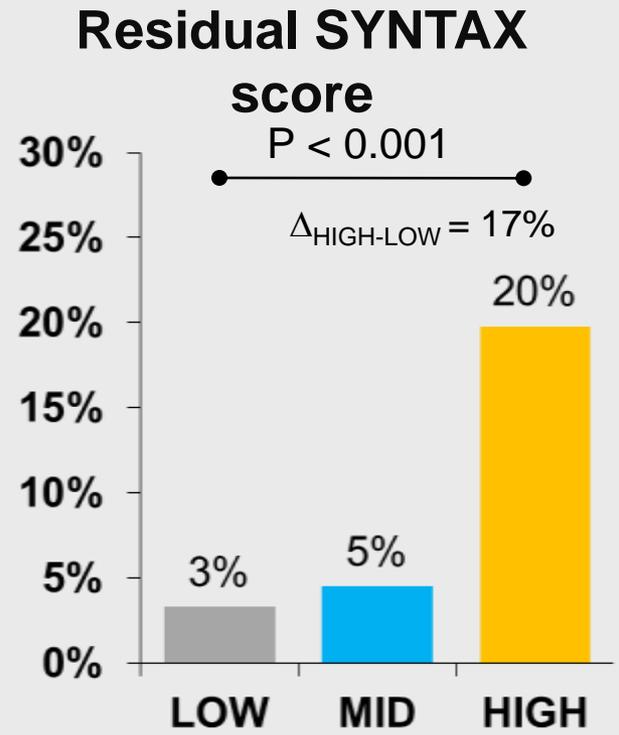
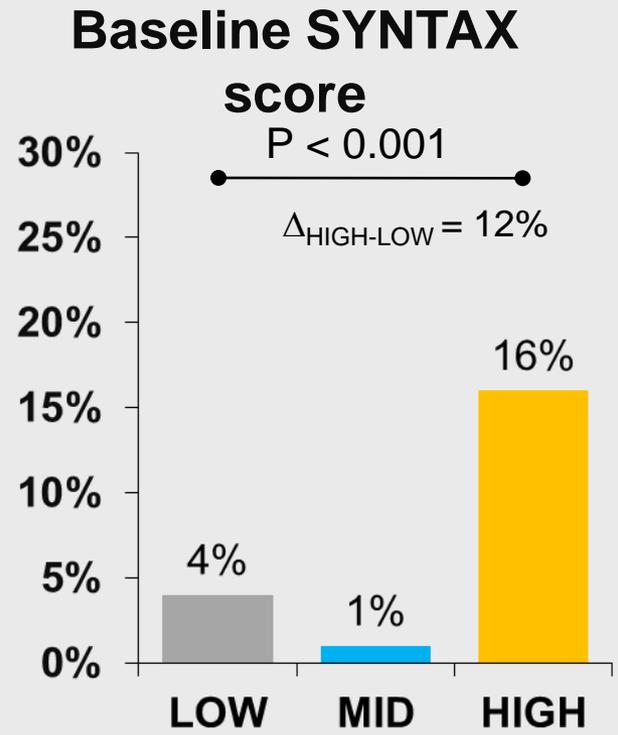


### Number of patients

	0	1	2	3	4	5	6	7	8
CABG <55 years	1063	1039	1016	938	891	774	556	507	468
CABG 55-64 years	1477	1434	1400	1308	1206	1017	711	634	585
CABG ≥65 years	1347	1292	1257	1167	1082	902	586	468	424
PCI <55 years	1122	1104	1087	1013	955	817	561	500	466
PCI 55-64 years	1456	1404	1371	1262	1177	989	705	614	578
PCI ≥65 years	1341	1286	1247	1154	1072	852	562	462	408

# Two-year cardiac mortality

## bSS, rSS and variation of SYNTAX score after LM PCI



Calibration( $\chi^2$ ): 2.45

Discrimination (AUC): 0.73

Calibration( $\chi^2$ ): 0.60

Discrimination (AUC): 0.72

Calibration( $\chi^2$ ): 3.13

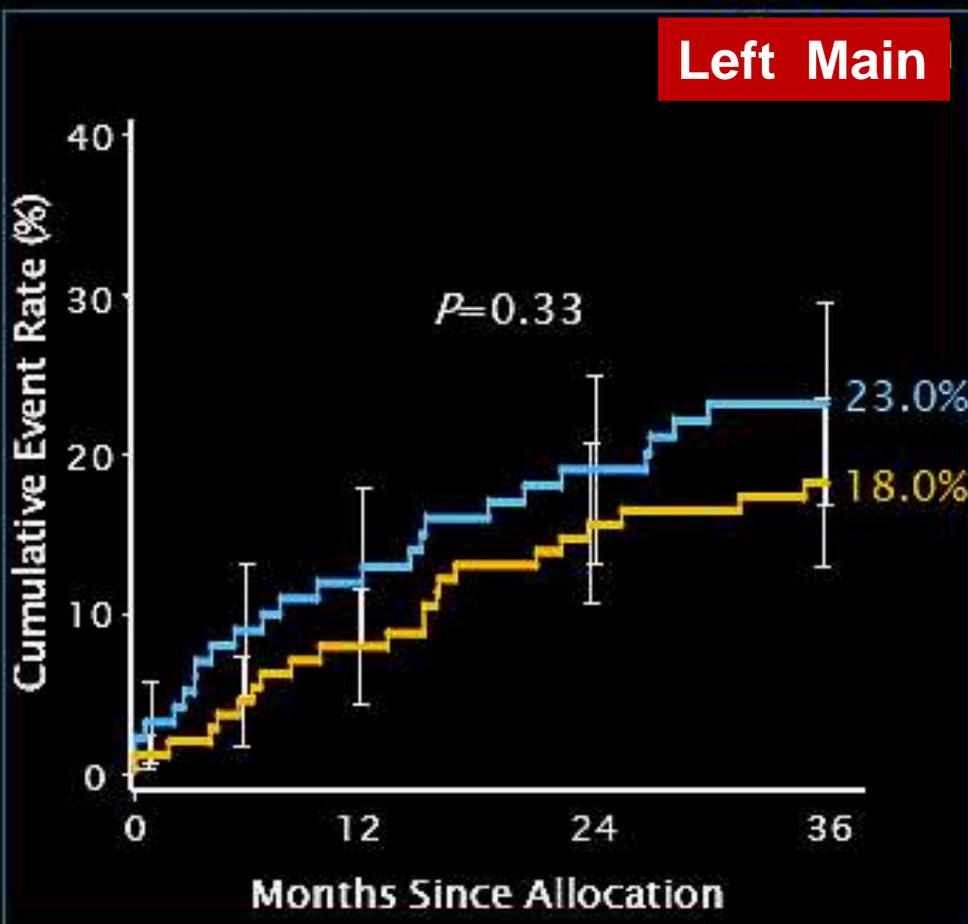
Discrimination (AUC): 0.55

# MACCE to 3 Years by SYNTAX Score Tercile *Low Scores (0-22)*



- CABG (N=104)
- TAXUS (N=118)

**Left Main**



	CABG	PCI	<i>P</i> value
Death	6.0%	> 2.6%	0.21
CVA	4.1%	> 0.9%	0.12
MI	2.0%	< 4.3%	0.36
Death, CVA or MI	11.0%	> 6.9%	0.26
Revasc.	13.4%	< 15.4%	0.69

Cumulative KM Event Rate  $\pm$  1.5 SE; log-rank *P*value

Site-reported Data; ITT population

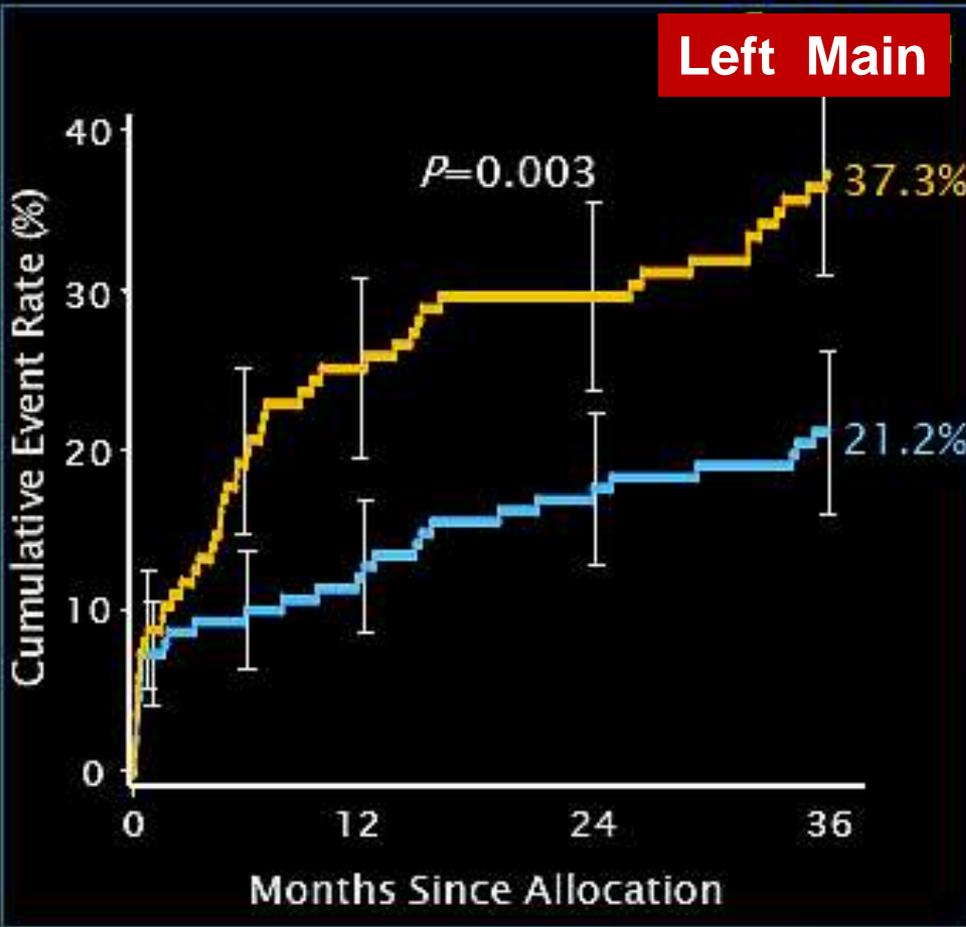
# MACCE to 3 Years by SYNTAX Score Tercile

*Left Main SYNTAX Score  $\geq 33$*



■ CABG (N=149)  
■ TAXUS (N=135)

**Left Main**



	CABG	PCI	P value
Death	7.6%	< 13.4%	0.10
CVA	4.9%	> 1.6%	0.13
MI	6.1%	< 10.9%	0.18
Death, CVA or MI	15.7%	< 20.1%	0.34
Revasc.	9.2%	< 27.7%	<0.001

Cumulative KM Event Rate  $\pm$  1.5 SE; log-rank P value

Site-reported Data; ITT population

# CSS vs. SYNTAX score.

## Better discrimination in mortality, but limitations remain

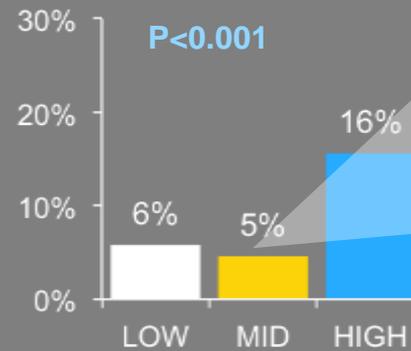
**CSS**

17.4 ± 20.5

**MACE**



**Death**



- Tertiles are not in the anticipated order
- Modest gain in calibration vs SYNTAX score ( $\chi^2$  8 vs 6)

c-statistic = 0.62



c-statistic = 0.66



**SYNTAX score**

11.7 ± 7.3



c-statistic = 0.61

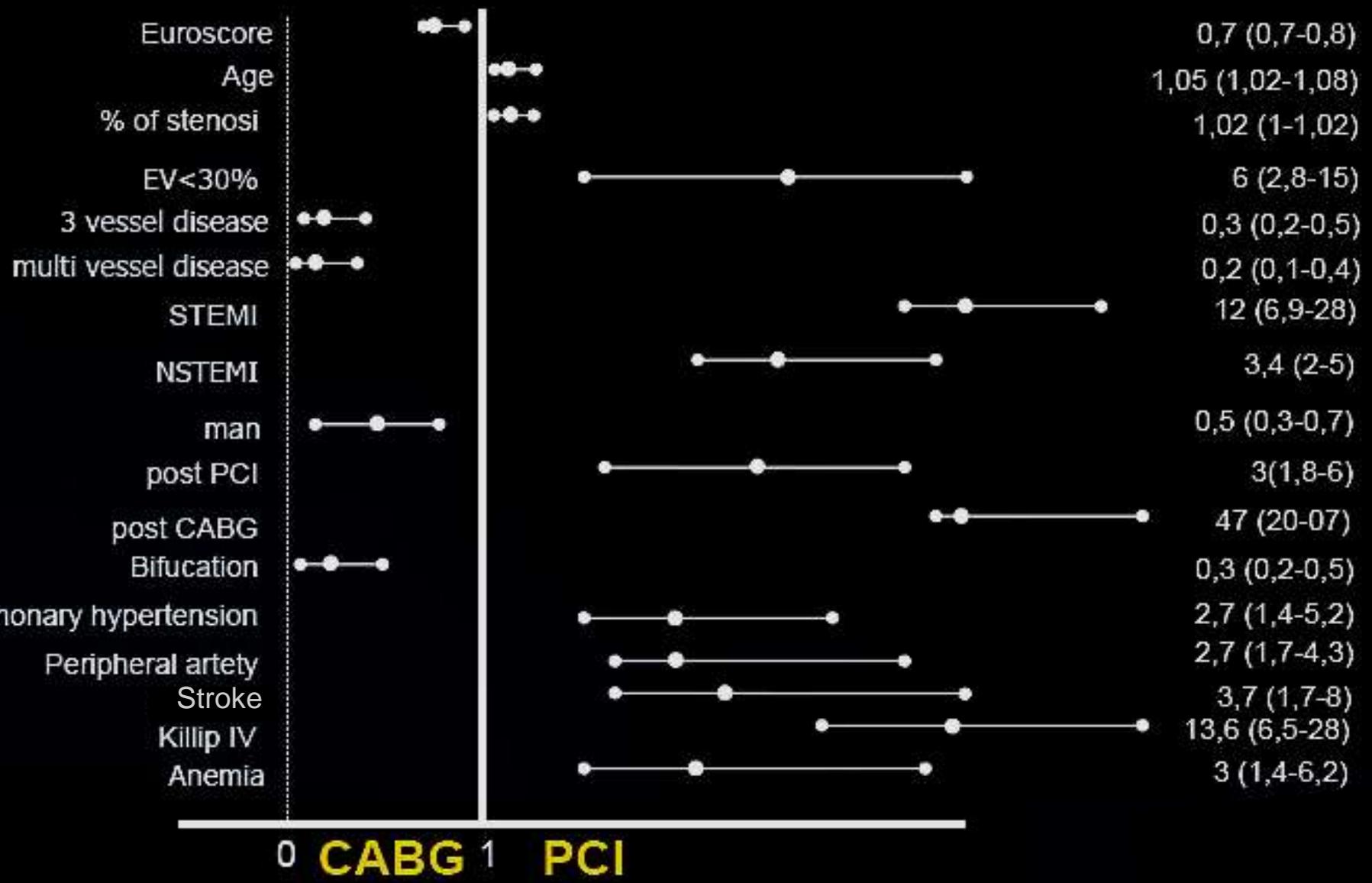


c-statistic = 0.58

# Factors influencing treatment selection

## Index procedure : PCI vs CABG

OR (95% CI)



# 347 J.S.

♂ 87 años

SIA con isquemia posterolateral

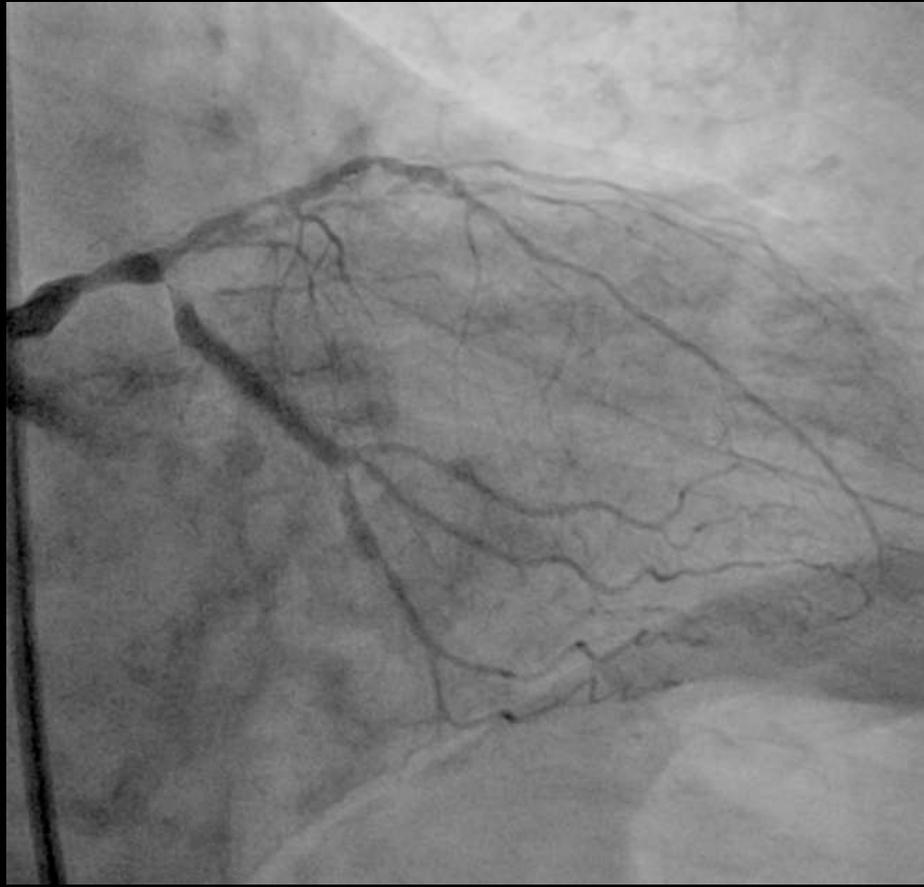
7 días de internación en UCI

EUROscore 24%

STS 13%

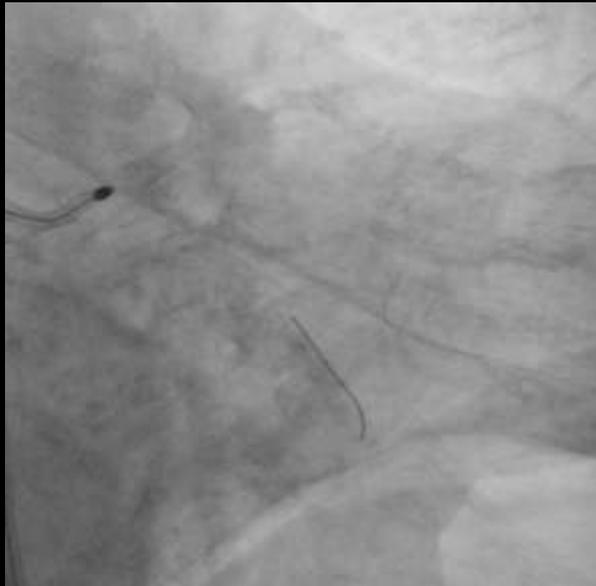
Syntax 29



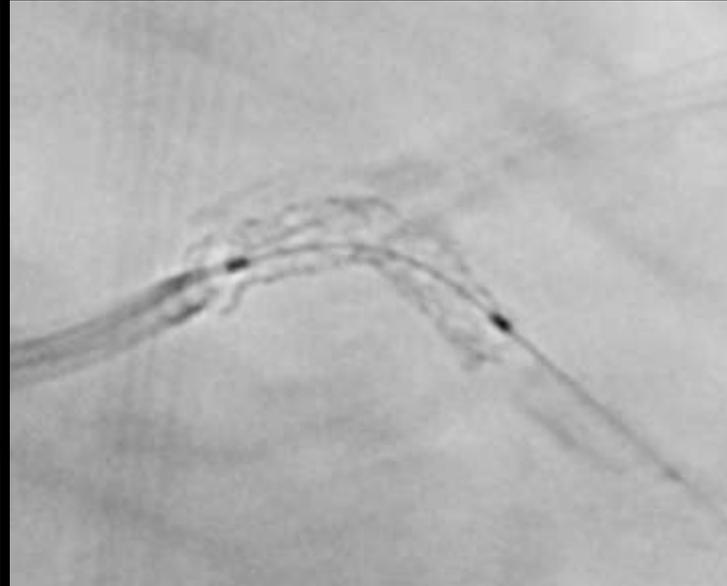


# Bivalirudina

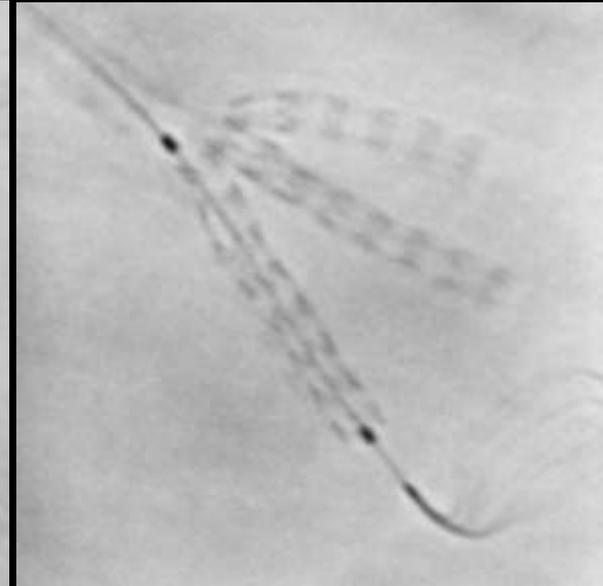
Rotablator



DES a Tronco  
DES a ostium de CX



3 DES a trifurcacion de CX



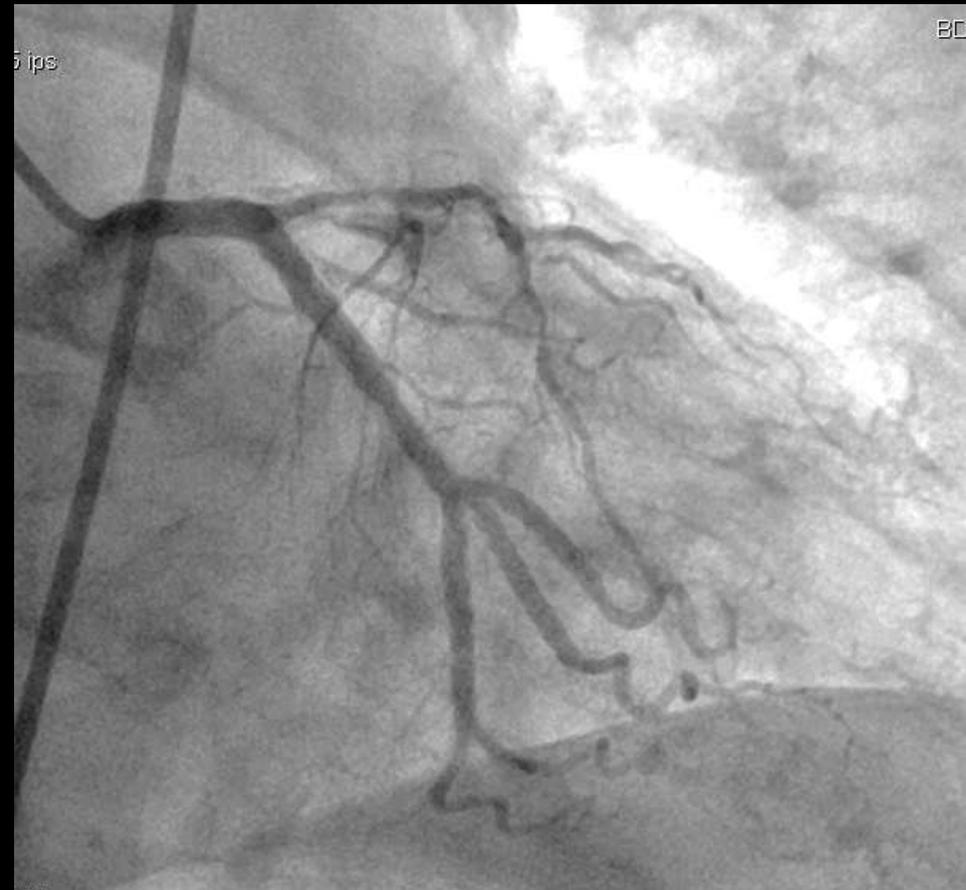


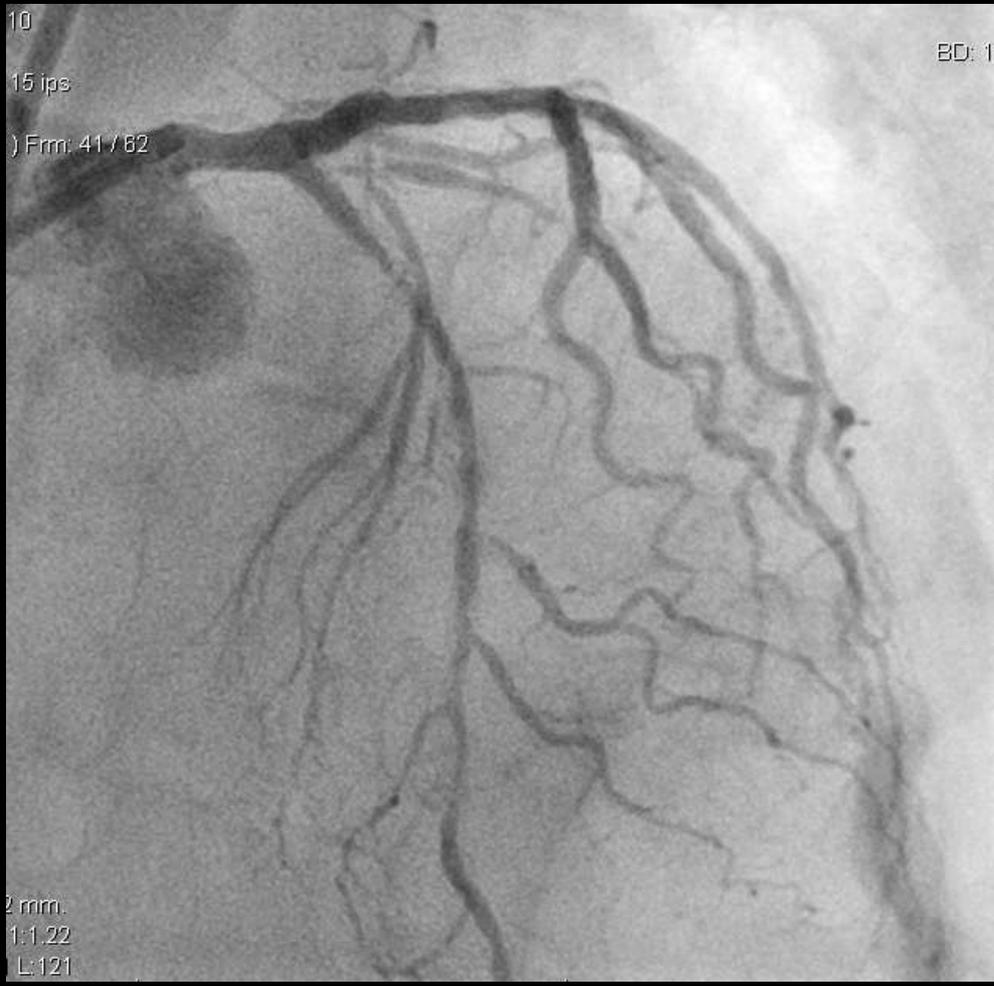
**PRE**



**POST**

7 Meses después  
SIA con cambios laterales  
Trop I= 0.9





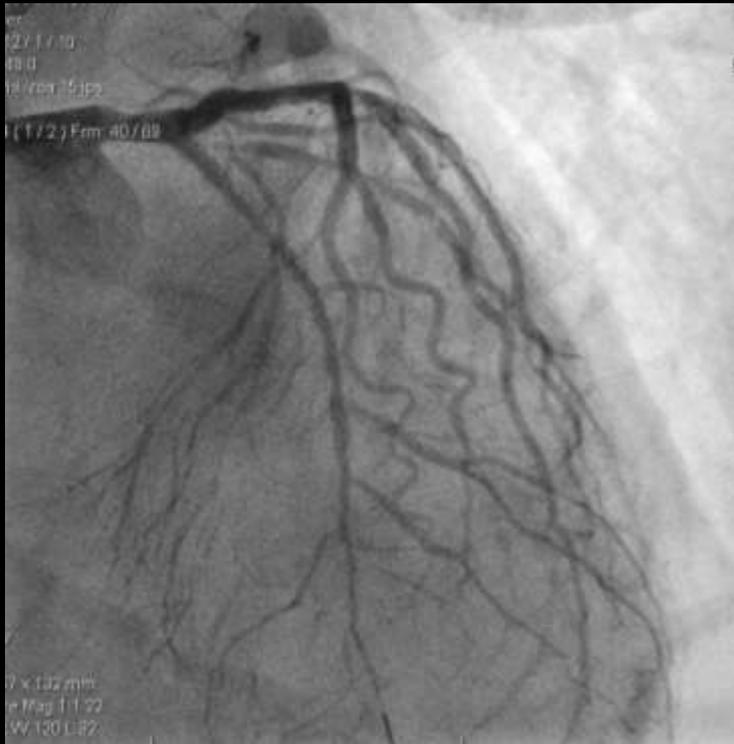
# Bivalirudina

Rotablator



3 DES a DA  
("full metal jacket")





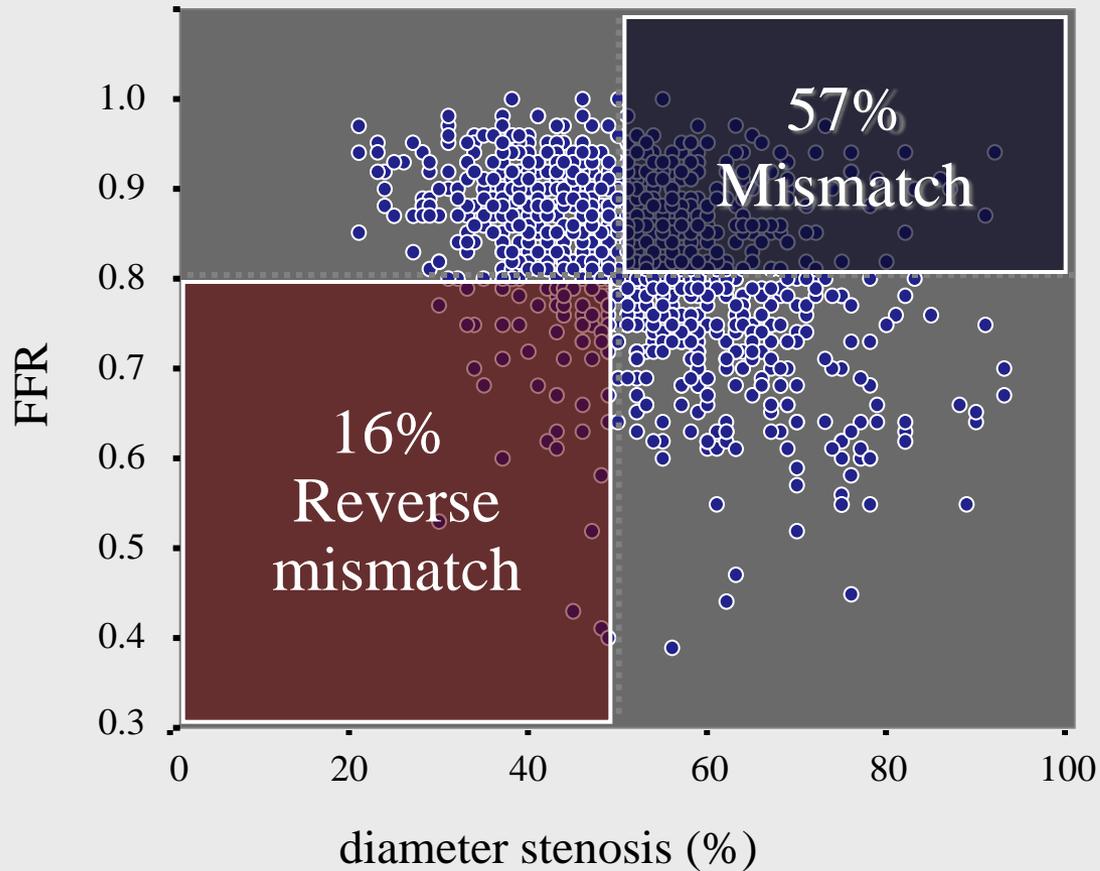
**PRE**



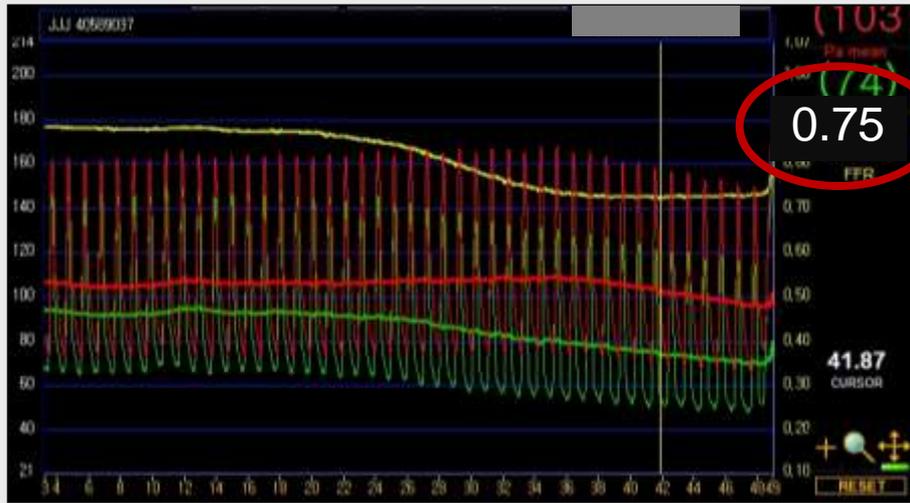
**POST**

# Mismatch Disease in the Cath Lab

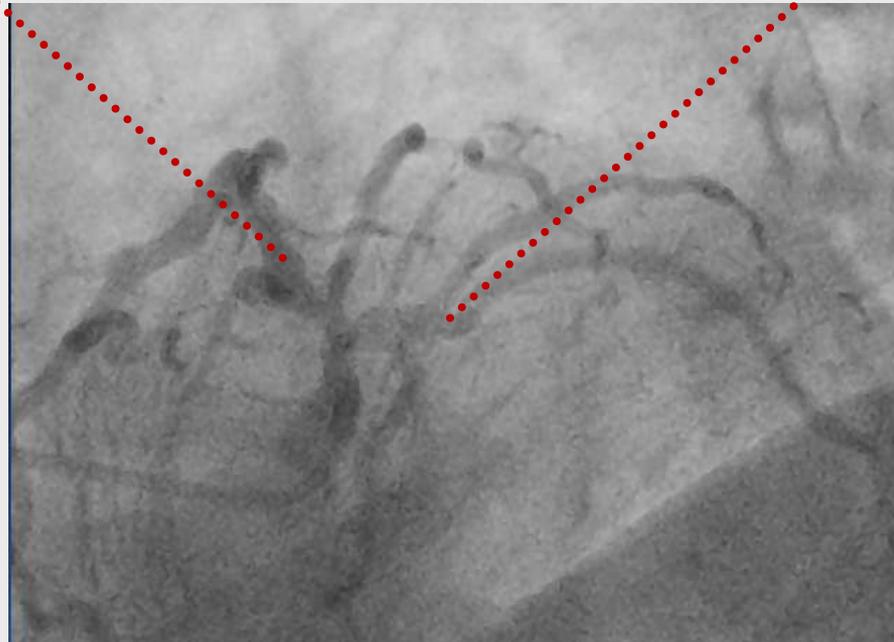
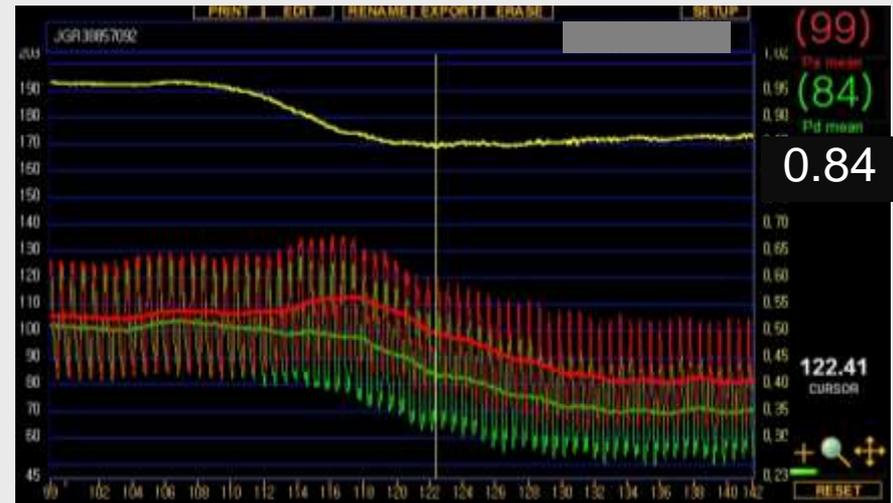
1066 Non-LM lesions



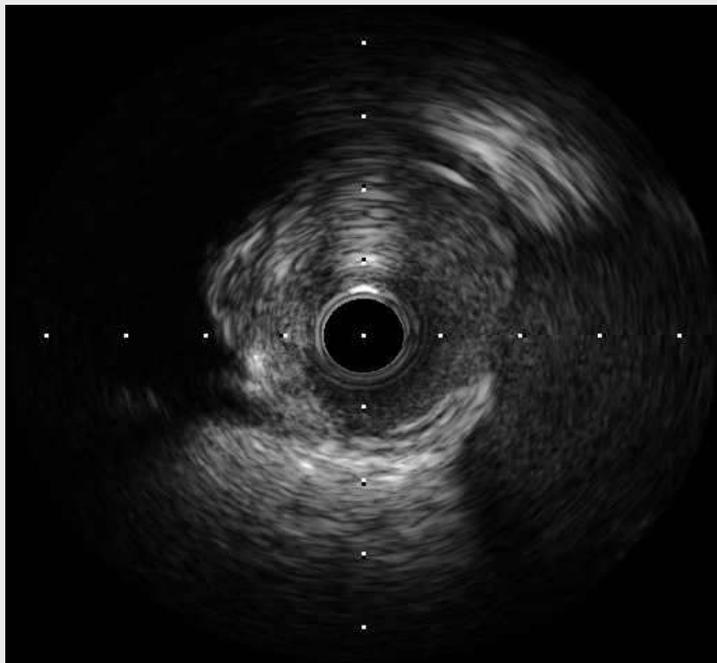
# LAD, FFR



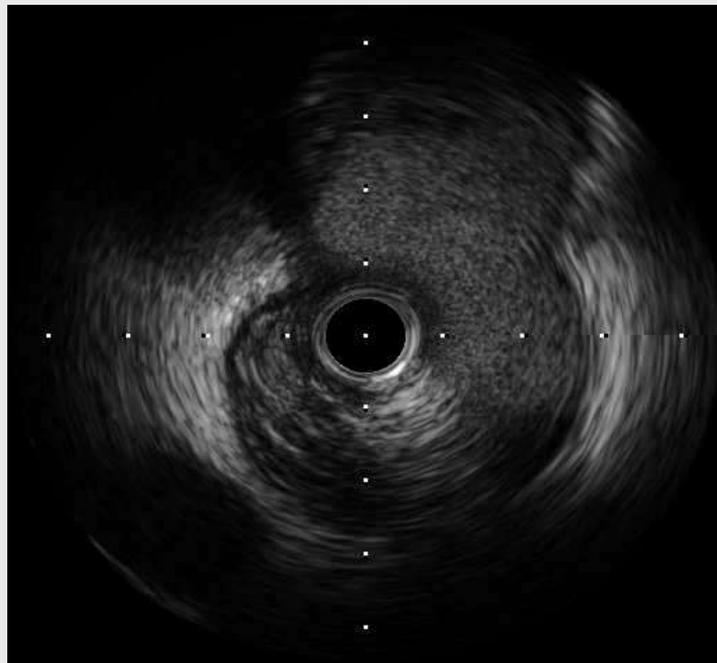
# LCX, FFR



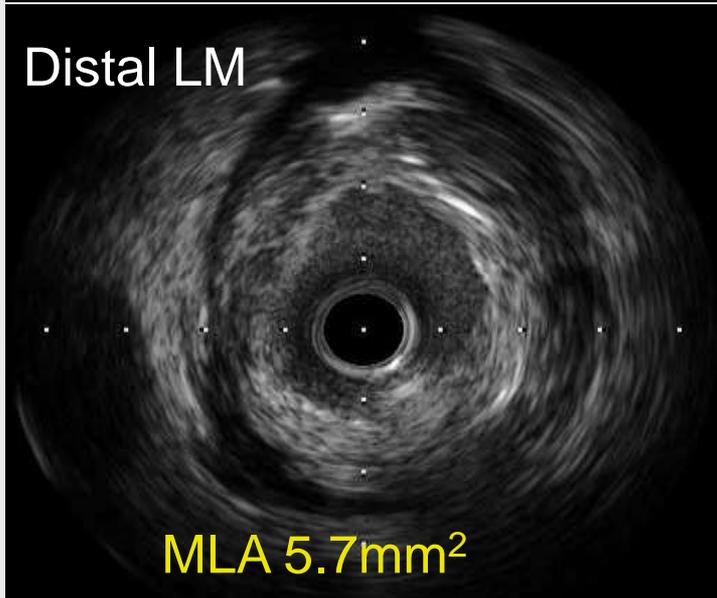
**LM** from LAD pullback



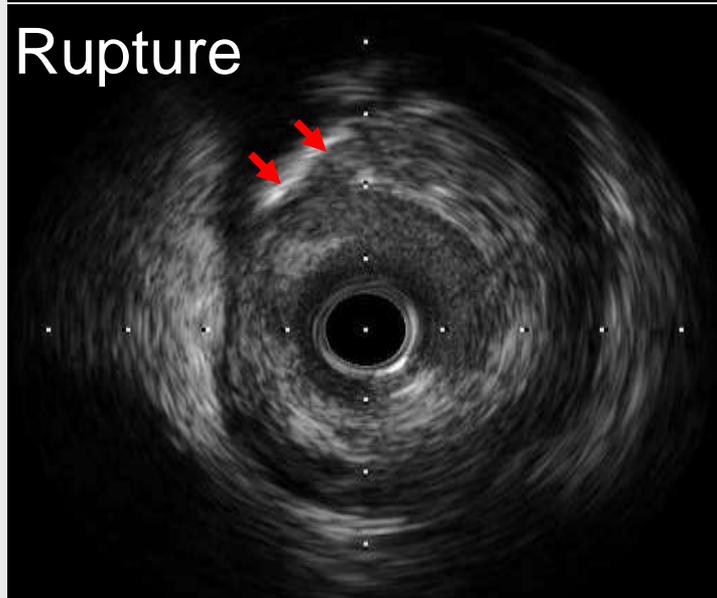
**LM** from LCX pullback



Distal LM



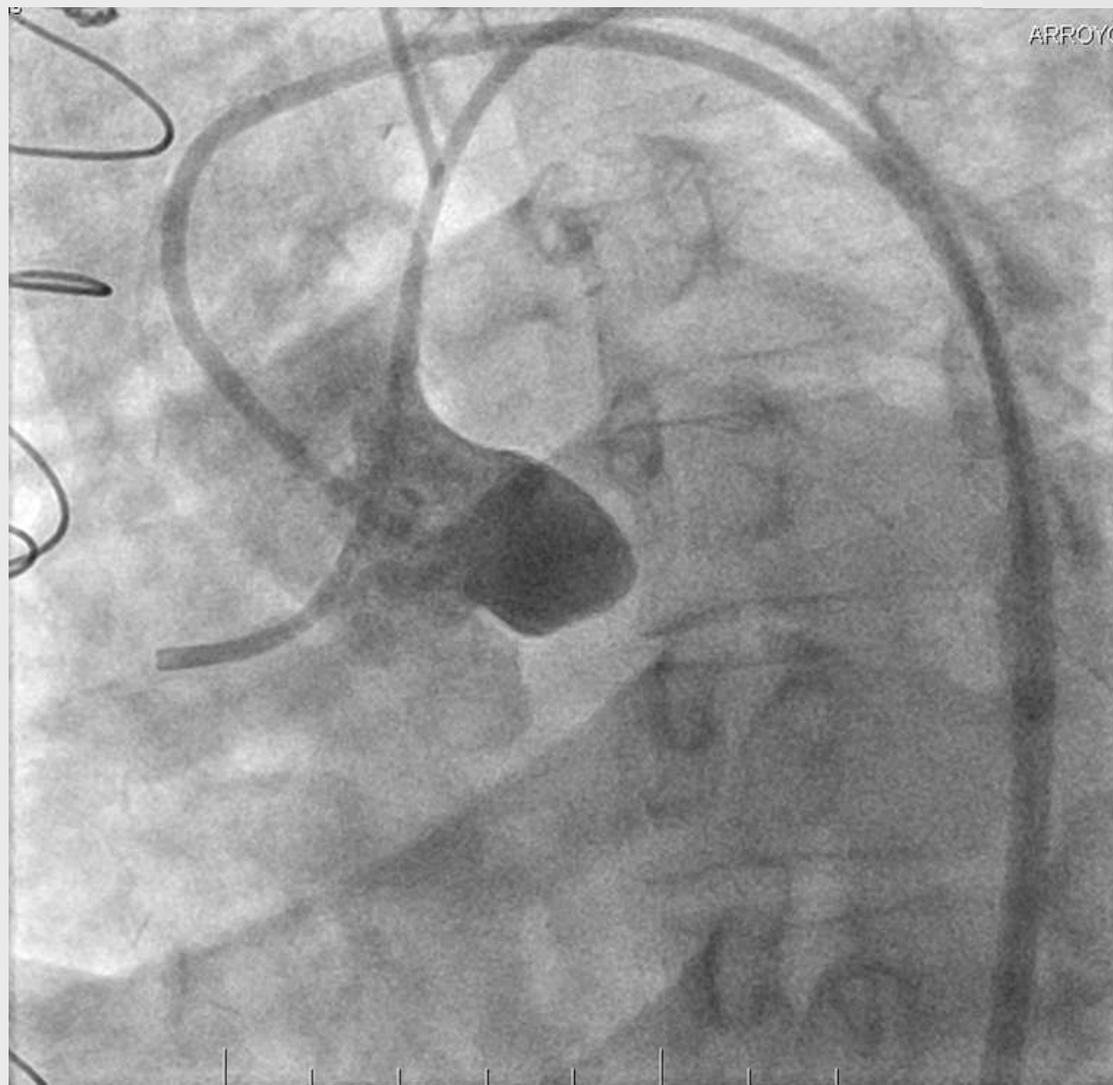
Rupture





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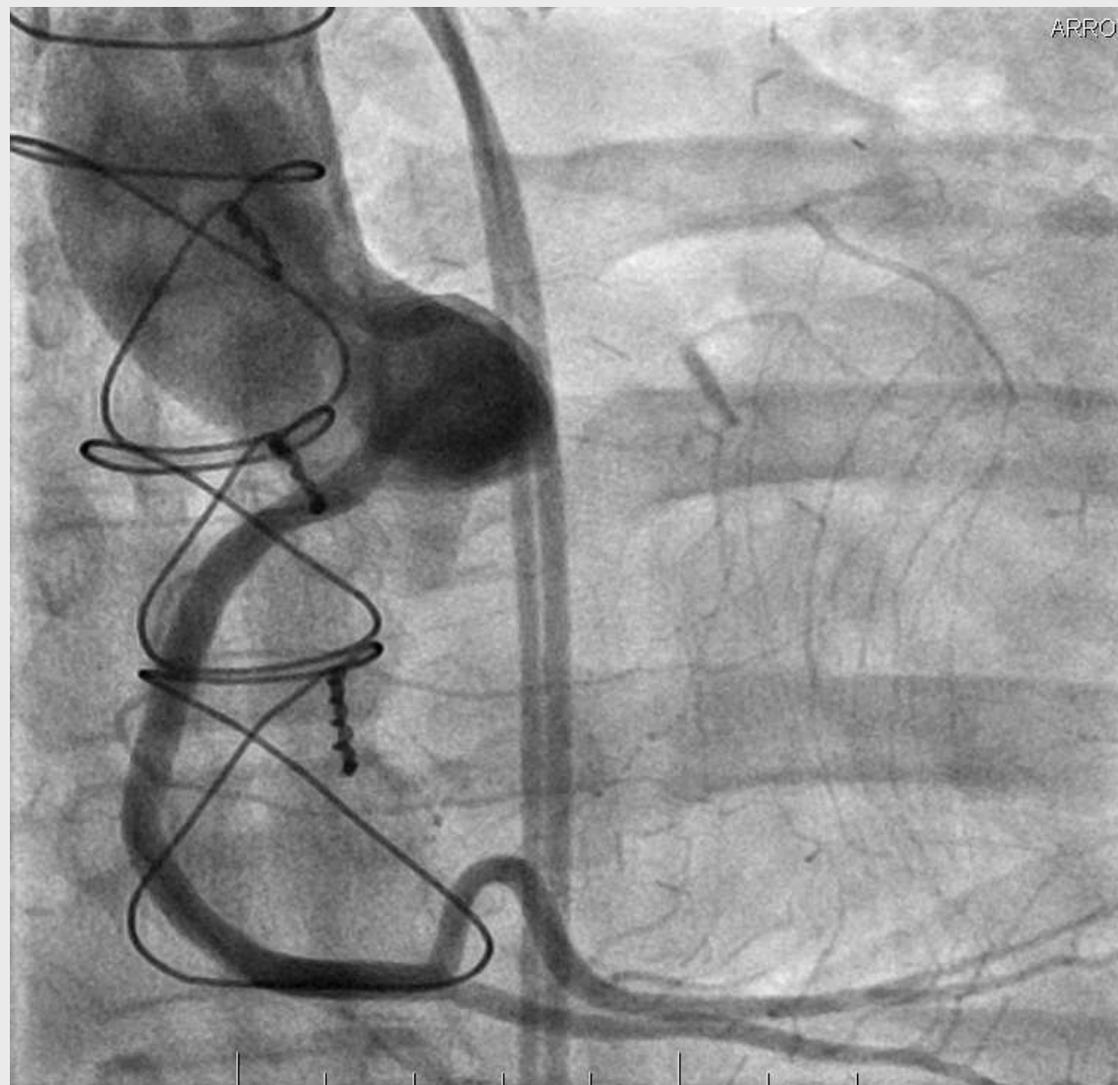


APROYO



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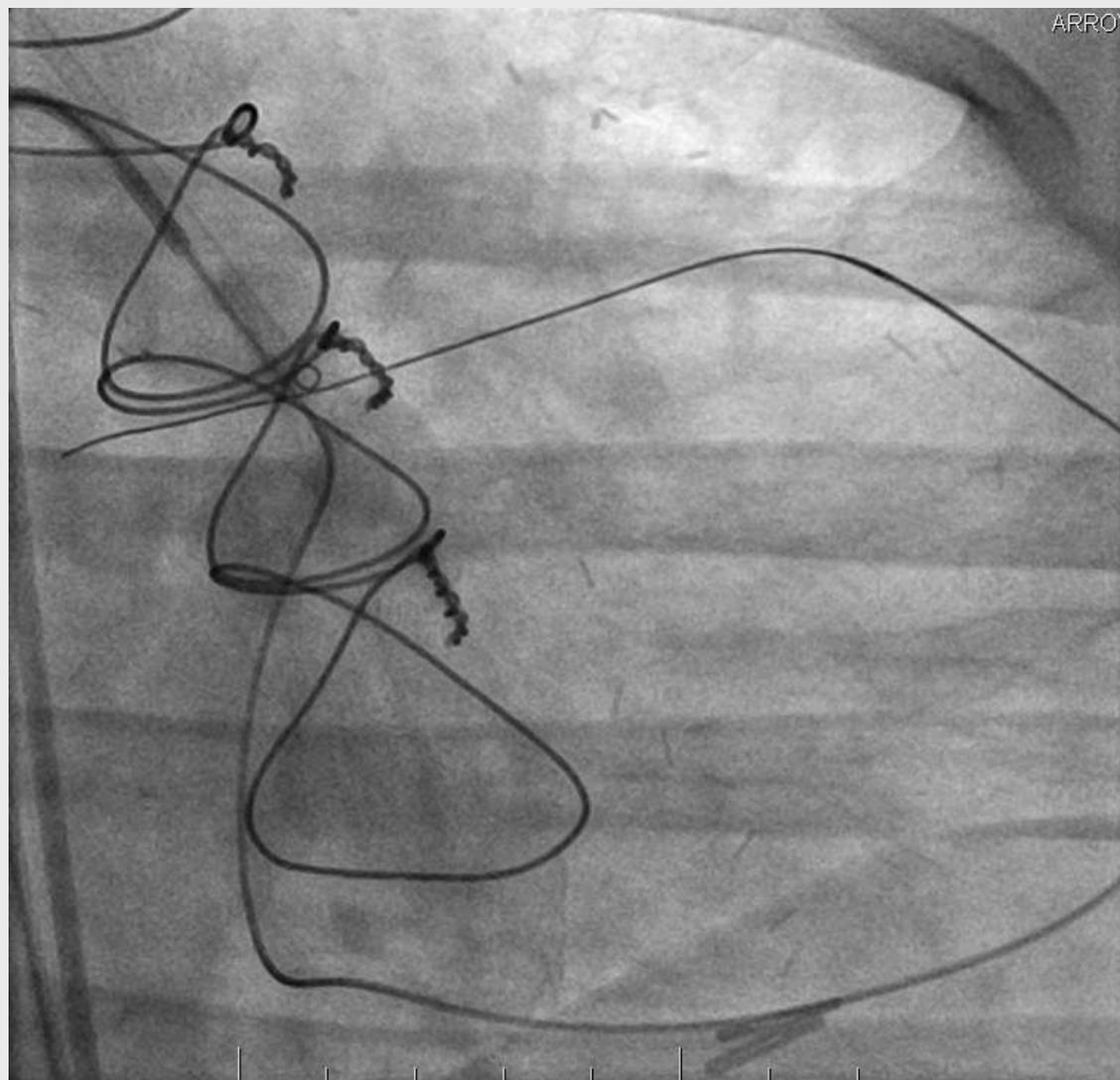
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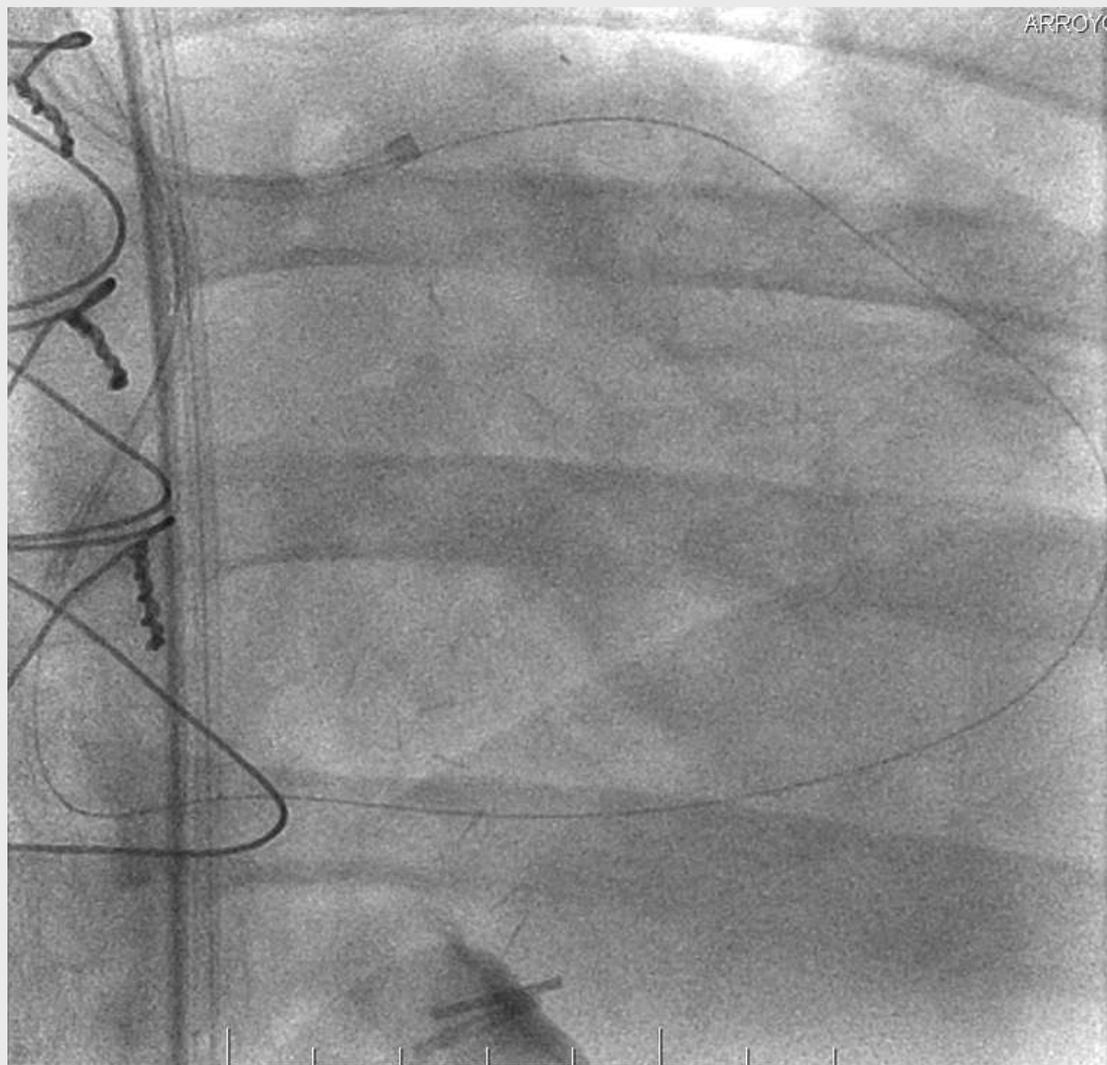
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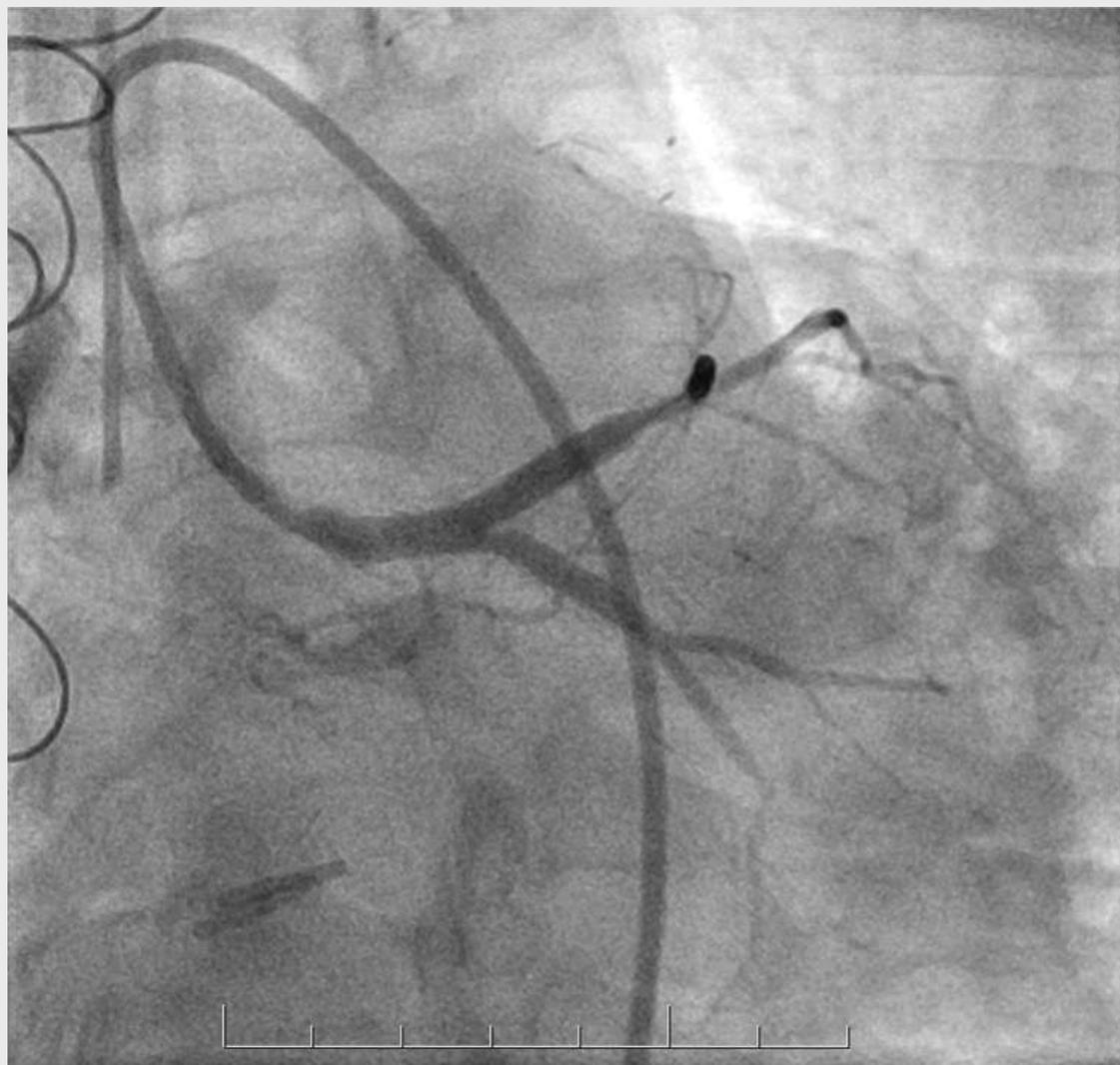
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Híbridos



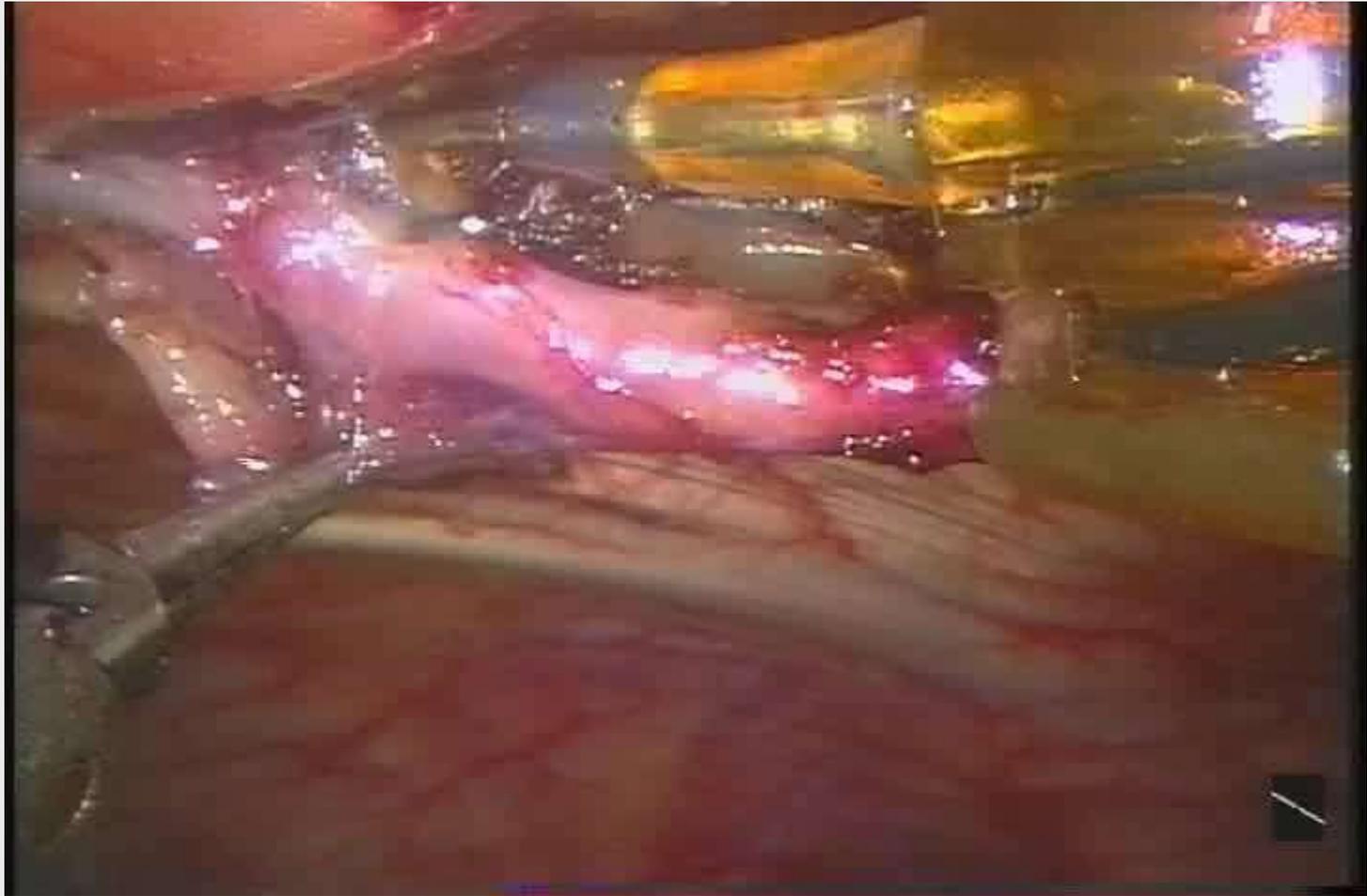
# Resultados de 130 casos híbridos TECAB-PCI

- 2001 to 2009:
- 3 MIDCAB, AH-TECAB 96, BH-TECAB 31 pts
- Mortalidad Peri-op 0.7%
- F/U: 6% IAM, 0.7% ACV, 8% nueva PCI, 0 Muertes.
- 75% Libres de MACE

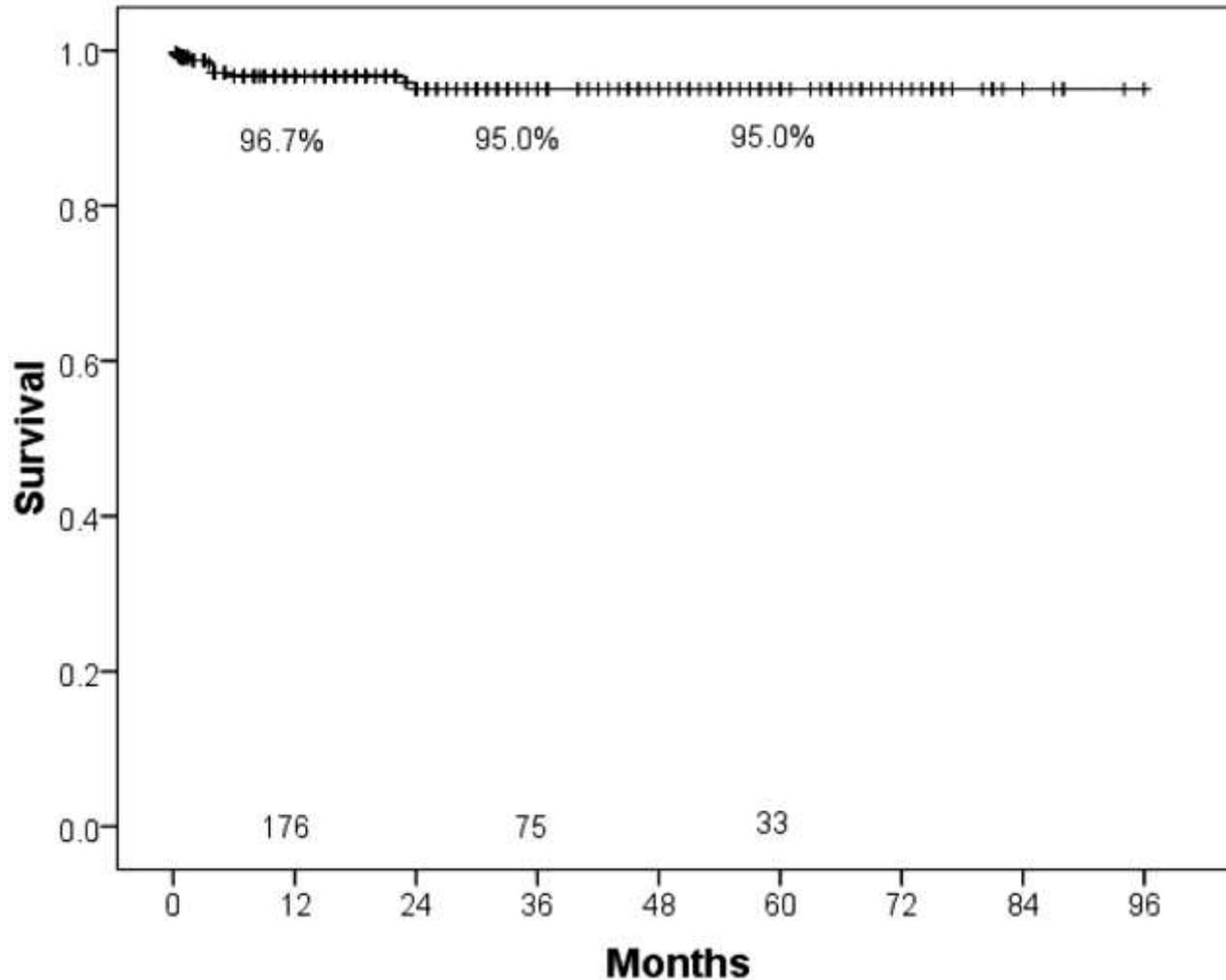
# Robotic EndoACAB



# ROBOTIC LIMA HARVESTING



**Cumulative survival of 410 patients undergoing totally endoscopic coronary artery bypass grafting from 2001 to 2010 at the University of Maryland and at Innsbruck Medical University.**



*Bonatti J et al. Circulation 2011;124:236-244*

# Hybrid Coronary Revascularization

## ***ACC/AHA/SCA 2011 Guidelines***

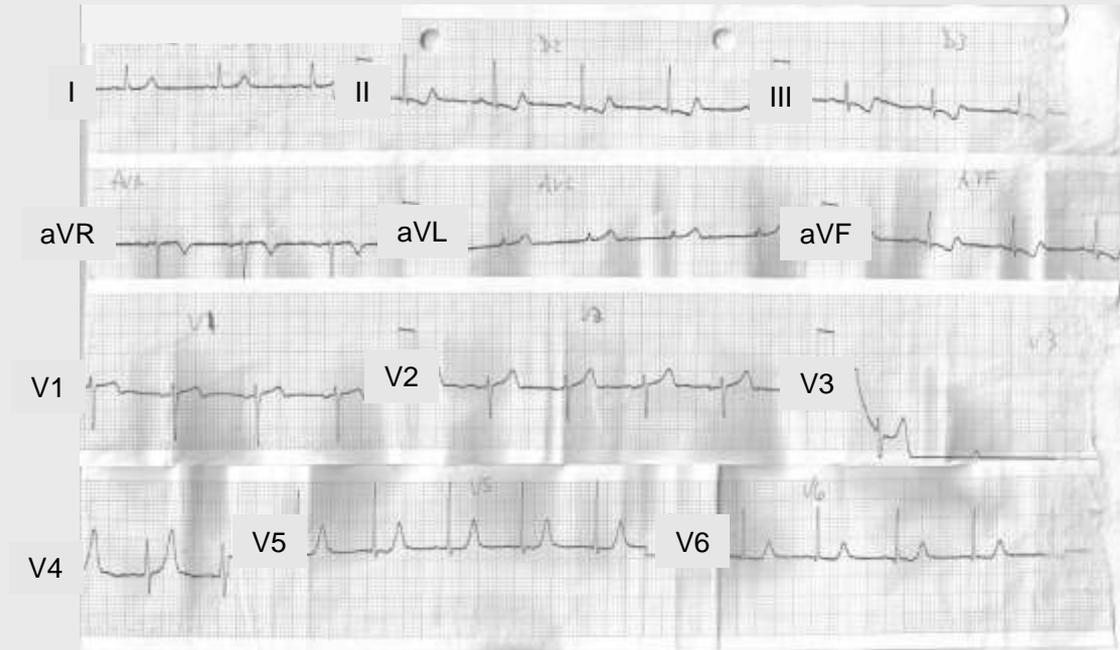


Hybrid coronary revascularization (defined as the planned combination of LIMA-to-LAD artery grafting and PCI of  $\geq 1$  non-LAD coronary arteries **may be reasonable as an alternative to multivessel PCI or CABG in an attempt to improve the overall risk-benefit ratio of the procedures.**



♀ 38

- ✓ Dolor precordial típico de mas de 30 minutos
- ✓ Al llegar a la guardia de nuestro centro se constata electrocardiograma normal
- ✓ Enzimas cardiacas normales
- ✓ Prueba ergométrica una semana anterior leve dolor precordial opresivo que cedió solo
- ✓ Ecocardiograma transtorácico que fue normal



Philips Medical Systems

AlluraXper

SD: 2011 / 12 / 5

ST: 14:41:51

Coronaria izda 15 ips

Ser: 8

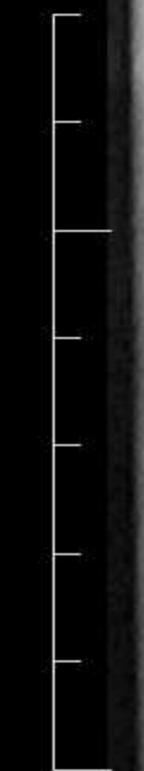
Frm: 34 / 66

Hospital Italiano

Id: 2704380

BD: 1973 / 4 / 8

512 x 512

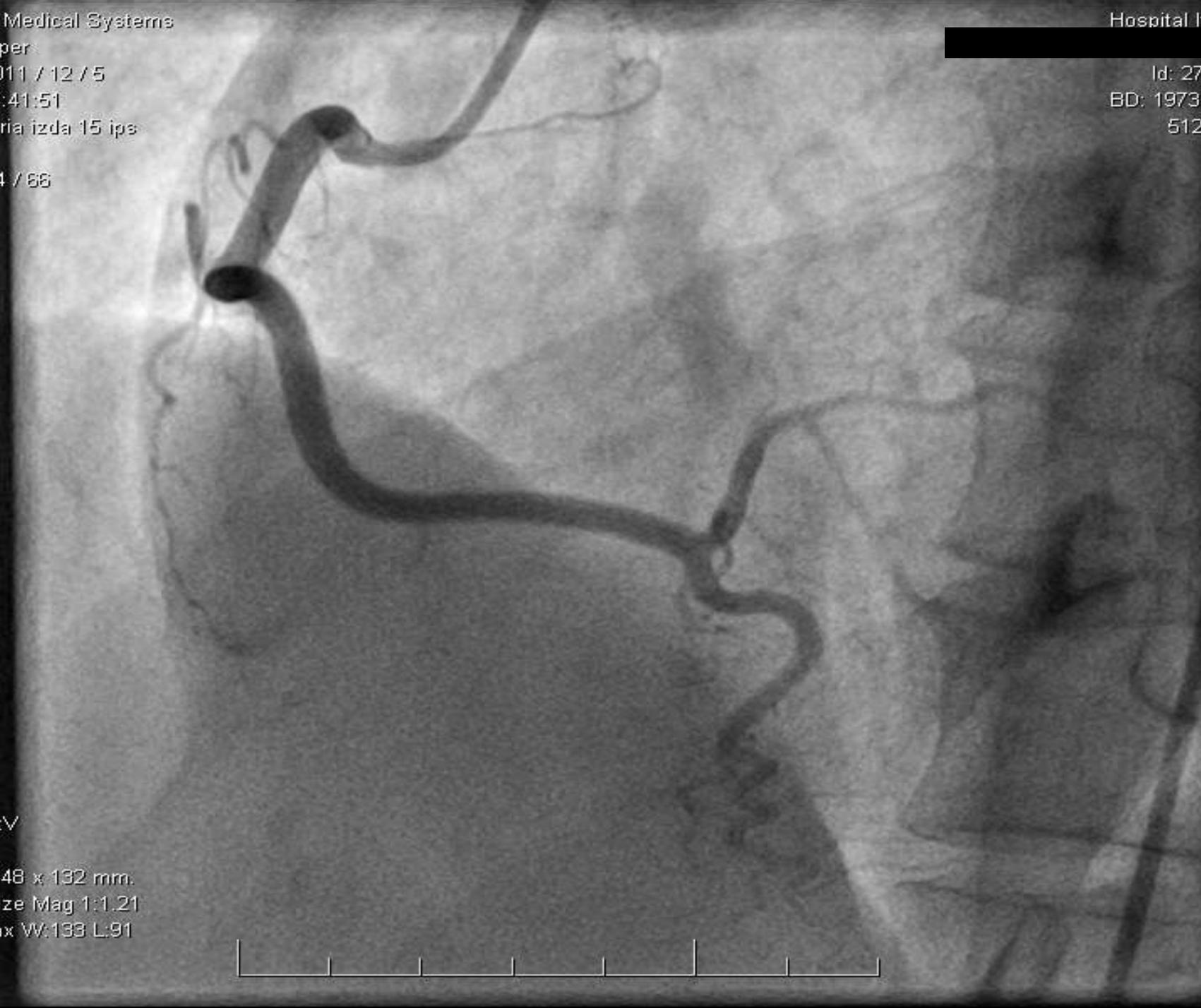


73.56 kV

FOV: 148 x 132 mm.

Real Size Mag 1:1.21

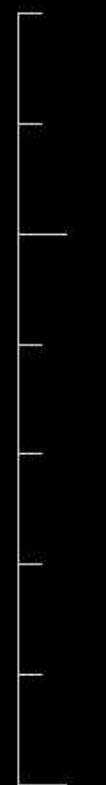
Min-Max W:133 L:91



Philips Medical Systems  
AlluraXper  
BD: 2011 / 12 / 5  
ST: 14:41:51  
Coronaria izda 15 ips  
Ser: 6  
Frm: 23 / 59

Hospital Italiano

Id: 2704380  
BD: 1973 / 4 / 8  
512 x 512



75.51 kV

FOV: 184 x 132 mm.  
Real Size Mag 1:1.33  
Min-Max W:116 L:83



ps

m.  
33  
36



AlluraXper

SD: 2011 / 12 / 5

ST: 14:41:51

Coronaria izda 15 ips

Ser: 13

Frm: 1 / 19

Id: 2704380

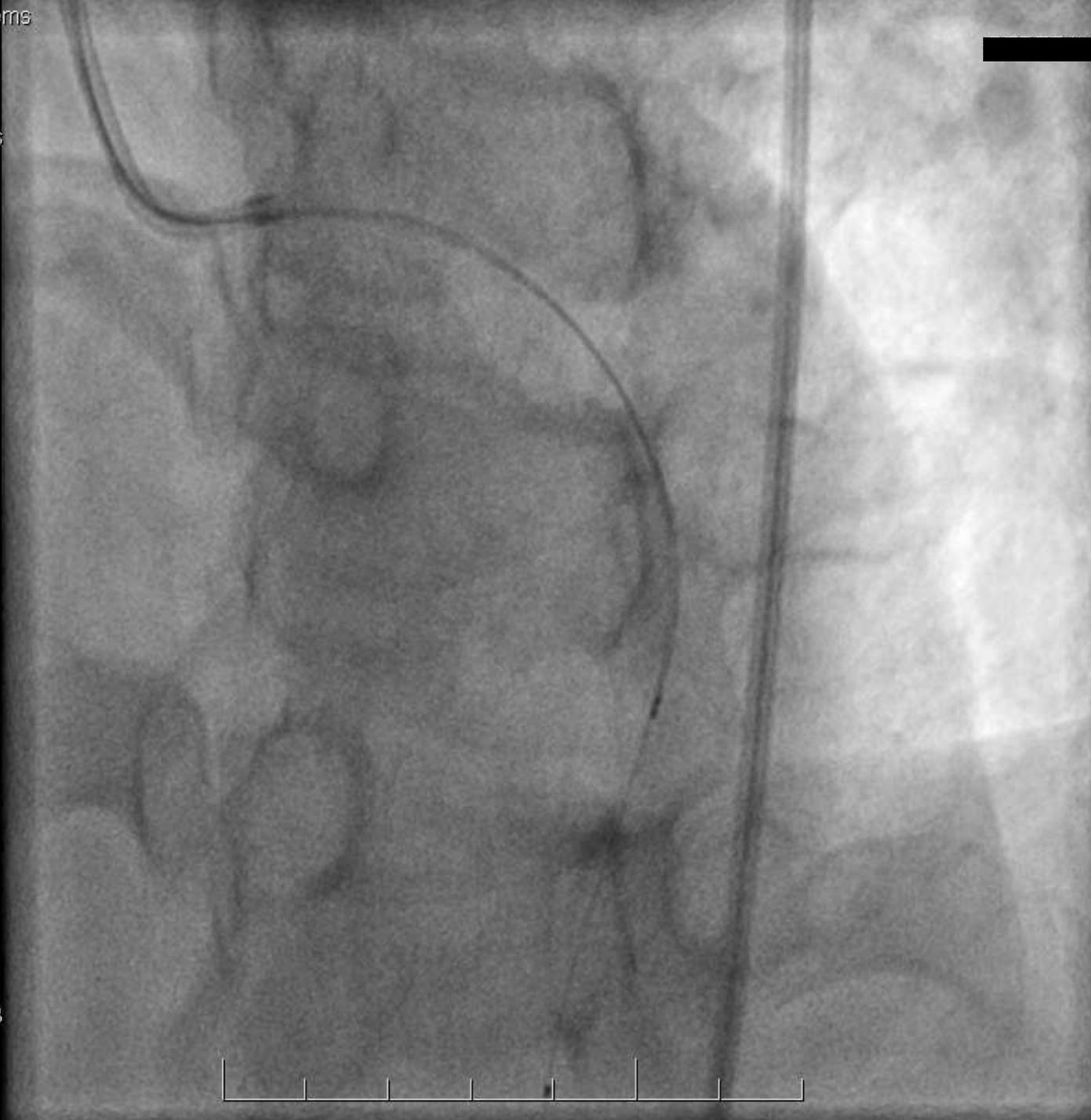
BD: 1973 / 4 / 8

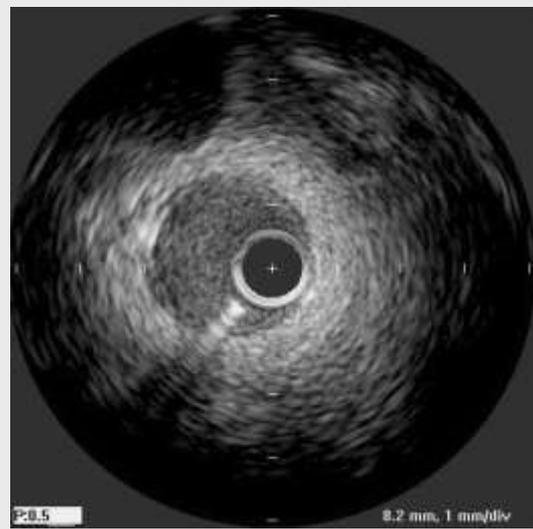
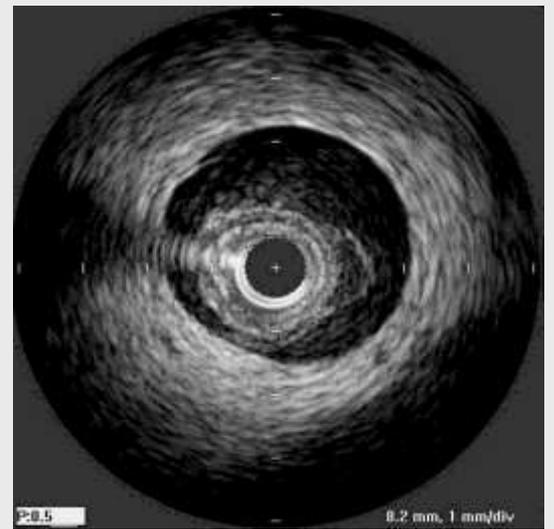
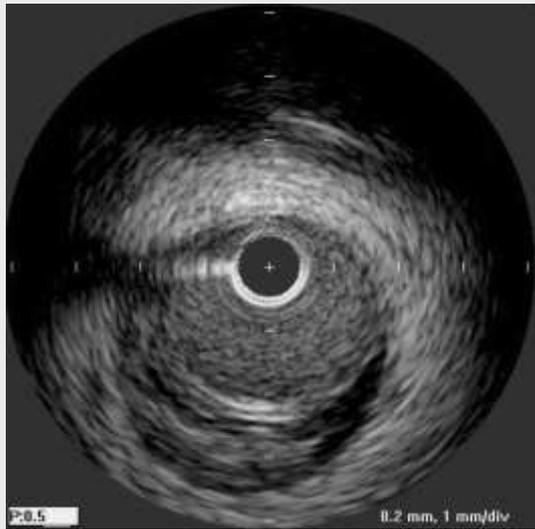
512 x 512



76.59 kV

FOV: 184 x 132 mm.  
Real Size Mag 1:1.33  
Min-Max W: 136 L: 93







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**24 horas**

- ✓ **ANGOR 5/10**
- ✓ **ECG sin cambios**

Siemens  
AXIOM-Artis  
SD: 2011 / 12 / 6  
ST: 18:14:25  
Coro Log  
Coronario\*Cateterismo diagnóstico coronario  
Ser: 1  
Frm: 21 / 40

Id: 11.12.06-18:38:51-STD-1.3.12.2.1107.5.13.2.20116  
BD: 1973 / 4 / 8  
038Y  
512 x 512

81 kV

FOV: 124 x 110 mm.  
Real Size Mag 1:1.44  
Min-Max W:170 L:119



Siemens

HOSPITAL ITALIANO

AXIOM-Artis

SD: 2011 / 12 / 6

ST: 18:14:25

Coro Log

Coronario\*Cateterismo diagnóstico coronario

Ser: 4

Frm: 1 / 53

Id: 11.12.06-18:38:51-STD-1.3.12.2.1107.5.13.2.20116

BD: 1973 / 4 / 8

038Y

512 x 512



32 kV

FOV: 124 x 110 mm.

Real Size Mag 1:1.44

Min-Max W:134 L:102





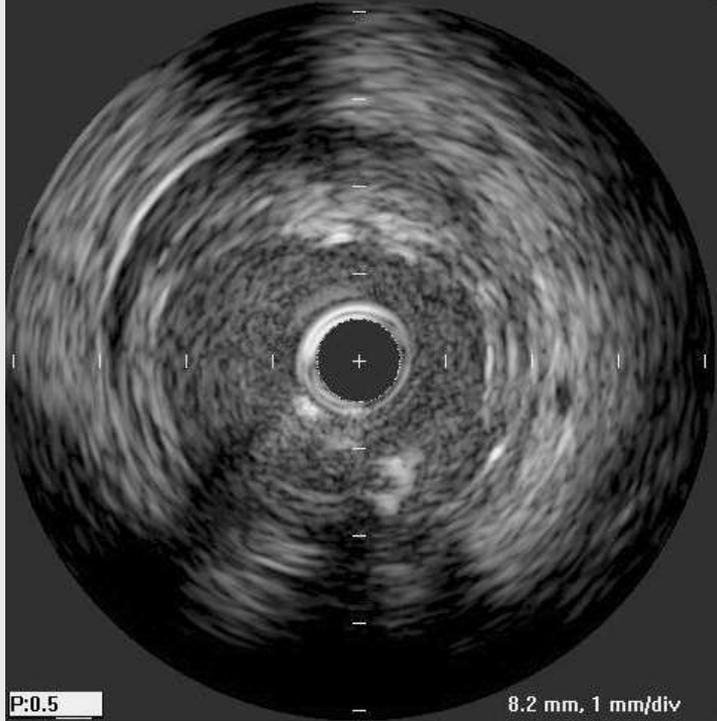
Siemens  
AXIOM-Artis  
SD: 2011 / 12 / 6  
ST: 18:14:25  
Coro Log  
Coronario\*Cateterismo diagnóstico coronario  
Ser: 25  
Frm: 21 / 80

Id: 11.12.06-18:38:51-STD-1.3.12.2.1107.5.13.2.20116  
BD: 1973 / 4 / 8  
038Y  
512 x 512

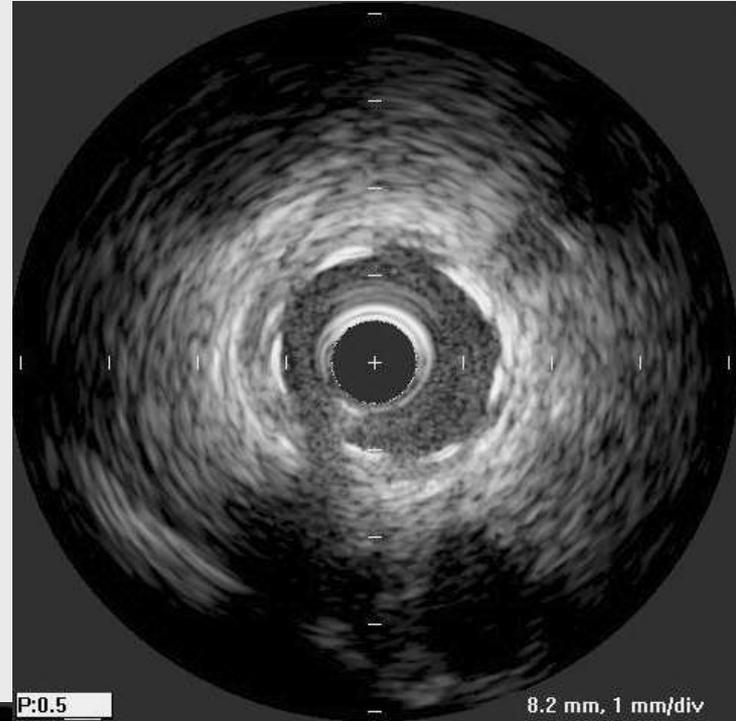
85.9 kV

FOV: 124 x 110 mm.  
Real Size Mag 1:1.44  
Min-Max W:156 L:120

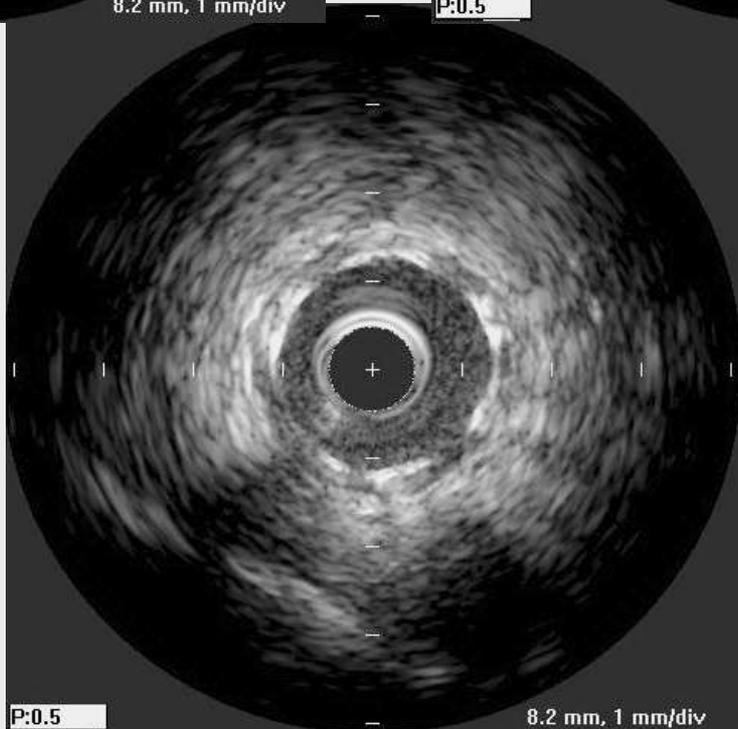




8.2 mm, 1 mm/div



8.2 mm, 1 mm/div



P:0.5

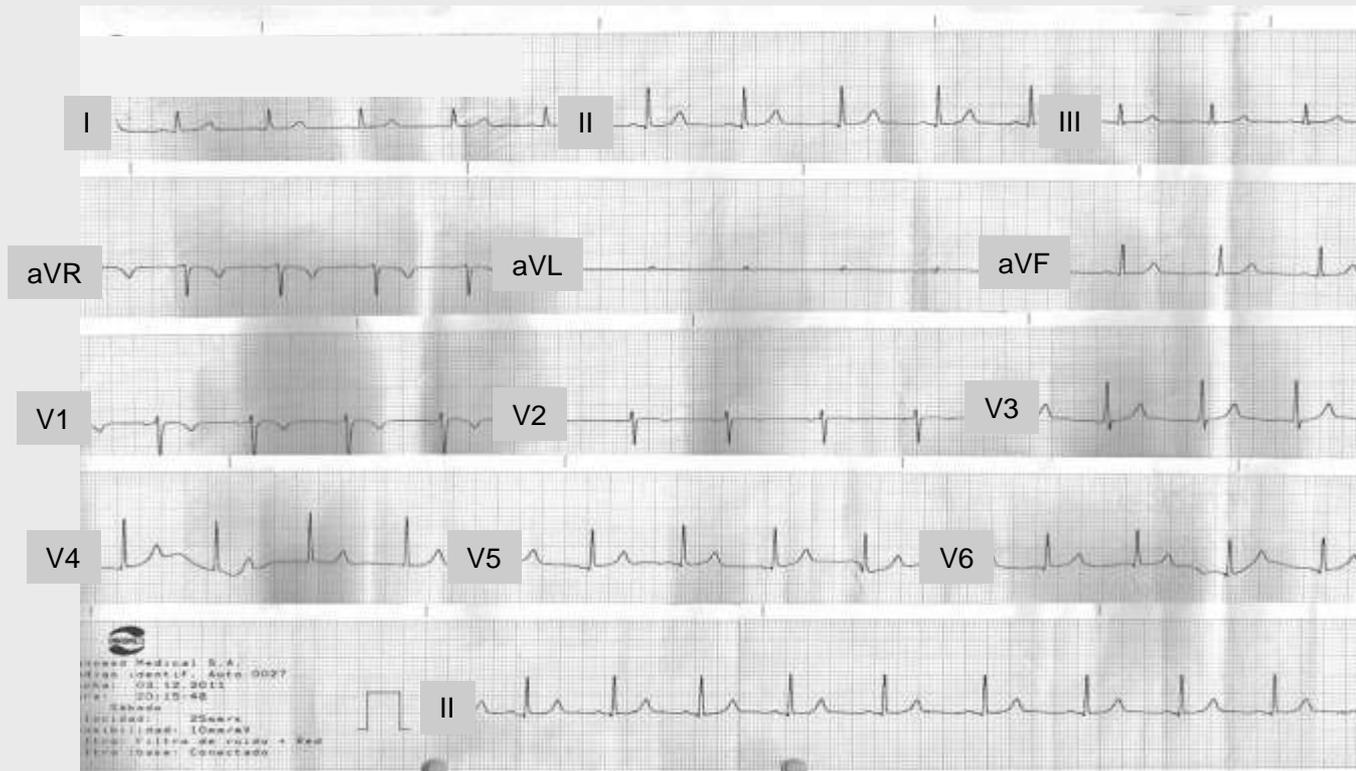
8.2 mm, 1 mm/div



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✓ **4to día post ATC**  
**angor típico**



AlluraXper

SD: 2011 / 12 / 10

ST: 12:8:58

Coronaria izda 15 ips

Ser: 23

Frm: 28 / 60

Id: 722010-64-201112101208463

BD: 1973 / 4 / 8

512 x 512



79.72 kV

FOV: 148 x 132 mm.

Real Size Mag 1:1.21

Min-Max W:131 L:118



AlluraXper

SD: 2011 / 12 / 10

ST: 12:8:58

Coronaria izda 15 ips

Ser: 24

Frm: 35 / 59

Id: 722010-84-201112101208463

BD: 1973 / 4 / 8

512 x 512

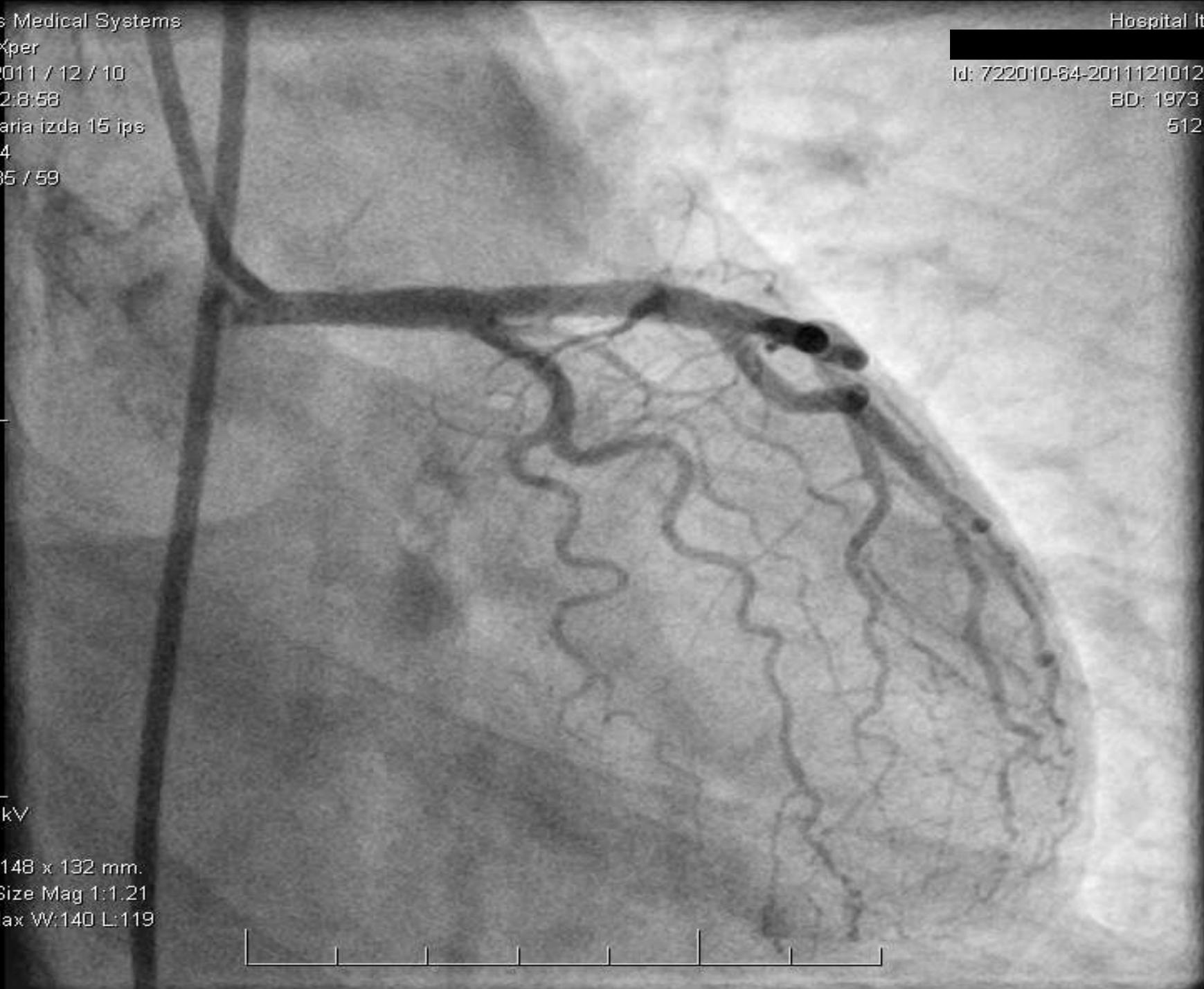


74.14 kV

FOV: 148 x 132 mm.

Real Size Mag 1:1.21

Min-Max W:140 L:119



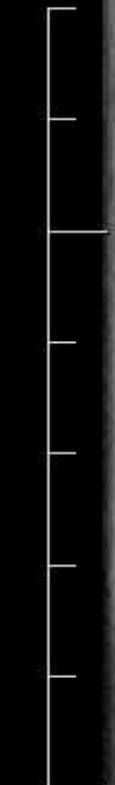
Philips Medical Systems  
AlluraXper  
SD: 2011 / 12 / 10  
ST: 12:8:58  
Coronaria izda 15 ips  
Ser: 1  
Frm: 44 / 74

Hospital Italiano

Id: 722010-64-201112101208463

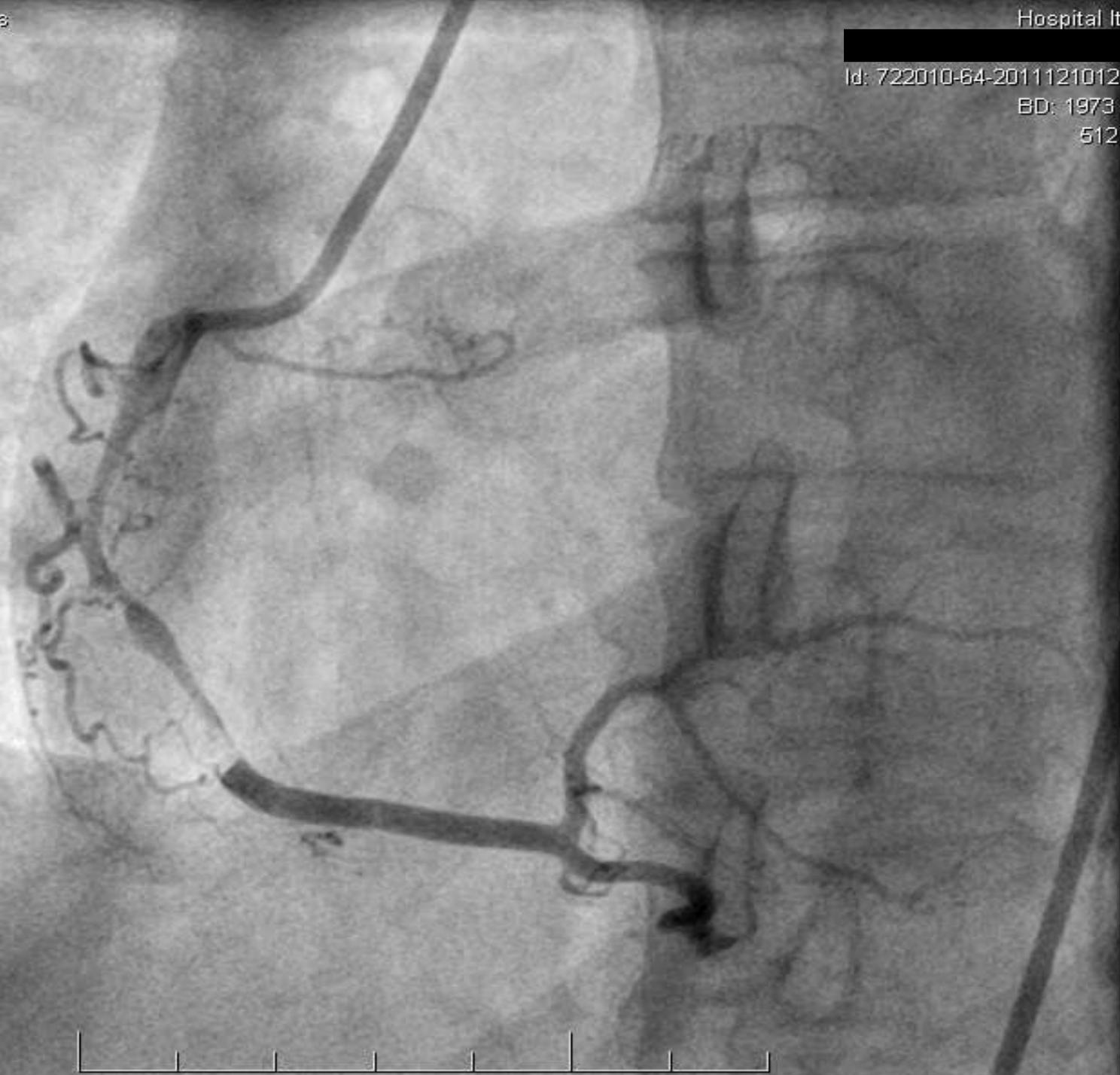
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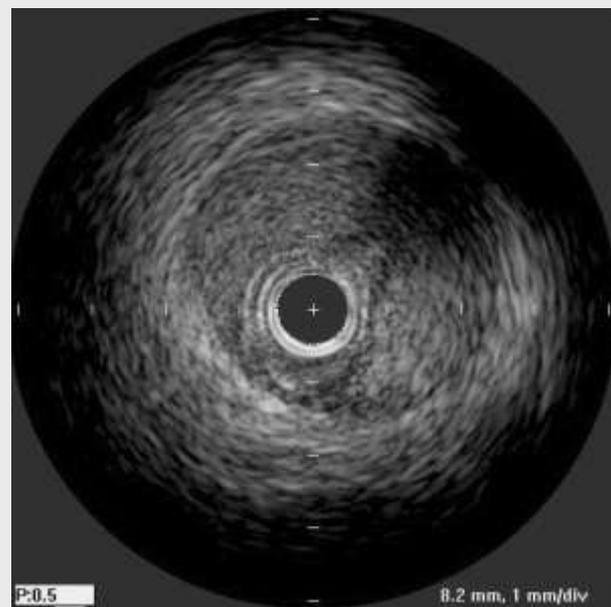
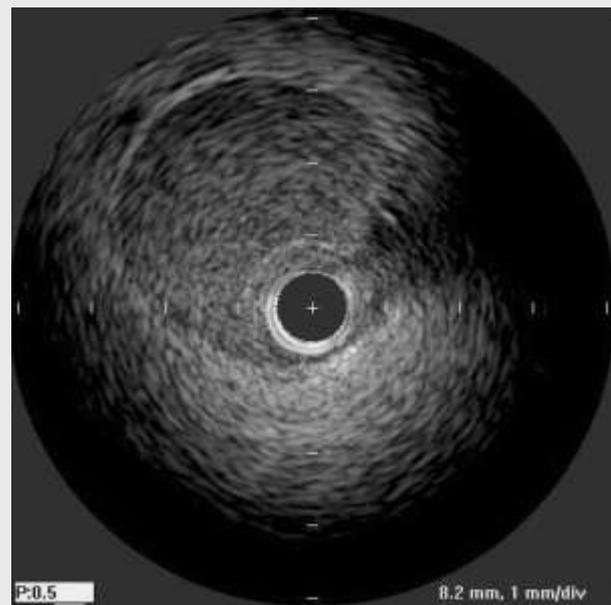
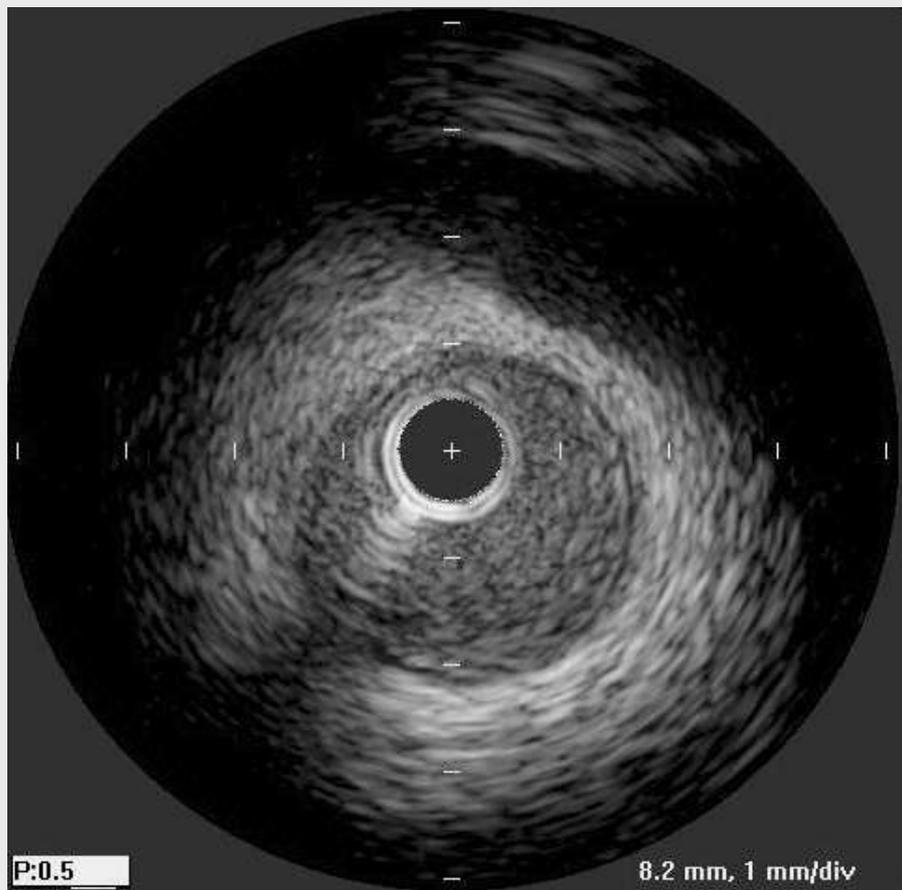
512 x 512



69.31 kV

FOV: 148 x 132 mm.  
Real Size Mag 1:1.21  
Min-Max W:138 L:115

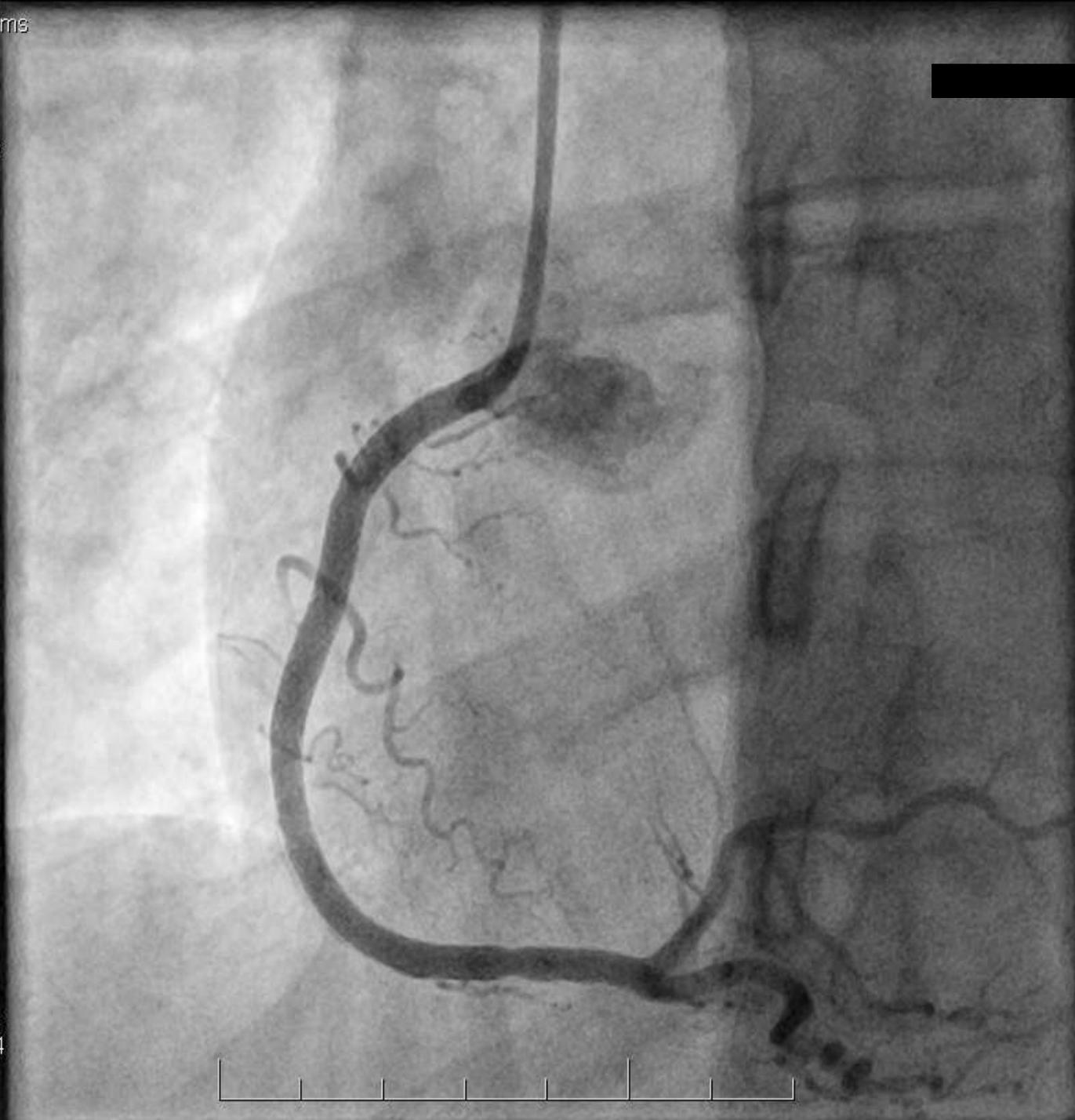




Philips Medical Systems  
AlluraXper  
SD: 2011 / 12 / 10  
ST: 12:8:58  
Coronaria izda 15 ips  
Ser: 21  
Frm: 22 / 48

Hospital Italiano  
PEREZ^MARIELA

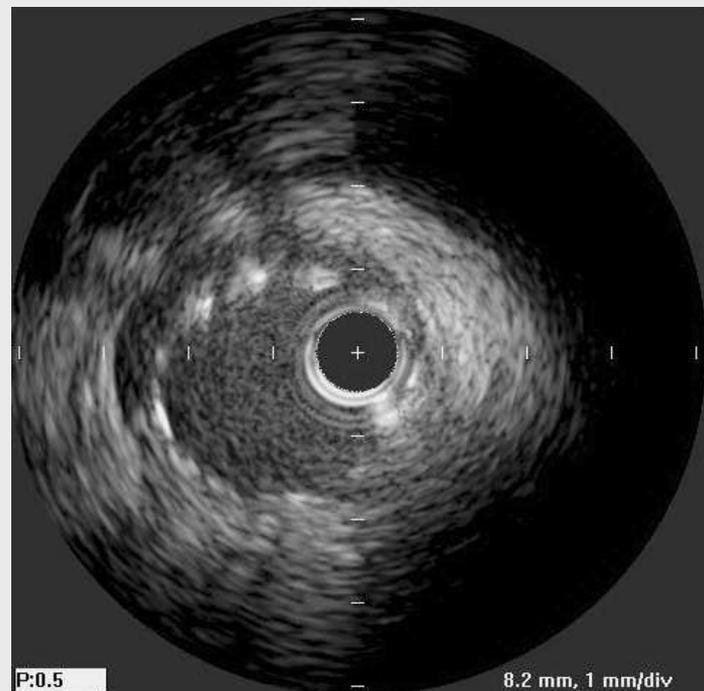
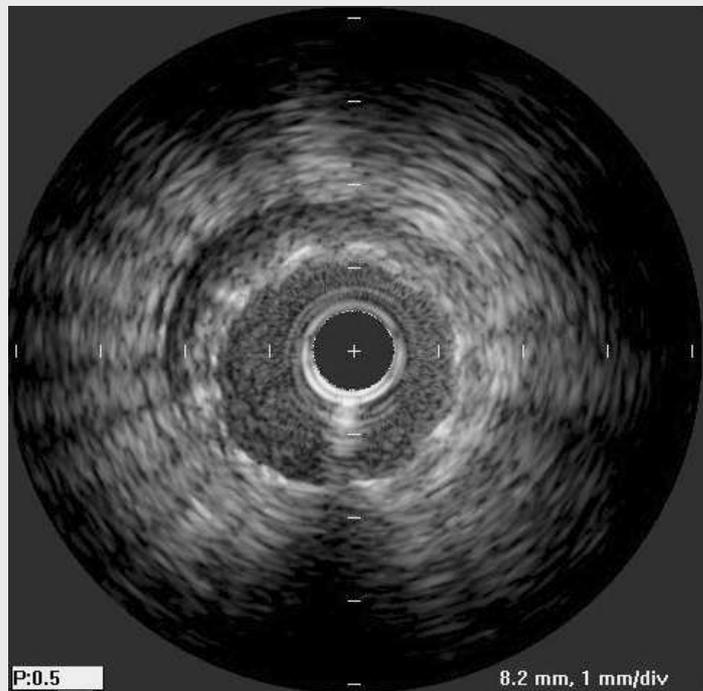
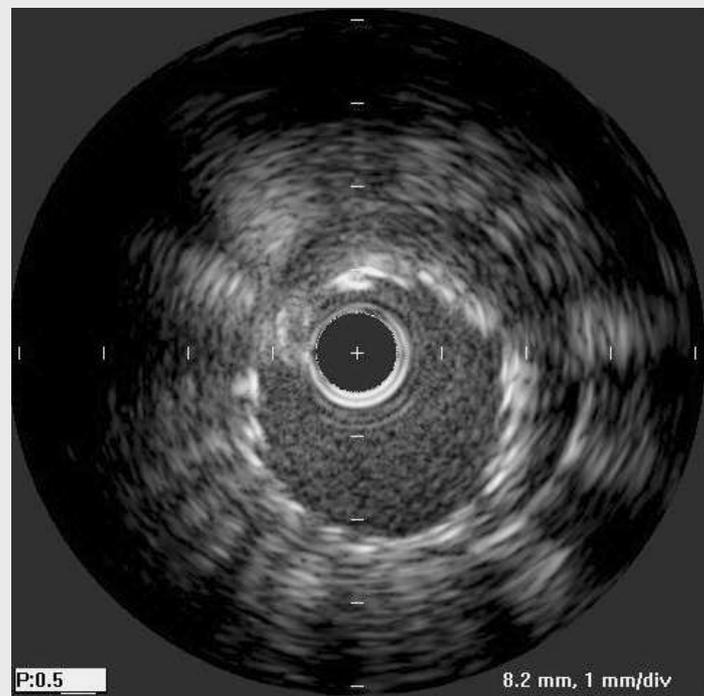
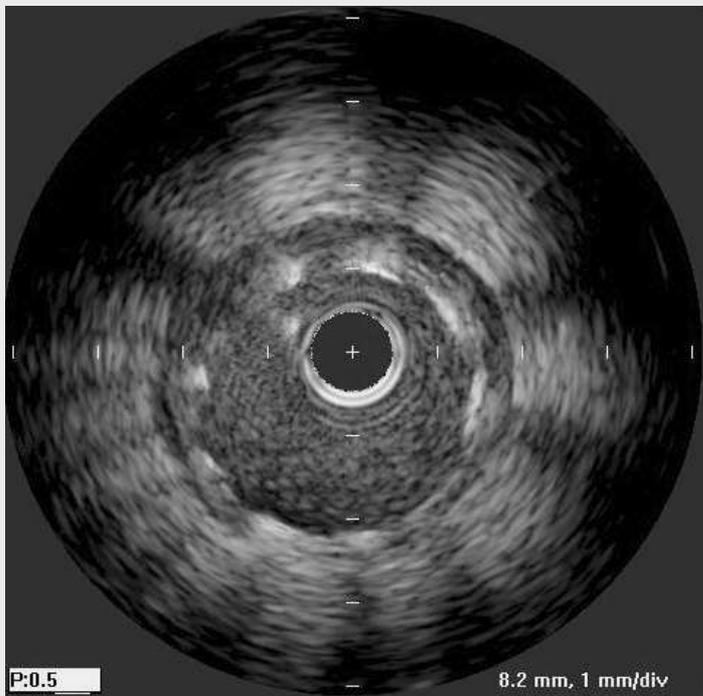
BD: 1973 / 4 / 8  
512 x 512



68.52 kV

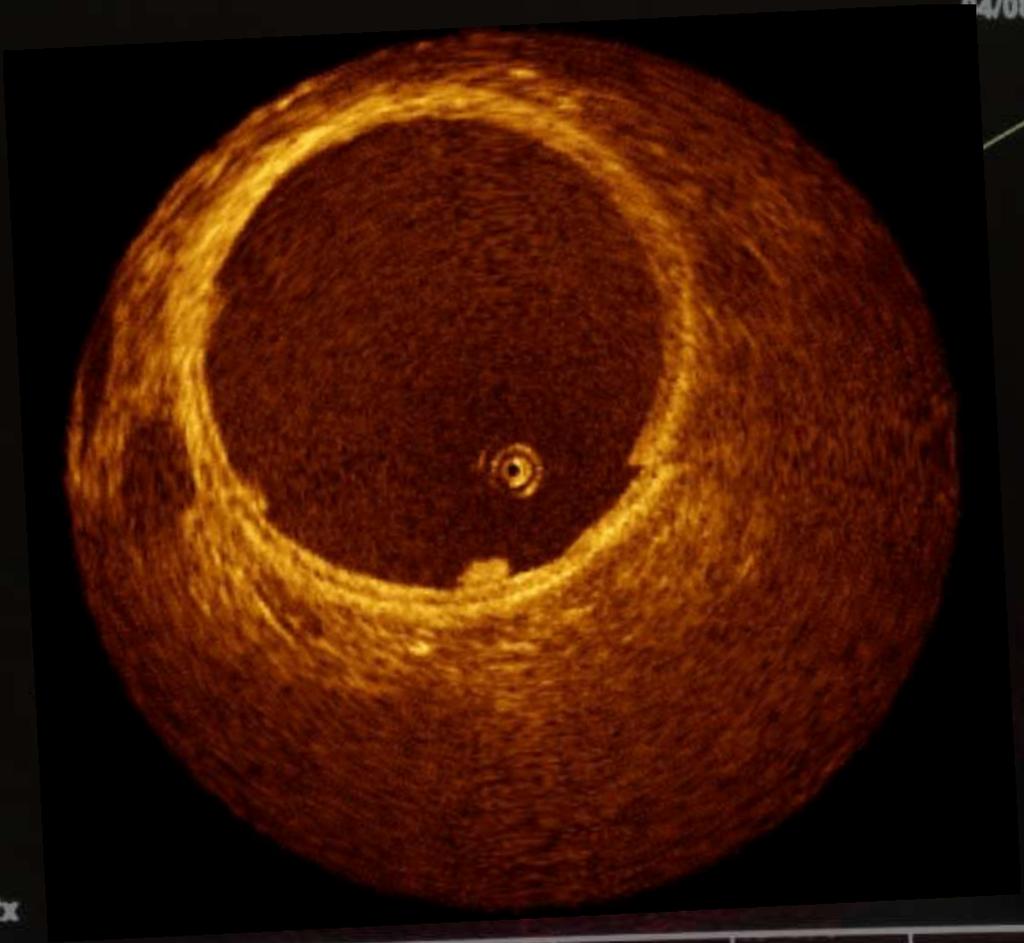
FOV: 184 x 132 mm.  
Real Size Mag 1:1.33  
Min-Max W:155 L:124



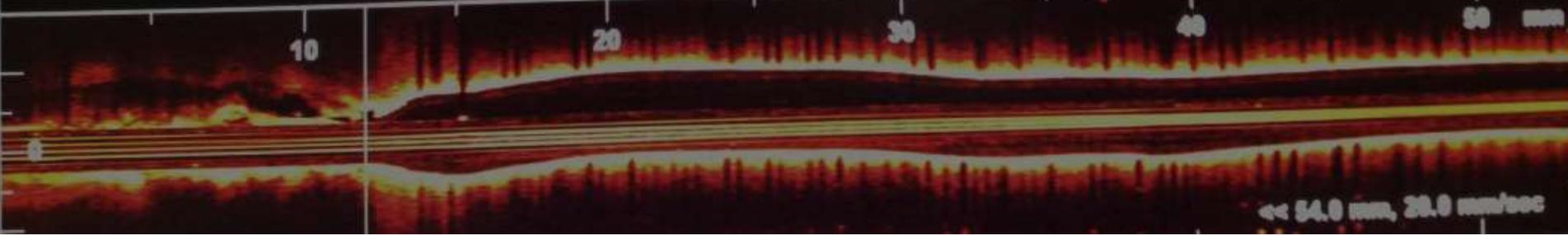




04/08/2013 15:55:38  
0061



Zoom: 1.2x



# Decisión de revascularización

## Híbridos

- ✓ Edad
- ✓ FE%
- ✓ EPOC
- ✓ IR

Presentación  
Clínica

Riesgo  
de sangrado

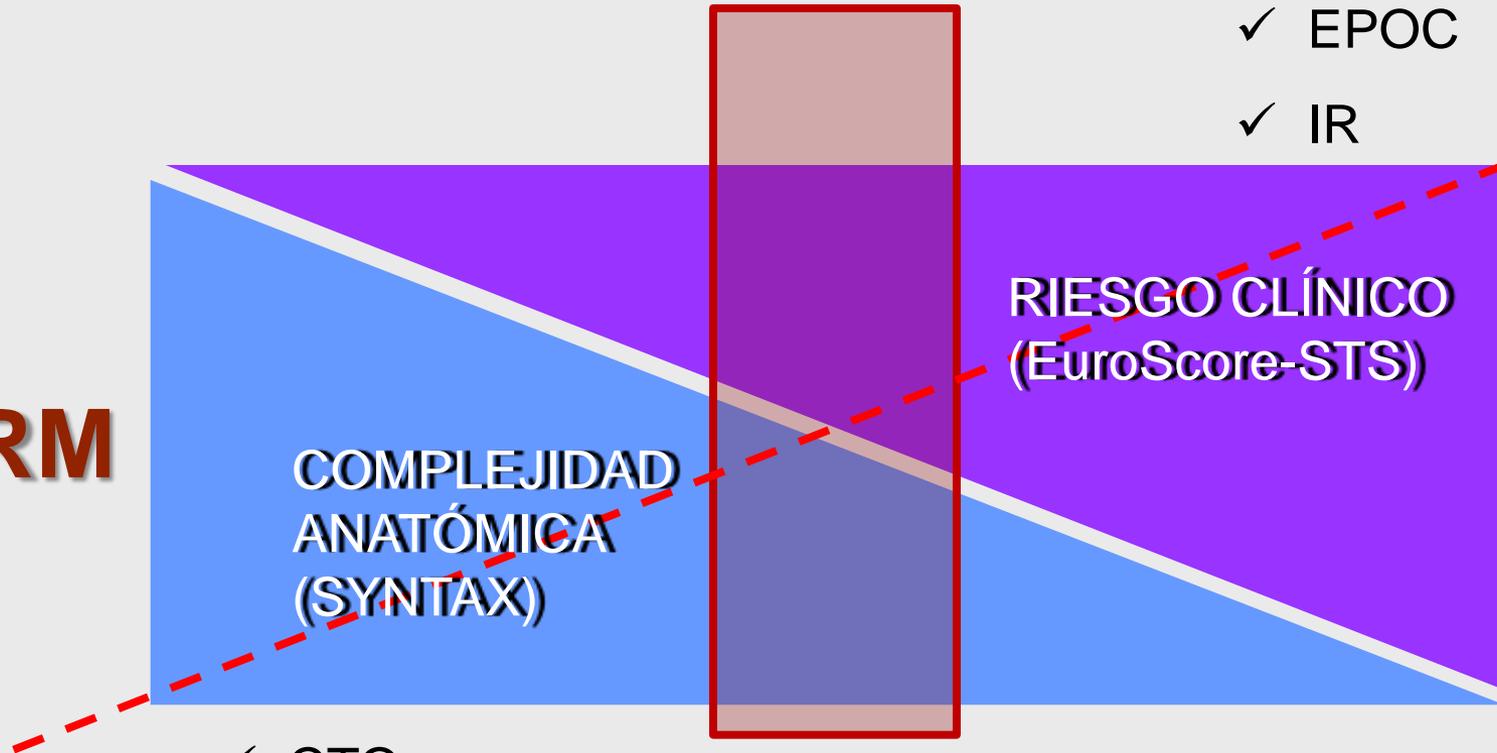
CRM

COMPLEJIDAD  
ANATÓMICA  
(SYNTAX)

RIESGO CLÍNICO  
(EuroScore-STS)

ATC

- ✓ CTO
- ✓ Ca+
- ✓ Tortuosidad extrema
- ✓ Enfermedad difusa



**XXII Jornadas SOLACI**  
7° Región Cono Sur

21 / 22 de Noviembre 2013



- ✓ La estratificación clínica y anatómica es muy importante
- ✓ Debemos contar con gran disponibilidad de dispositivos y drogas
- ✓ Tener en cuenta los procedimientos en etapas (“staged”)