

Estado Actual y Material Básico para el Tratamiento de las Oclusiones Crónicas

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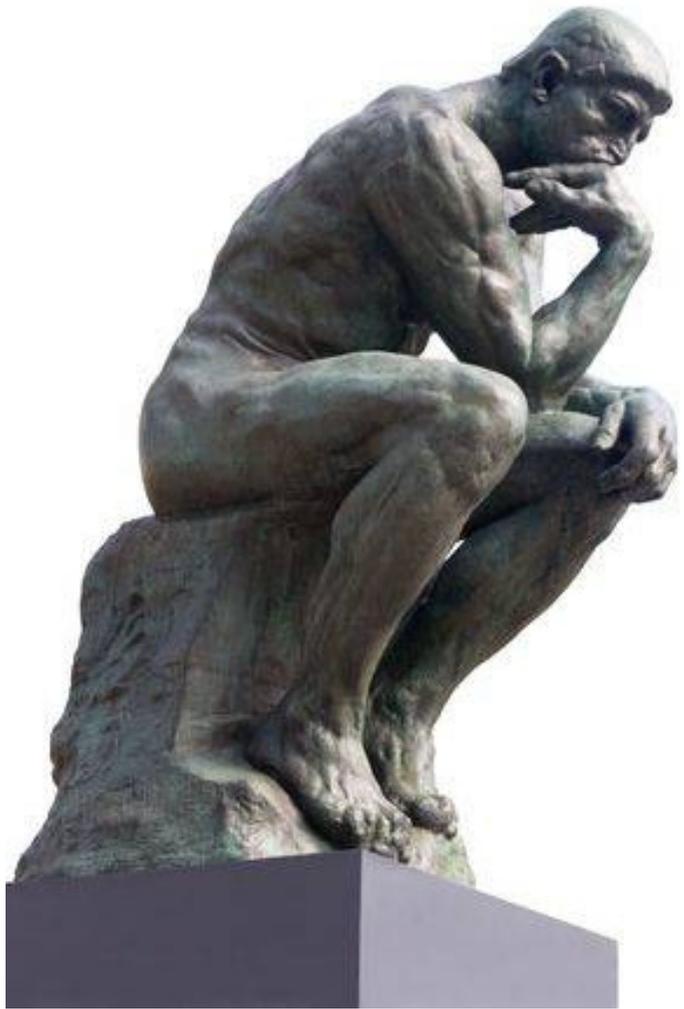
Relevancia del Problema

OTC presentes en **≈20%** coronariografías

Tradicionalmente éxito **≈60%** (AWE)

Técnicas actuales, operadores expertos **≈90%**

Factor determinante **TM / CABG**



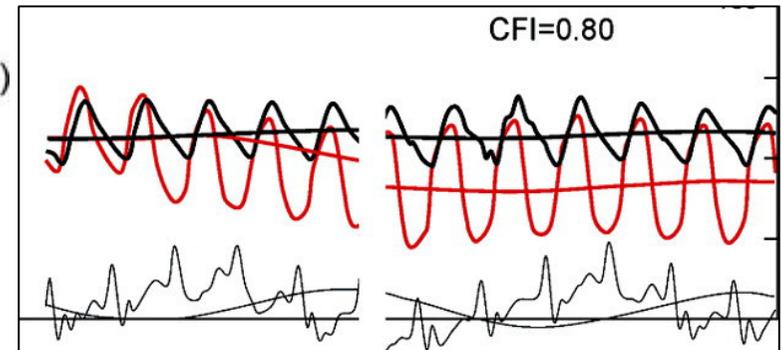
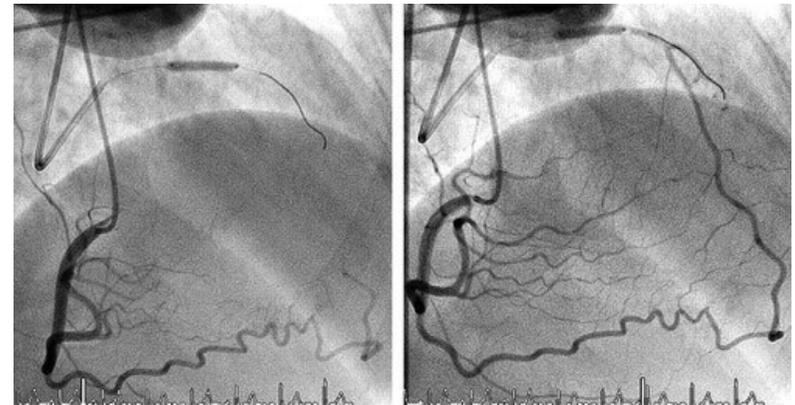
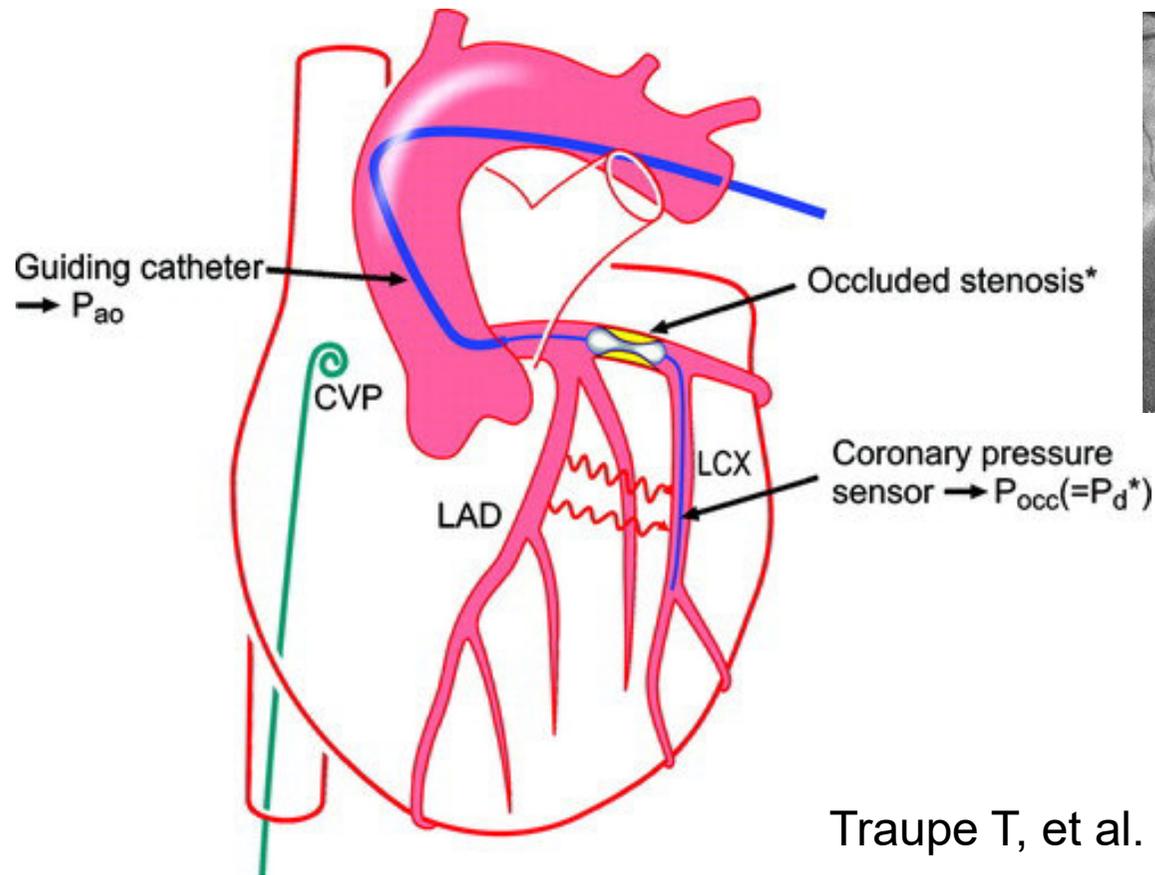
Indicaciones clínicas

Indicaciones de revascularización en los Síndromes Coronarios Crónicos

Síntomas	Pronóstico	
<i>Estenosis >90%</i> ó <i>Isquemia documentada</i> ó <i>FFR/iFR patológico</i>	Anatomía	Función
	<i>Tronco común</i> <i>DA proximal</i> <i>Arteria única</i>	<i>MTV c/ FEVI ≤35%</i> <i>Isquemia >10%</i> <i>FFR/iFR patológico</i>

Modificado de Guías ESC MR 2018 y CCS 2019

Funcionalidad de la Circulación Colateral



Traupe T, et al. Circulation. 2010;122(12):1210-20.

ACC/AATS/AHA/ASE/ASNC/SCAI/SCCT/ STS Appropriate Use Criteria for Coronary Revascularization

<ul style="list-style-type: none"> Chronic total occlusion of 1 major epicardial coronary artery, without other coronary stenoses Low-risk findings on noninvasive testing Receiving a course of maximal anti-ischemic medical therapy 	I ₍₁₎	I ₍₂₎	I ₍₃₎
<ul style="list-style-type: none"> Chronic total occlusion of 1 major epicardial coronary artery, without other coronary stenoses Low-risk findings on noninvasive testing Receiving a course of maximal anti-ischemic medical therapy 	I ₍₁₎	U ₍₄₎	U ₍₆₎
<ul style="list-style-type: none"> Chronic total occlusion of 1 major epicardial coronary artery, without other coronary stenoses Intermediate-risk findings on noninvasive testing Receiving a course of maximal anti-ischemic medical therapy 	I ₍₃₎	U ₍₄₎	U ₍₆₎
<ul style="list-style-type: none"> Chronic total occlusion of 1 major epicardial coronary artery, without other coronary stenoses Intermediate-risk criteria on noninvasive testing Receiving a course of maximal anti-ischemic medical therapy 	U ₍₄₎	U ₍₅₎	A ₍₇₎
<ul style="list-style-type: none"> Chronic total occlusion of 1 major epicardial coronary artery, without other coronary stenoses High-risk findings on noninvasive testing Receiving a course of maximal anti-ischemic medical therapy 	U ₍₄₎	U ₍₅₎	A ₍₇₎
<ul style="list-style-type: none"> Chronic total occlusion of 1 major epicardial coronary artery, without other coronary stenoses High-risk criteria on noninvasive testing Receiving a course of maximal anti-ischemic medical therapy 	U ₍₅₎	A ₍₇₎	A ₍₈₎

Appropriate Use Score (1-9)

Indication	Asymptomatic				Ischemic Symptoms			
	Not on AA Therapy or With AA Therapy		Not on AA Therapy		On 1 AA Drug (BB Preferred)		On ≥2 AA Drugs	
	PCI	CABG	PCI	CABG	PCI	CABG	PCI	CABG
No Proximal LAD or Proximal Left Dominant LCX Involvement								
1. ■ Low-risk findings on noninvasive testing	R (2)	R (1)	R (3)	R (2)	M (4)	R (3)	A (7)	M (5)
2. ■ Intermediate- or high-risk findings on noninvasive testing	M (4)	R (3)	M (5)	M (4)	M (6)	M (4)	A (8)	M (6)
3. ■ No stress test performed or, if performed, results are indeterminate ■ FFR ≤0.80*	M (4)	R (2)	M (5)	R (3)	M (6)	M (4)	A (8)	M (6)
Proximal LAD or Proximal Left Dominant LCX Involvement Present								
4. ■ Low-risk findings on noninvasive testing	M (4)	R (3)	M (4)	M (4)	M (5)	M (5)	A (7)	A (7)
5. ■ Intermediate- or high-risk findings on noninvasive testing	M (5)	M (5)	M (6)	M (6)	A (7)	A (7)	A (8)	A (8)
6. ■ No stress test performed or, if performed, results are indeterminate ■ FFR ≤0.80	M (5)	M (5)	M (6)	M (6)	M (6)	M (6)	A (8)	A (7)

2009

2017



ESC

European Society
of Cardiology

European Heart Journal (2019) **40**, 87–165
doi:10.1093/eurheartj/ehy394

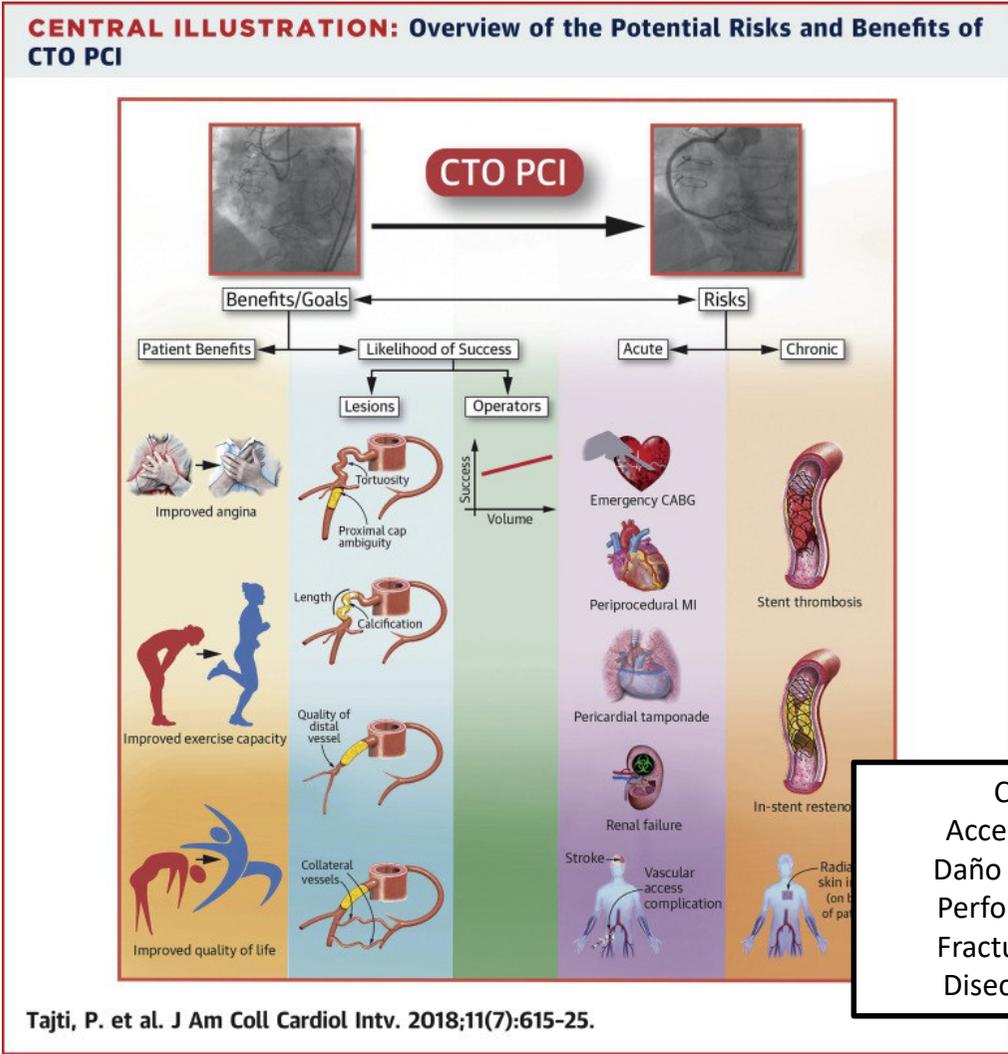
ESC/EACTS GUIDELINES

2018 ESC/EACTS Guidelines on myocardial revascularization

Percutaneous revascularization of CTOs should be considered in patients with angina resistant to medical therapy **or** with a large area of documented ischaemia in the territory of the occluded vessel.^{629,659–663}

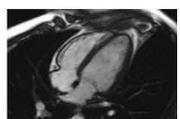
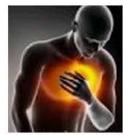
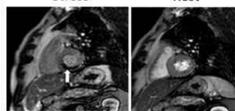
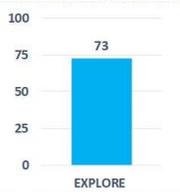
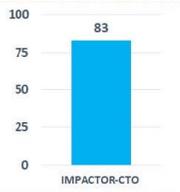
IIa

B



F/U

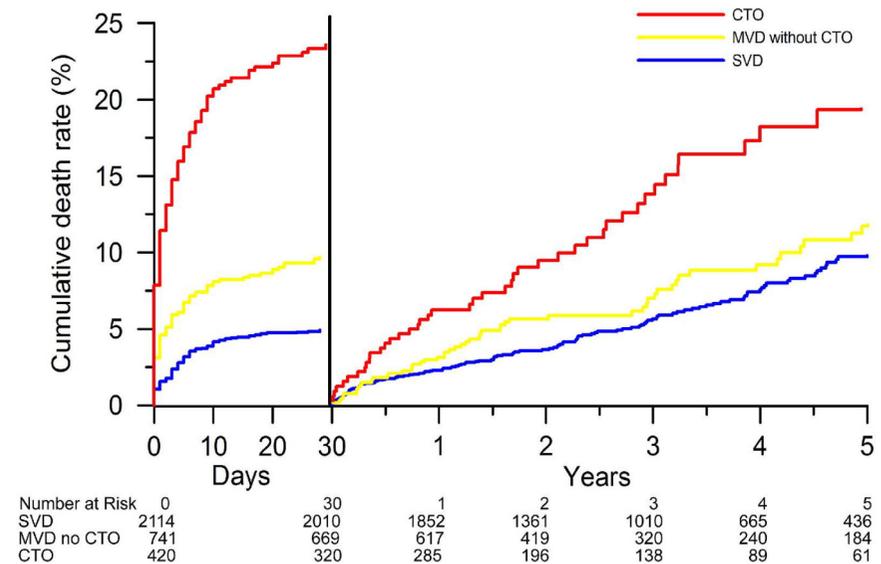
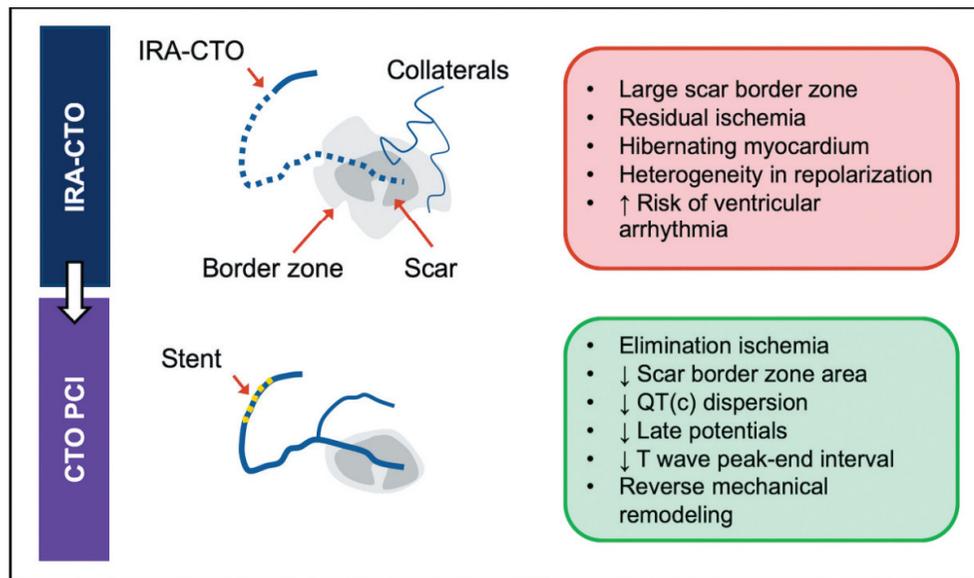
Éxito

	EXPLORE	EUROCTO	IMPACTOR-CTO
Location & Design	<p>Europe & Canada</p>  <p>Multi-center RCT (14 centers)</p>	<p>Europe</p>  <p>Multi-center RCT (28 centers)</p>	<p>Russia</p>  <p>Single-center RCT</p>
N Patients	304	407	72
Study population	Patients with STEMI treated with PCI with a non-infarct related CTO	SCAD CTO patients with symptoms and/or ischemia, and viability	Patients with isolated dominant RCA CTO and stable angina
Primary Endpoint	 <p>LVEF and LVEDV by CMR</p>	 <p>QoL (SAQ, EQ-5D)</p>	<p>Stress Rest</p>  <p>ΔMIB by adenosine stress CMR</p>
Follow up period	4 months	1 year	1 year
Mean J-CTO score	2 ± 1	1.82 ± 1.07	1.92 ± 0.86
Success Rate	 <p>EXPLORE</p>	 <p>EUROCTO</p>	 <p>IMPACTOR-CTO</p>
Positive/Negative RCT	<p>⊖</p> <p>Neutro</p>	<p>⊕</p> <p>QoL</p>	<p>⊕</p> <p>QoL</p>

J-CTO

MACE

Aspectos Particulares de las OTCs desde el Punto de Vista Pronóstico



Assaf A, et al. Expert Rev Cardiovasc Ther. 2020

Claessen BE, et al. JACC CI. 2009

¿Porqué no?

EDITORIAL COMMENT

Percutaneous Revascularization of Coronary Chronic Total Occlusions

The New Era Begins*

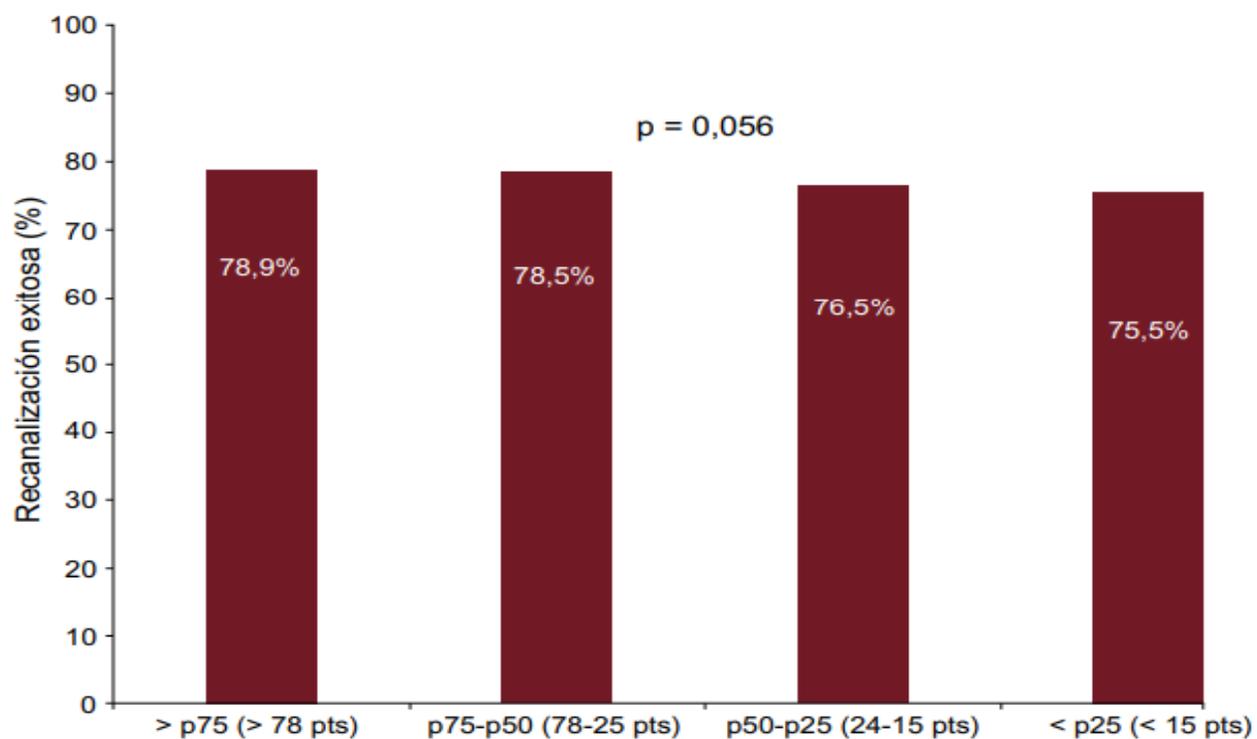
Craig A. Thompson, MD, MMSc

New Haven, Connecticut

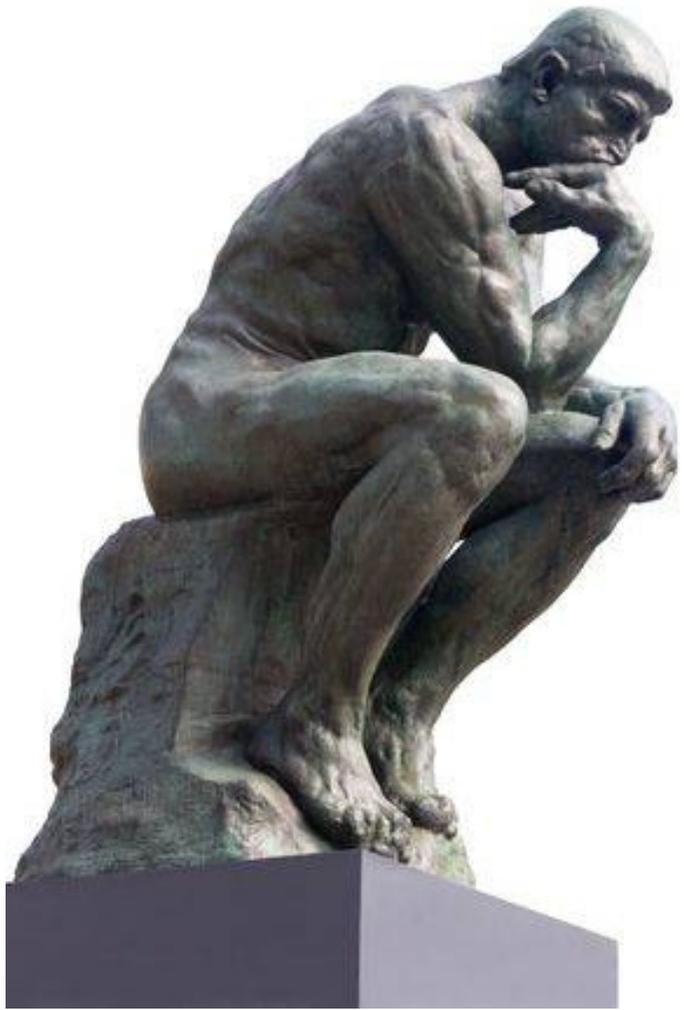
As these advances are disseminated, the new era of CTO revascularization in patients with symptoms and/or ischemic burden begins in which the question is not “Why should we open the occluded vessel?” but “What is the justification to leave the vessel closed?”

Thompson CA. JACC Cardiovasc Interv. 2010:152-4.

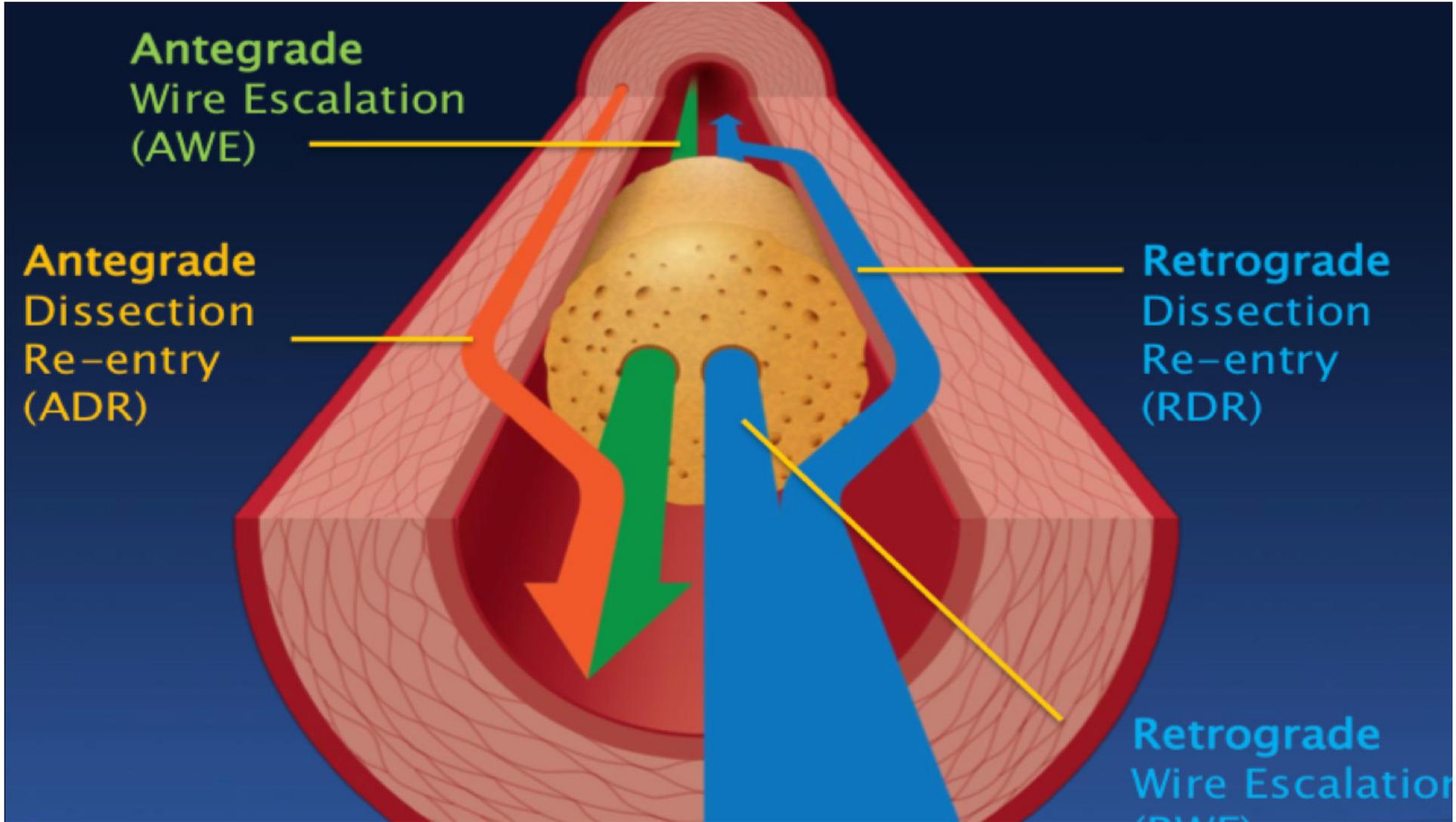
Tasa de Éxito / Nº Casos



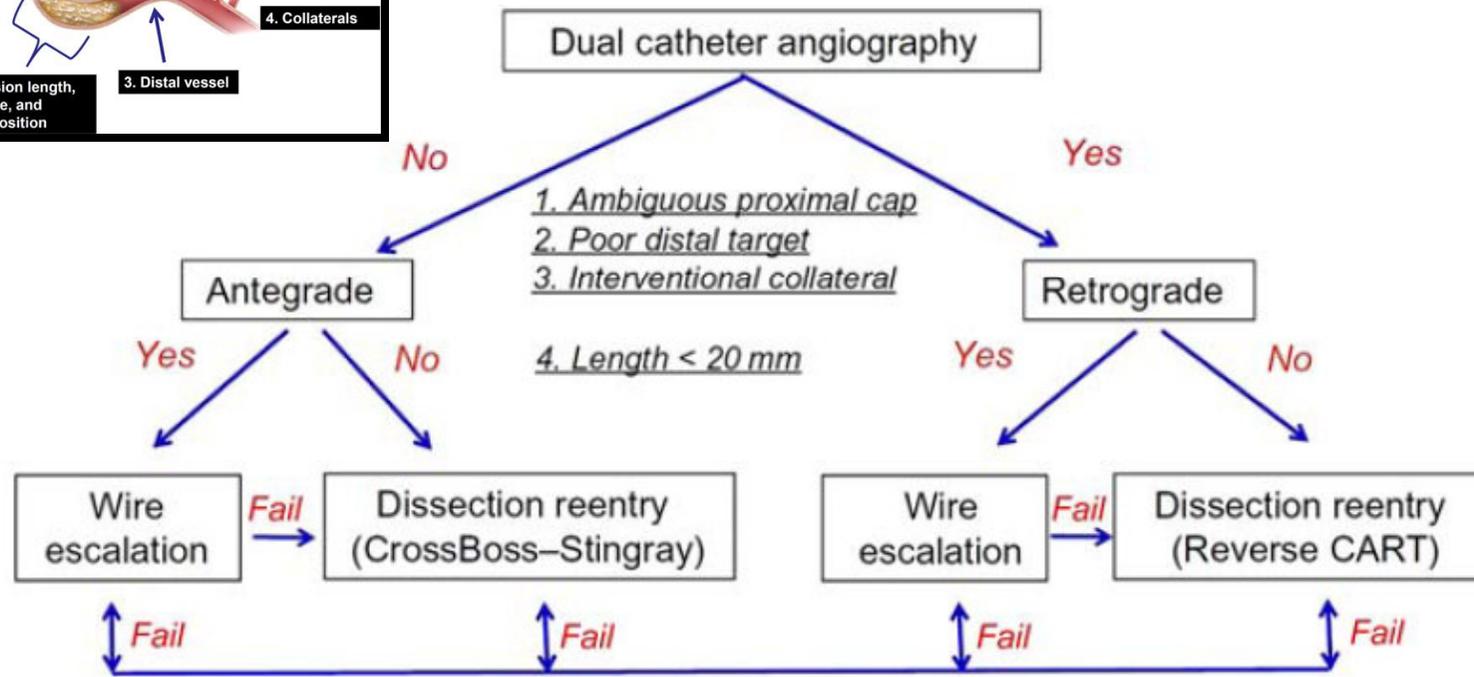
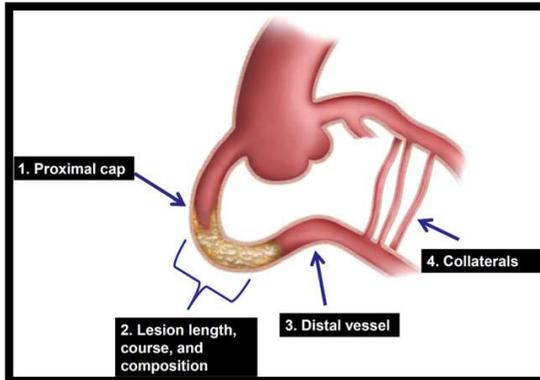
IJ Amat-Santos et al. Rev Esp Cardiol. 2019



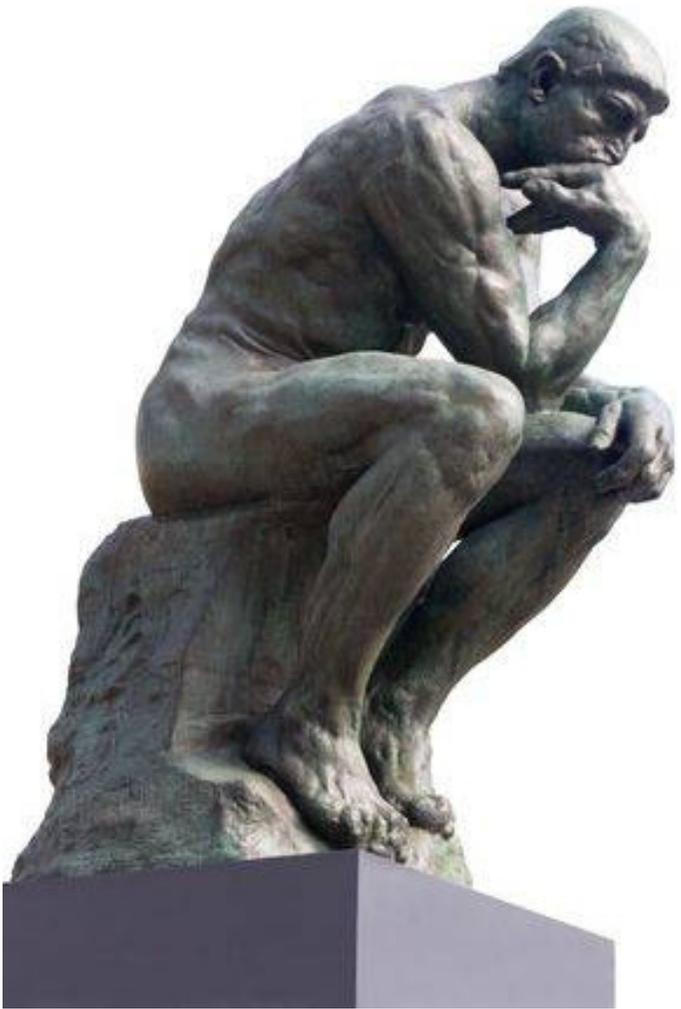
Estrategias



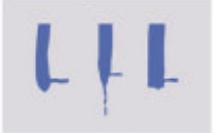
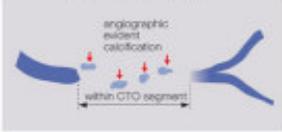
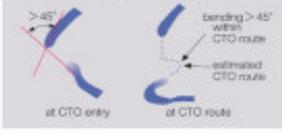
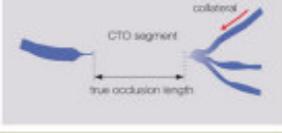
Abordaje Híbrido



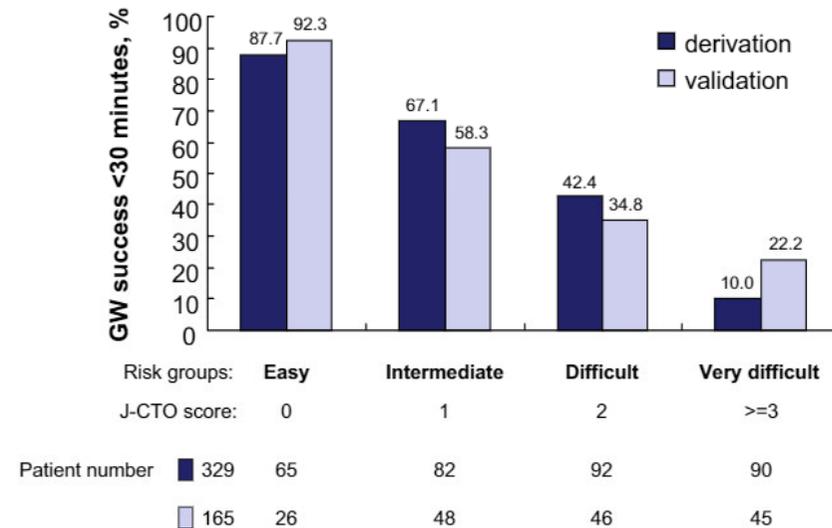
Brilakis ES, et al. Circulation 2019;140:42033.



Dispositivos

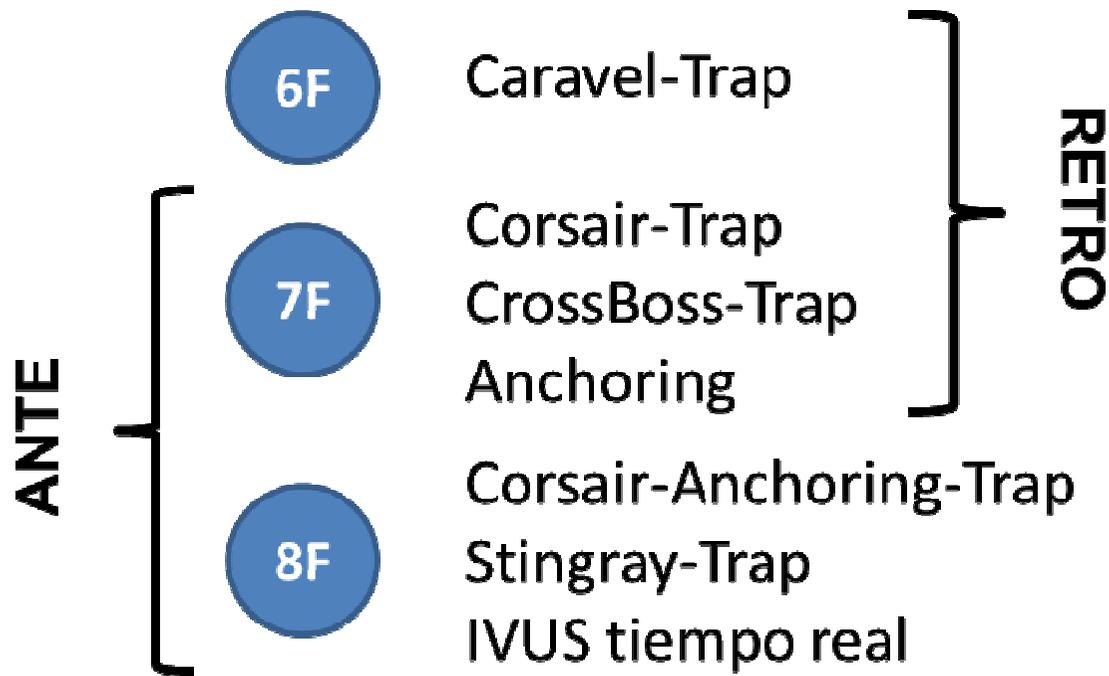
J-CTO SCORE SHEET		Version 1.0
Variables and definitions		
<p>Tapered</p> 	<p>Blunt</p> 	<p>Entry with any tapered tip or dimple indicating direction of true lumen is categorized as "tapered".</p> <p>Entry shape</p> <input type="checkbox"/> Tapered (0) <input type="checkbox"/> Blunt (1) <p>point</p>
<p>Calcification</p> 	<p>Regardless of severity, 1 point is assigned if any evident calcification is detected within the CTO segment.</p>	<p>Calcification</p> <input type="checkbox"/> Absence (0) <input type="checkbox"/> Presence (1) <p>point</p>
<p>Bending >45degrees</p> 	<p>One point is assigned if bending > 45 degrees is detected within the CTO segment. Any tortuosity separated from the CTO segment is excluded from this assessment.</p>	<p>Bending > 45°</p> <input type="checkbox"/> Absence (0) <input type="checkbox"/> Presence (1) <p>point</p>
<p>Occlusion length</p> 	<p>Using good collateral images, try to measure "true" distance of occlusion, which tends to be shorter than the first impression.</p>	<p>Occl.Length</p> <input type="checkbox"/> <20mm (0) <input type="checkbox"/> ≥20mm (1) <p>point</p>
<p>Re-try lesion</p> <p>Is this Re-try (2nd attempt) lesion ? (previously attempted but failed)</p>		<p>Re-try lesion</p> <input type="checkbox"/> No (0) <input type="checkbox"/> Yes (1)

Planificación



Morino Y, et al. JACC Cardiovasc Interv. 2011;4(2):213-21.

1º Los catéteres (Acceso dual)



Lower complexity	Similar success	Lower risk	
2.3 +/- 1.2	78.7 %	0.73 %	0.18%
			
J-CTO score p < 0.001	Technical success p = 0.24	Access-site complications p < 0.001	Major bleeding p < 0.001
2.5 +/- 1.3	78.5 %	1.79 %	0.9 %

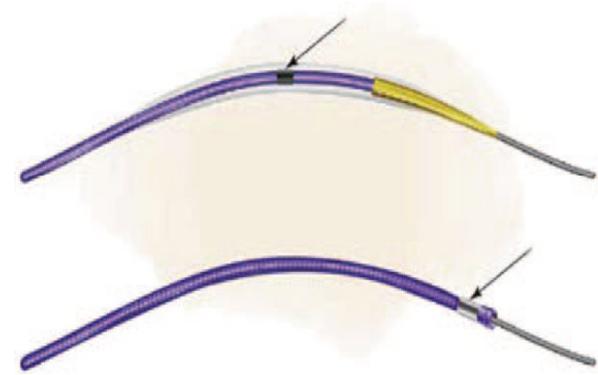
Megaly M, et al. Circ CI 2019

2º El Micro

Mejora cualidades de la guía

Marcador distal

Funciones: Intercambios,
penetración, inyección, liberación
material



2º El Micro



3º La guía

Dureza

Flexibilidad

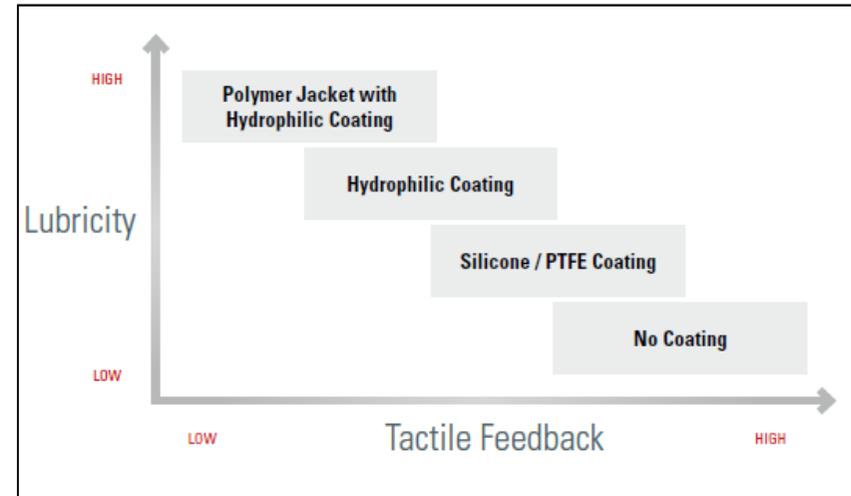
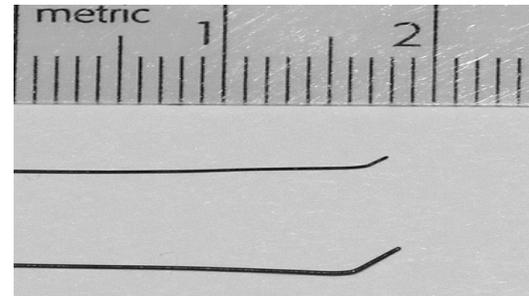
Soporte

Dirigibilidad (steering)

Lubricidad

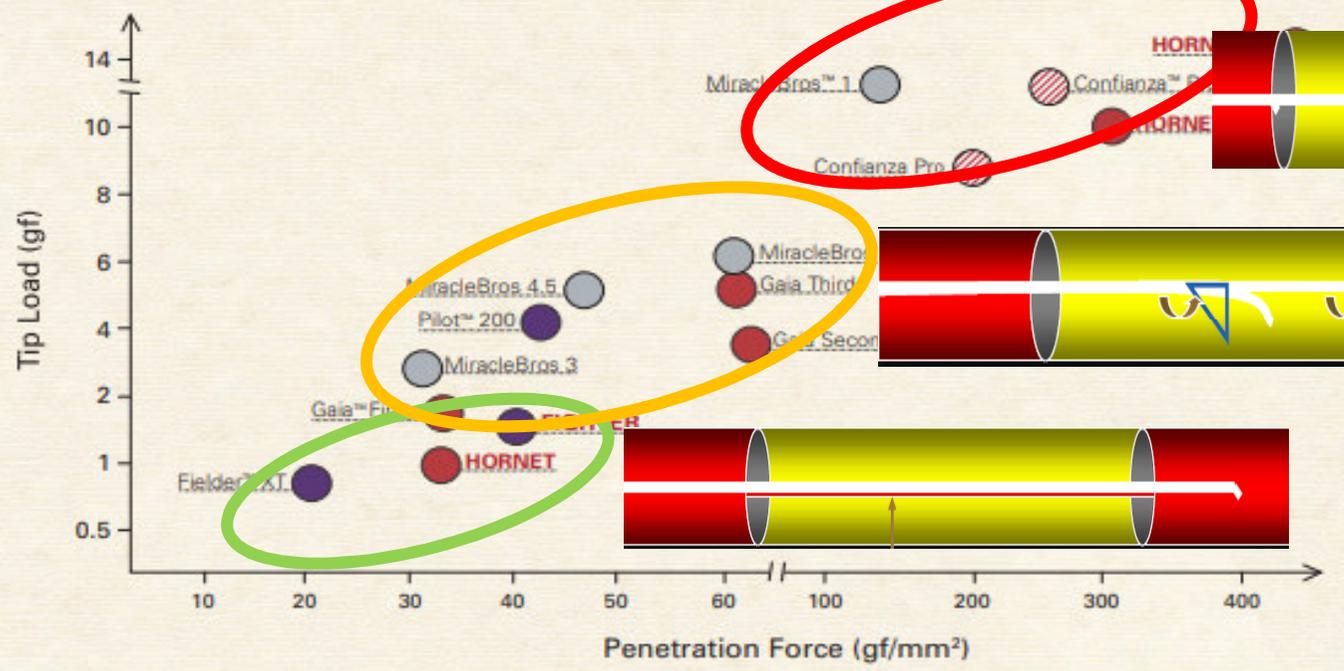
Tendencia prolapso

Feedback táctil

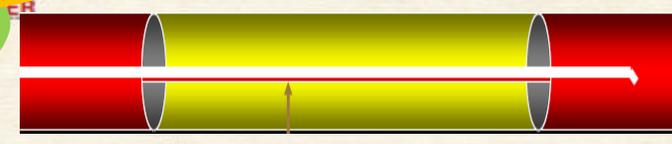
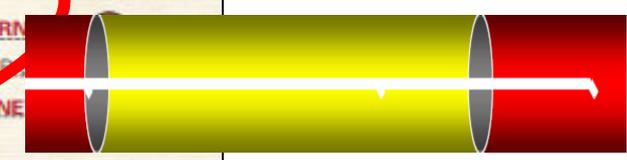


Specialty Crossing Wires

Tip Load and Penetration Force Testing



Hydrophilic	Silicone				
Hydrophilic with Uncoated Tip	Polymer with Hydrophilic	← Less Lubricity More →			



Guías de control direccional

