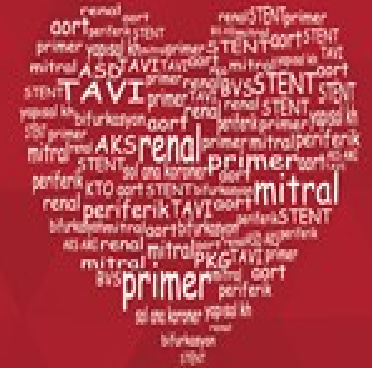




İSTANBUL GİRİŞİMSEL KARDİYOLOJİ KURSU

17-18 Şubat
2017

Radisson Blu Hotel İstanbul Şişli



Kronik Total Oklüzyonda

Antegrad Yaklaşım

Dr. Ersan Tatlı

Sakarya Üniversitesi Tıp Fakültesi

CTO PCI' a Yaklaşım

Çift Kateter Anjiyografi

E

1. Proximal güdük net
2. Distal yatak kaliteli

H

Antegrad

E

Uzunluk < 20mm

H

1. Tek tel stratejisi
2. Paralel tel tekniği
3. IVUS eşliğinde ilerleme

1. STAR (LAST, Mini STAR)
2. Dissection Reentry (crossboss-stingray)

Tel sertleştirir

E

Retrograd

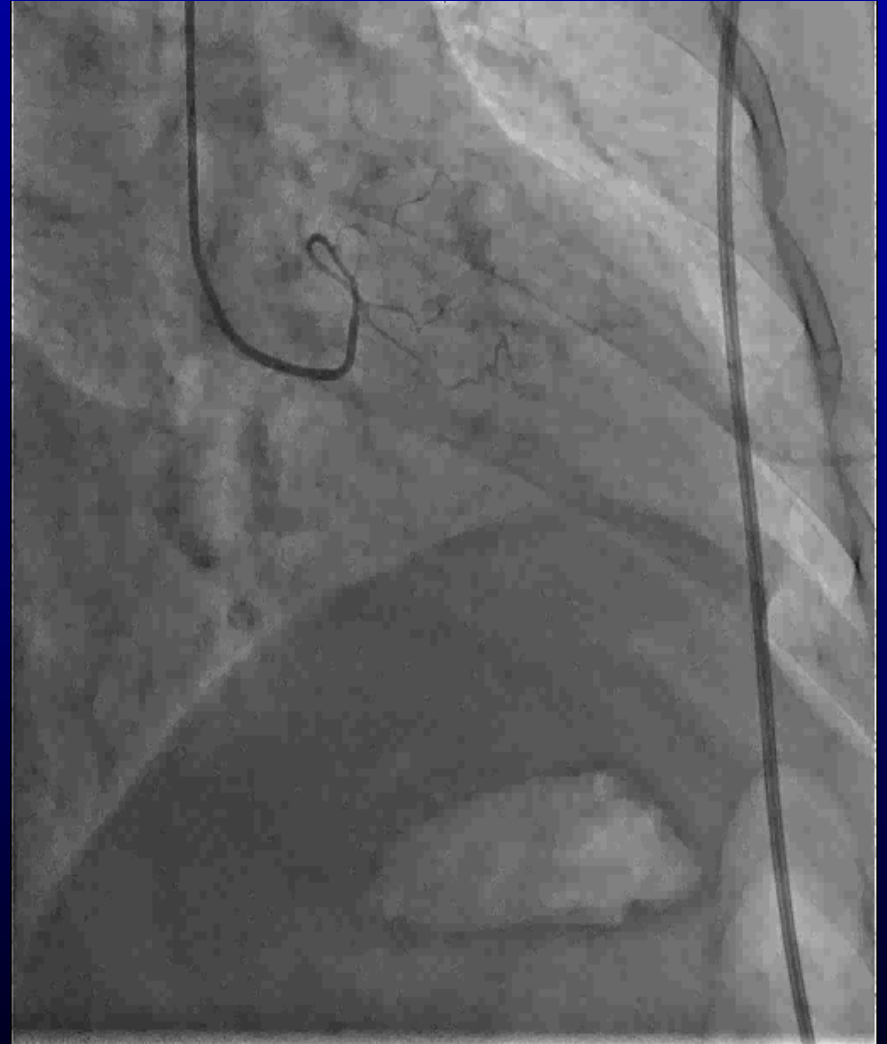
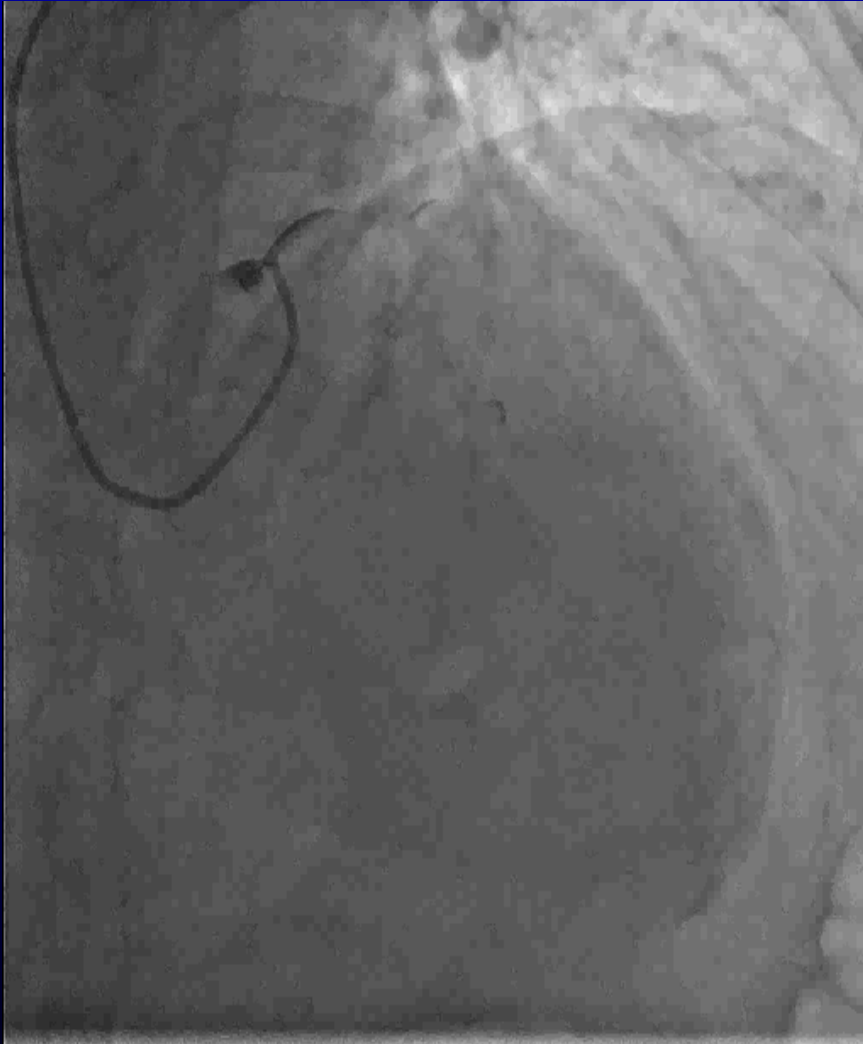
H

Uzunluk > 20mm

Dissection Reentry
(reverse CART)

Dönüşüm

Koroner Anjiyografi



J-CTO SCORE SHEET

Version 1.0



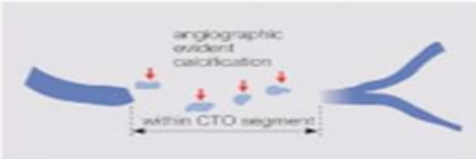

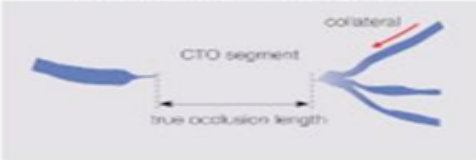
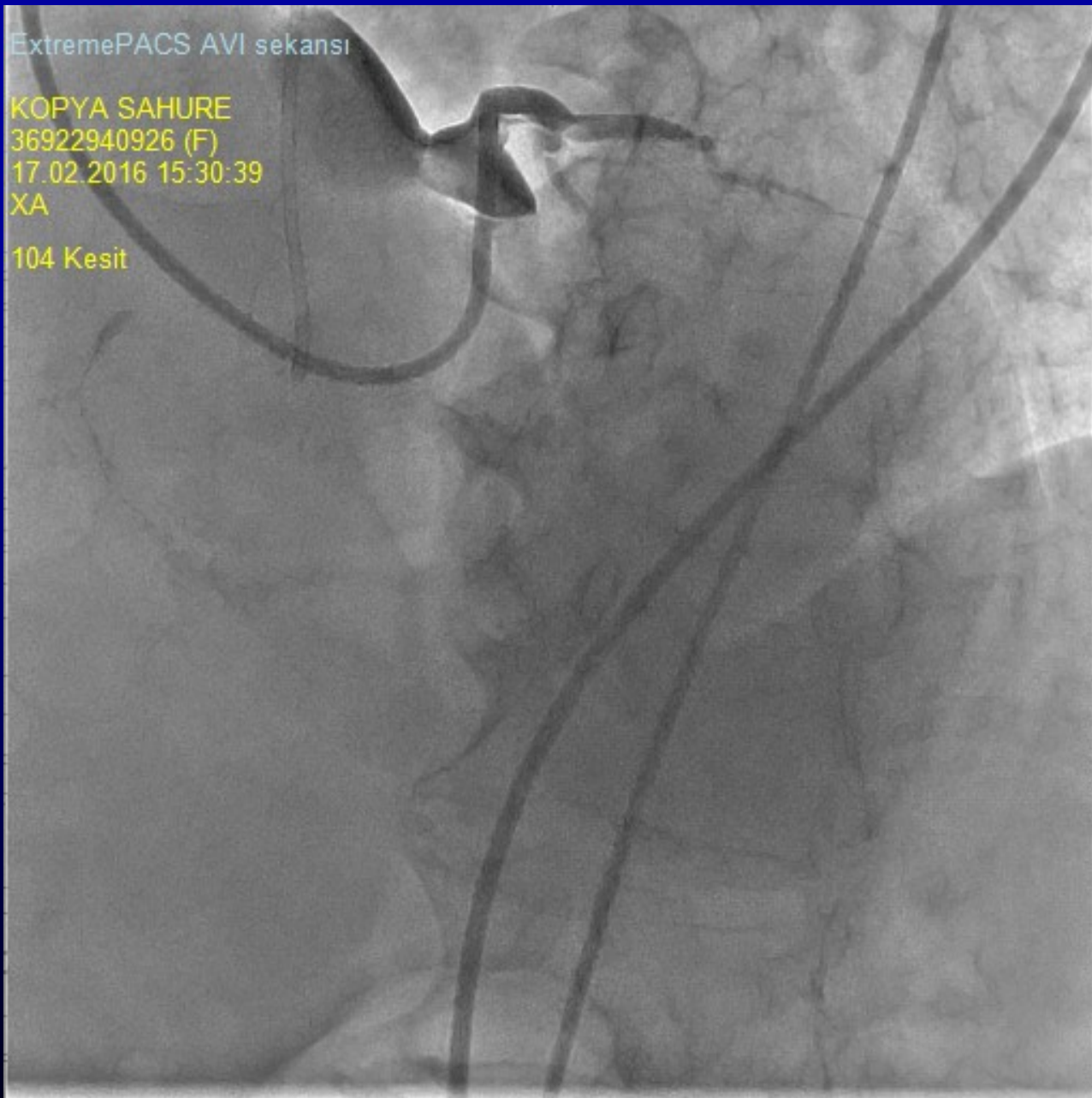
Variables and definitions		
<p>Tapered</p> 	<p>Blunt</p> 	<p>Entry with any tapered tip or dimple indicating direction of true lumen is categorized as "tapered".</p>
		<p>Entry shape</p> <p><input checked="" type="checkbox"/> Tapered (0)</p> <p><input type="checkbox"/> Blunt (1)</p> <p>point</p>
<p>Calcification</p> 		<p>Regardless of severity, 1 point is assigned if any evident calcification is detected within the CTO segment.</p>
		<p>Calcification</p> <p><input type="checkbox"/> Absence (0)</p> <p><input checked="" type="checkbox"/> Presence (1)</p> <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> <p><input checked="" type="checkbox"/> Absence (0)</p> <p><input type="checkbox"/> Presence (1)</p> <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> <p><input checked="" type="checkbox"/> < 20mm (0)</p> <p><input type="checkbox"/> ≥ 20mm (1)</p> <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> <p><input checked="" type="checkbox"/> No (0)</p> <p><input type="checkbox"/> Yes (1)</p> <p>point</p>
<p>Category of difficulty (total point)</p> <p><input type="checkbox"/> easy (0) <input checked="" type="checkbox"/> Intermediate (1)</p> <p><input type="checkbox"/> difficult (2) <input type="checkbox"/> very difficult (≥ 3)</p>		<p>Total</p> <p><input type="checkbox"/> points</p>

Figure 5. J-CTO Score Sheet. A calculation sheet for J-CTO (Multicenter CTO Registry of Japan) scoring. A definitions of each variable are summarized and illustrated. The total score is identified as the "J-CTO score".

ExtremePACS AVI sekansı

KOPYA SAHURE
36922940926 (F)
17.02.2016 15:30:39
XA

104 Kesit



CTO Kılavuz telleri

- Fielder XT
- Fielder XT-A
- Fielder XT-R
- Ultimatebros
- Miracle 3
- Miracle 6
- Miracle 12
- Confianza Pro
- Confianza Pro 12
- Confianza Pro 8-20
- Gaia 1st
- Gaia 2nd
- Gaia 3rd
- Progress 40
- Progress 80
- Progress 120
- Progress 140T
- Progress 200T
- PILOT 50
- PILOT 150
- PILOT 200
- SION
- SION black
- SION bleu

CTO' da tel seçimi

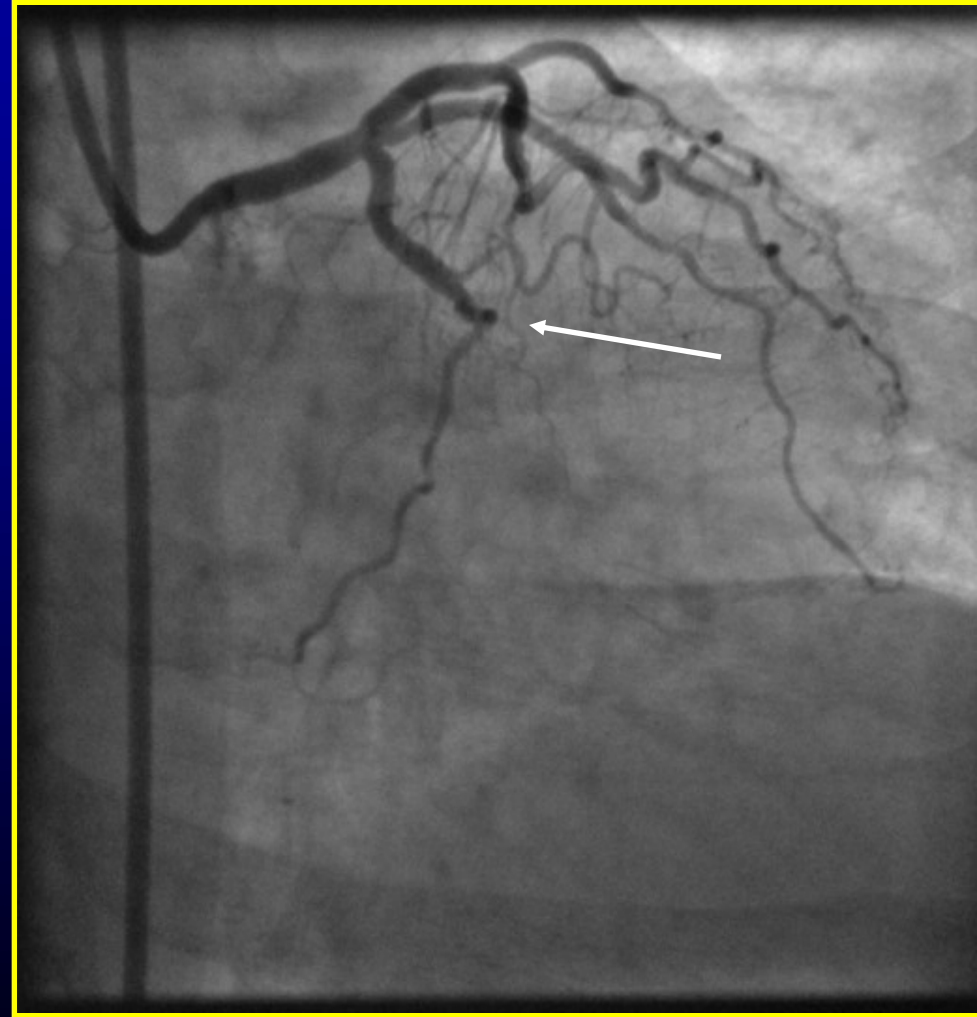
- Mikrokanal varlığında yada giderek incelen (Tapered) lezyonlarda Hidrofilik tellerle başla
 - ✓ Fielder
 - ✓ Fielder XT (extreme)
 - ✓ Fielder FC
 - ✓ Fielder XT-A
 - ✓ Whisper
 - ✓ Choice PT (Extra Support)
 - ✓ Confianza Pro



Tel seçimi

Künt Oklüzyon

- Penetrasyon gücü yüksek sert teller seçilmeli
 - × Miracle serisi
 - × Confianza serisi
 - × Gaia serisi (1,2,3)
 - × Cross-it serisi



Use		Manufacturer	Name	Tip load	Coating	Cover	Diameter	Tip composition
Access	1	ASAHI	SION blue	0.5 g	Hydrophilic Hydrophobic tip	None	0.014"	20 cm spring coil
	2	Abbott Vascular	BMW Universal	0.6 g	Hydrophilic	Intermediate polymer sleeve	0.014"	Shaping ribbon
	3	Terumo	Runthrough NS Intermediate	3.6 g	Hydrophilic	None	0.014"	
Microchannel crossing	1	ASAHI	Fielder XT	0.8 g	Hydrophilic	Polymer	0.014" 0.009" tip	16 cm spring coil
	2	ASAHI	Fielder XT-A	1.0 g	Hydrophilic	Polymer	0.014" 0.010" tip	16 cm spring coil
Direct penetration	1	ASAHI	Confianza PRO family	9 g/12 g	Hydrophilic Hydrophobic tip	None	0.014" 0.009" tip	20 cm spring coil
	2	Abbott Vascular	PROGRESS 200T	13.0 g	Hydrophilic uncoated tip	Intermediate polymer	0.014" 0.009" tip	
	3	ASAHI	Gaia family (First/Second/ Third)	1.7 g / 3.5 g / 4.5 g	Hydrophilic	None	0.014" 0.010"/0.011"/0.012" tip	15 cm spring coil
	4	Abbott Vascular	PILOT 200	4.1 g	Hydrophilic	Full polymer	0.014"	
Collateral crossing	1	ASAHI	SION	0.7 g	Hydrophilic	None	0.014"	28 cm spring coil
	2	ASAHI	Fielder XT-R	0.6 g	Hydrophilic	Polymer	0.014" 0.010" tip	16 cm spring coil
	3	Abbott Vascular	PILOT 50	1.5 g	Hydrophilic	Full polymer	0.014"	
	4	ASAHI	Fielder FC	0.8 g	Hydrophilic	Polymer	0.014"	11 cm spring coil
	5	ASAHI	SION black	0.8 g	Hydrophilic	Polymer	0.014"	12 cm spring coil
Knuckling	1	ASAHI	Fielder XT	0.8 g	Hydrophilic	Polymer	0.014" 0.009" tip	16 cm spring coil
	2	ASAHI	Fielder FC	0.8 g	Hydrophilic	Polymer	0.014"	11 cm spring coil
	3	Abbott Vascular	PILOT 50	1.5 g	Hydrophilic	Full polymer	0.014"	
	4	Abbott Vascular	PILOT 200	4.1 g	Hydrophilic	Full polymer	0.014"	
Re-entering	1	ASAHI	Confianza	9 g	Hydrophobic	None	0.014" 0.009" tip	20 cm spring coil

CTO Kılavuz teli açılandırma



İlk açı 1-2 mm
prox 'e ~ 60°



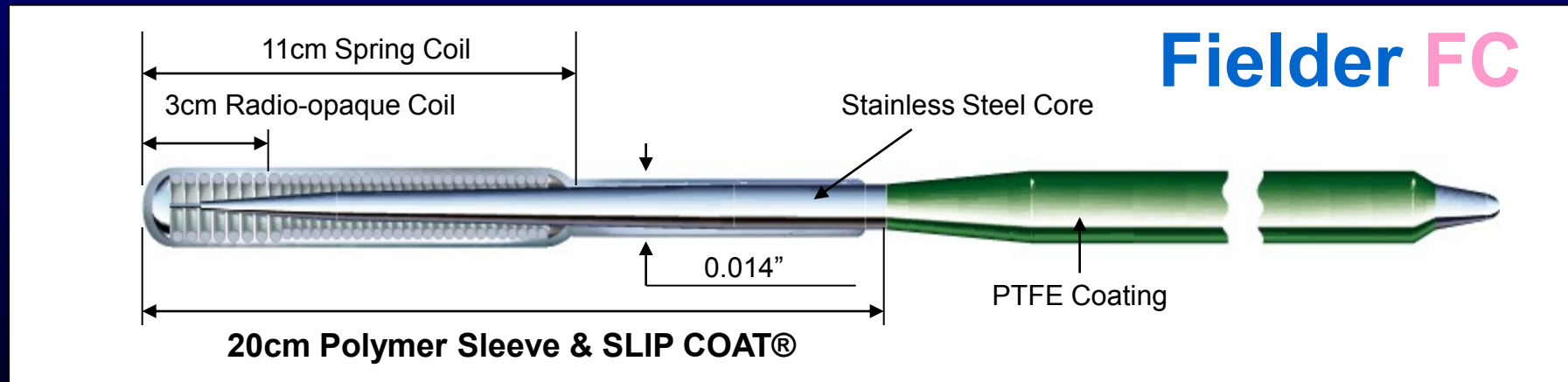
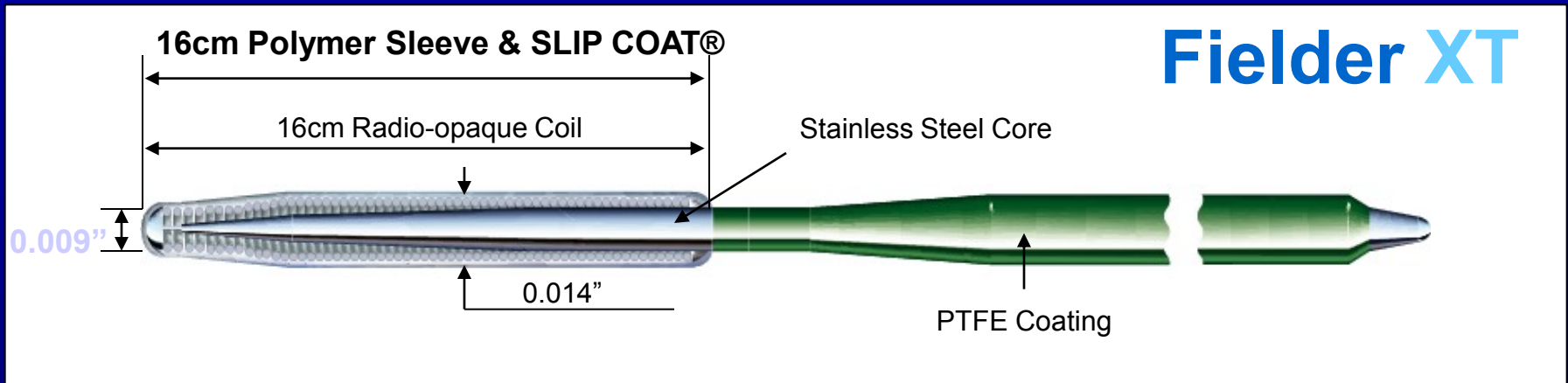
İkinci açı
1 cm sonra ~
10-15°

Antegrad yaklaşımda tel seçimi

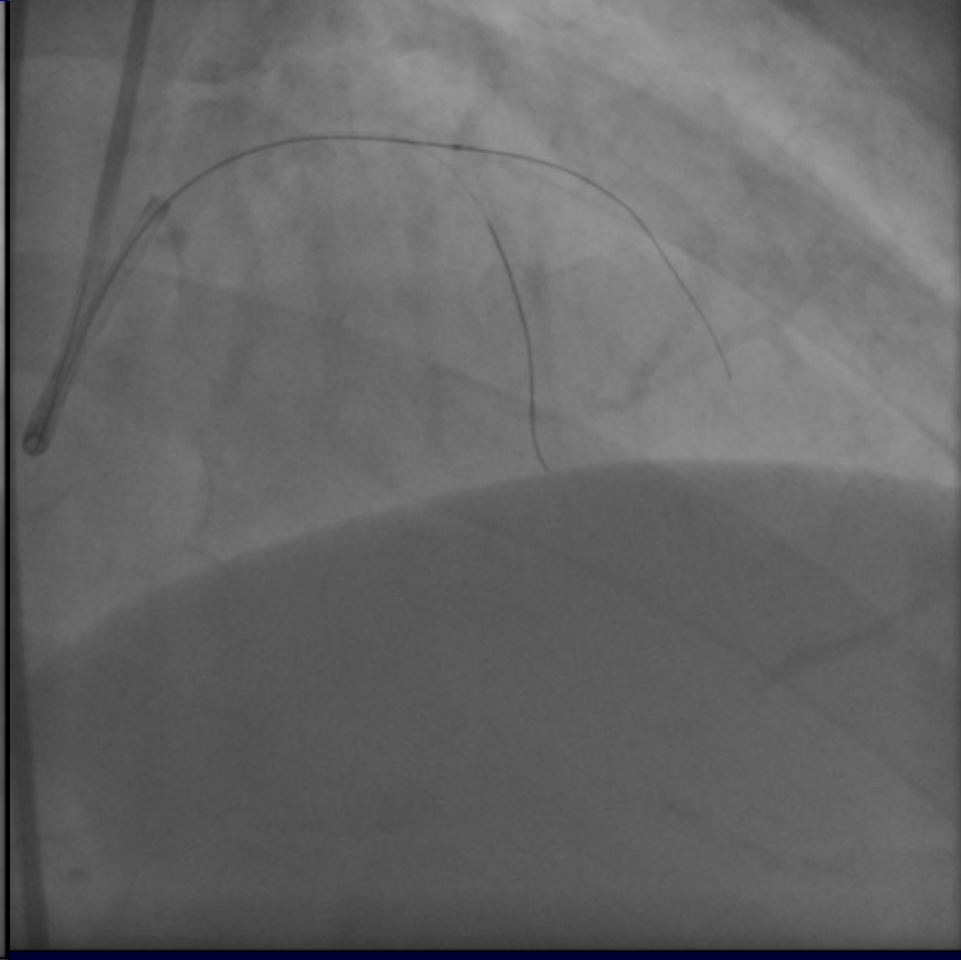
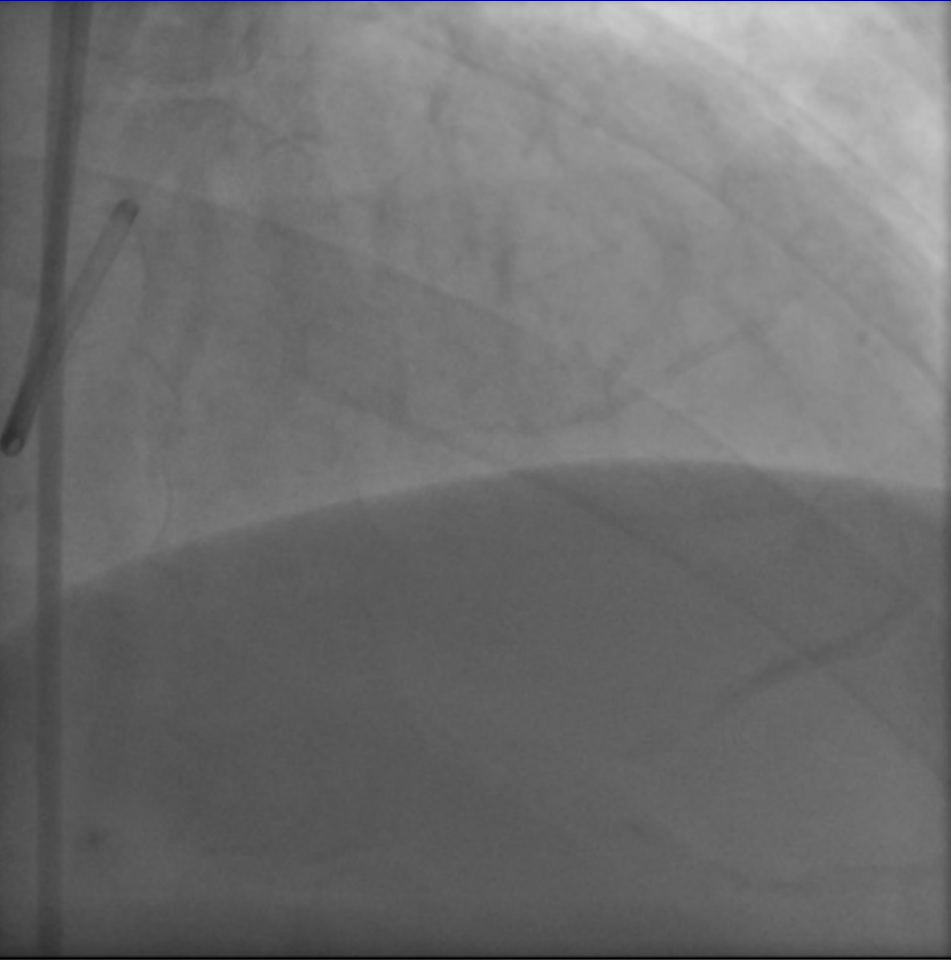
Fielder XT

Küçük bir kaygan ucu olan tel



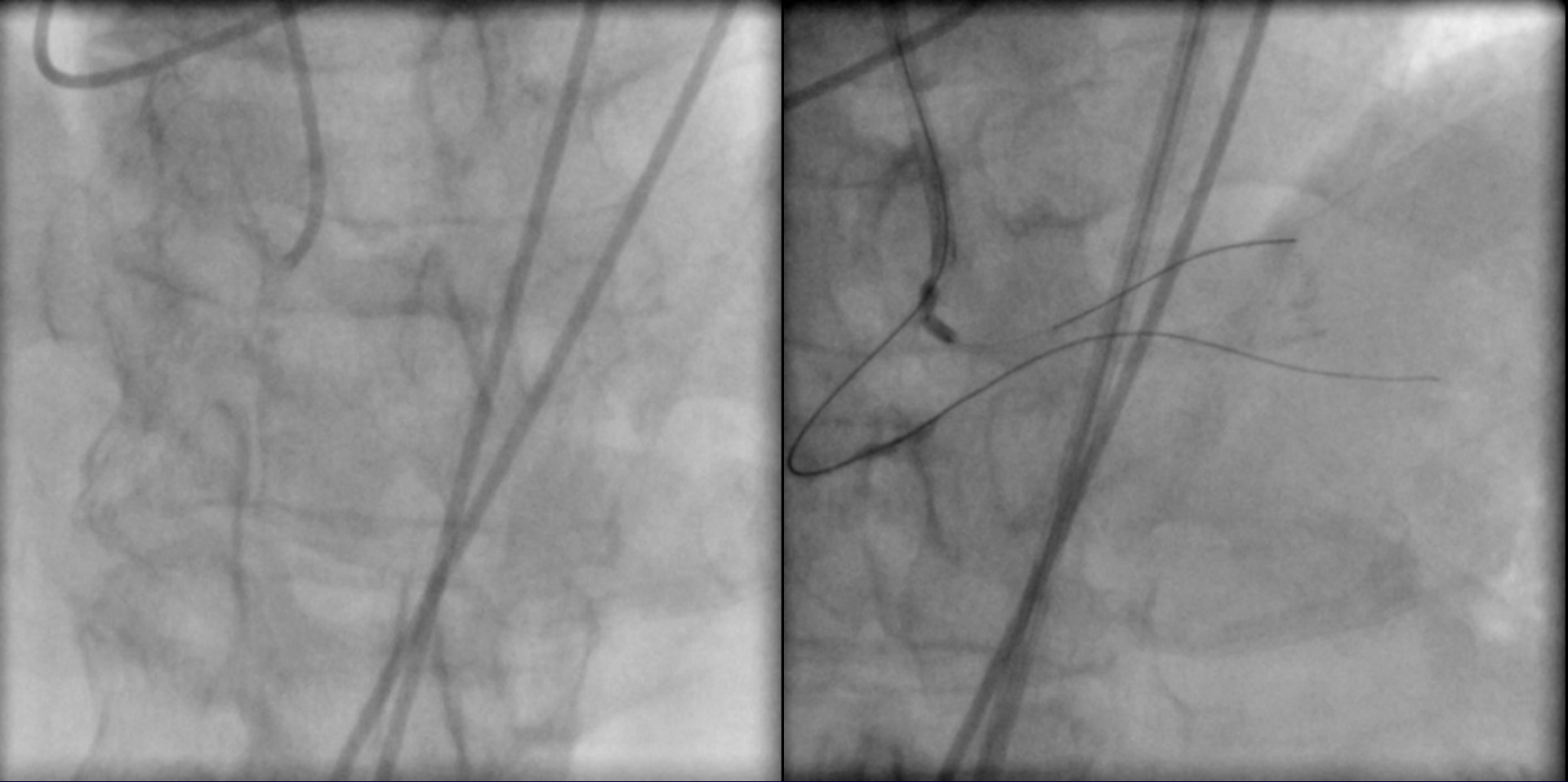


LAD mid CTO

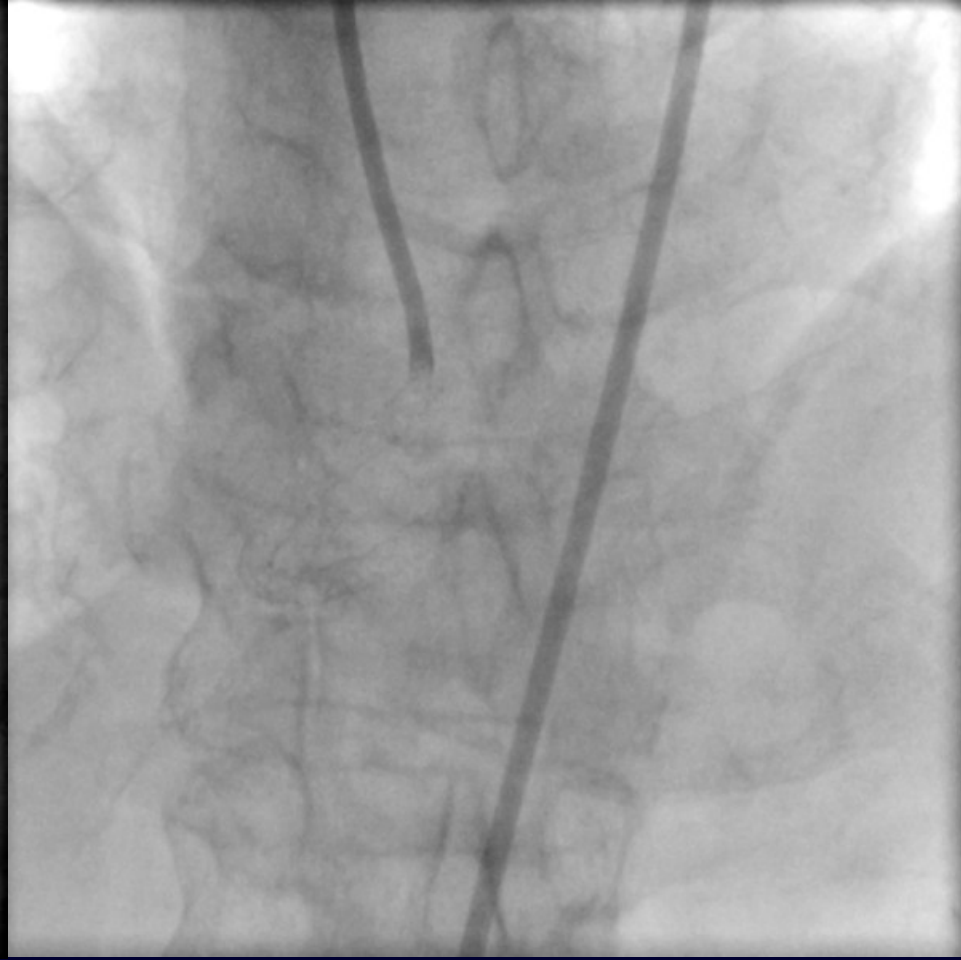
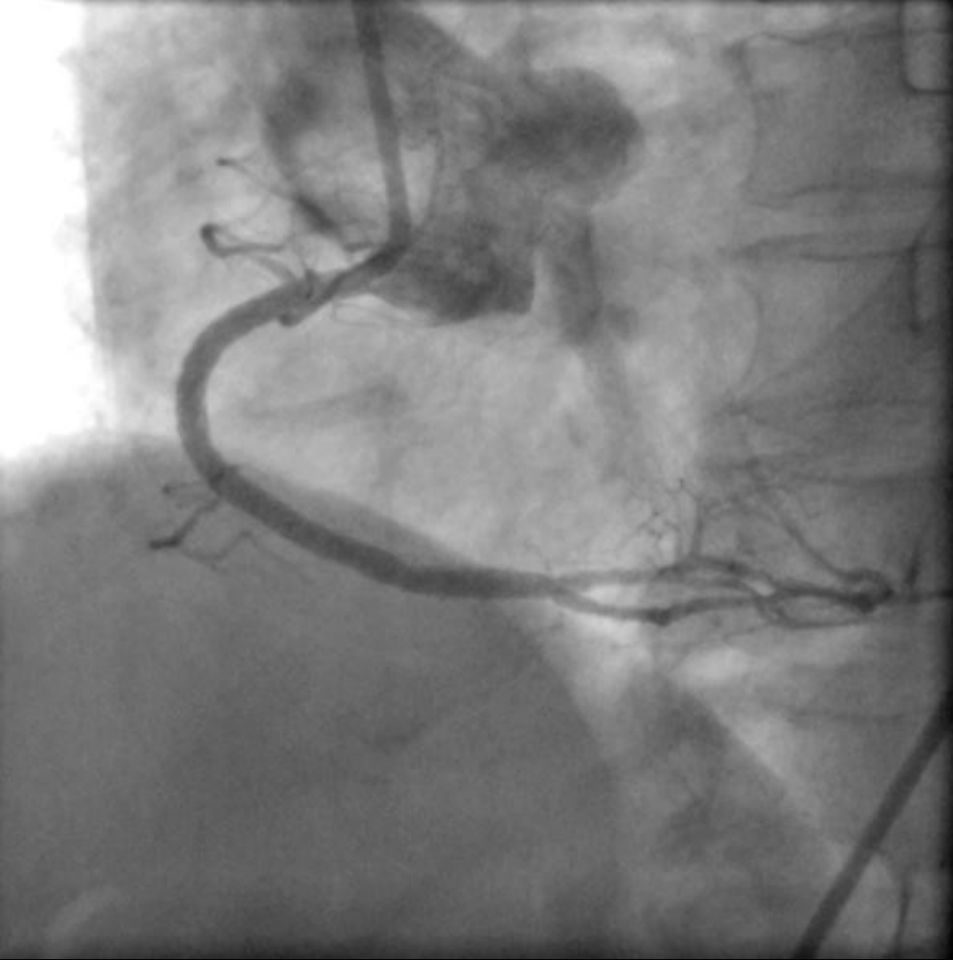


Fielder XT ve OTW

RCA-CTO



Fielder XT ve OTW



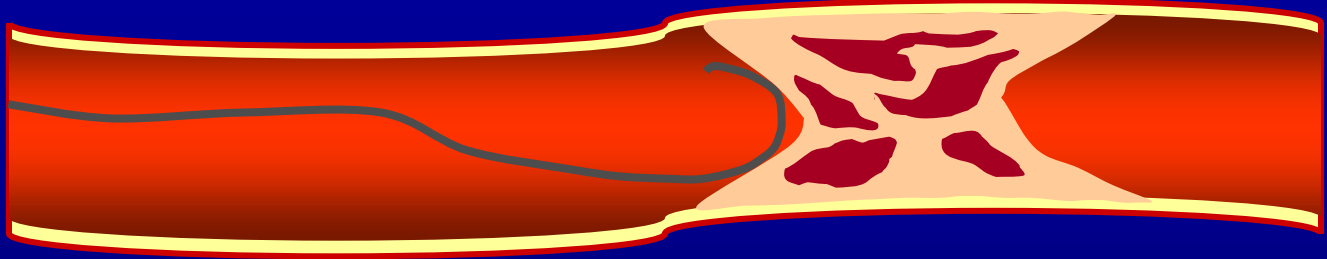
Final

Antegrad yaklaşımda tel seçimi



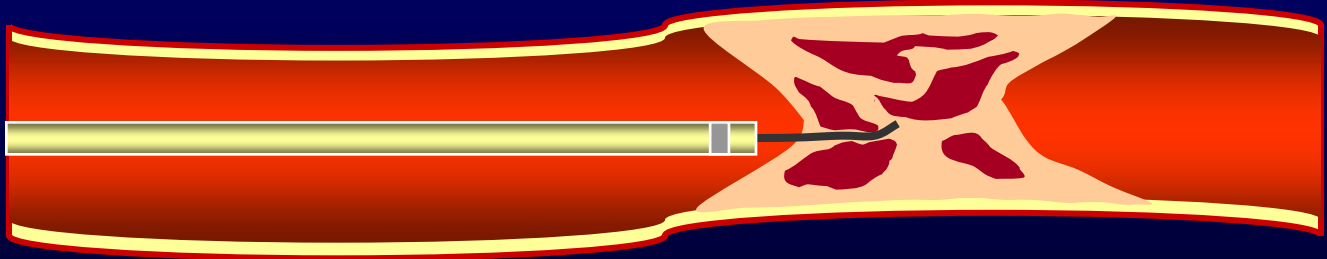
→ *İlerleyememe* → *Başarısızlık*
(Subintimal ilerleme)

Sadece tel ile



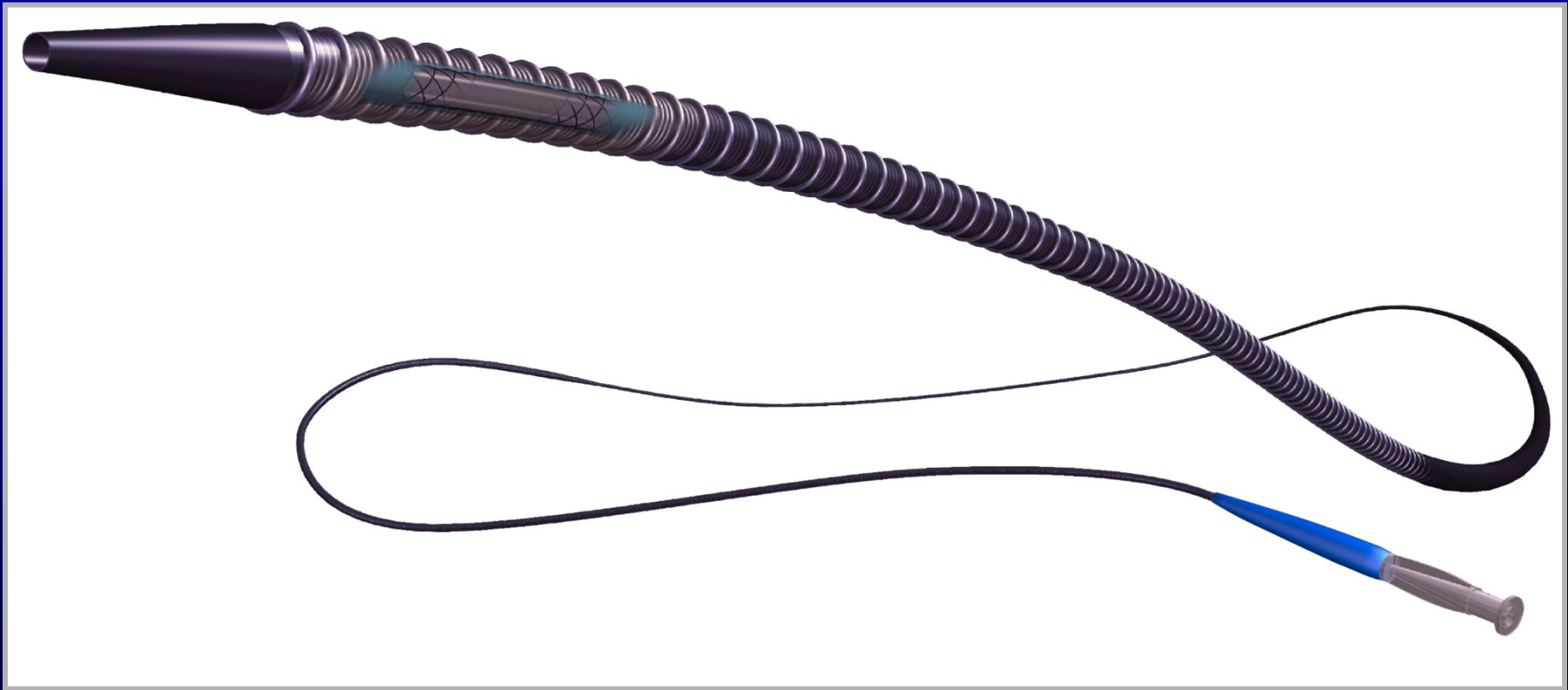
Telin ucu genellikle prox. Cap de geri kurve yapar ve desteđini kaybeder

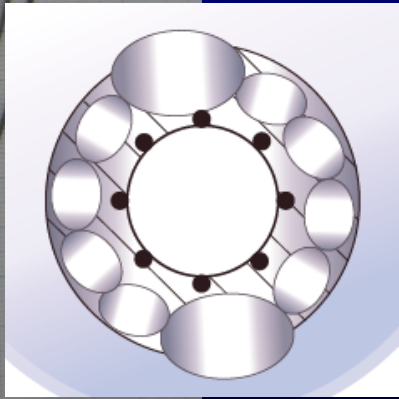
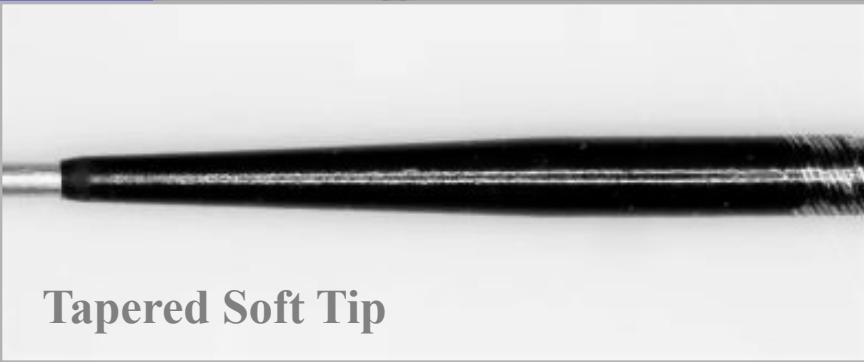
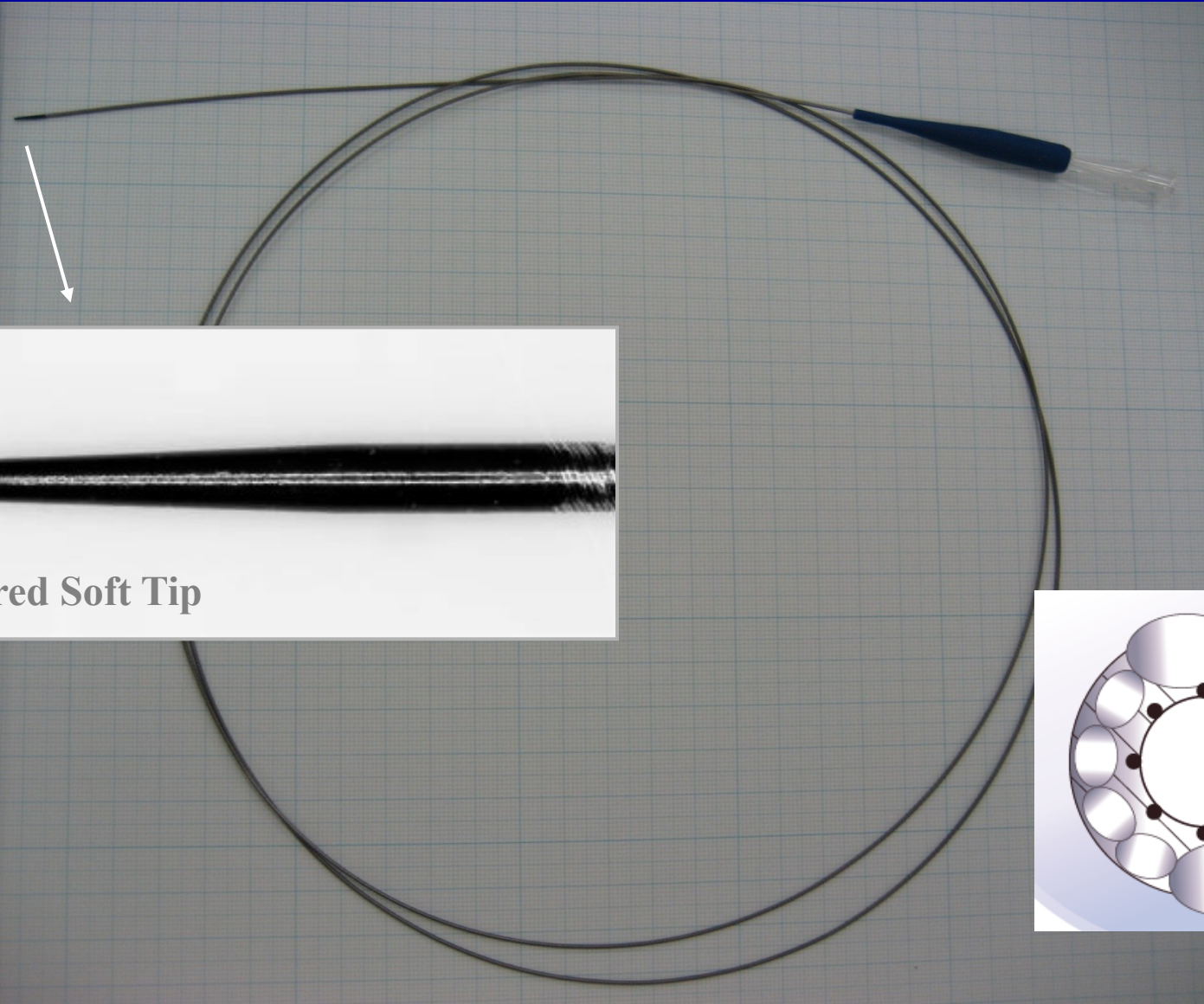
Tel ile Mikrokateter



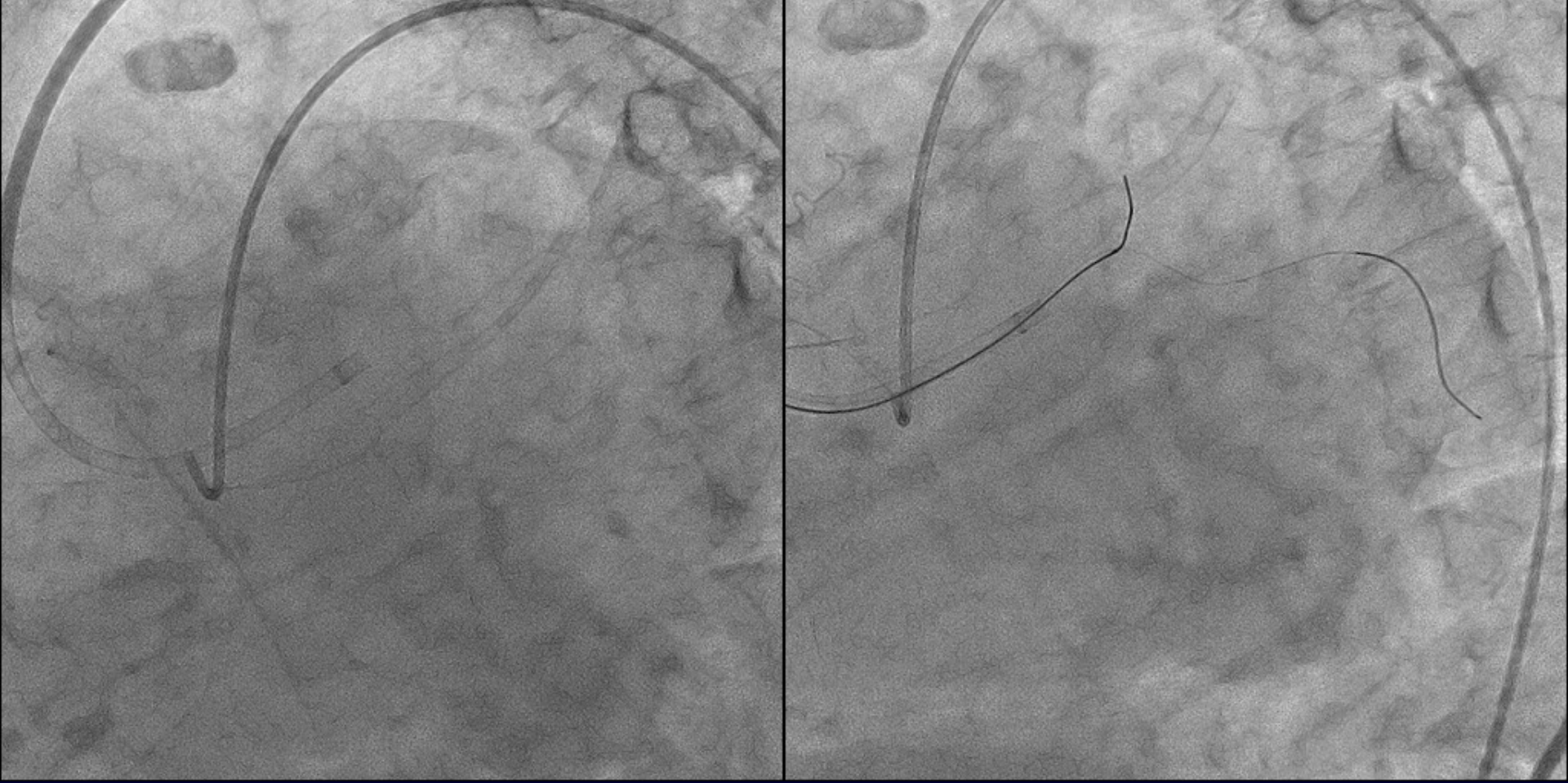
Mikrokateter tele daha iyi destek ve penetrasyon g¼c¼ sađlar .

Antegrad Mikrokateter



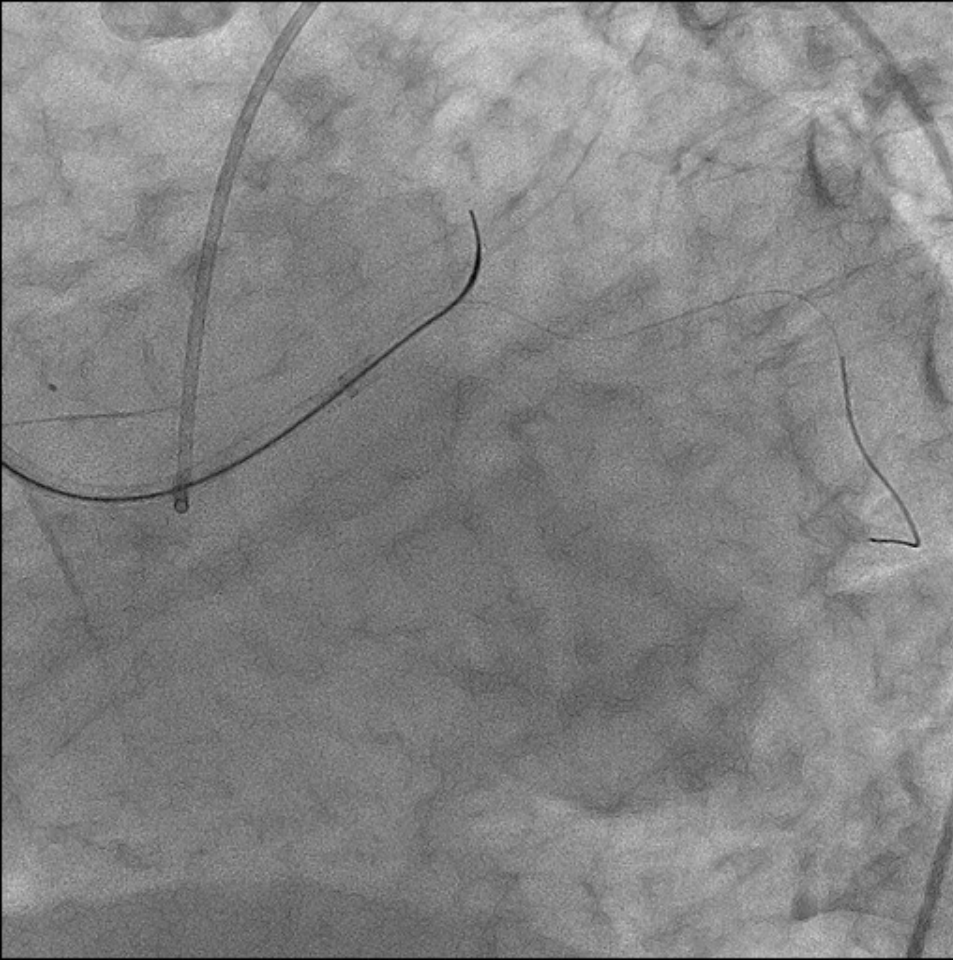


LAD Ostial CTO

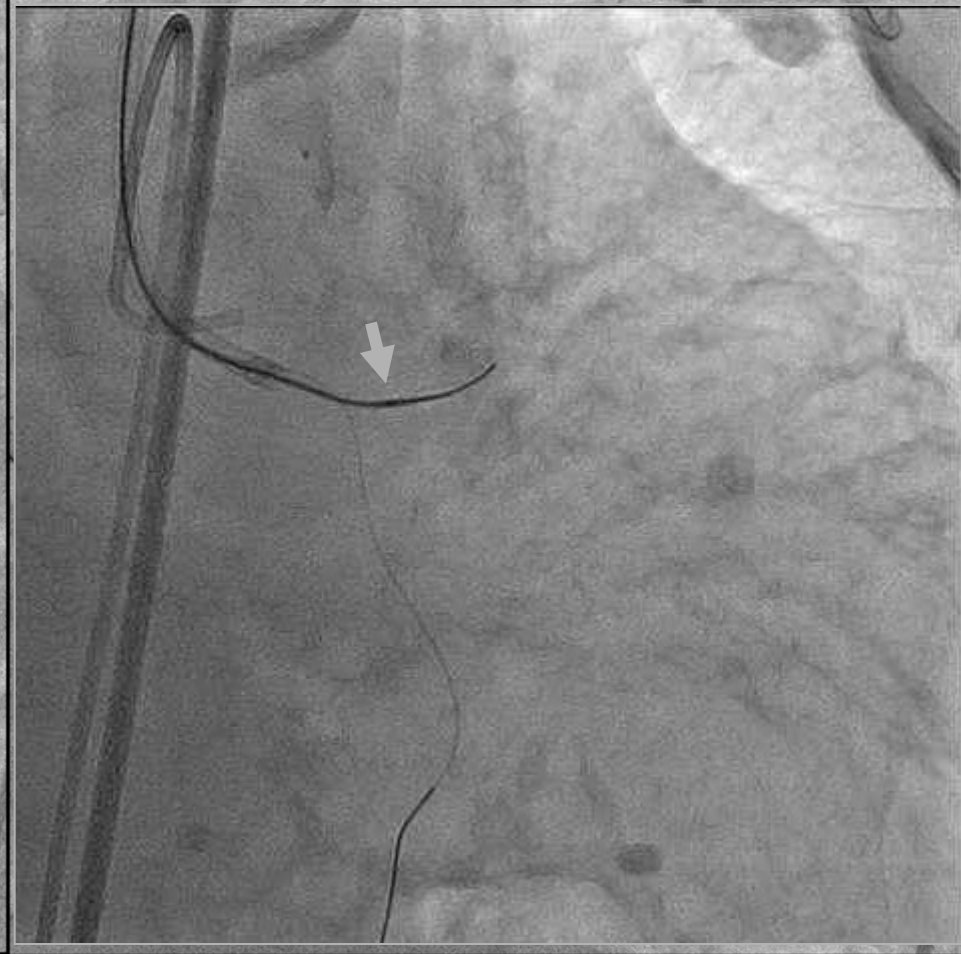


*Miracle 3 ile lezyon geçilemedi
ve penetrasyon için destek
sağlanamadı*

LAD Ostial CTO

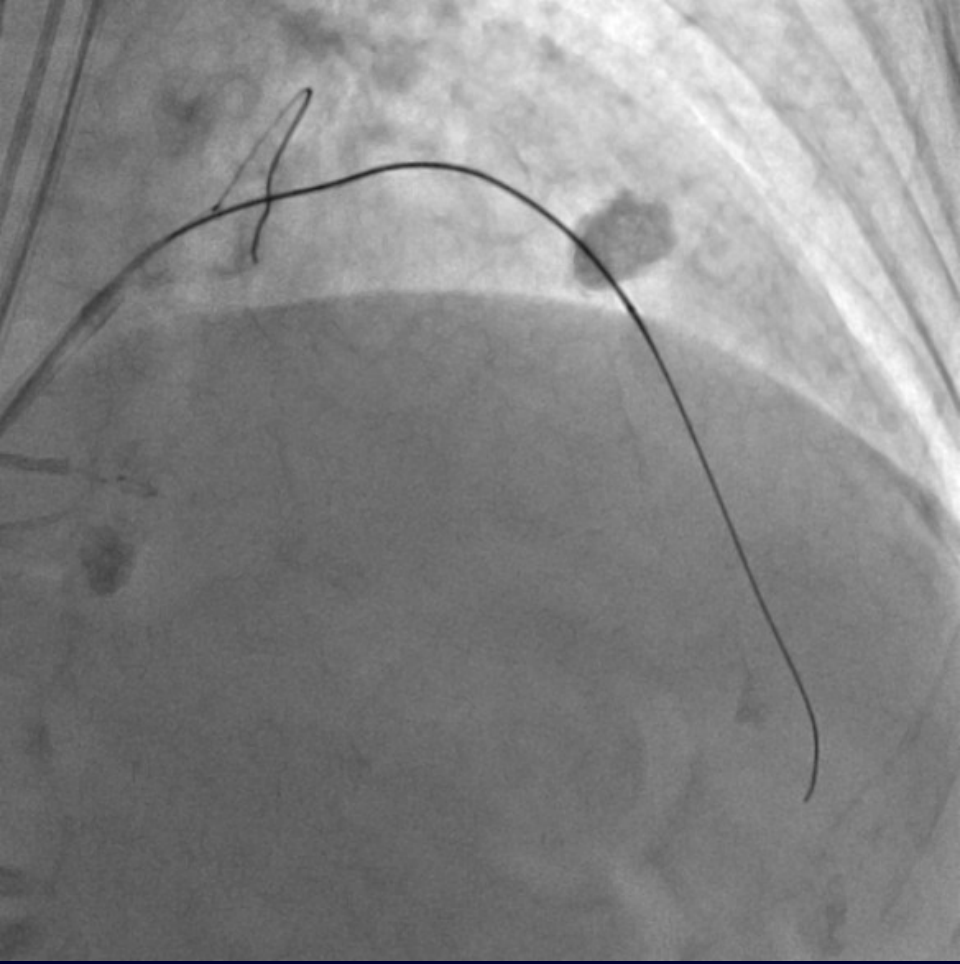


Corsair 'e geçildi

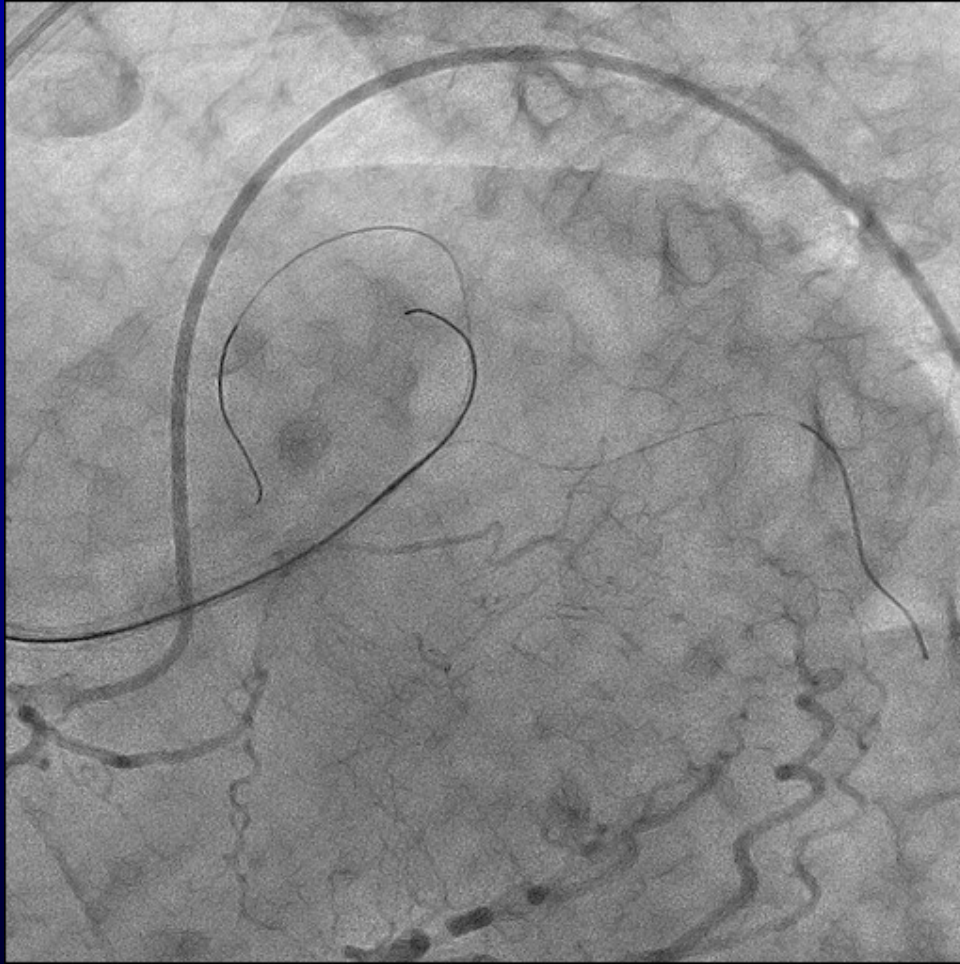


Başarılı crossing

LAD Ostial CTO

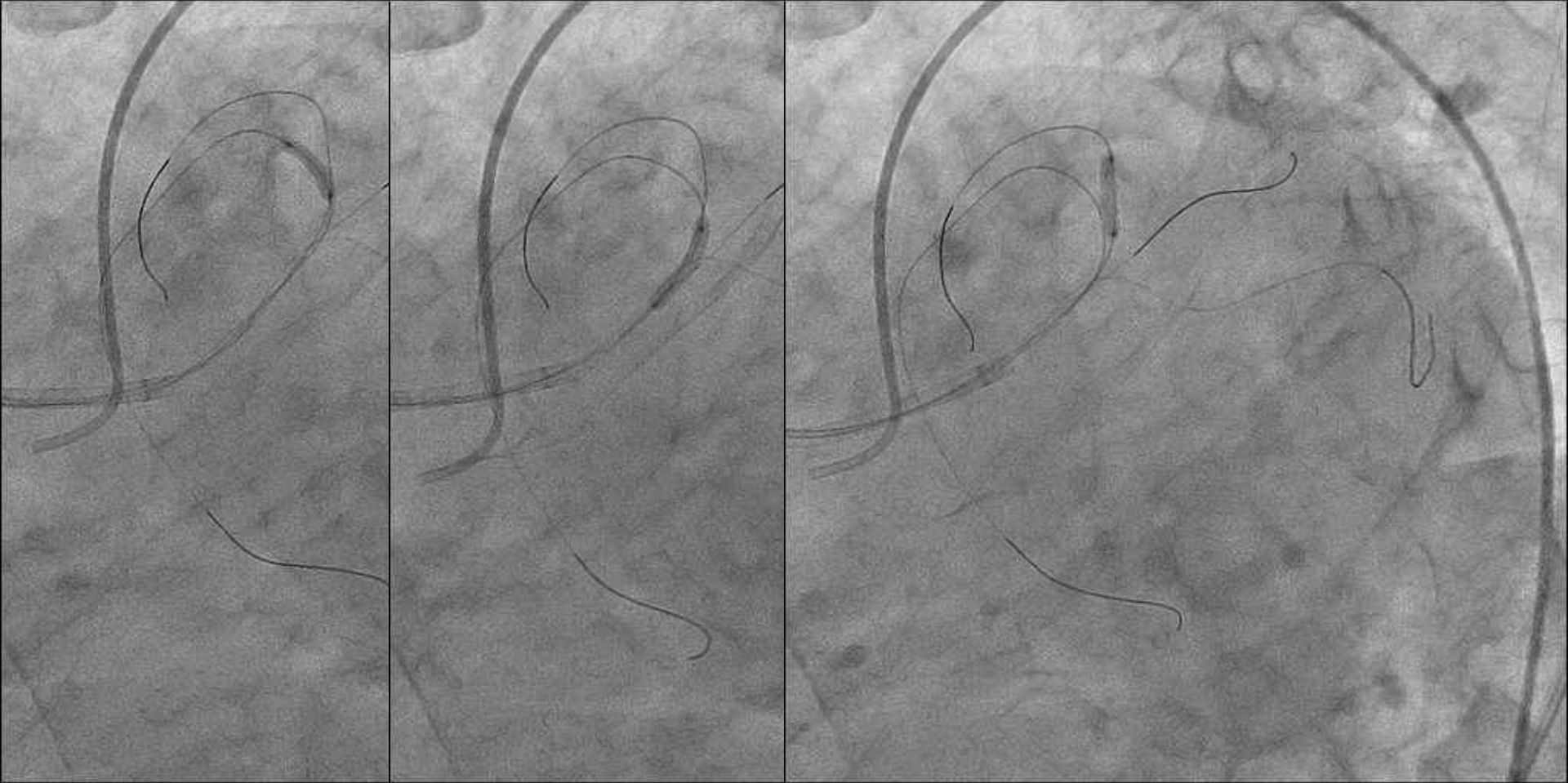


Corsair



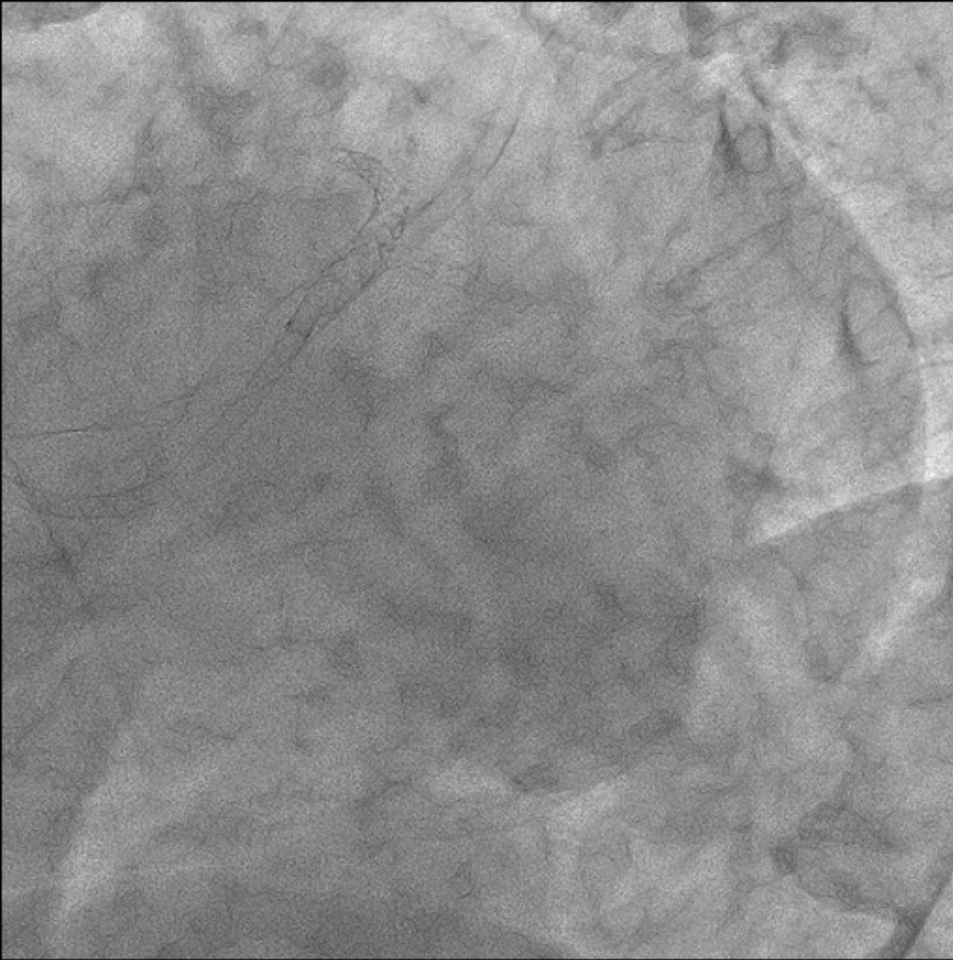
Yan dallar telleniyor

LAD Ostial CTO

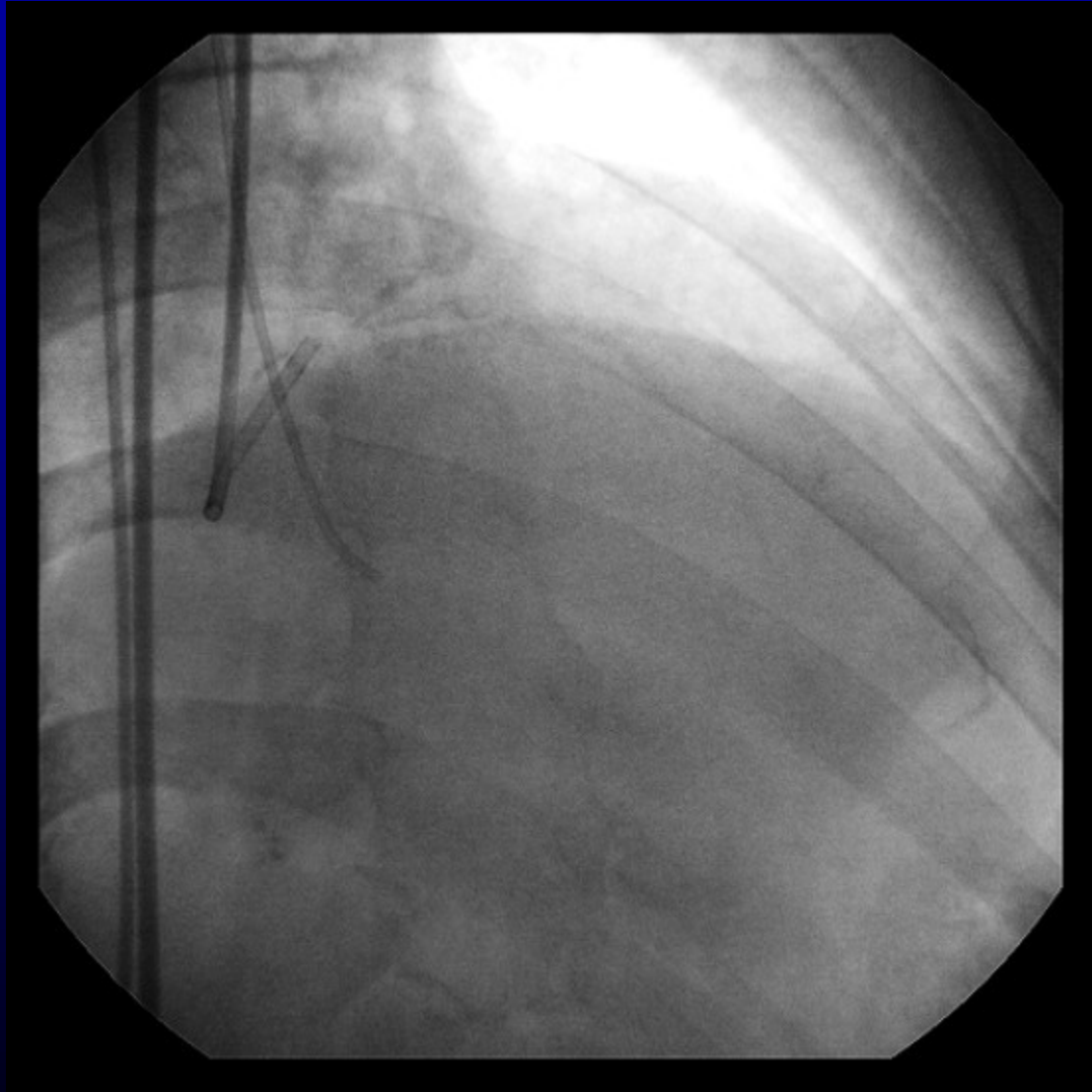


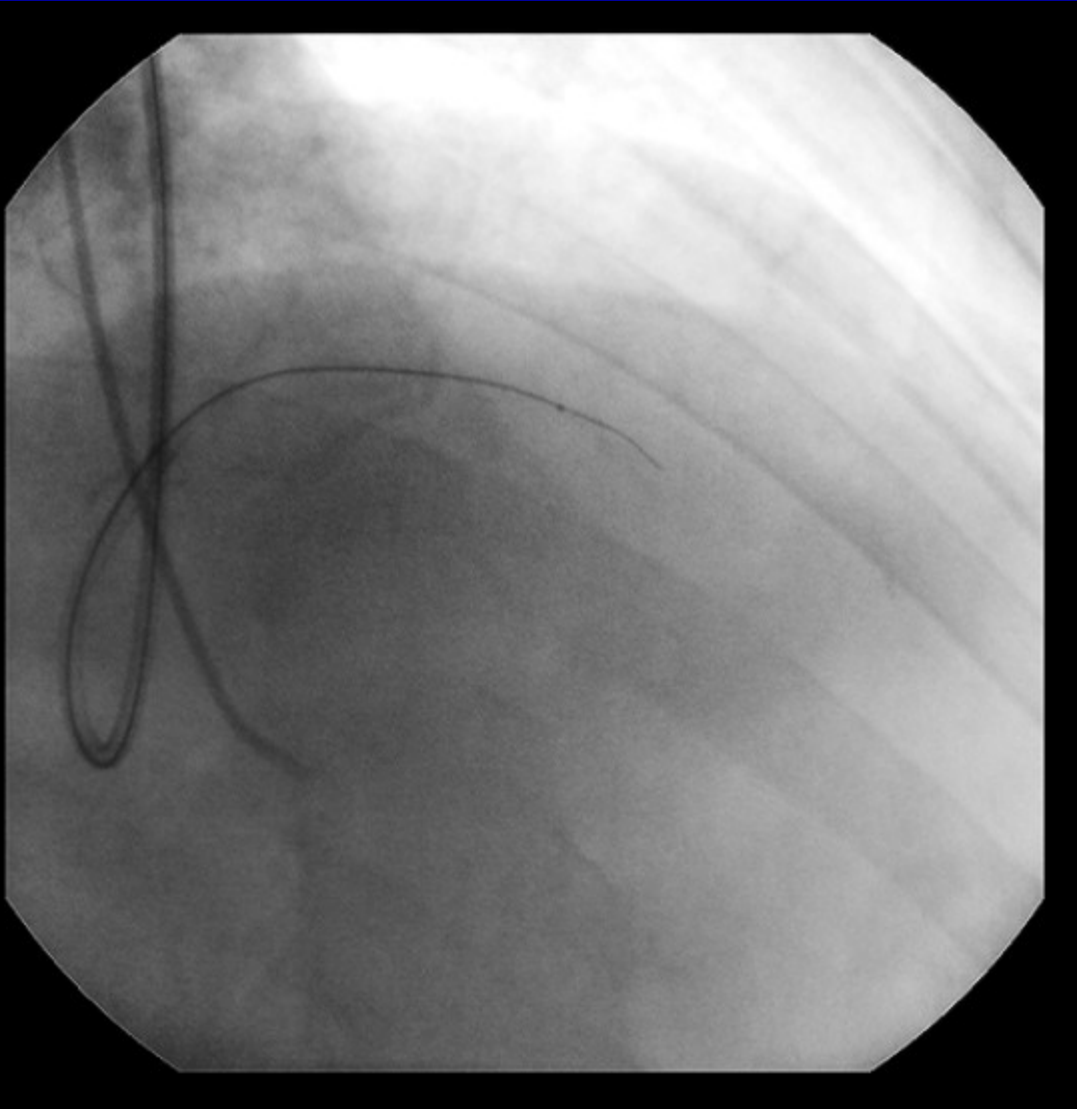
Direct 2.5 balon dilatasyon

LAD Ostial CTO



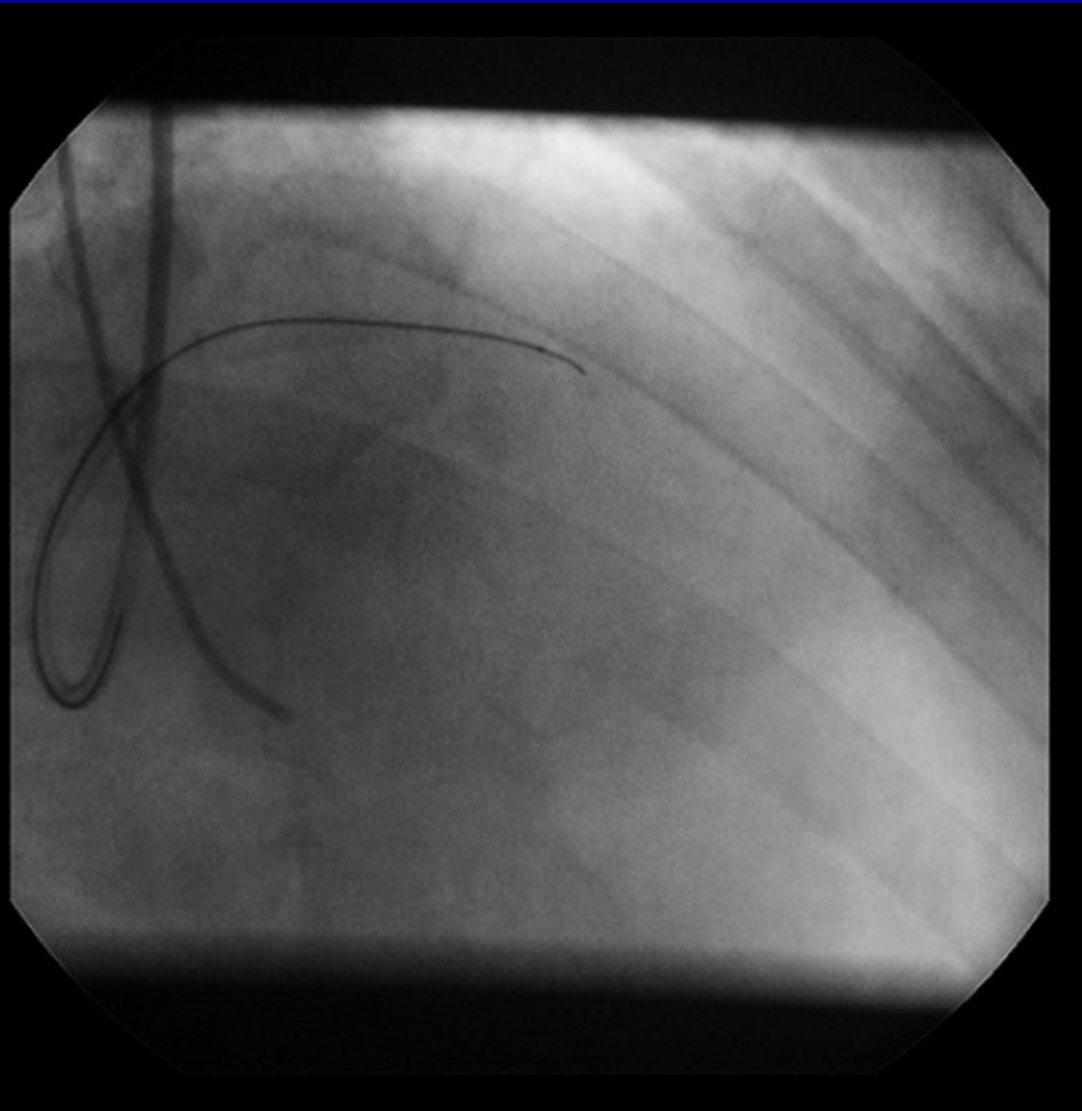
LAD proximal CTO





Fielder XT ve Finecross

Subintimal boşlukta...

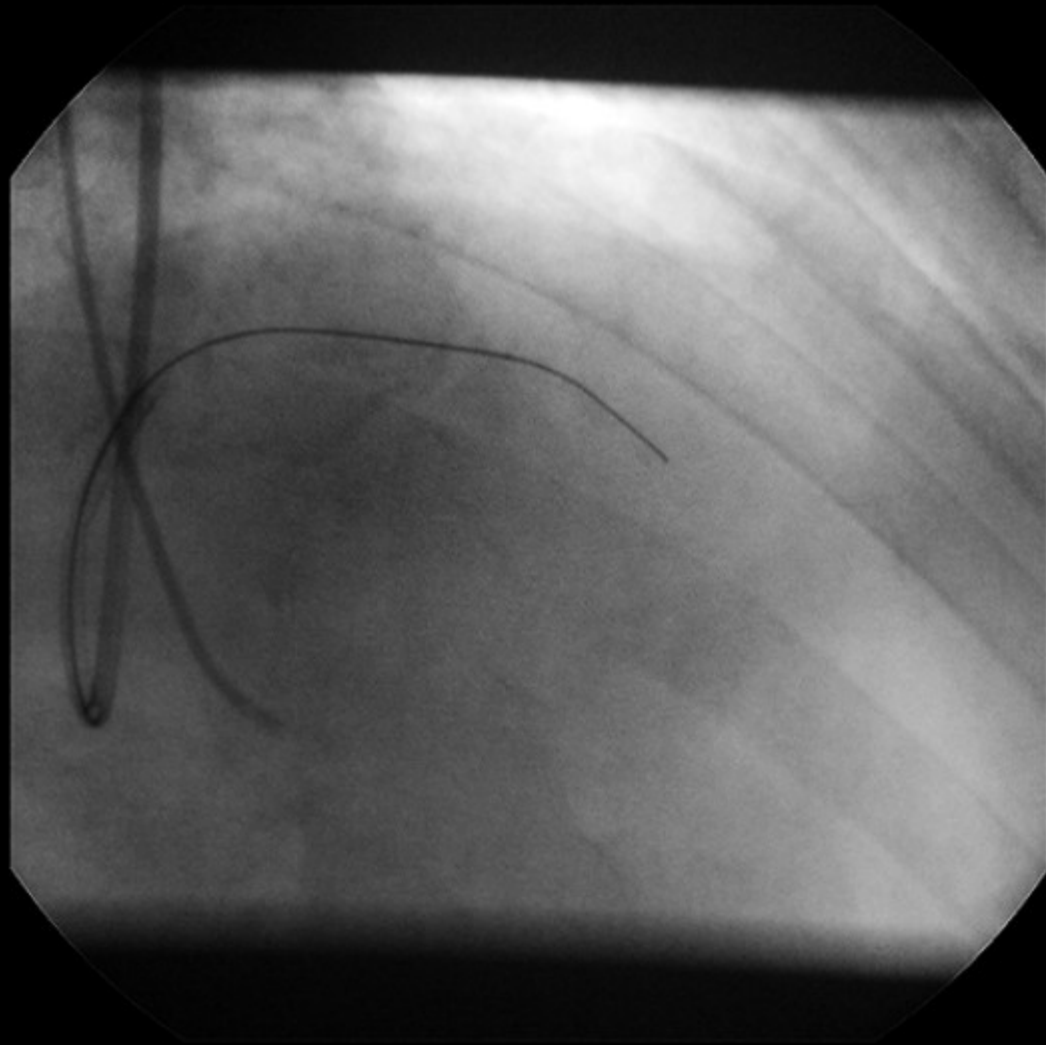


Miracle 12 ile

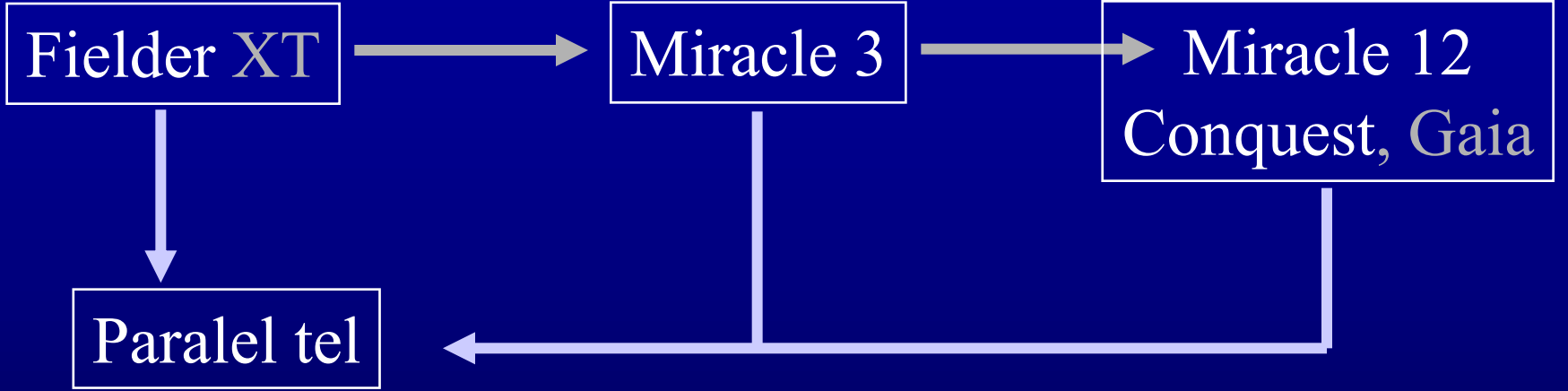
Finecros mikrokater

Miracle 12 ile

Final



Antegrad CTO 'ya Yaklaşım



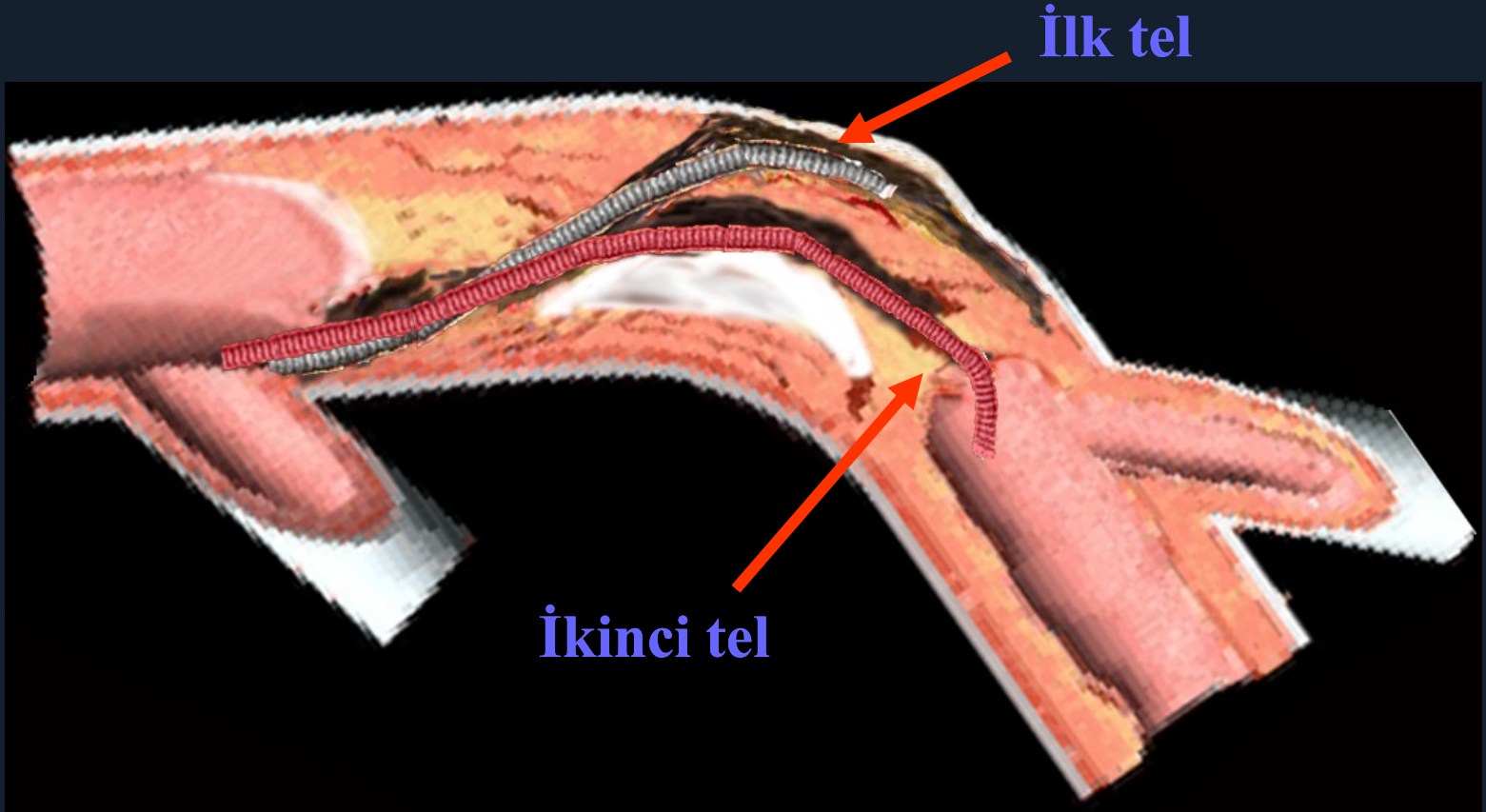
→ *İlerleyememe* → *Başarısız*
(Subintimal ilerleme)

Birinci tel Subintimal ilerlediğinde ne yapmalıyım ?

- **Tel değiştir**(daha ağır tellere geç)
- Paralel tel tekniği
- Yan daldan IVUS guided paralel tel tekniği
- Yan dal tekniği
- STAR tekniği (LAST, Mini STAR, STAR)
- IVUS guided subintimal penetrasyon

Antegrad CTO

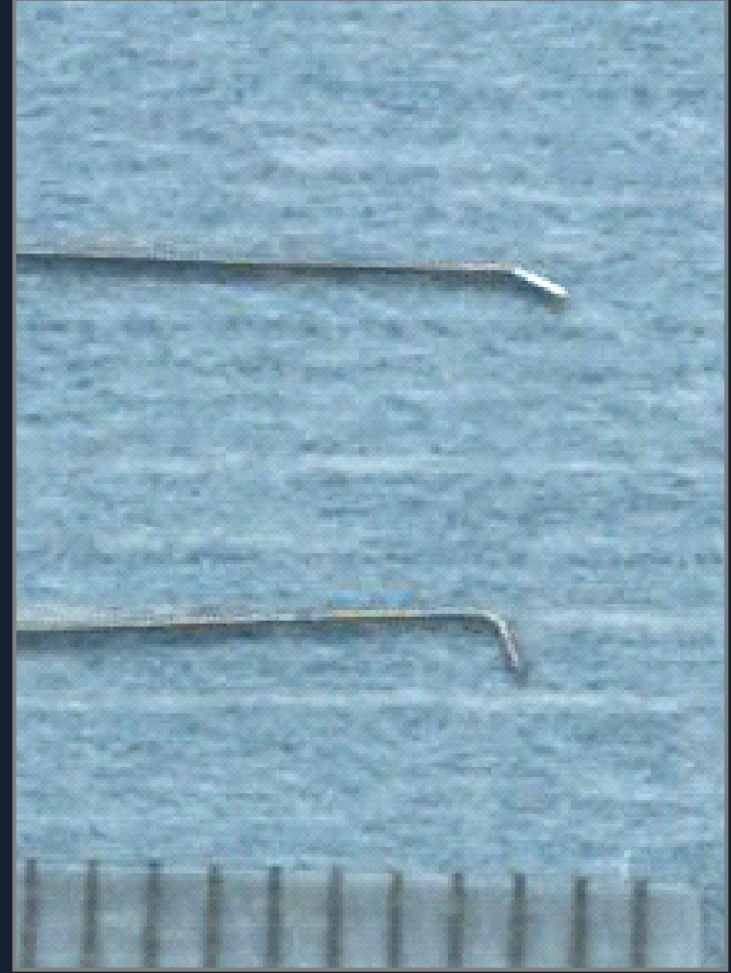
Paralel tel tekniđi



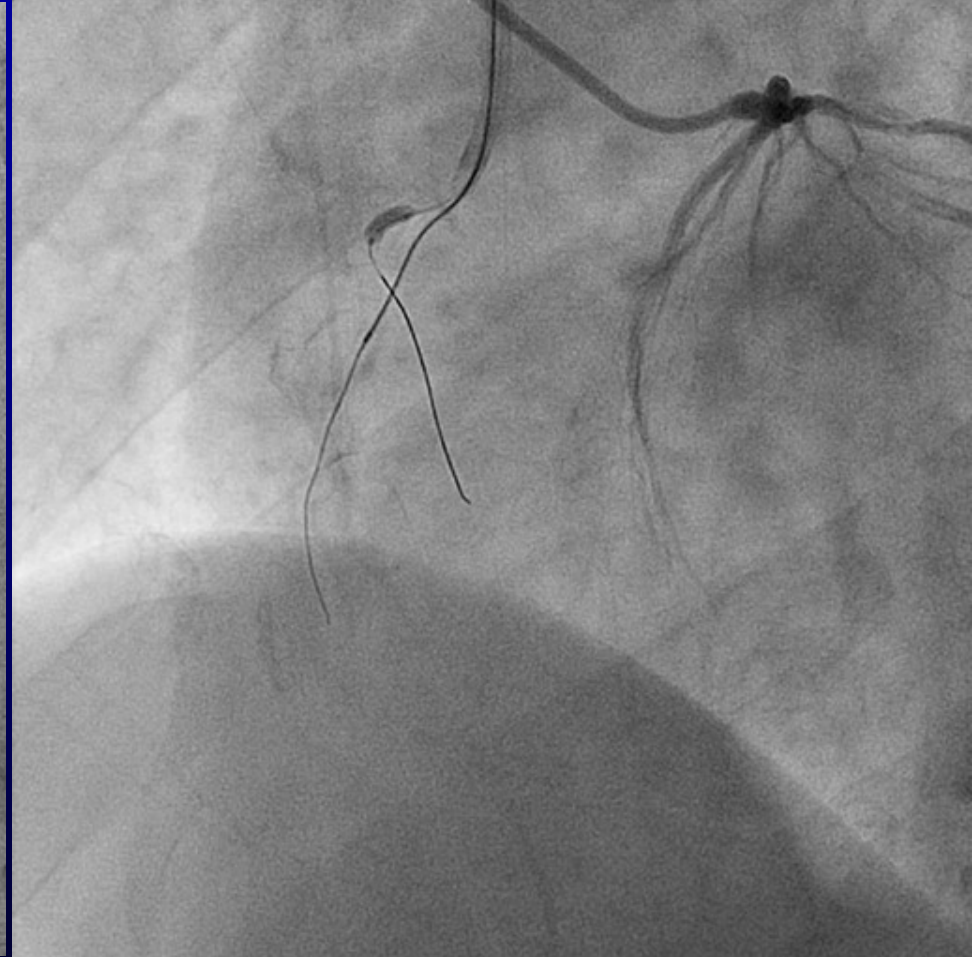
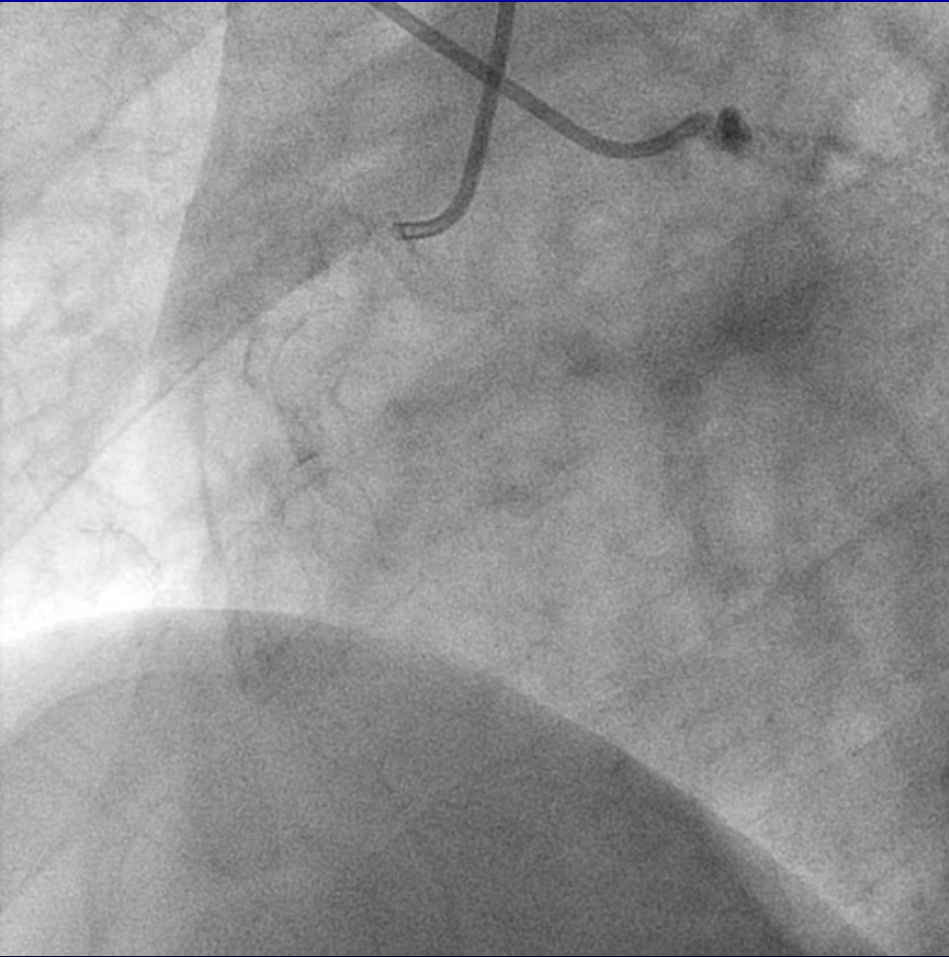
CTO Kılavuz teli açılendirma

**Paralel tel tekniğinde;
ilk tele Penetrasyon için
ilk 1-2 mm' lik uç
kısmı 15-30 derece,**

**İkinci tele ise
subintimal boşluktan
lümene düşmek için 90
derecelik açı vermek
daha akılcı bir
yaklaşım olabilir**

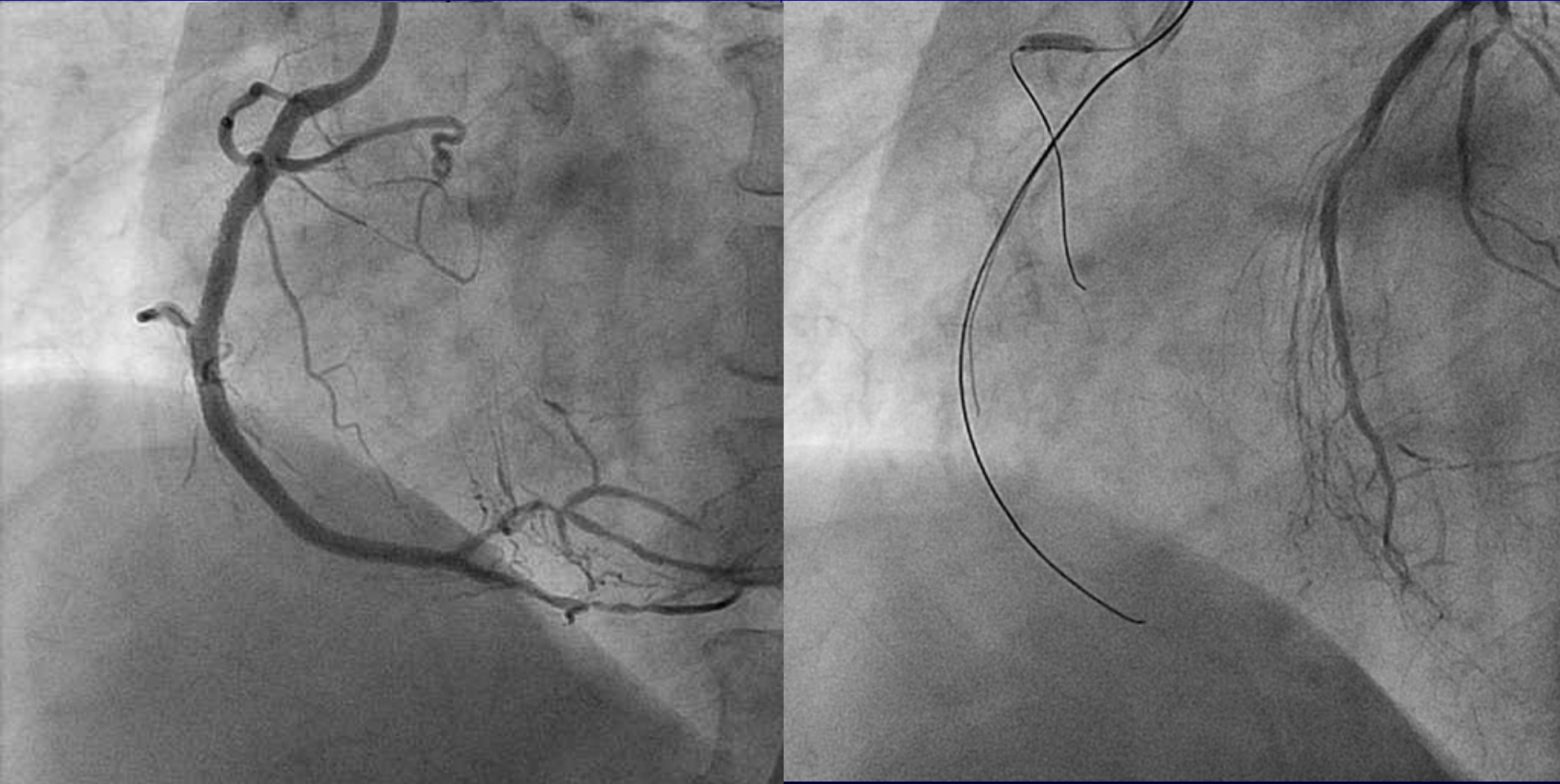


RCA proximal CTO



Fielder XT ile anchor

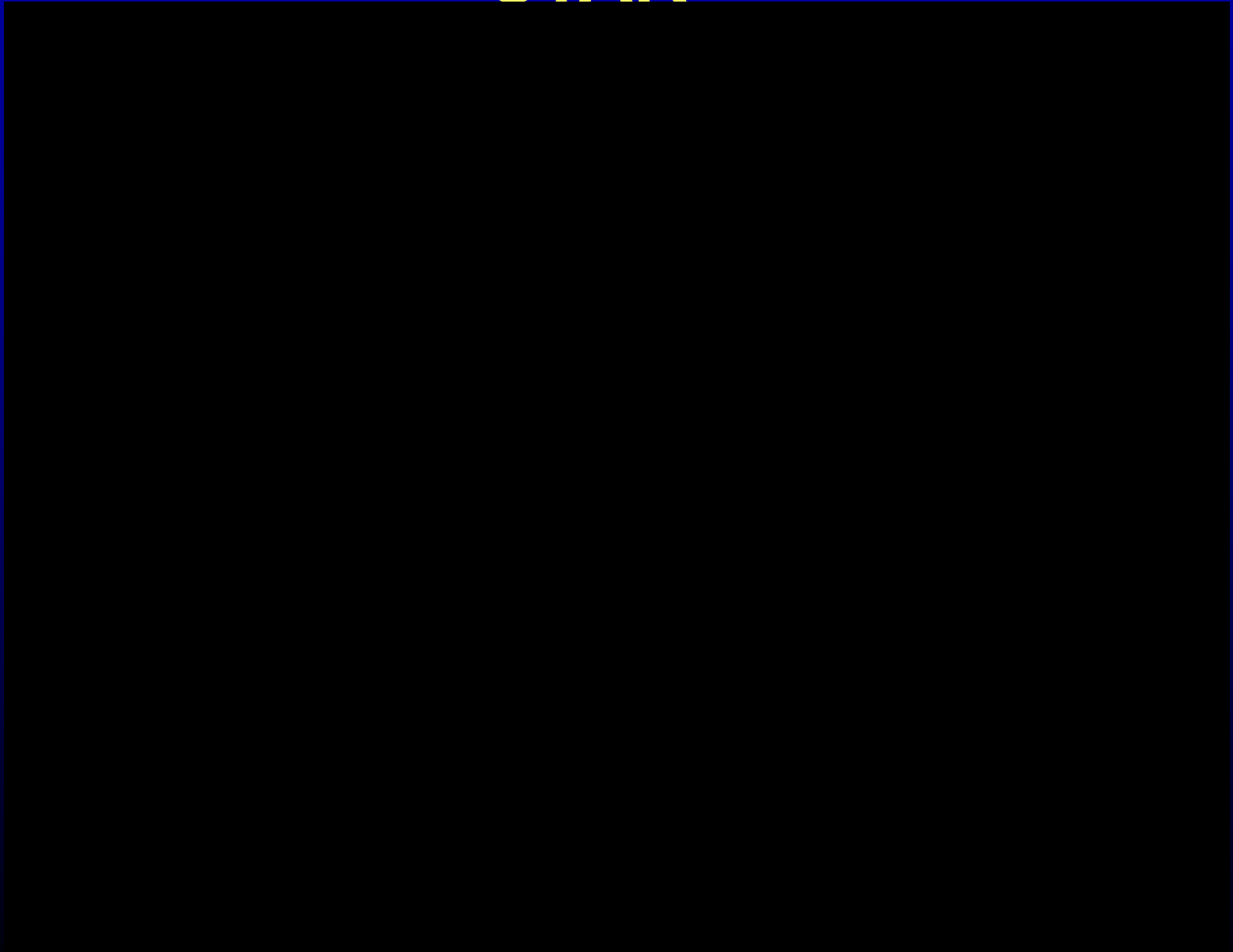
RCA proximal CTO



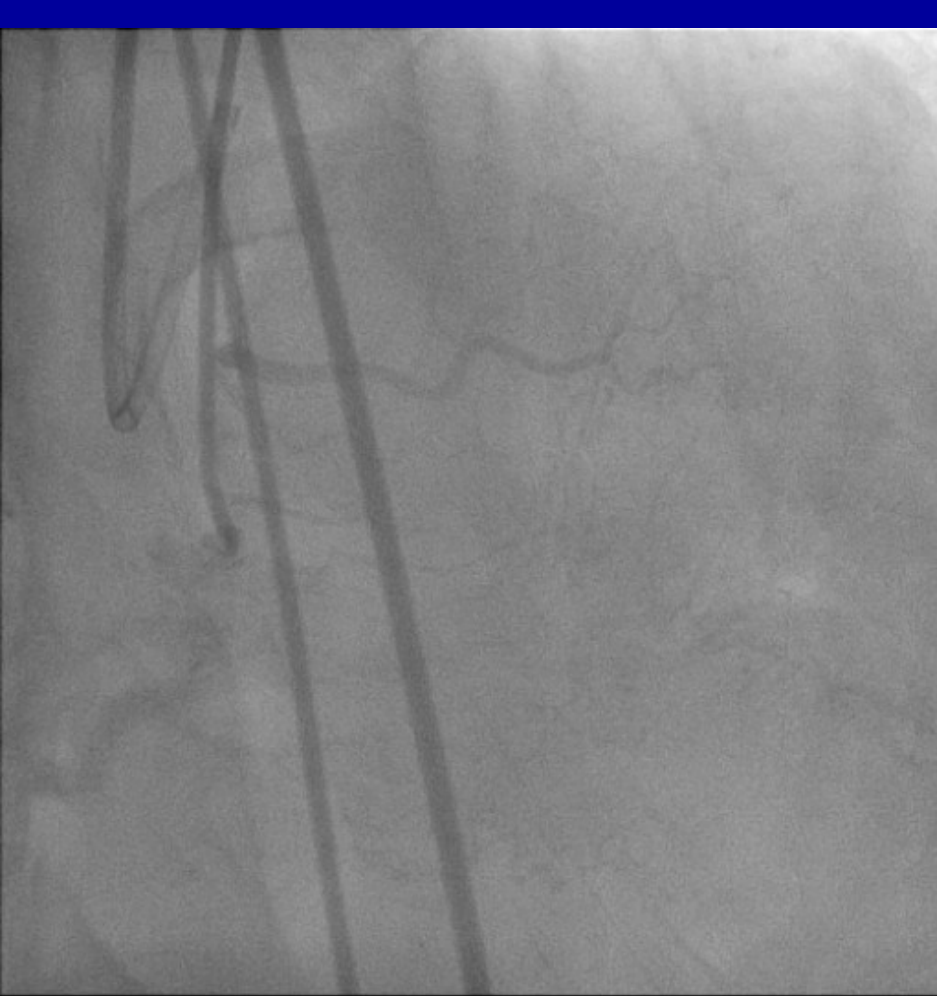
Miracle 12 ile paralel tel tekniği

Subintimal Tracking And Re-entry

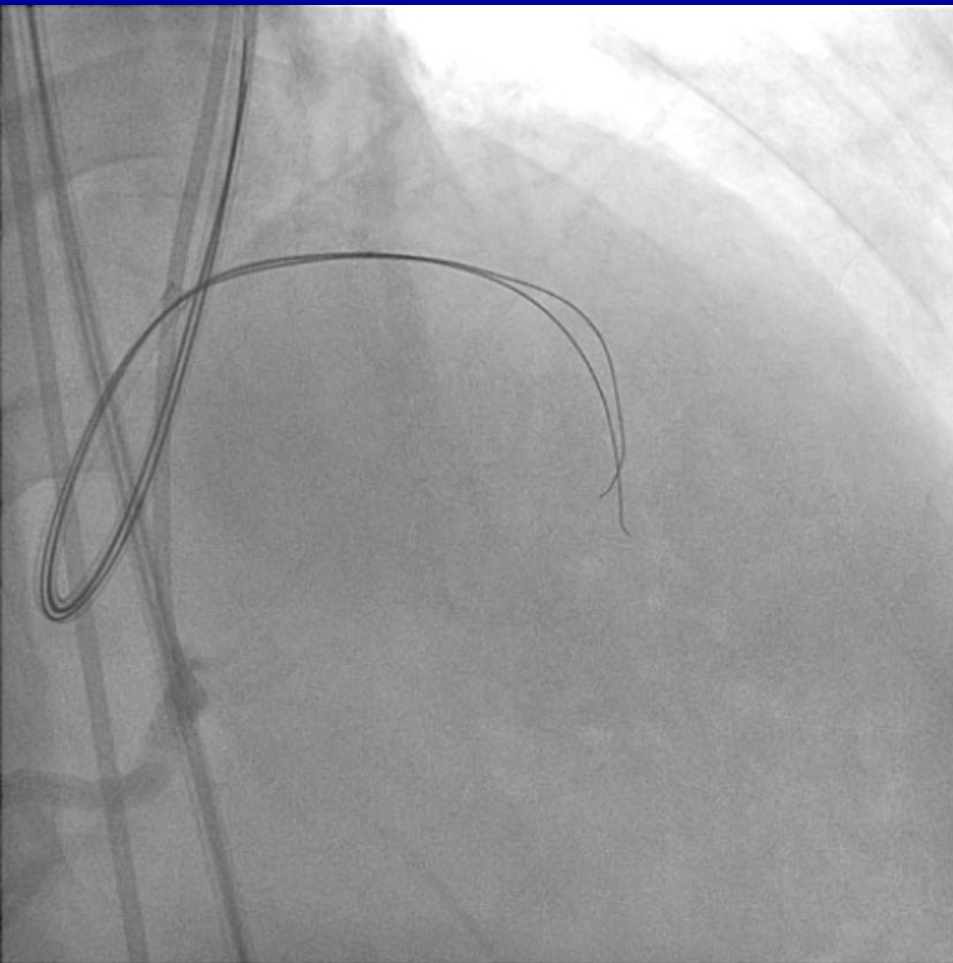
STAR



LAD-CTO- Başarısız paralel tel sonrası lokalize STAR

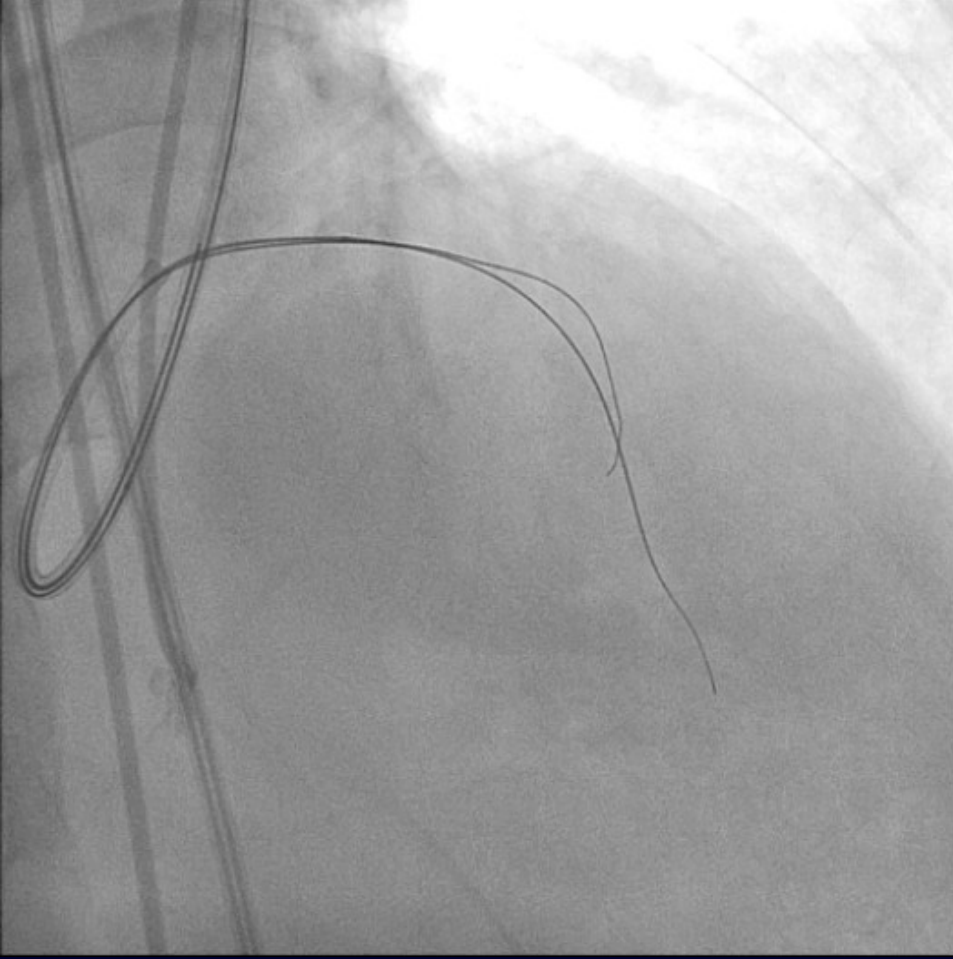


Paralel tel tekniği



2 Confianza

Paralel tel tekniđi



Subintimal ilerleme

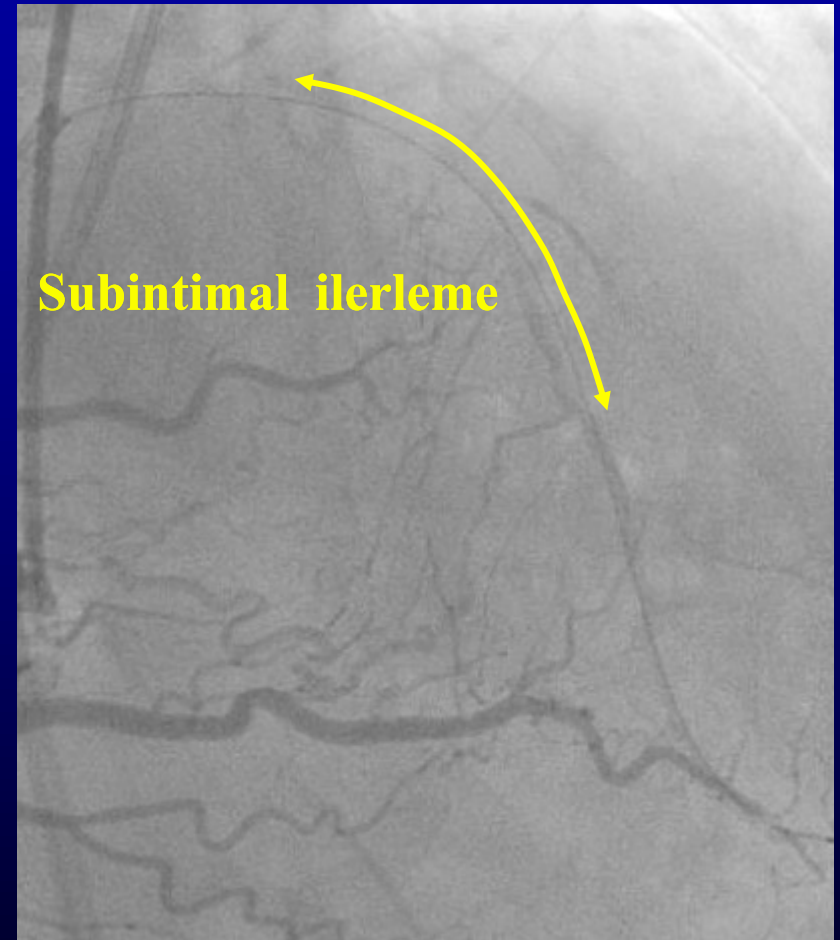
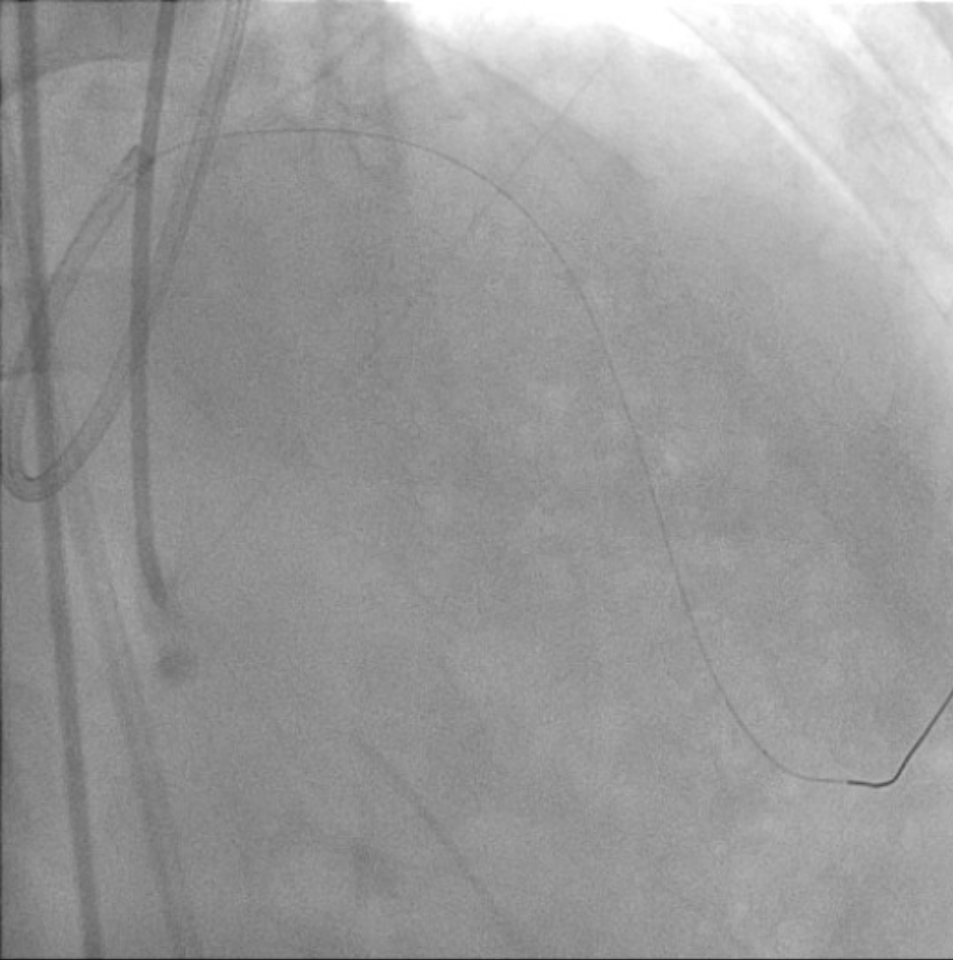


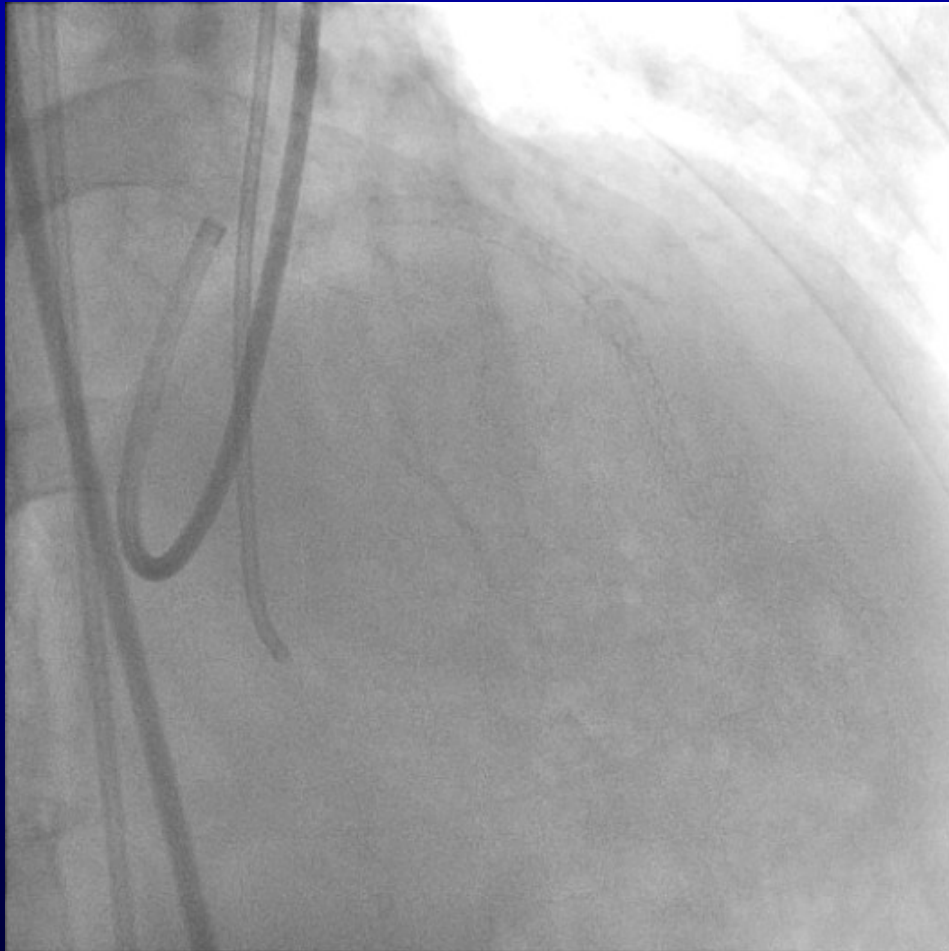
Penetrasyon için hedef



Başarılı penetrasyon

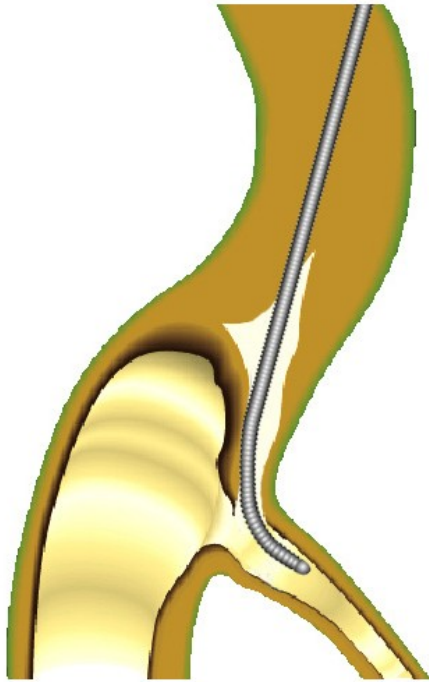
Localize STAR



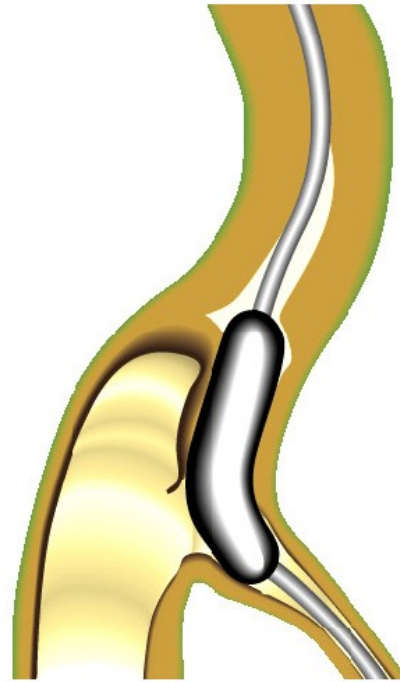


Final anjiyogram

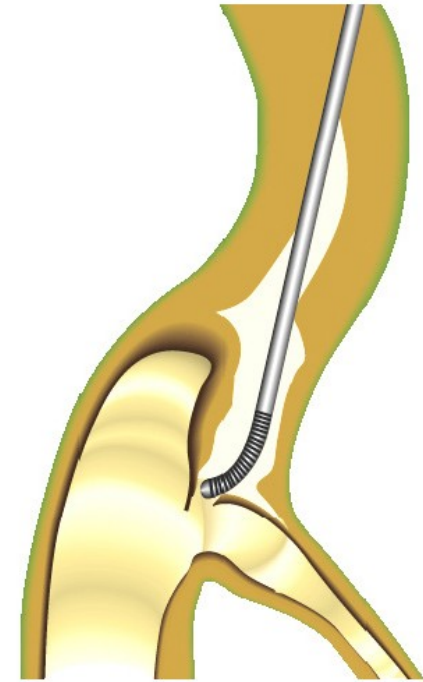
Yan dal tekniđi



(a)

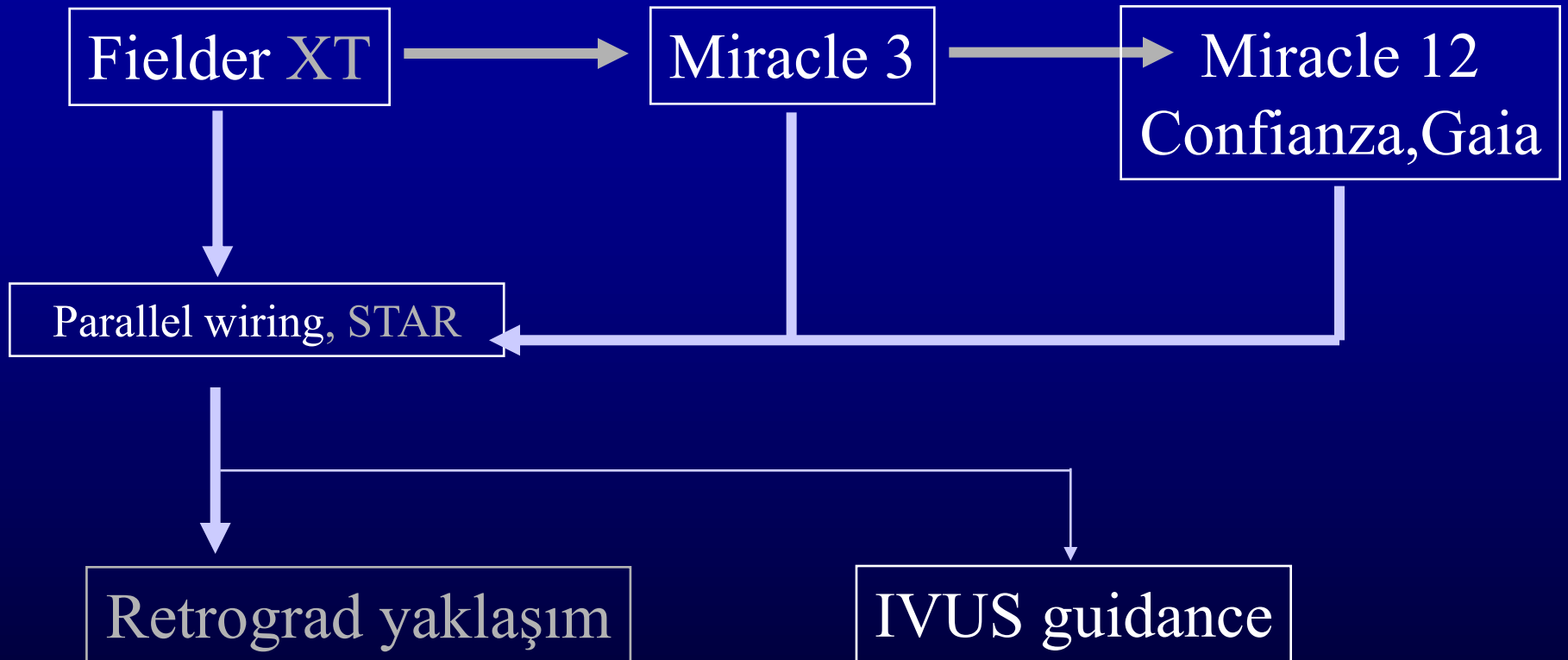


(b)



(c)

CTO'ya yaklaşım

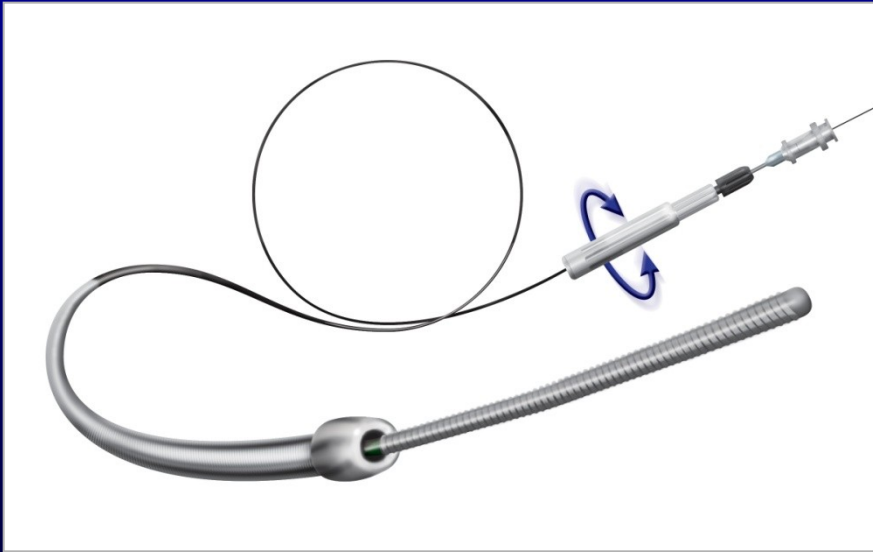


Özetle

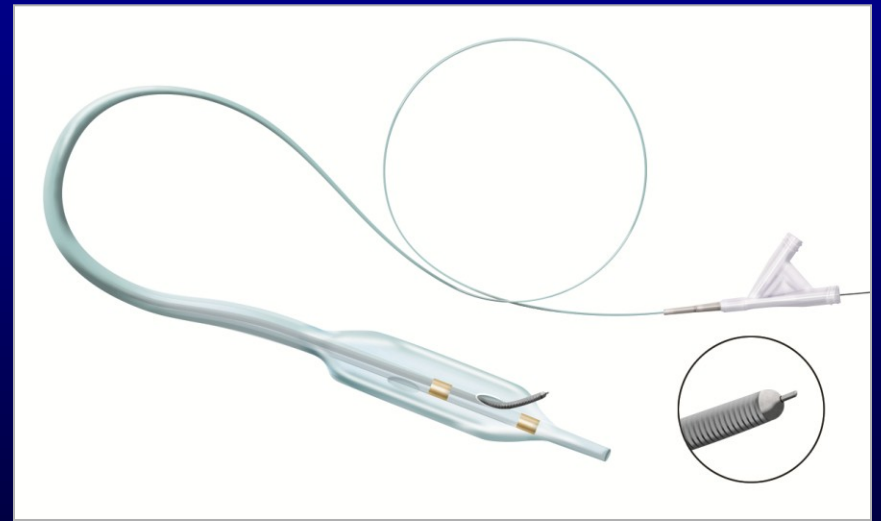
- Muhakkak çift kasık işleme başlanmalı
- Mikrokanal varlığında ilk tel olarak Fielder serisi ile başlanmalı, sonrasında başarısız olunursa daha sert tellere geçilebilir
- Paralel tel tekniği hala altın standart, tüm vakalarda denenmeli.
- Antegrad yaklaşım hala CTO lezyonları için en temel ve kıymetli bir yaklaşım.

BridgePoint Sistem

CrossBoss CTO Catheter



Stingray CTO Re-Entry System



Stingray Catheter & Guidewire

The Stingray™ Catheter & The Stingray™ Guidewire

Stingray™
Guidewire
Probe



0.019" diameter (0.48mm)
lesion entry profile

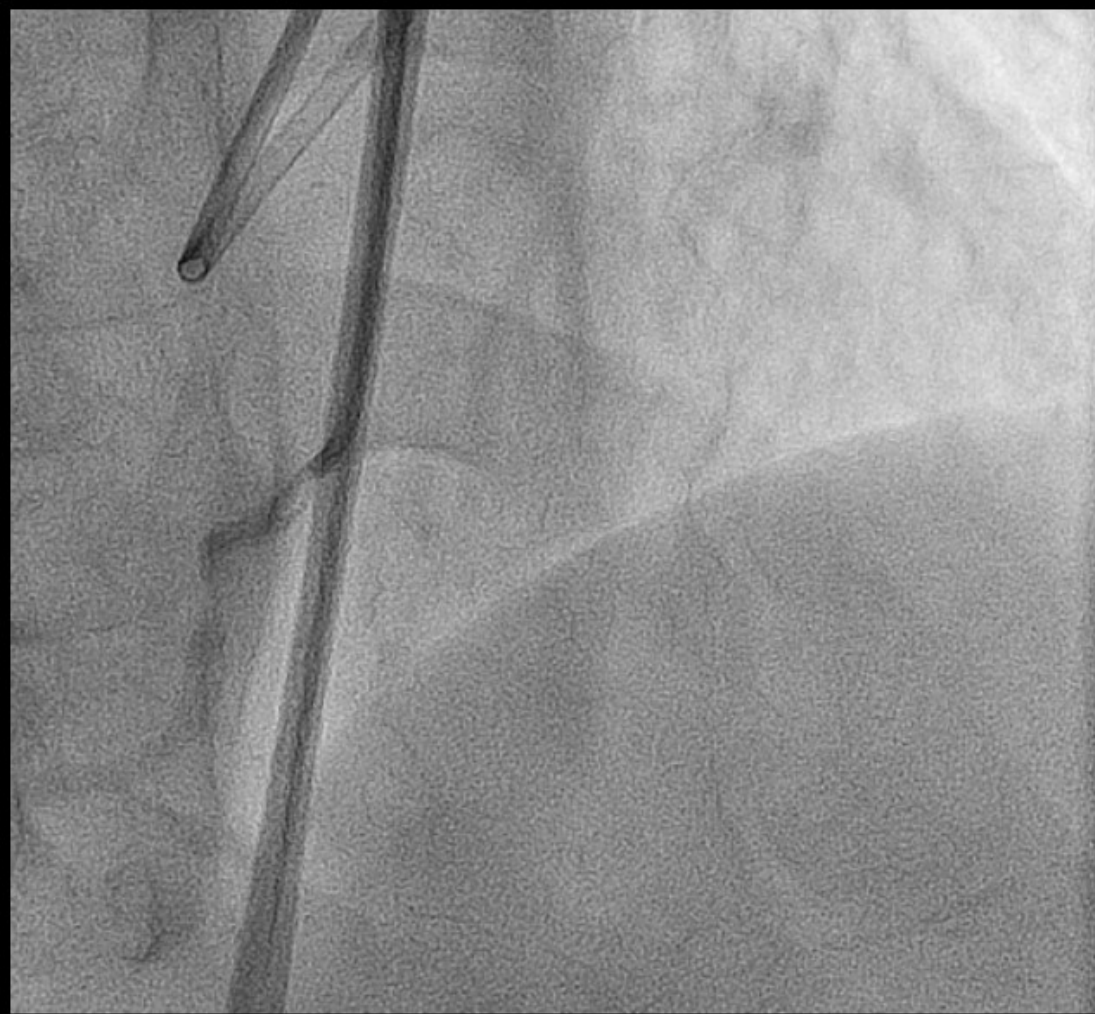
Self-orienting
balloon has flat shape

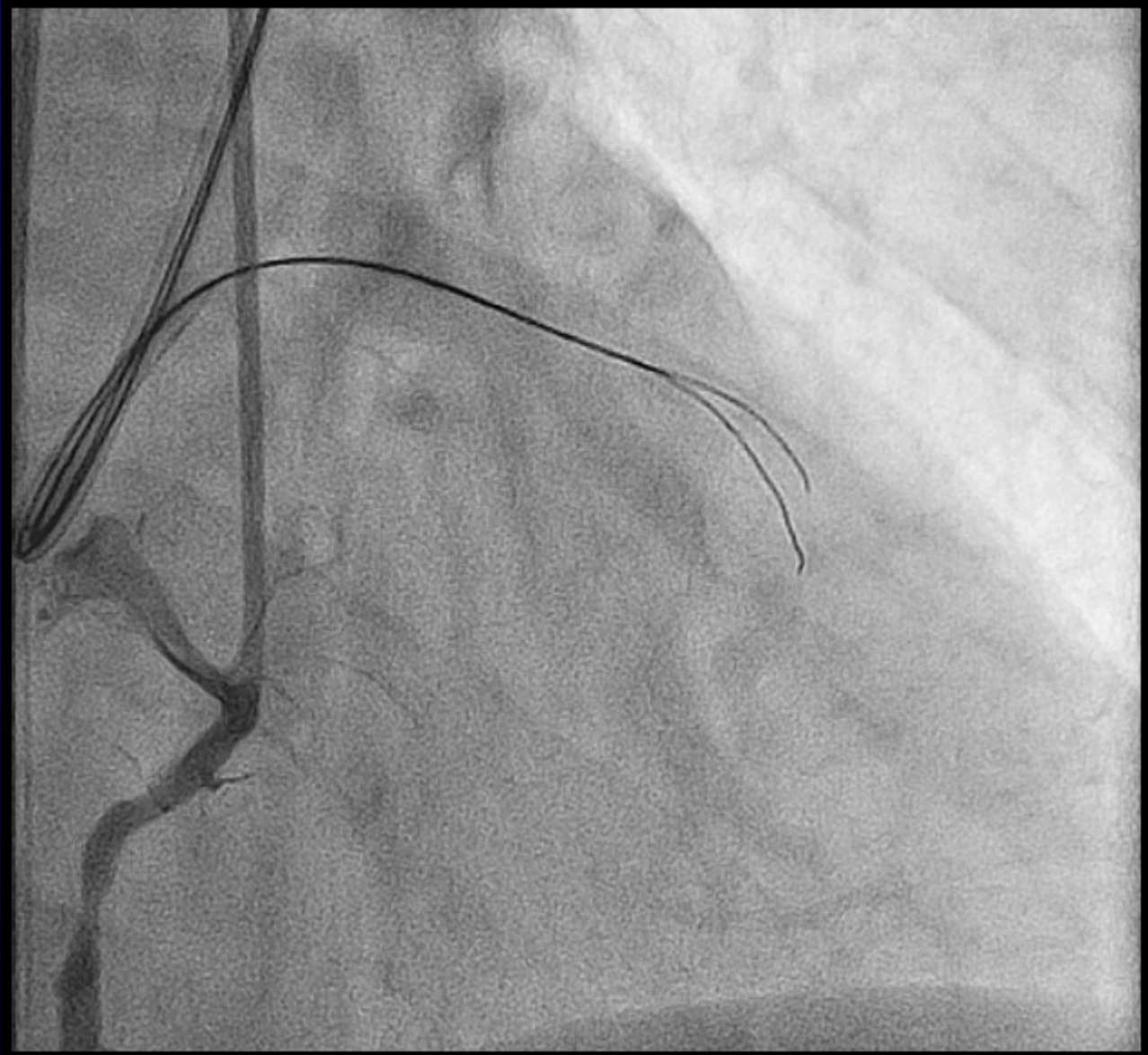
Offset exit ports for
Stingray™ Guidewire

Compatibility:
0.014" guidewire
6F guide catheter

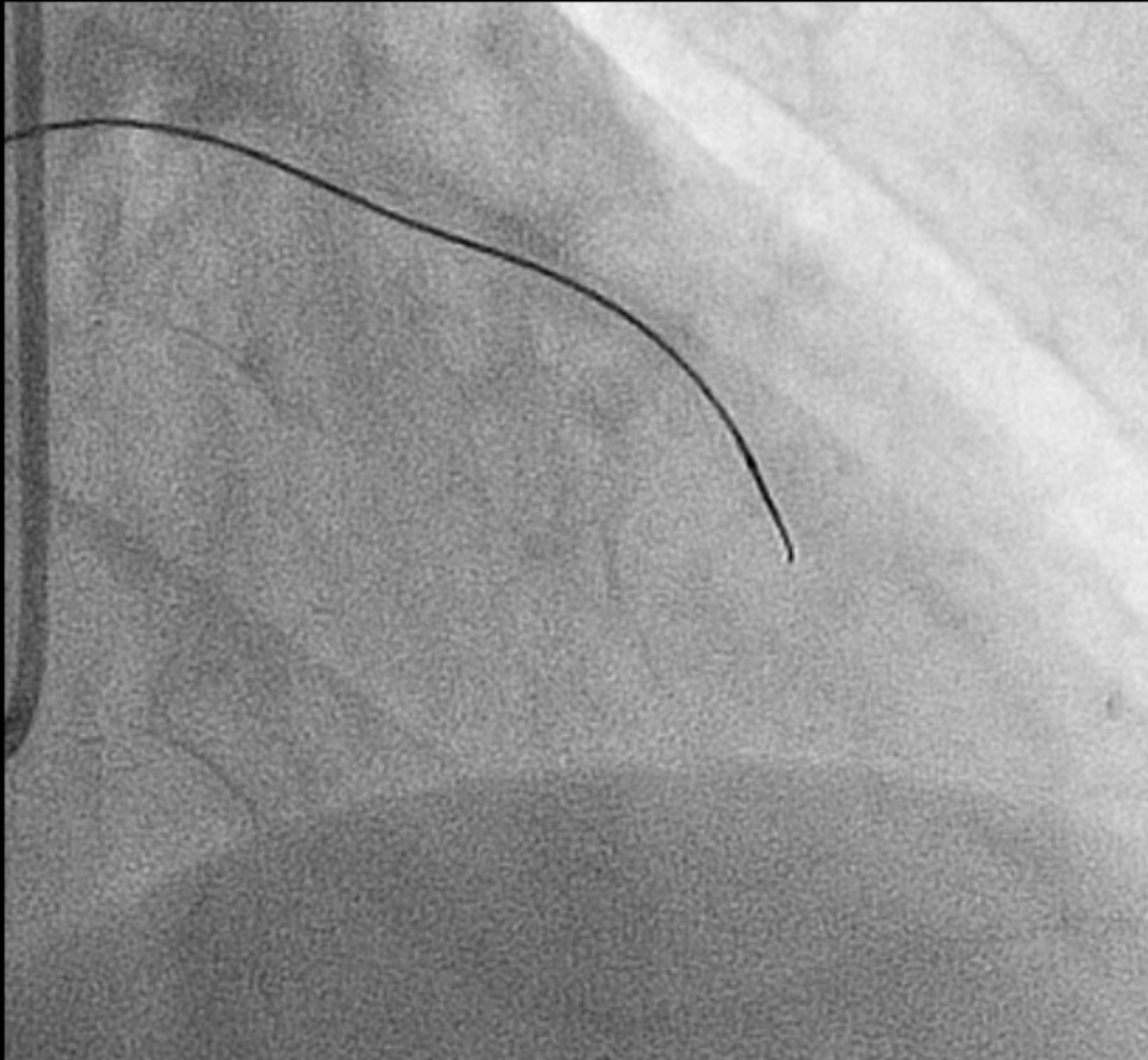


LAD-CTO

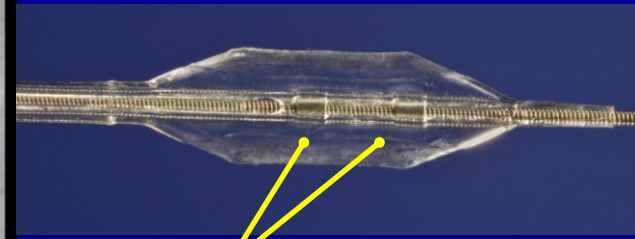
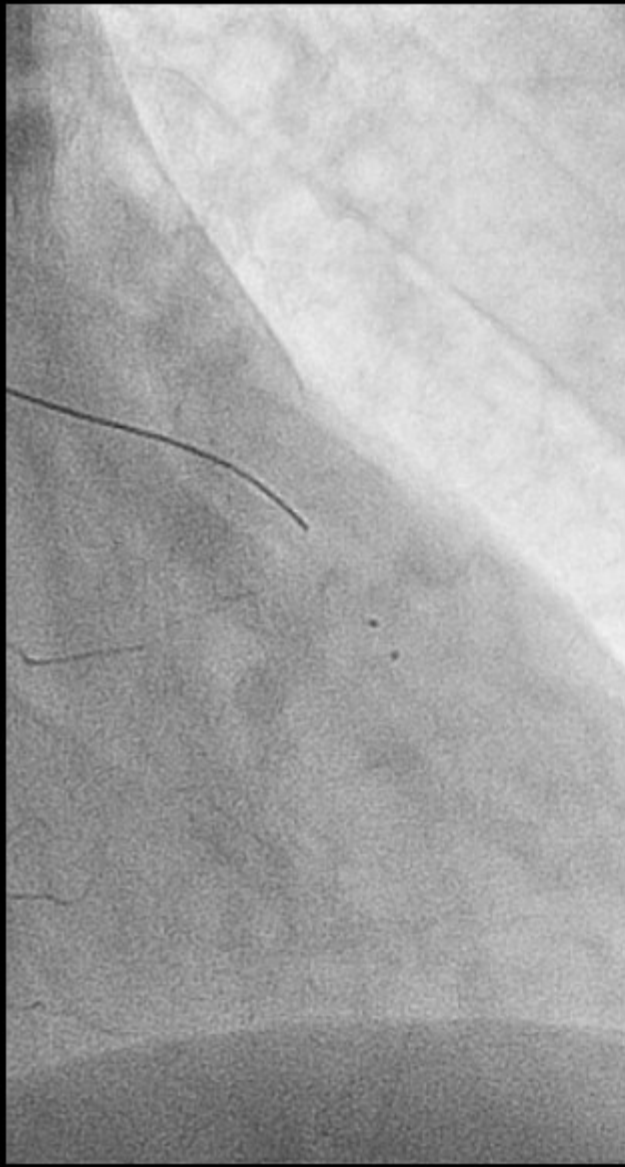




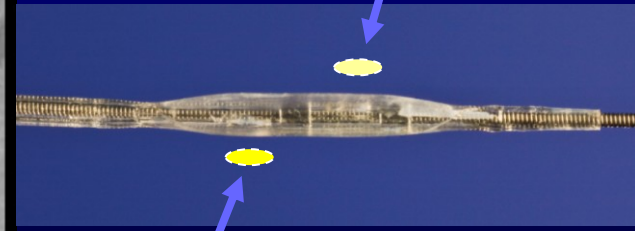
Başarısız paralel tel tekniği



Antegrade Corsair ve Conquest Pro tel



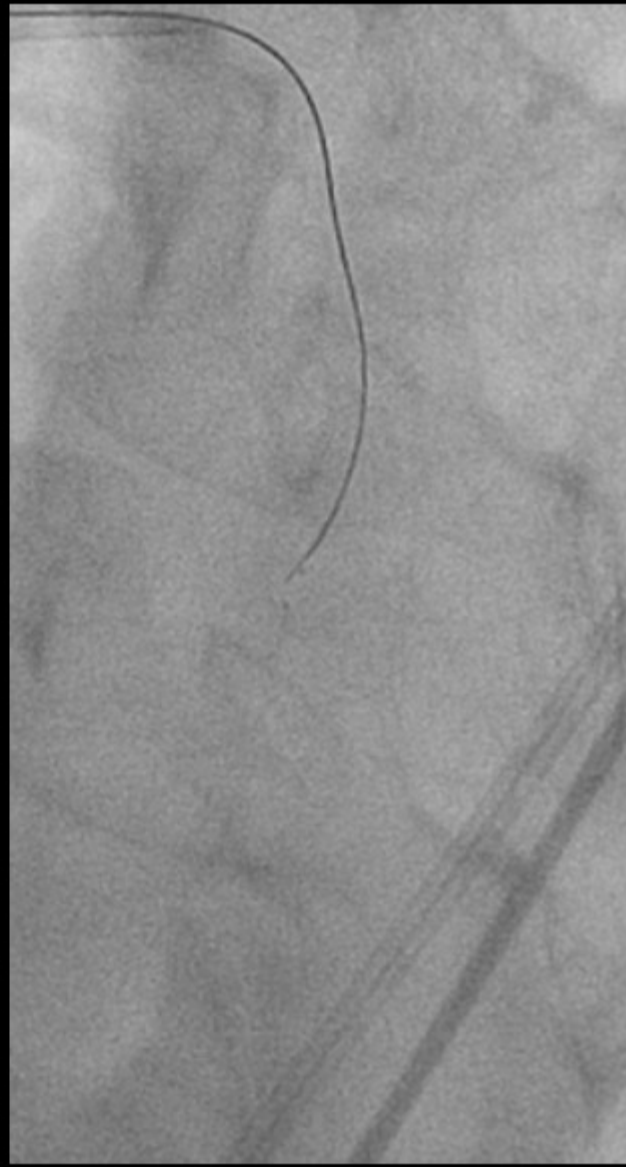
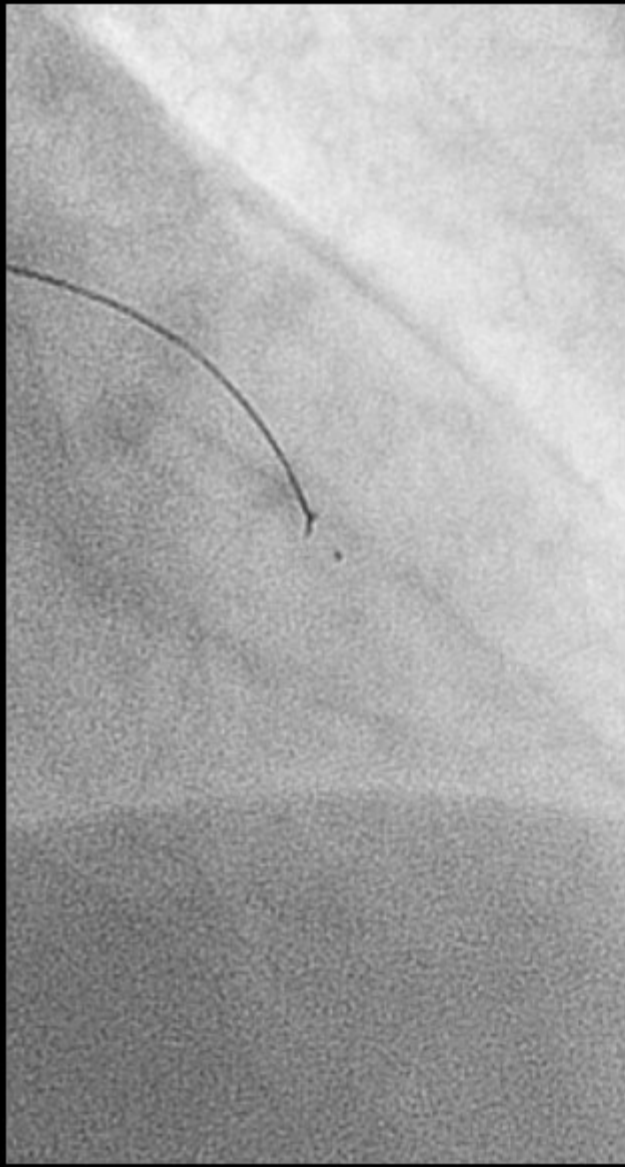
Markers



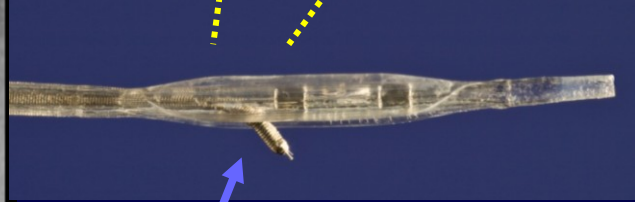
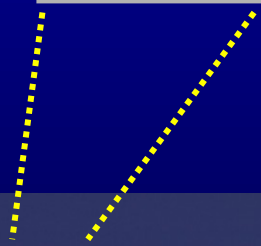
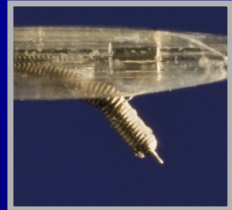
Distal Port

Proximal Port

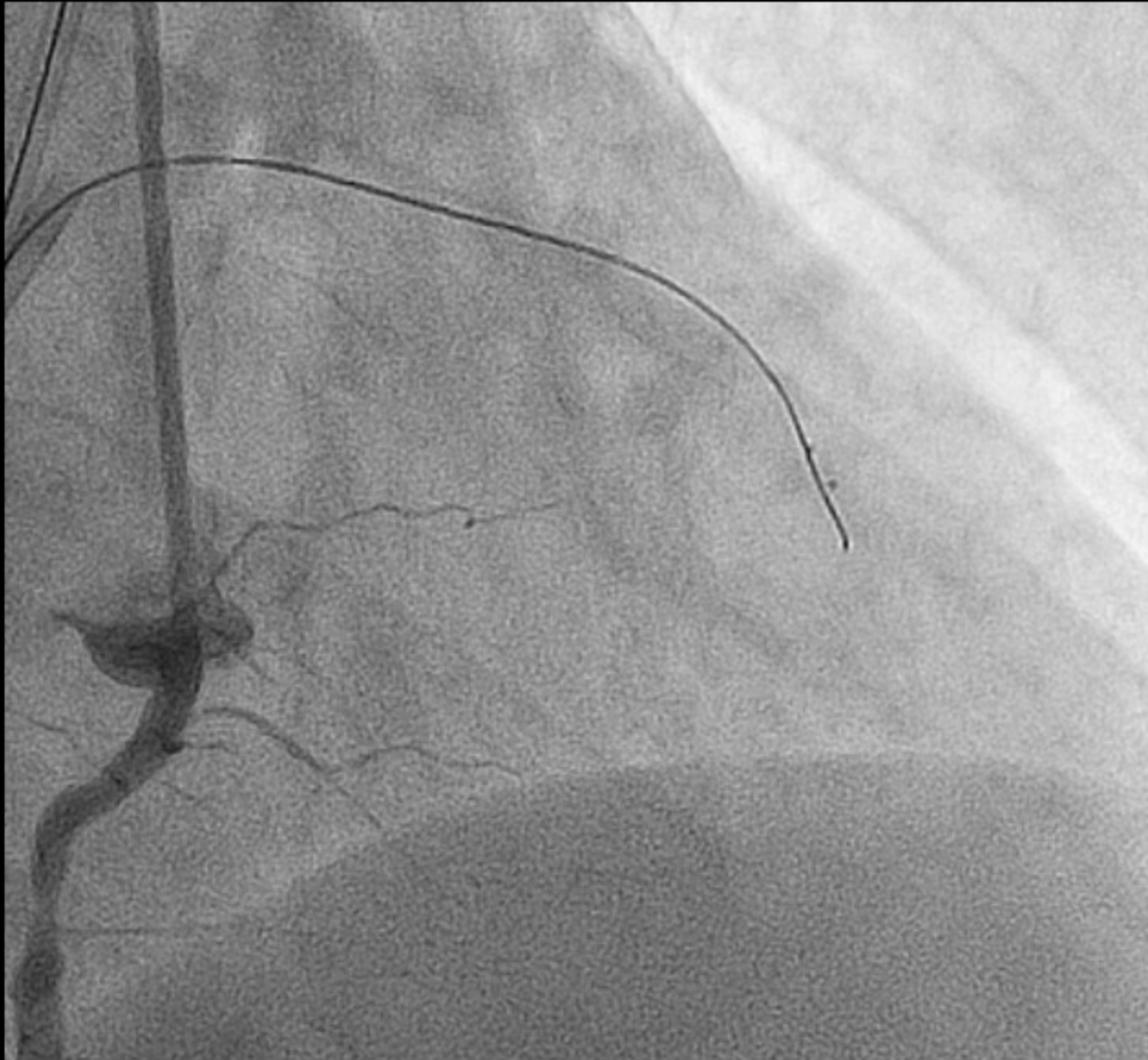
Stingray balon



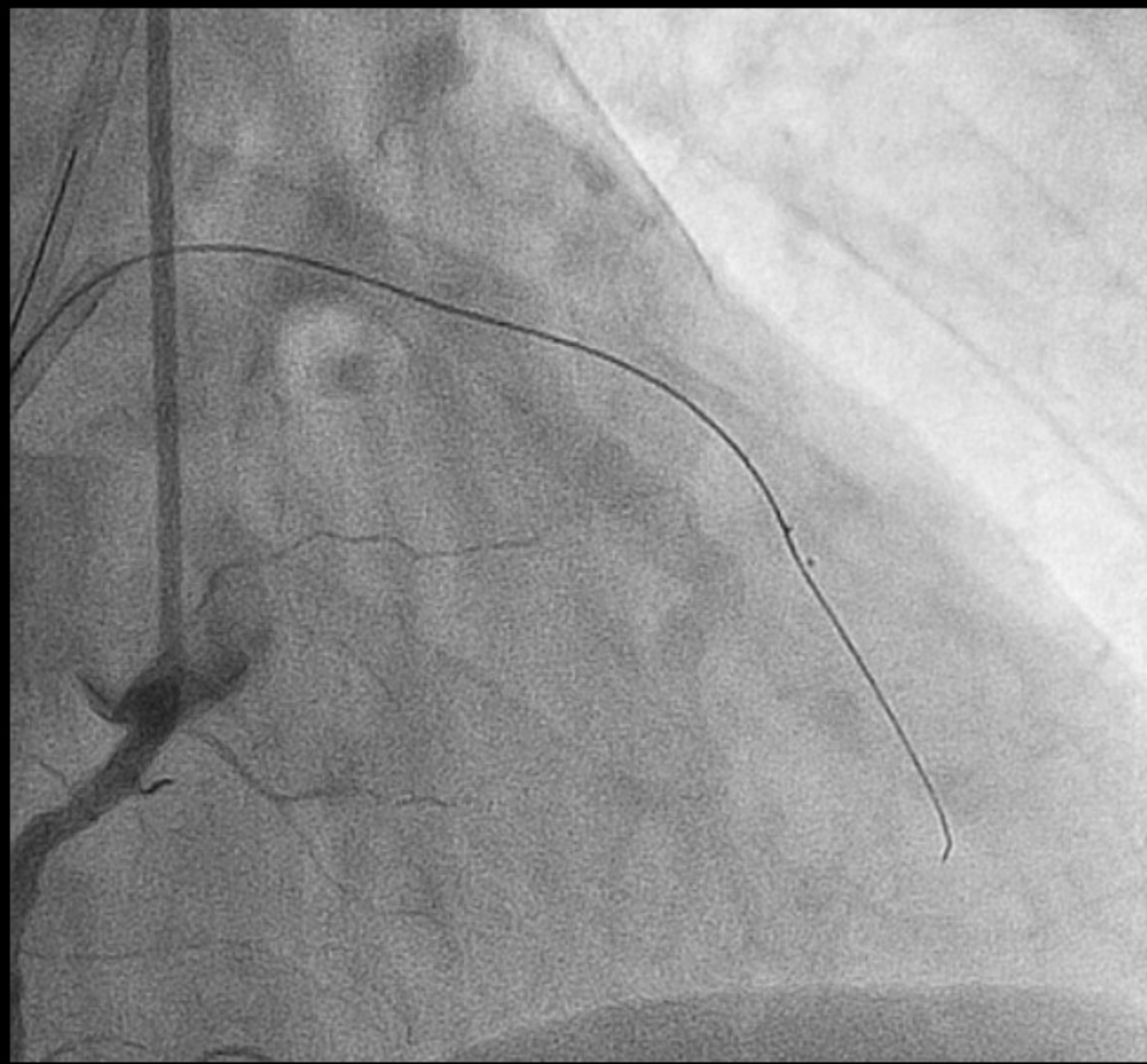
Re-entry wire



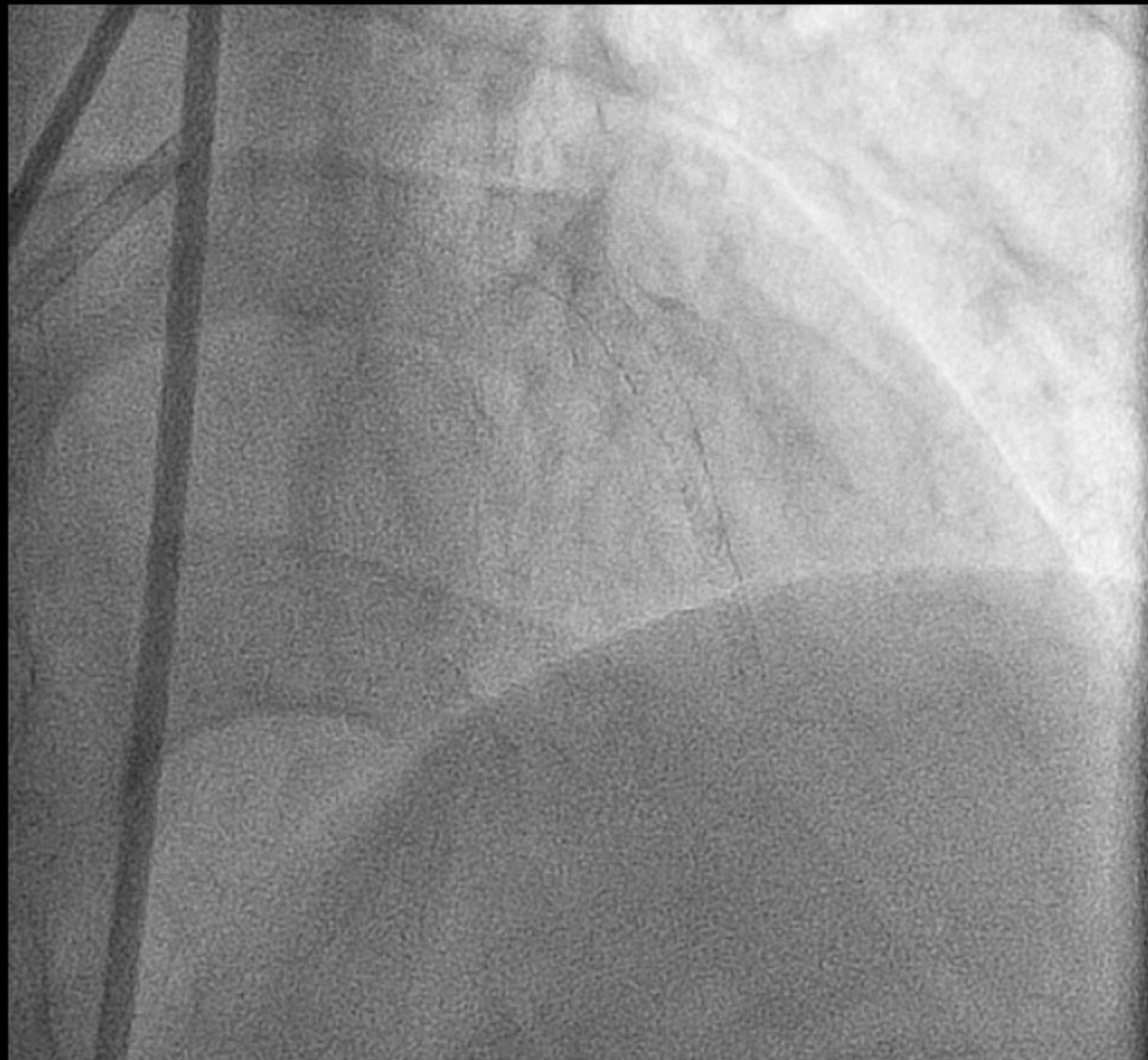
Proximal Port



Başarılı puncture, ancak tel ilerletilemiyor



Step down: Fielder XT ile başarılı geiş



Final Anjiogram