

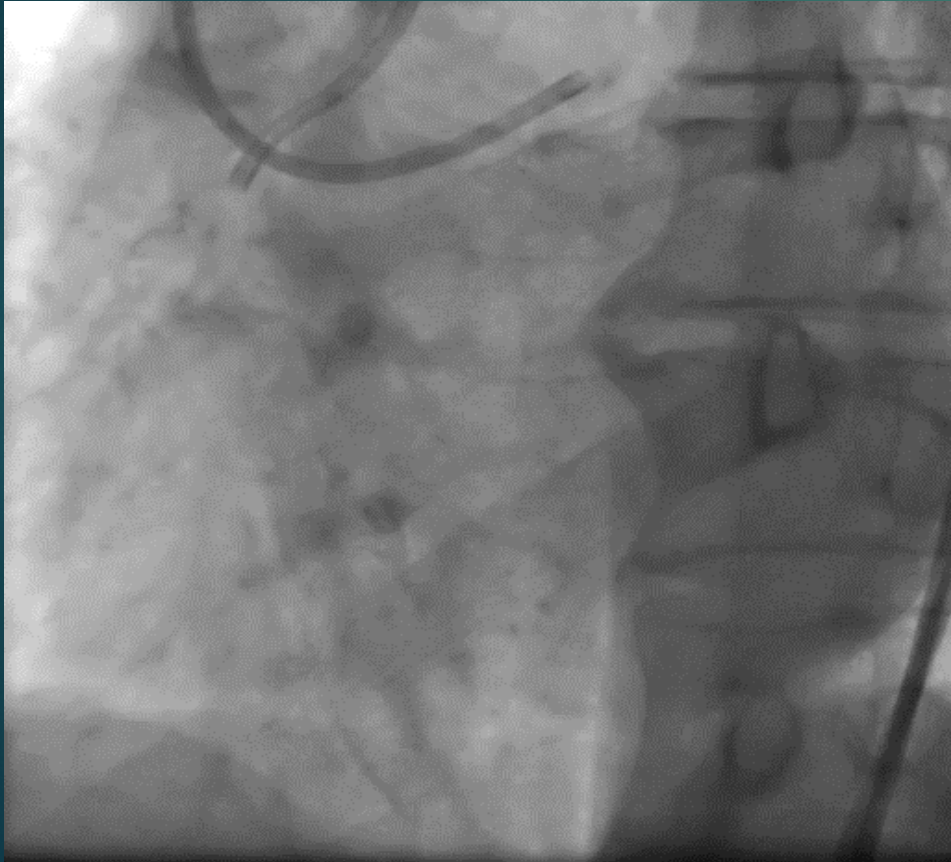


CTO Operatorunun Real Heyat Tecürbesi

DR. ELNUR ALIZADE

Sanal Dünya (Facebook, Instagram, Twitter..)

Before



After



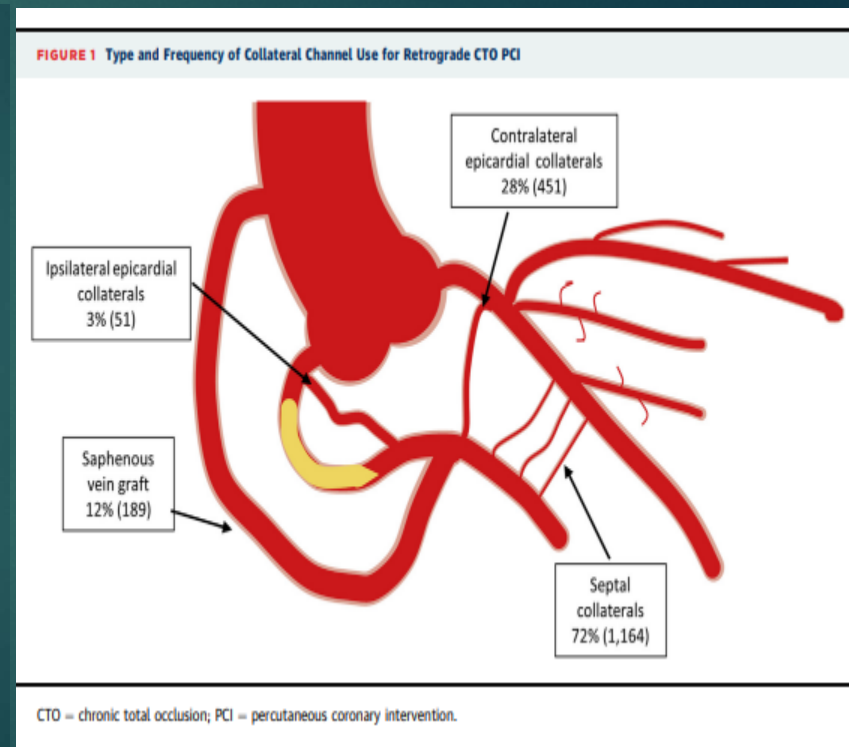
**ARADA NE BAŞ VERİR?
NELERE DİQQET EDEK?
NELER EDEK?
NELER ETMEYEK?**

Real (Gerçek) Dünya

- ▶ Görüntülerin İzlenmesi (vaxt, kontrast, prosedurun uğurlu neticesi)
- ▶ Kollateral Değerlendirilmesi(çetinlikler ve bunların helli)
- ▶ Antegrad mı? Retrograd mı?
- ▶ Hansı teller ve mikrokatataterler?(en çox istifade etiğim)
- ▶ Komplikasyonlar (niye oldu ve nece müalice edek)

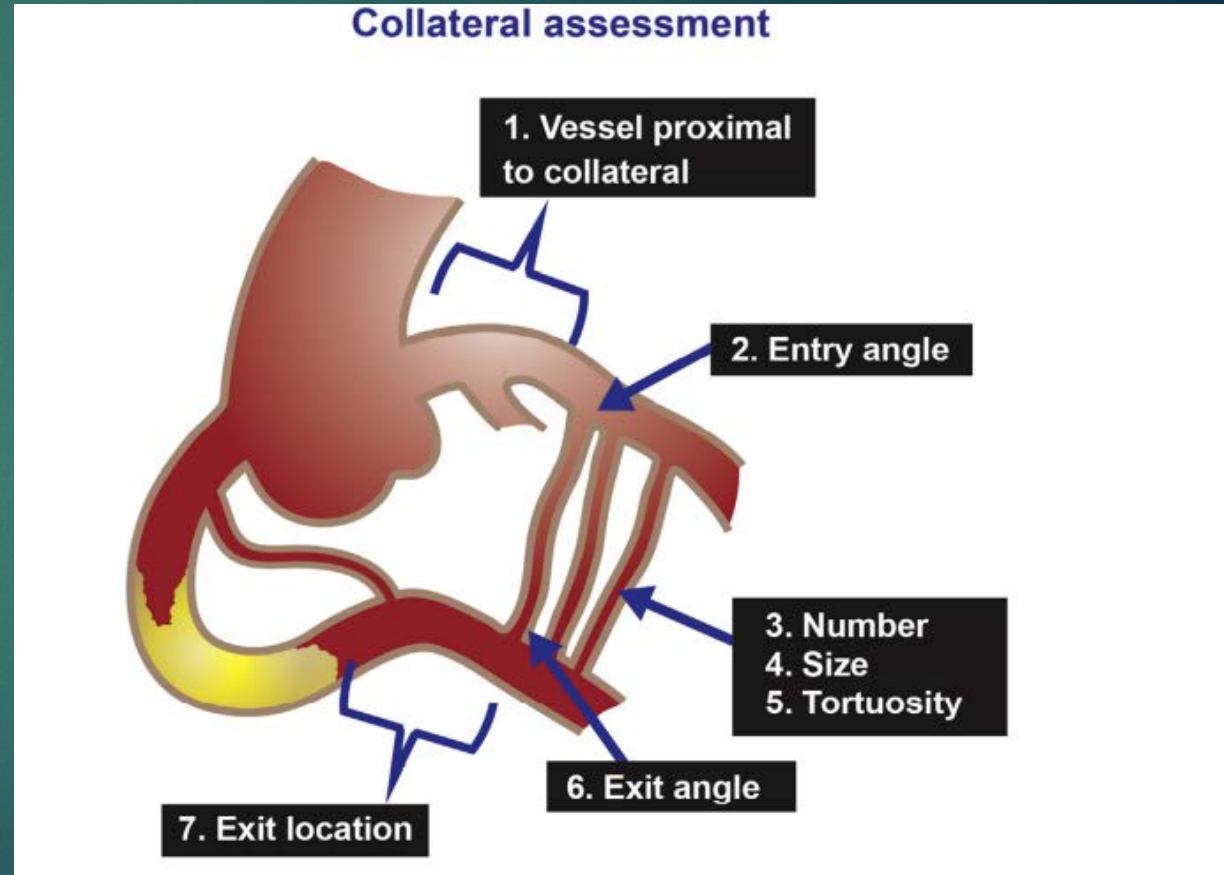
Kollateraller

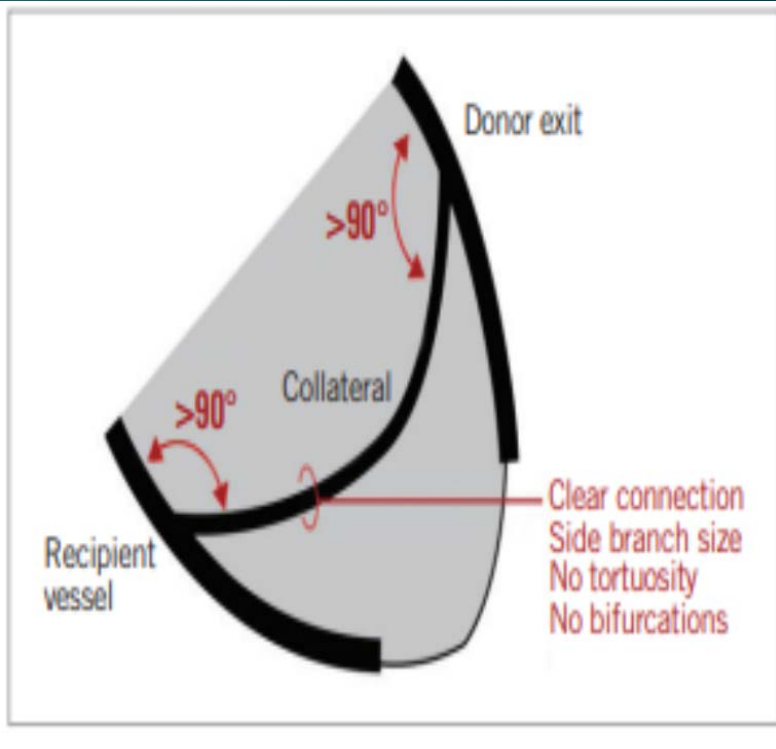
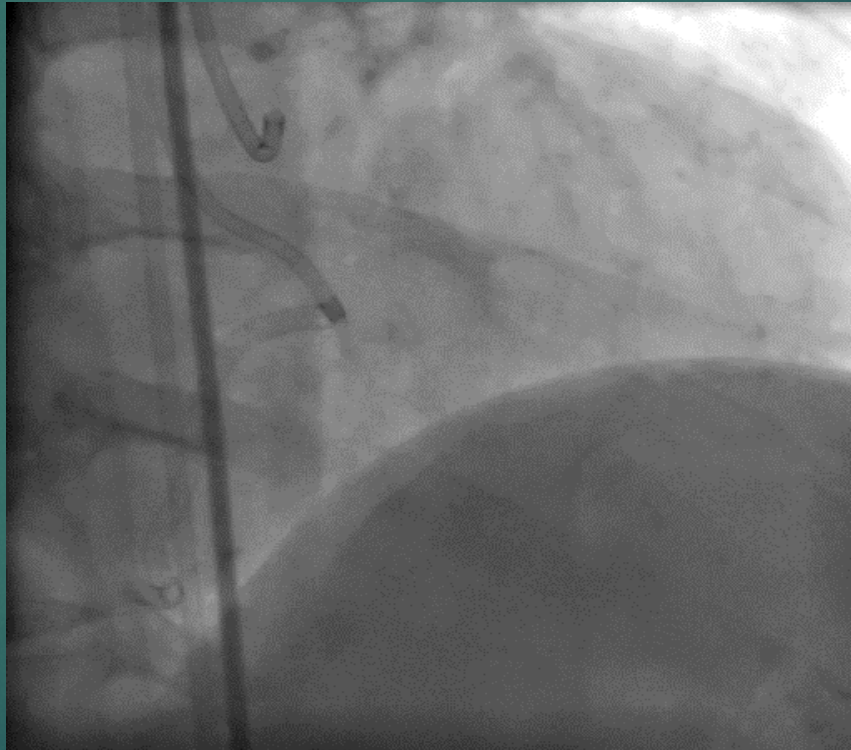
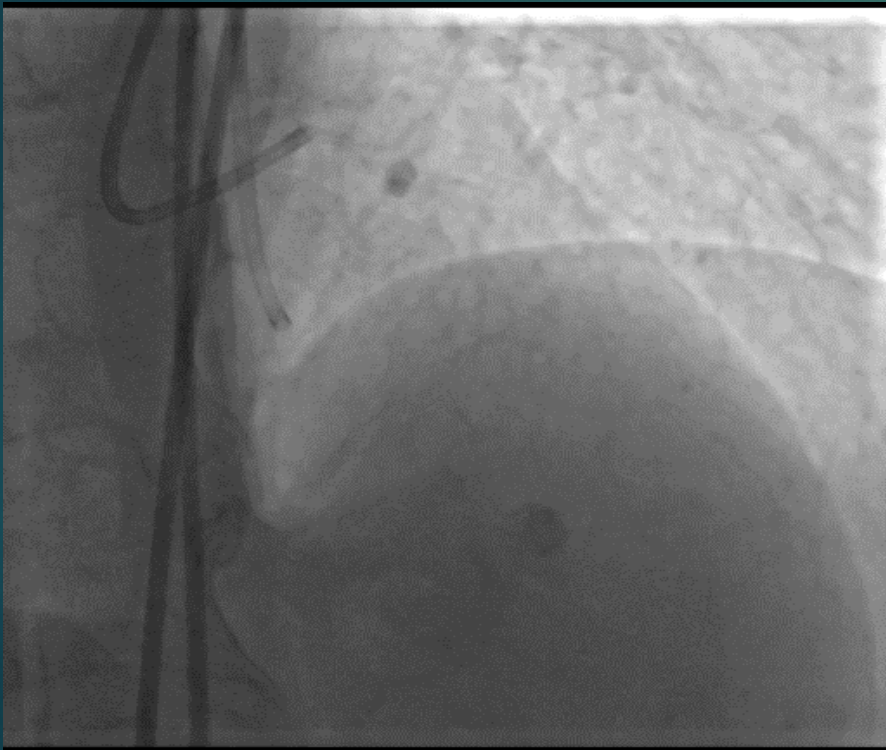
- ▶ Septal (%50-65)
- ▶ Epikardiyal (%25-38)
- Kontrilateral
 - ▶ Septal, PL, OM to PDA, atrial
- Ipsilateral
 - ▶ Septal to septal, LAD to left PDA, OM to OM
 - ▶ Dx to OM, Conus and Mariginal to RCA
- ▶ Greft (%5-13)



Kollateral deęerlendirilmesi

- 1- Kollateral proximalindeki damarın kalitesi
- 2-Giriş Açıısı (<90,>90)
- 3-Çapı (CCS sınıflaması)
- 4-Sayı
- 5-Tortuosite
- 6-Bifurkasyon
- 7-Distal damara çıkış açısı
- 8-Distal damara giriş yeri

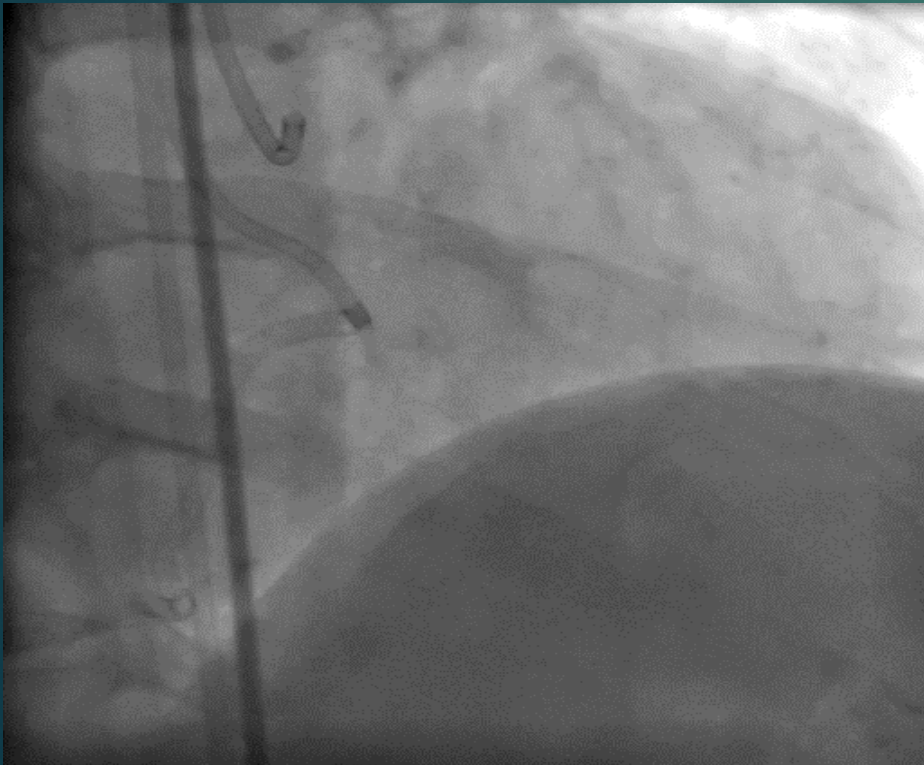




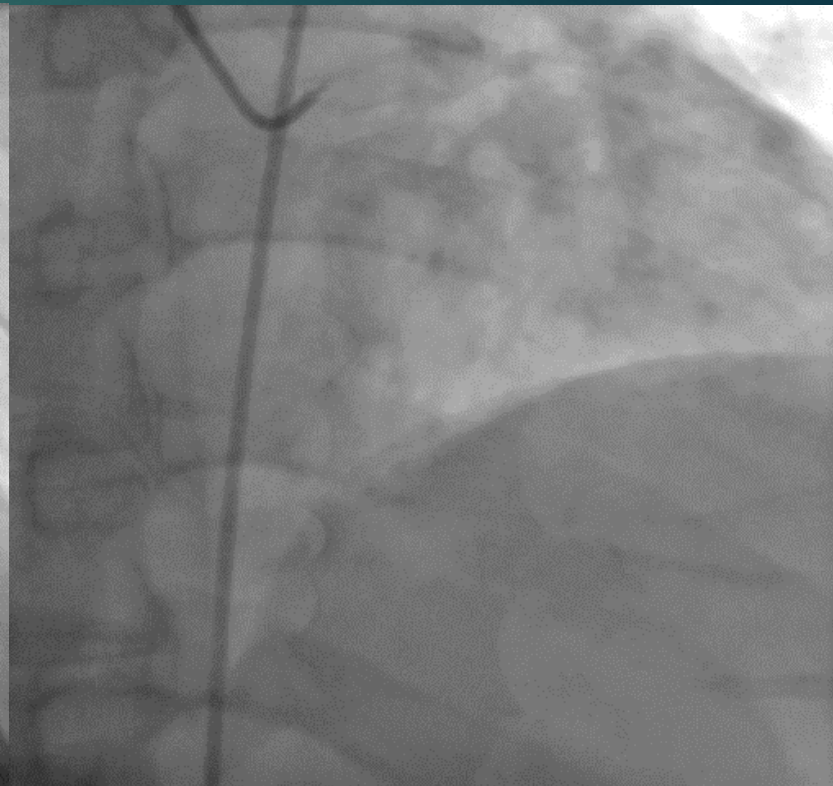
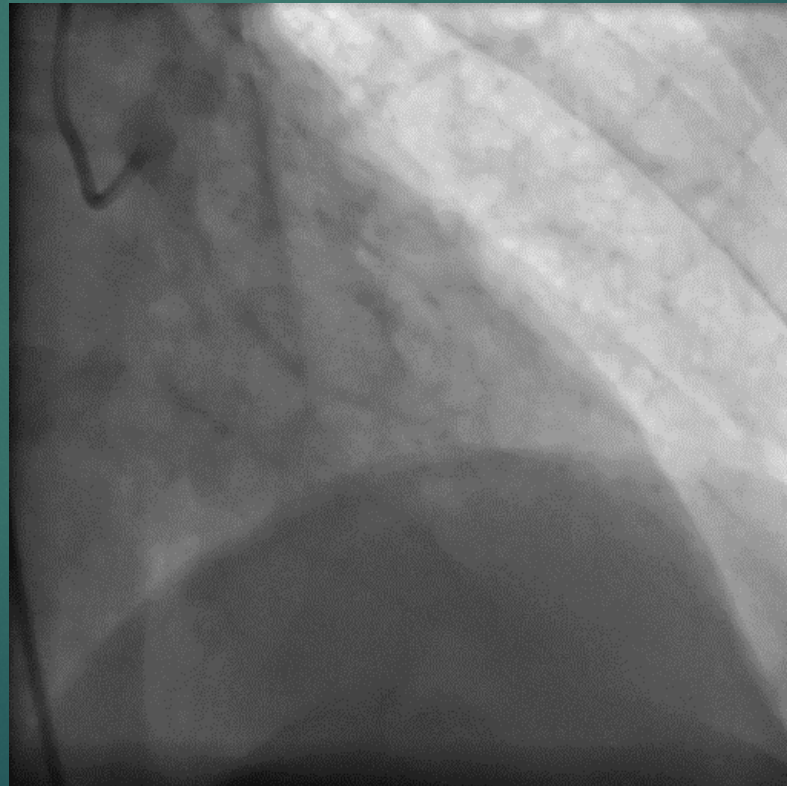
Septal Kollateral



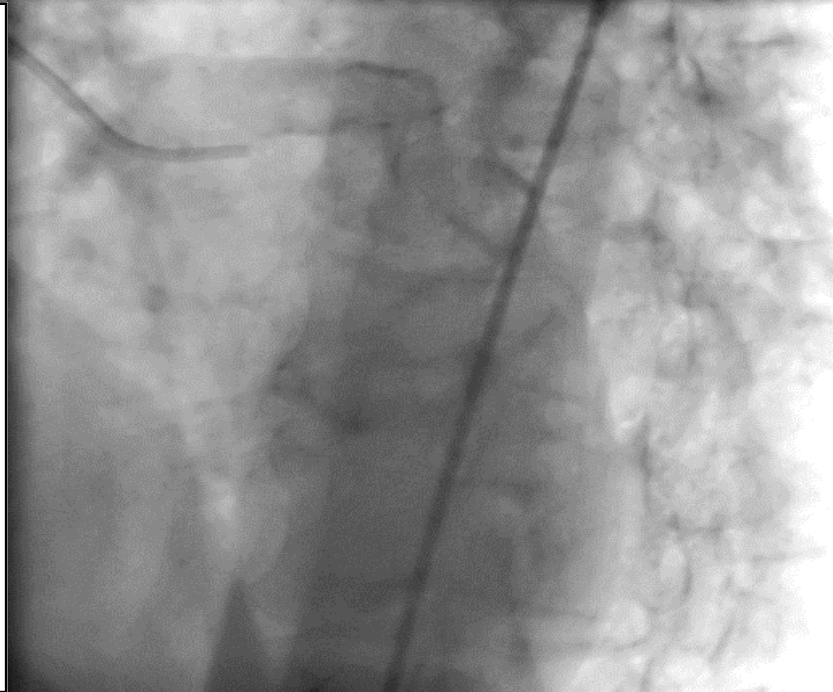
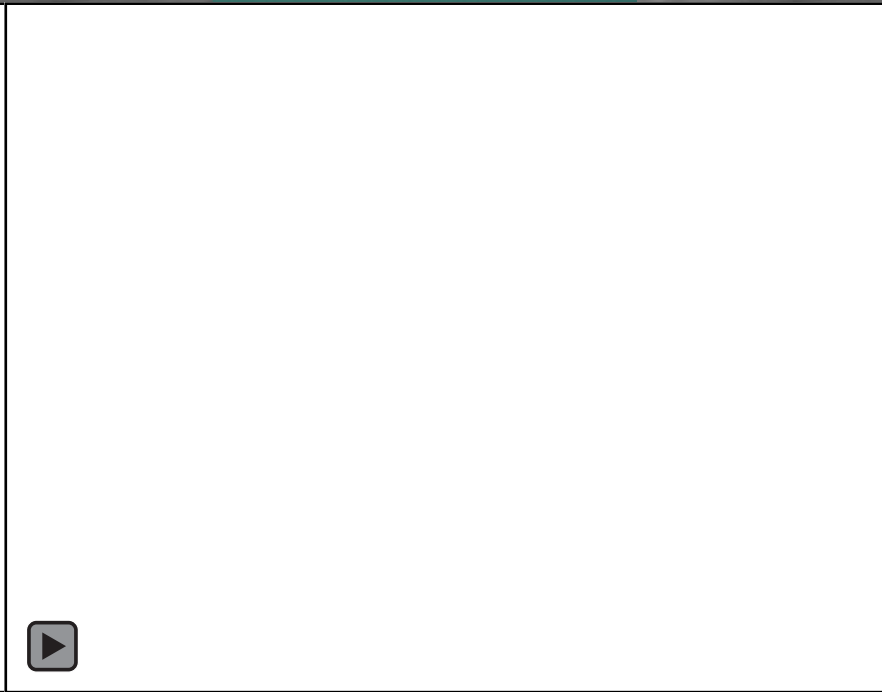
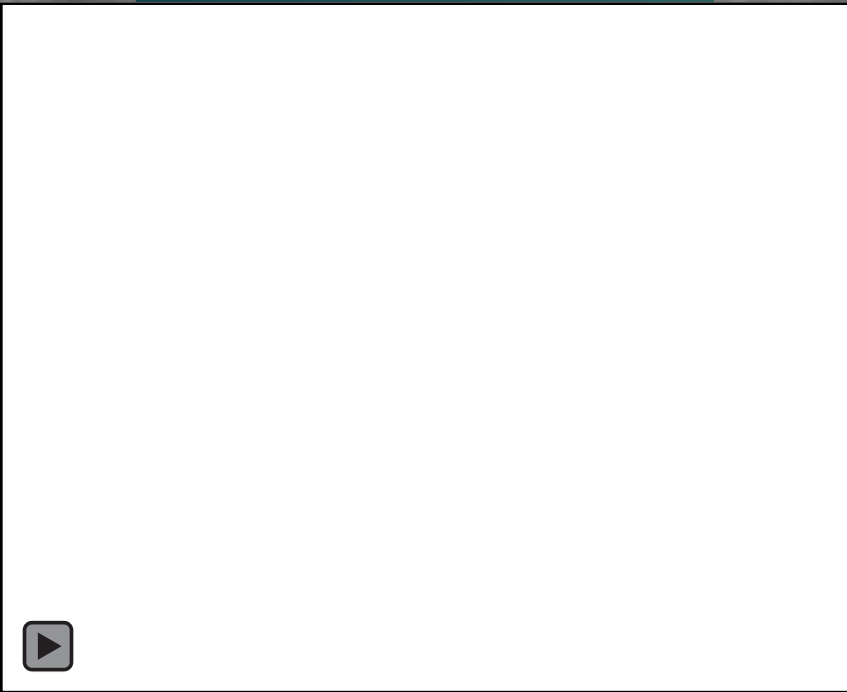
Septal Tortuosite yok



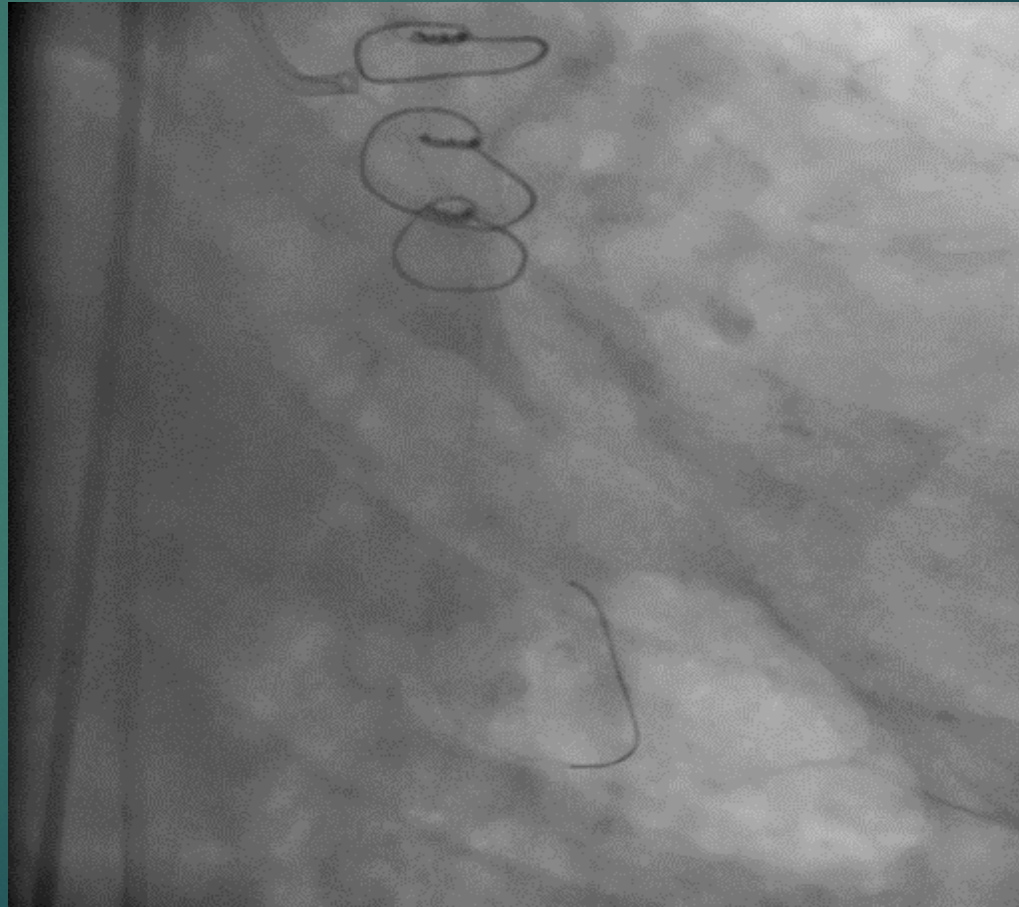
Septal Tortuosite var



Epikardial Kollateral

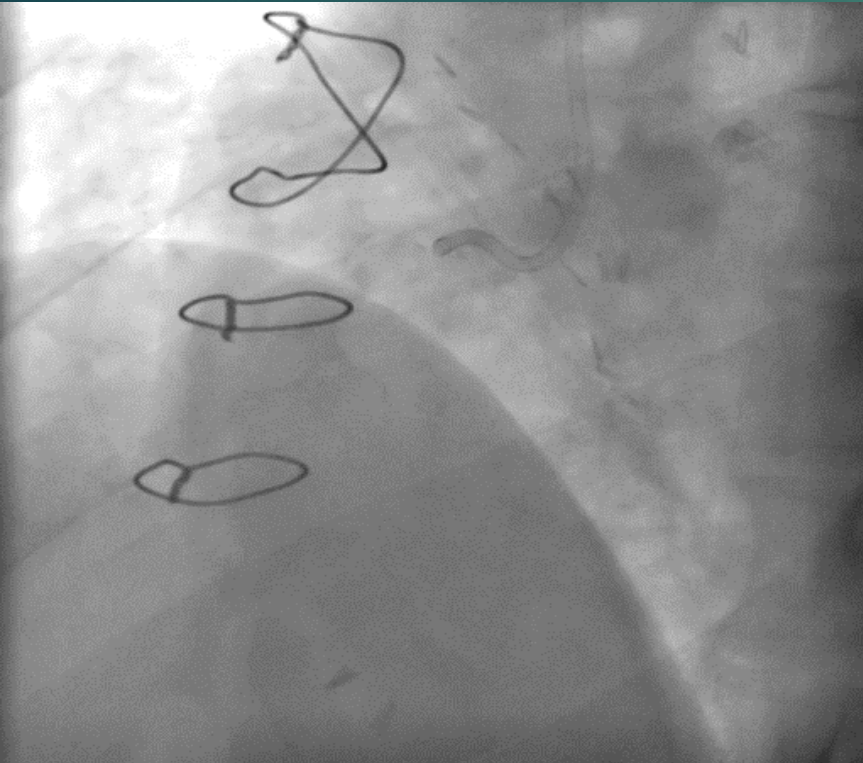


Safen greft Kollateral

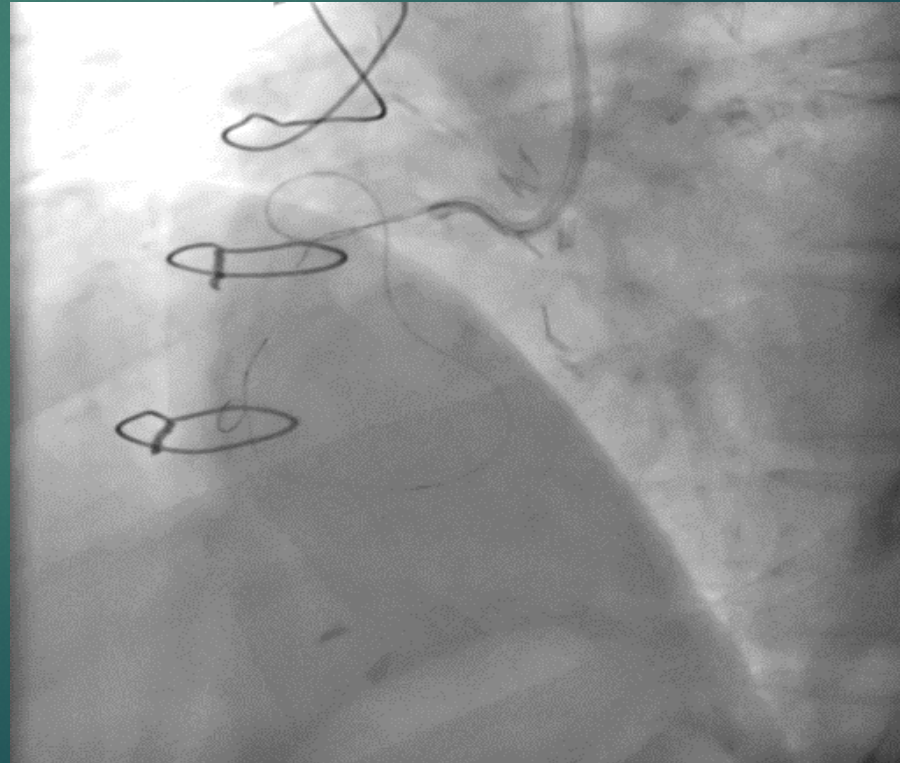


İpsilateral epikardial kollateral

Sol Amplatz- 7Fr



Pilot 50 geçiş



Antegrad mi? Retrograd mi?

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JACC STATE-OF-THE-ART REVIEW

Global Chronic Total Occlusion Crossing Algorithm

JACC State-of-the-Art Review



Dual injection

In-stent CTO

Yes No

Consider CTO PCI failure in the following conditions, unless the procedure is well advanced:
 Δ Procedural time >3 hours
 Δ Contrast load >4 x eGFR (ml)
 Δ Air Kerma >5 Gy

Proximal cap ambiguity?

No

Yes

AWE

Failure

CrossBoss™

Poor distal vessel quality?
Bifurcation at distal cap?

Yes

No

Antegrade techniques to resolve proximal cap ambiguity*

*Such as:
 Δ BASE technique
 Δ Scratch and Go technique
 Δ IVUS guided puncture

** Investment procedure refers to deferred stenting (during a second procedure) after subintimal plaque modification via the STAR technique and balloon dilatation

Failure

Interventional collaterals?

Yes

No

AWE

Failure

Retrograde approach

CTO length >20 mm?
Severe calcification?
Ambiguous vessel course?

No

Yes

RWE

Failure

Knuckle wire technique

Reverse CART

Possible as first line if CTO length >20 mm

ADR

Stingray System™

Failure

Investment procedure**: STAR+ POBA then deferred stenting

Bail-out strategy

Parallel wire technique

Wire-based ADR: mini-STAR

Failure to re-enter proximally

Consider strategy switch when appropriate

	Hybrid	Asia Pacific CTO Club	EuroCTO Club	CTO Club China	Japan CTO Club	Global
1. Dual angiography	+	+	+	+	+	+
1b. CTA		+		+		+
2. Careful angiographic review	+	+	+	+	+	+
ISR	No specific recommendation	+ (CrossBoss)	+ (CrossBoss)	+ (CrossBoss)	Antegrade	No specific recommendation; assess lesion characteristics and treat accordingly
3. Proximal cap ambiguity	+	+	+	+	+	+
3b. Solutions to proximal ambiguity	Retrograde	Retrograde, IVUS	Retrograde, IVUS, move the cap	Retrograde, IVUS, move the cap	Retrograde	IVUS, retrograde, move the cap
4. Poor distal vessel bifurcation distal cap	+ (retrograde)	+ (retrograde)	+ (retrograde)	+ (retrograde)		+ (retrograde)
5. Retrograde option	+	+	+	+	+	+
6. Antegrade wiring strategies	ADR for length ≥ 20 mm	AWE, parallel wiring Primary ADR for ambiguous CTO course, tortuous CTO segment, heavy calcification Secondary ADR: length ≥ 20 mm, prior failed attempt	AWE preferred; ADR possible as first line if length ≥ 20 mm	ADR preferred if severe diffuse distal disease and major side branch near landing zone	ADR or parallel wiring after AWE failure	AWE preferred
7. Retrograde	Ambiguous proximal cap, poor distal vessel + interventional collateral vessels	Ambiguous proximal cap (if IVUS fails), poor distal vessel + interventional collateral vessels	Ambiguous proximal cap, poor distal vessel + interventional collateral vessels	Ambiguous proximal cap + no or failed IVUS-guided approach + interventional collateral vessels	Reattempt, CTO length of ≥ 20 mm, and no stump + interventional collateral vessels	Ambiguous proximal cap, poor distal vessel + feasible retrograde option
7b. RDR preferred over RWE	Length ≥ 20 mm	Length ≥ 15 mm	Length ≥ 20 mm Severe calcification Ambiguous vessel course	Length ≥ 20 mm		Length ≥ 20 mm Severe calcification Ambiguous vessel course
7c. RDR preferred technique	Reverse CART	Contemporary reverse CART	Reverse CART	Reverse CART		Reverse CART

Cardiac Interventions Today - US Device Guide - Interventional CTO/Specialty Wires

Company Name	Product Name	Type	Diameter (inch)	Length (cm)	Tip Type	Coating Type (Hydrophilic or Hydrophobic)	Comments
Abbott	HT Cross-It 100XT	Tortuous anatomy	0.014	190,300	Straight, J	Hydrophilic	-
Abbott	HT Pilot 150	CTO	0.014	190,300	Straight, J	Hydrophilic	-
Abbott	HT Pilot 200	CTO	0.014	190,300	Straight, J	Hydrophilic	-
Abbott	HT Progress 120	CTO	0.014	190,300	Straight	Hydrophilic	-
Abbott	HT Progress 140T	CTO	0.014	190,300	Straight with taper	Hydrophilic	-
Abbott	HT Progress 200T	CTO	0.014	190,300	Straight with taper	Hydrophilic	-
Abbott	HT Progress 40	CTO	0.014	190,300	Straight	Hydrophilic	-
Abbott	HT Progress 80	CTO	0.014	190,300	Straight	Hydrophilic	-
Abbott	HT Standard	Challenging lesions	0.014	190,300	Straight, J	Hydrophilic or hydrophobic	-
Abbott	HT Wiggle	Specialty wire	0.014	190,300	Straight	Hydrophobic	-
Asahi Intecc USA, Inc.	Confianza 9	Tortuous anatomy	0.014	180,300	Straight with taper	Hydrophobic	-
Asahi Intecc USA, Inc.	Confianza Pro 12	Tortuous anatomy	0.014	180,300	Straight with taper	Hybrid	-
Asahi Intecc USA, Inc.	Confianza Pro 9	Tortuous anatomy	0.014	180,300	Straight with taper	Hybrid	-
Asahi Intecc USA, Inc.	Extension 165	Extension wire	0.014	165	-	-	-
Asahi Intecc USA, Inc.	Fielder XT	Tortuous anatomy	0.014, tapering to 0.009	190,300	Straight	Hydrophilic	-
Asahi Intecc USA, Inc.	Fielder XT-A	Composite core, coil, polymer jacket, tapered	0.014, tapering to 0.010	190,300	Straight	Hydrophilic	-
Asahi Intecc USA, Inc.	Fielder XT-R	Composite core, coil, polymer jacket, tapered	0.014	190,300	Straight	Hydrophilic	-
Asahi Intecc USA, Inc.	Gaia First	CTO, composite core, coil, tapered	0.014, tapering to 0.010	190,300	1-mm preshaped	Hydrophilic; hydrophobic tip	-
Asahi Intecc USA, Inc.	Gaia Second	CTO, composite core, coil, tapered	0.014, tapering to	190,300	1-mm preshaped	Hydrophilic; hydrophobic tip	-

Company Name	Product Name	Type	Diameter (inch)	Length (cm)	Tip Type	Coating Type (Hydrophilic or Hydrophobic)	Comments
			0.011				
Asahi Intecc USA, Inc.	Gaia Third	CTO, composite core, coil, tapered	0.014, tapering to 0.012	190, 300	1-mm preshaped	Hydrophilic; hydrophobic tip	-
Asahi Intecc USA, Inc.	Intermediate	CTO, coil	0.014	180, 300	Straight, J	Hydrophobic	-
Asahi Intecc USA, Inc.	Miracle 12	CTO, coil	0.014	180	Straight	Hydrophobic	-
Asahi Intecc USA, Inc.	MiracleBros 3	Tortuous anatomy	0.014	180, 300	Straight	Hydrophobic	-
Asahi Intecc USA, Inc.	MiracleBros 4.5	Tortuous anatomy	0.014	180, 300	Straight	Hydrophobic	-
Asahi Intecc USA, Inc.	MiracleBros 6	Tortuous anatomy	0.014	180, 300	Straight	Hydrophobic	-
Asahi Intecc USA, Inc.	Ultimate Bros 3	CTO, coil	0.014	180, 300	Straight, J	Hydrophilic; hydrophobic tip	-
BD Interventional	Porter	Stainless steel	0.014	195, 300	3-, 6-, 9-, 12-gauge tip stiffness	Hydrophilic	Hydrophilic guidewire in various levels of tip stiffness, providing exceptional trackability, steerability, visibility, and support for delivery of therapeutic devices
Boston Scientific Corporation	Fighter Guidewire	Stainless steel polymer jacket	0.014, tapering to 0.009	190, 300	Core-to-tip	Hydrophilic	Clear polymer jacket over spring coil; part of the Sentai guidewires
Boston Scientific Corporation	Hornet 10 Guidewire	Stainless steel	0.014, tapering to 0.008	190, 300	Core-to-tip	Hydrophilic	10-gauge tip load; part of the Sentai guidewire family
Boston Scientific Corporation	Hornet 14 Guidewire	Stainless steel	0.014, tapering to 0.008	190, 300	Core-to-tip	Hydrophilic	14-gauge tip load; part of the Sentai guidewire family
Boston Scientific Corporation	Judo 1 Guidewire	Stainless steel	0.014, tapering to 0.008	190, 300	Core-to-tip	Hydrophilic	Part of the Sentai guidewires; navigation wire with 1:1 torque and flexible distal shaft
Boston Scientific Corporation	Judo 3 Guidewire	Stainless steel	0.014, tapering to 0.008	190, 300	Core-to-tip	Hydrophilic	3-gauge tip load; navigation wire with 1:1 torque and flexible distal shaft; part of the Sentai guidewire family
Boston Scientific	Judo 6 Guidewire	Stainless steel	0.014,	190, 300	Core-to-tip	Hydrophilic	6-gauge tip load; navigation wire with 1:1 torque and

Company Name	Product Name	Type	Diameter (inch)	Length (cm)	Tip Type	Coating Type (Hydrophilic or Hydrophobic)	Comments
			tapering to 0.008				flexible distal shaft; part of the Sentai guidewire family
Boston Scientific Corporation	PT Graphix Intermediate Guidewire	Unibody stainless steel	0.014	182, 300	Intermediate/polymer	Hydrophilic	Moderate rail support
Boston Scientific Corporation	PT Graphix Standard	Stainless steel	0.014	182, 300	Core-to-tip	Hydrophilic	–
Boston Scientific Corporation	PT2 Moderate Support Guidewire	Linear elastic nitinol	0.014	185, 300	Intermediate/polymer	Hydrophilic	Moderate rail support
Cordis	Shinobi	Stainless steel	0.014	180, 300	Polymer wrapped	Hydrophobic	Core-to-tip lighter-weight wire with a polymer-wrapped tip to access highly stenosed lesions
Cordis	Shinobi Plus	Stainless steel	0.014	180, 300	Polymer wrapped	Hydrophobic	Core-to-tip heavier-weight wire with a polymer-wrapped tip to access highly stenosed lesions
Medtronic	ProVia 12	Stainless steel	0.014	180, 300	12-gauge tip stiffness	Both hydrophilic and silicone	ProVia 9 and 12 with a tapered tip to 0.009 inch
Medtronic	ProVia 3	Stainless steel	0.014	180, 300	3-gauge tip stiffness	Both hydrophilic and silicone	ProVia with Accu-Core technology for difficult lesions
Medtronic	ProVia 6	Stainless steel	0.014	180, 300	6-gauge tip stiffness	Both hydrophilic and silicone	ProVia with Accu-Core technology for difficult lesions
Medtronic	ProVia 9	Stainless steel	0.014	180, 300	9-gauge tip stiffness	Both hydrophilic and silicone	ProVia 9 and 12 with a tapered tip to 0.009 inch
Teleflex	PiggyBack Wire Converter	Polymer catheter wire converter	0.035 (OD)	145	Radiopaque marker embedded in distal tip	Hydrophilic	Wire converter with sliding lock securely fastens onto any standard 0.014-inch wire and converts it to a 0.035-inch wire platform
Teleflex	R350 Guidewire	Externalization wire	0.013	350	Nitinol core-to-tip; gold-plated tungsten coil; straight tip	PTFE (proximal: 150 cm); hydrophilic (distal: 200 cm)	–
Teleflex	Raider Guidewire	Specialty wire	0.014	200, 300	Stainless steel core-to-tip; 10-cm platinum coil; straight tip	PTFE (proximal); hydrophilic (distal)	Black polymer jacket covering the coil tip
Terumo Interventional Systems	Runthrough NS Hypercoat	Stainless steel proximal shaft/nitinol distal tip	0.014	180 (can be extended), 300	Straight (shapeable) nitinol	Hydrophilic	Enhanced hydrophilic guidewire for tortuous, distal, tight stenotic complex lesions

mikrokaterler

Cardiac Interventions Today - US Device Guide - Microcatheters

Company Name	Product Name	Type of Catheter Construction	Proximal Size (F)	Middle Size (F)	Distal Size (F)	Catheter Working Length (cm)	Catheter Endhole ID (inch)	Recommended Guidewire Size (inch)	Radiopaque Tip (Yes/No)	Hydrophilic Coating (Yes/No)
Abbott (manufactured by OrbusNeich)	Teleport Control Microcatheter	Stainless steel braid and coil with outer nylon Pebax jacket	2.7	-	2.1	135, 150	0.0157	0.014	Yes	Yes
Abbott (manufactured by OrbusNeich)	Teleport Microcatheter	Stainless steel braid and coil with outer nylon Pebax jacket	2.6	-	2.0	135, 150	0.0157	0.014	Yes	Yes
Acrostak	M-Cath	Stainless steel covered with blue Teflon (PTFE)	2.1	2.1	2.25	135	0.016	0.014	Yes	Yes
Asahi Intecc USA, Inc.	Asahi Caravel	Stainless steel braided	2.6	1.9	1.4	135, 150	-	0.014	Yes, tungsten powder 5-mm tip	Yes
Asahi Intecc USA, Inc.	Asahi Corsair/Corsair Pro	Stainless steel braided	2.8	2.6	1.3	135, 150	-	0.014	Yes, tungsten powder 5-mm tip	Yes
Asahi Intecc USA, Inc.	Tornus	Stainless steel braided	3.3	2.1	1.8	135	-	0.014	Yes	No
Asahi Intecc USA, Inc.	Tornus 88 Flex	Stainless steel braided	4.1	2.6	2.1	135	-	0.014	Yes	No
Baylis Medical Company, Inc.	ProTrack Microcatheter	Coiled stainless steel, PTFE, Pebax	2.7	2.7	2.7	145	0.022	Up to 0.021	Yes	No
Baylis Medical Company, Inc.	ProTrack Microcatheter	Coiled stainless steel, PTFE, Pebax	2.9	2.9	2.9	145	0.025	Up to 0.024	Yes	No
Boston Scientific Corporation	Mamba 135 Microcatheter	Coil	2.9	2.4	1.4	135	0.018	0.014	Yes	Yes
Boston Scientific Corporation	Mamba Flex 135 Microcatheter	Coil	2.9	2.1	1.4	135	0.018	0.014	Yes	Yes
Boston Scientific Corporation	Mamba Flex 150 Microcatheter	Coil	2.9	2.1	1.4	150	0.018	0.014	Yes	Yes
Cook Medical	Cantata 2.5	Braided stainless steel, PTFE, Pebax	2.5	2.5	2.5	100, 110, 135, 150	0.021	0.018 (maximum)	Yes	Yes
Cook Medical	Cantata 2.8	Braided stainless steel, PTFE, Pebax	2.8	2.8	2.8	100, 110, 135, 150	0.025	0.021 (maximum)	Yes	Yes
Cook Medical	Cantata 2.9	Braided stainless steel, PTFE, Pebax	2.9	2.9	2.9	100, 110, 135, 150	0.027 (0.69 mm)	0.025 (maximum)	Yes	Yes
Merit Medical	SwiftNinja Steerable	Tungsten-braided shaft	2.9 (0.97)	2.9 (0.97)	2.4	125	0.021 (0.54)	0.018	Yes, two	Yes

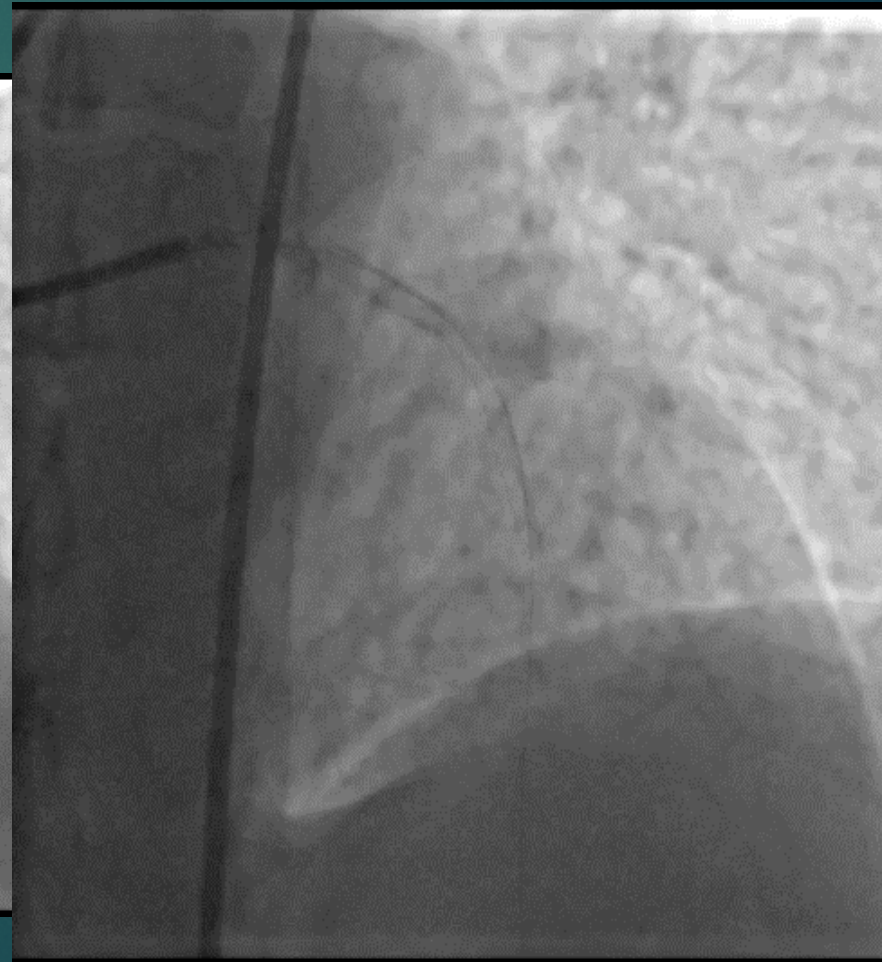
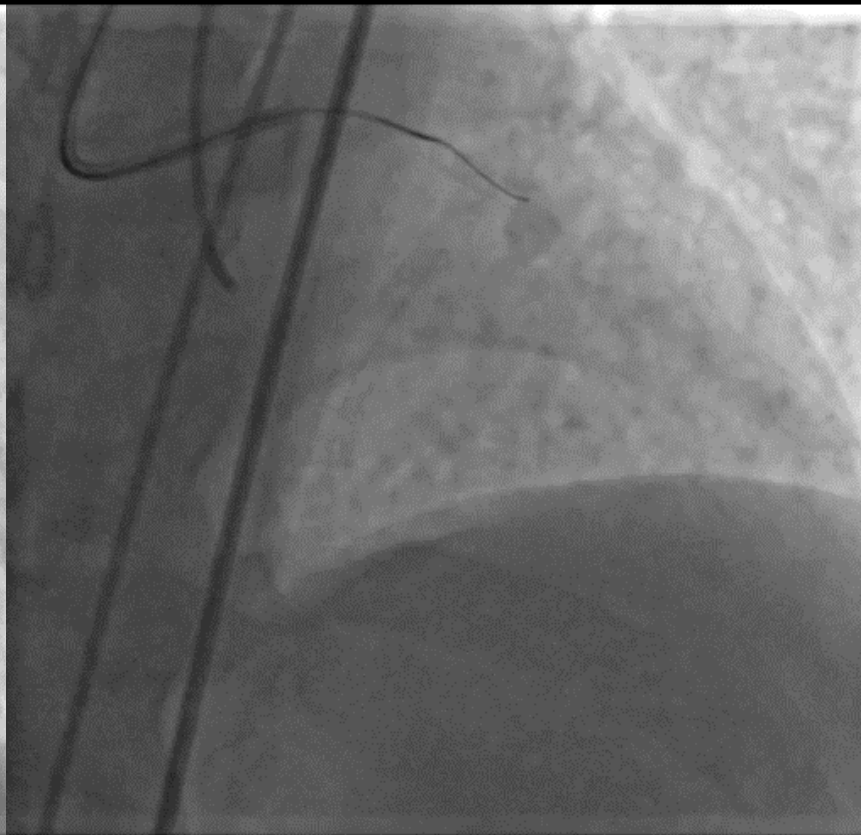
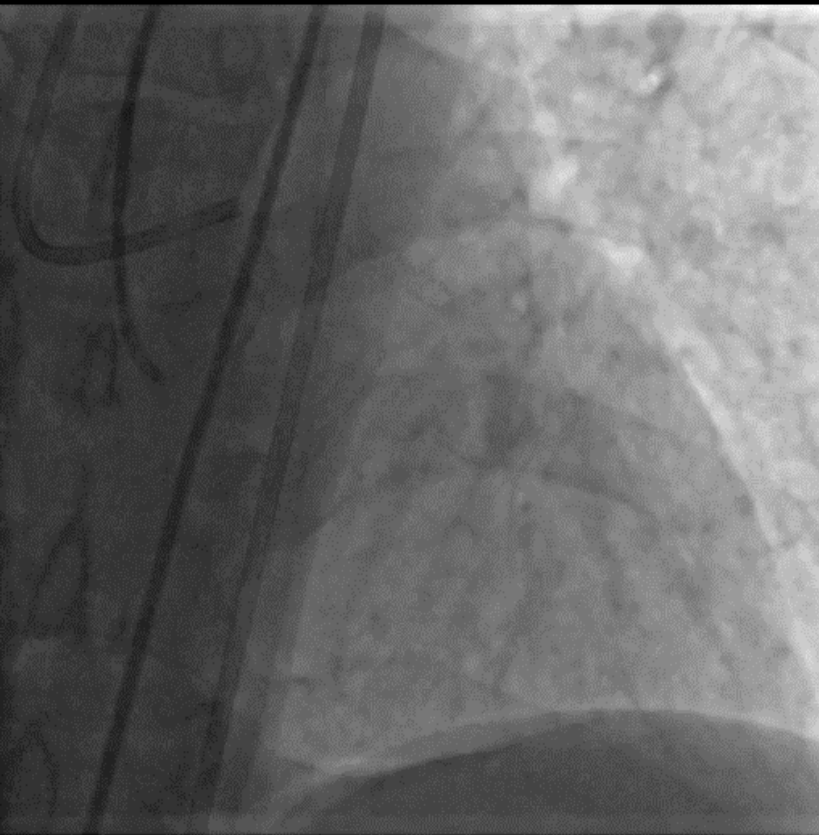
Company Name	Product Name	Type of Catheter Construction	Proximal Size (F)	Middle Size (F)	Distal Size (F)	Catheter Working Length (cm)	Catheter Endhole ID (inch)	Recommended Guidewire Size (inch)	Radiopaque Tip (Yes/No)	Hydrophilic Coating (Yes/No)
Systems, Inc.	Coronary Microcatheter		mm)	mm)	(0.80 mm)		mm)		markerbands	
Millar, Inc.	Mikro-Cath	Nylon tube	2.3	-	3.5	120	-	Guide catheter used for delivery	No	No
Reflow Medical, Inc.	Wingman14C Crossing Catheter	Braided catheter with extendable beveled tip	2.7	2.7	2.7	-	-	0.014	Yes	Yes
Teleflex	Minnie Support Catheter 0.014	Polymer	3.1	2	1.6	135, 150	-	0.014	No; three radiopaque marker bands near distal tip	Yes
Teleflex	SuperCross Microcatheter OTW - 0.014 Angled Tips: 45°, 90°, 120°, and 90° Extended Tip	Dual coil design, platinum/tungsten coil tip	3.2	-	2.4	130, 150	0.017	0.014	Yes, platinum/tungsten coil tip	Yes
Teleflex	SuperCross Microcatheter OTW - 0.014 Straight and Flexible Tip	Braided	2.5	-	1.8	130, 150	0.017	0.014	Yes, one markerband	Yes
Teleflex	Turnpike Catheter	Hybrid multilayer: dual bidirectional coils with inner braid	2.9	2.6	1.6	135, 150	0.0165	0.014	Yes, tungsten-loaded tip	Yes
Teleflex	Turnpike Gold Catheter	Hybrid multilayer: dual bidirectional coils with inner braid and external nylon spiral coil	2.9	2.9	2.1	135	0.0165	0.014	Yes, gold-plated tip	Yes
Teleflex	Turnpike LP Catheter	Hybrid multilayer: dual bidirectional coils with inner braid	2.9	2.2	1.6	135, 150	0.0165	0.014	Yes, tungsten-loaded tip	Yes
Teleflex	Turnpike Spiral Catheter	Hybrid multilayer: dual bidirectional coils with inner braid and external nylon spiral coil	2.9	2.9	1.6	135, 150	0.0165	0.014	Yes, tungsten-loaded tip	Yes
Teleflex	Twin-Pass Dual Access Catheter	Dual-lumen catheter	3	3.5	2	135	0.017	0.014 (RX and OTW)	Yes, two markerbands	Yes
Teleflex	Twin-Pass Torque Dual Access Catheter	Dual-lumen catheter	3.5 X 3.5	-	2.1	135	0.017	0.014 (RX and OTW)	Yes, two markerbands	Yes
Terumo Interventional	FineCross M3 Micro-Guide Catheter	Stainless steel braid construction, enhanced	2.5	1.8	1.7	130, 150	0.018	0.014	Yes	Yes

Antegrad prosedur



AWE FİLDER-XT>>

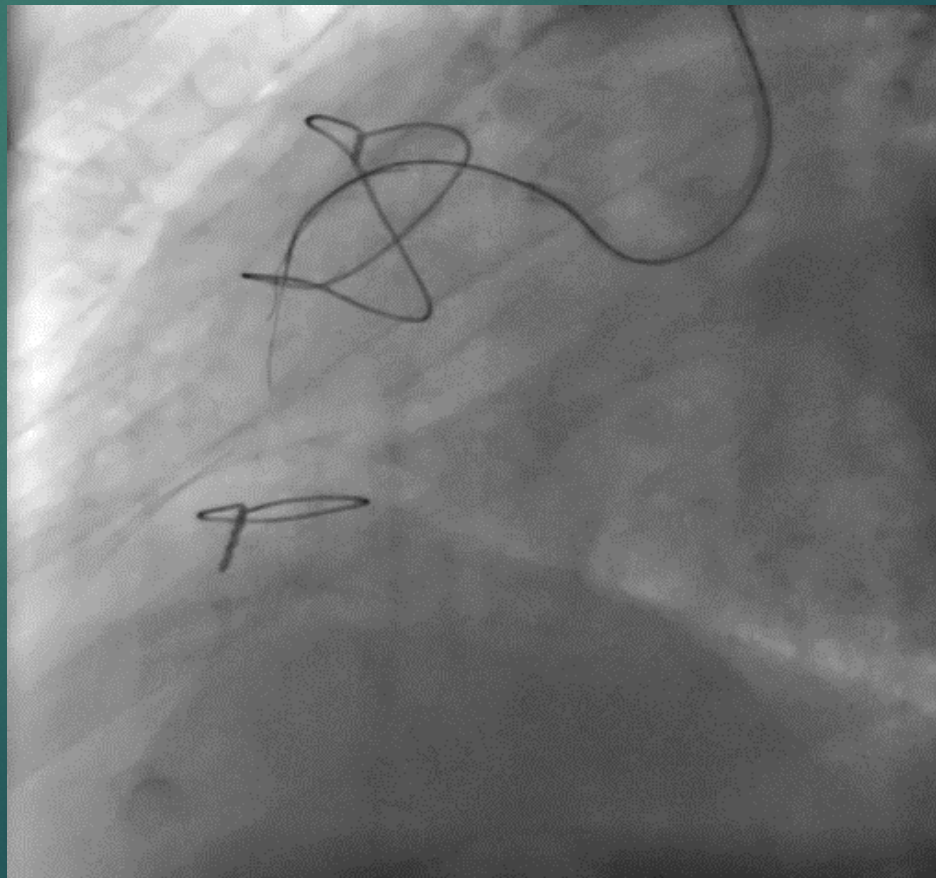
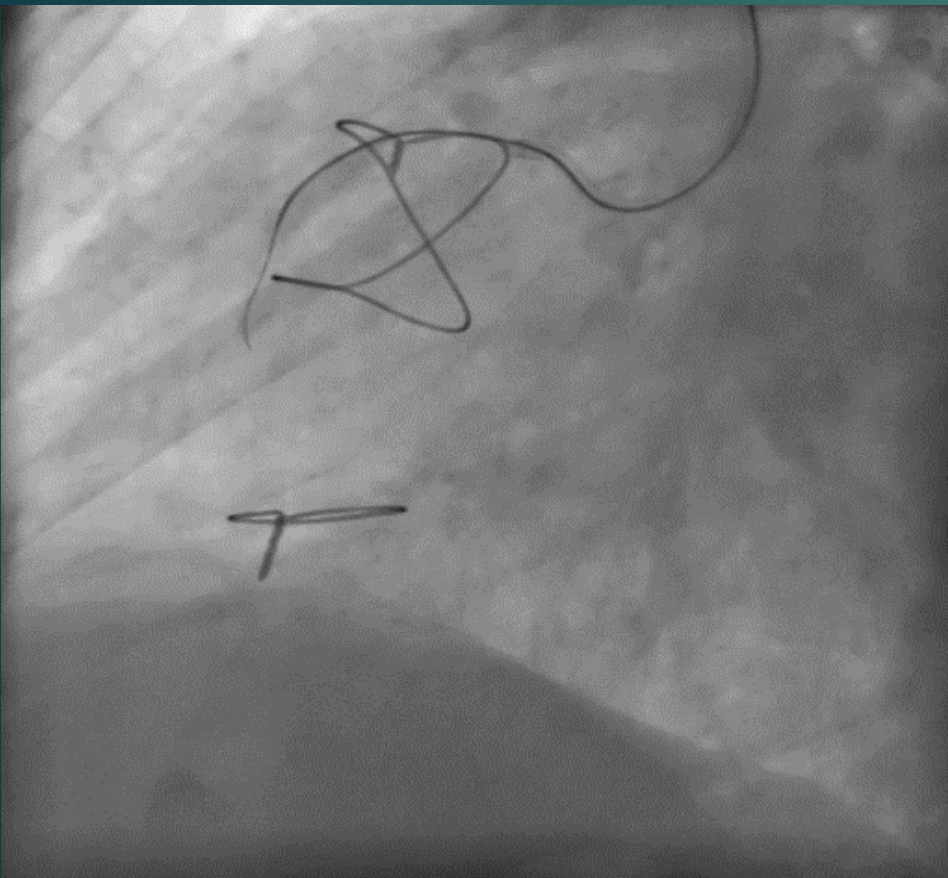
Coursair >>>PILOT 150



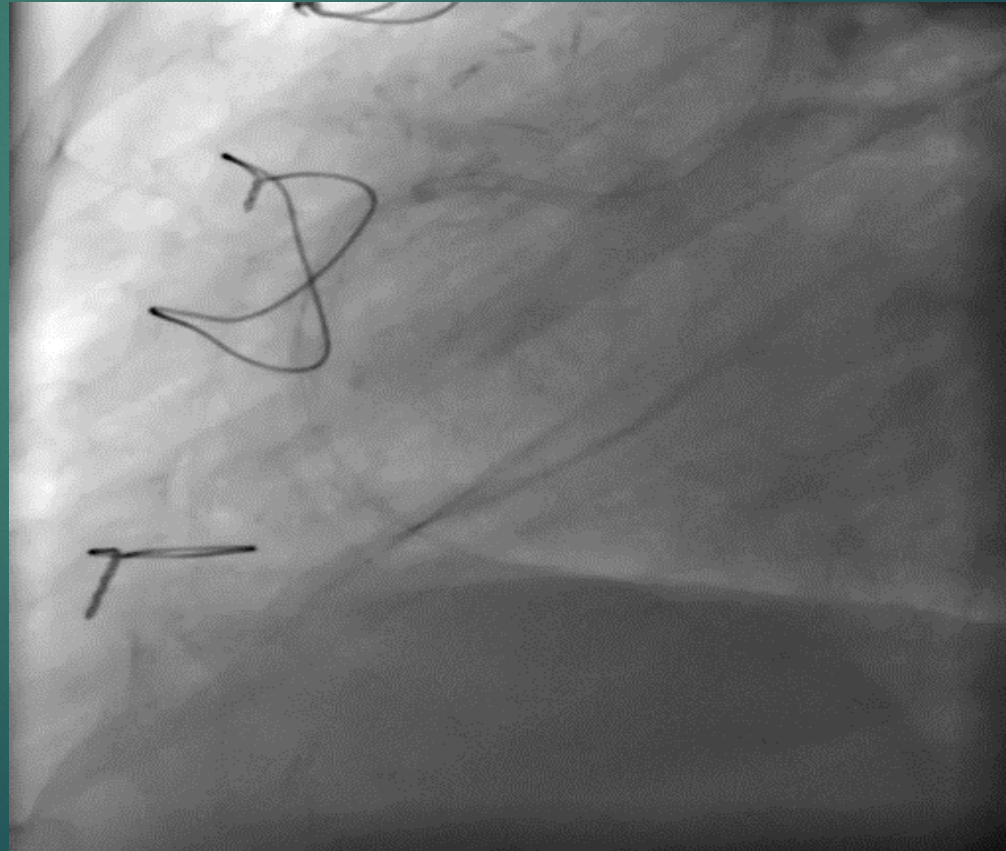
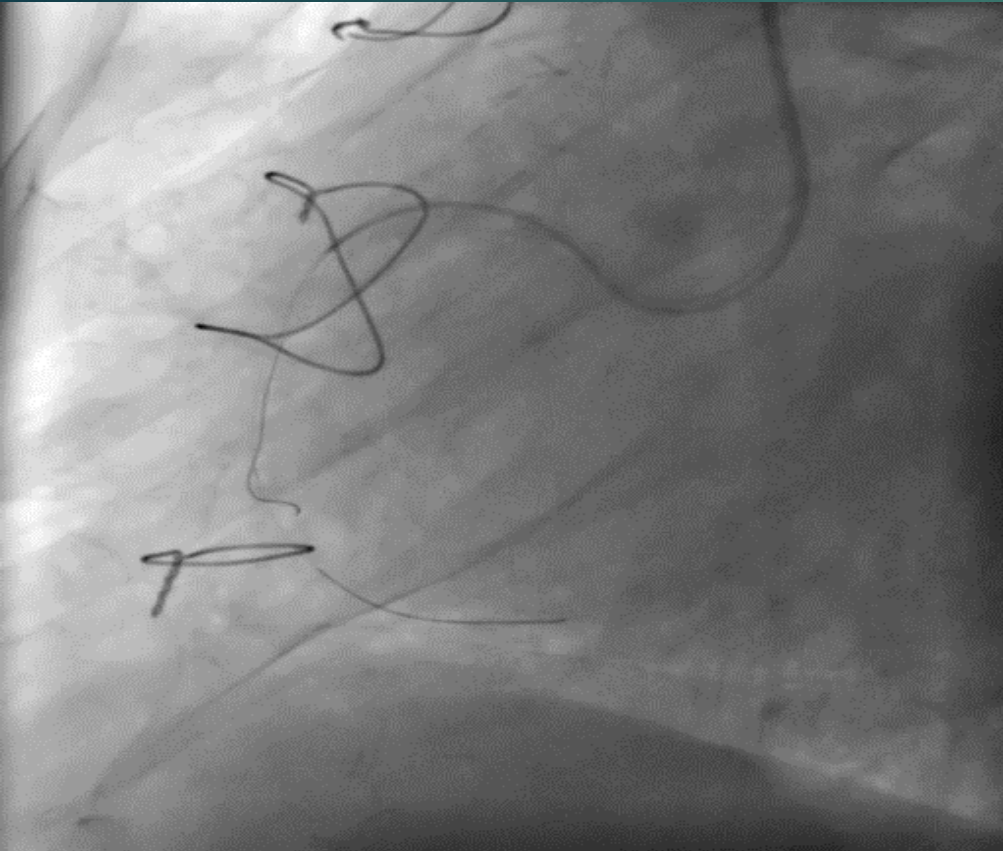
Paralel wire

Subintimal-ultimatebross-3

Miracale-6



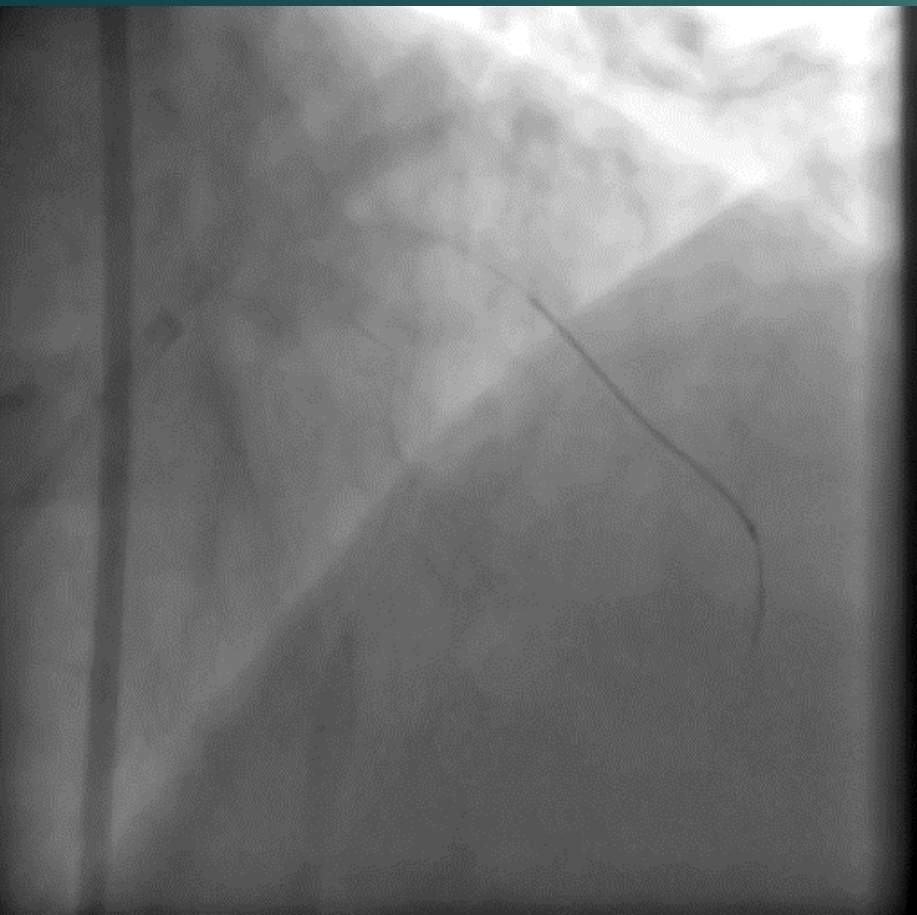
True lumene keçiş



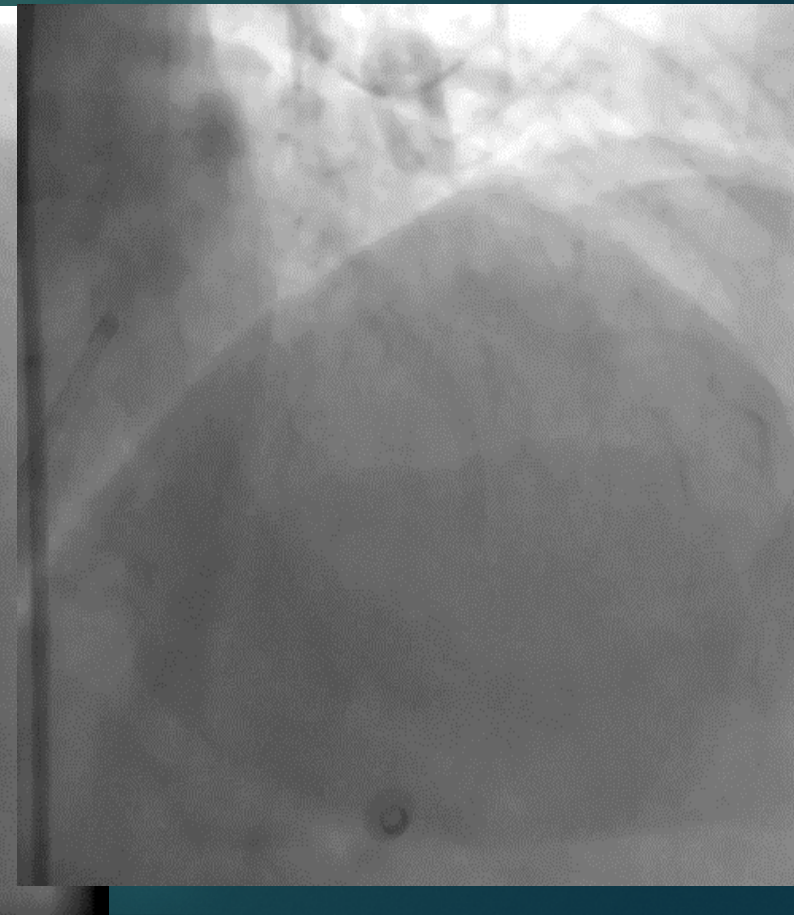
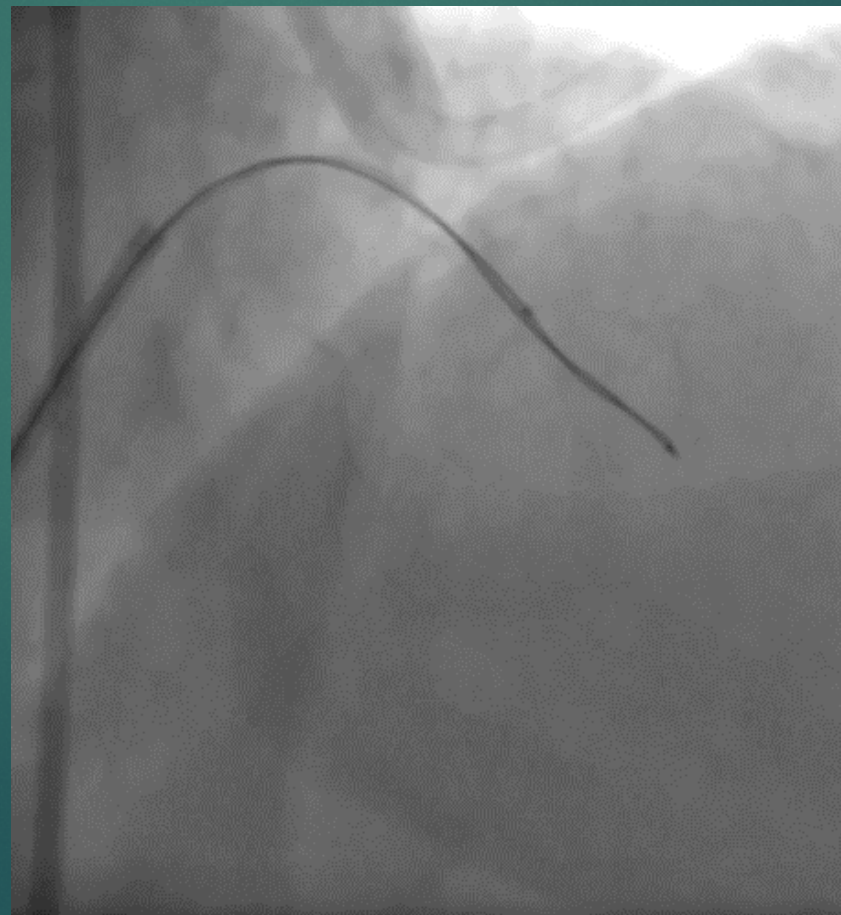
Mikro base parallel wire tekniği



Finecross-pilot150

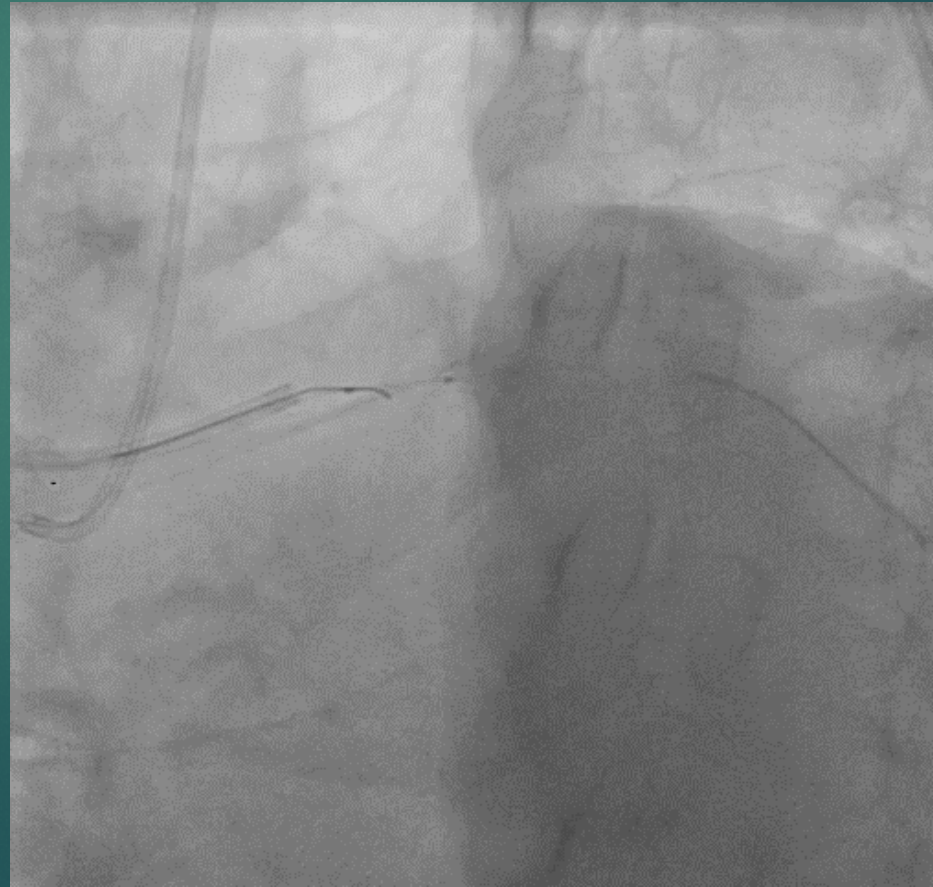


Gaia-2



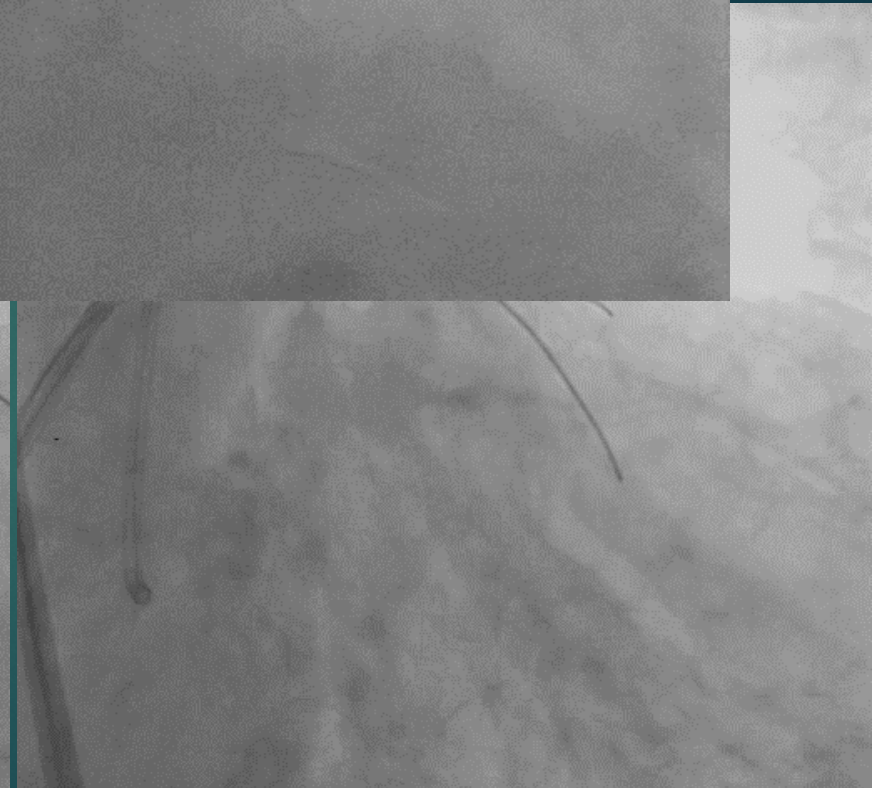
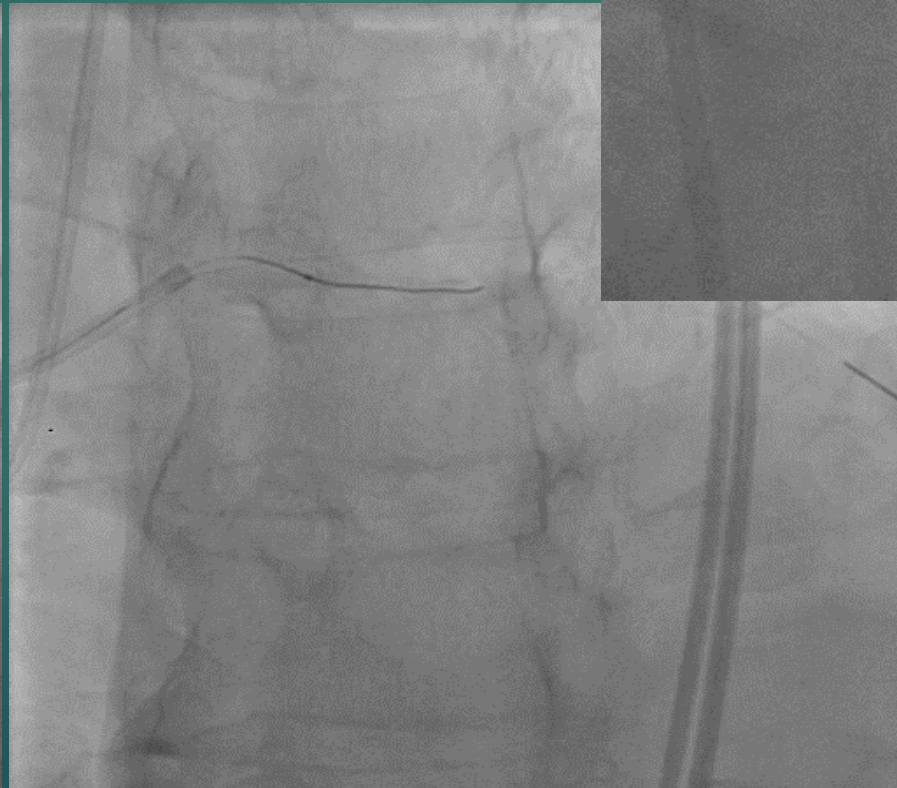
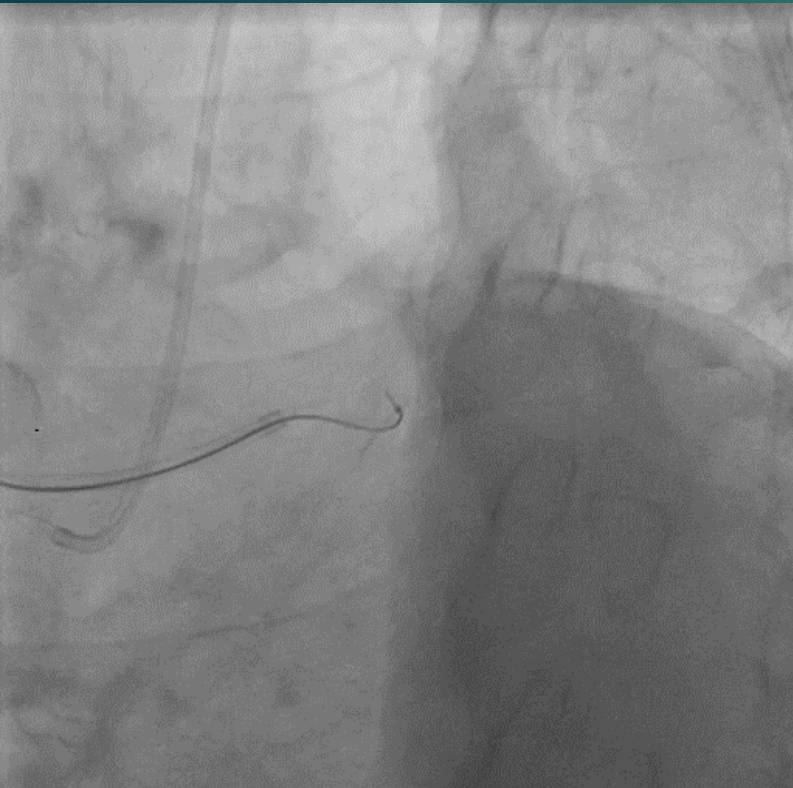
Prox cap belirsiz ve dual lumen

Dual lumen katater ve
ultimatebross

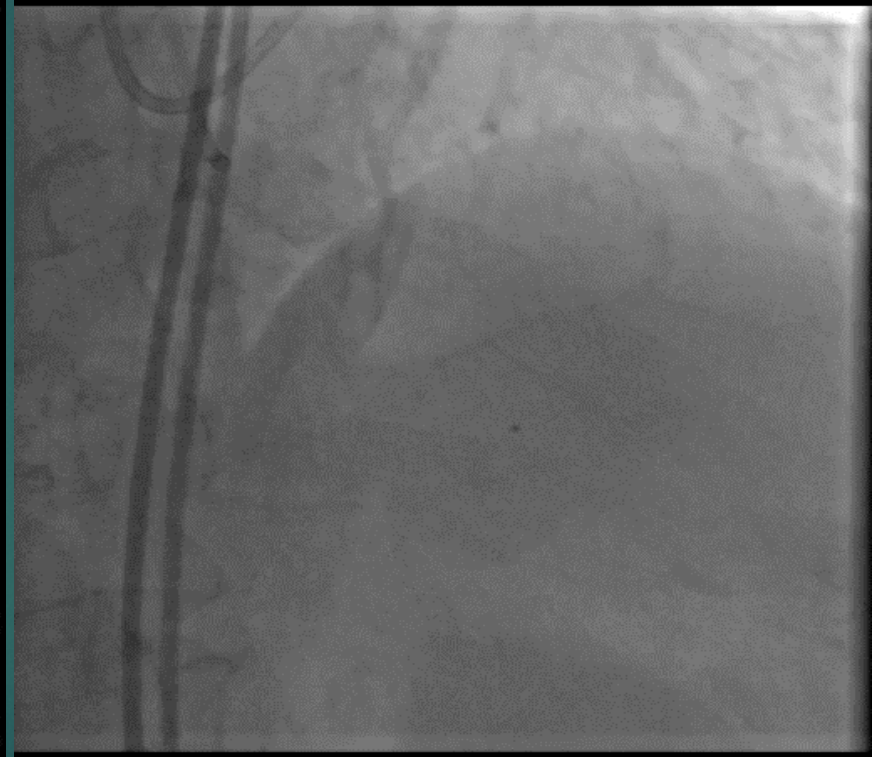
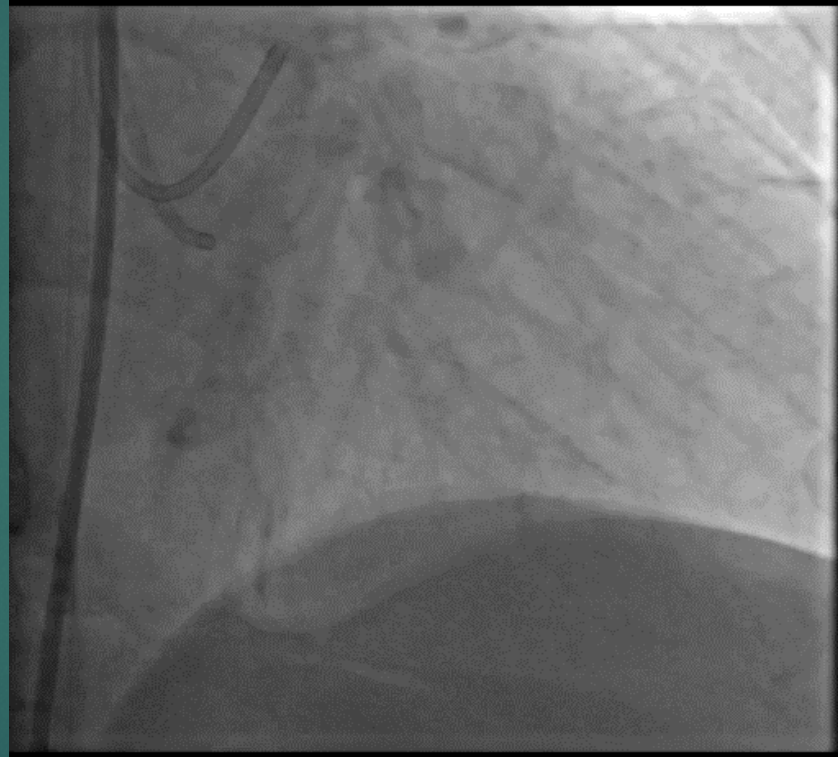
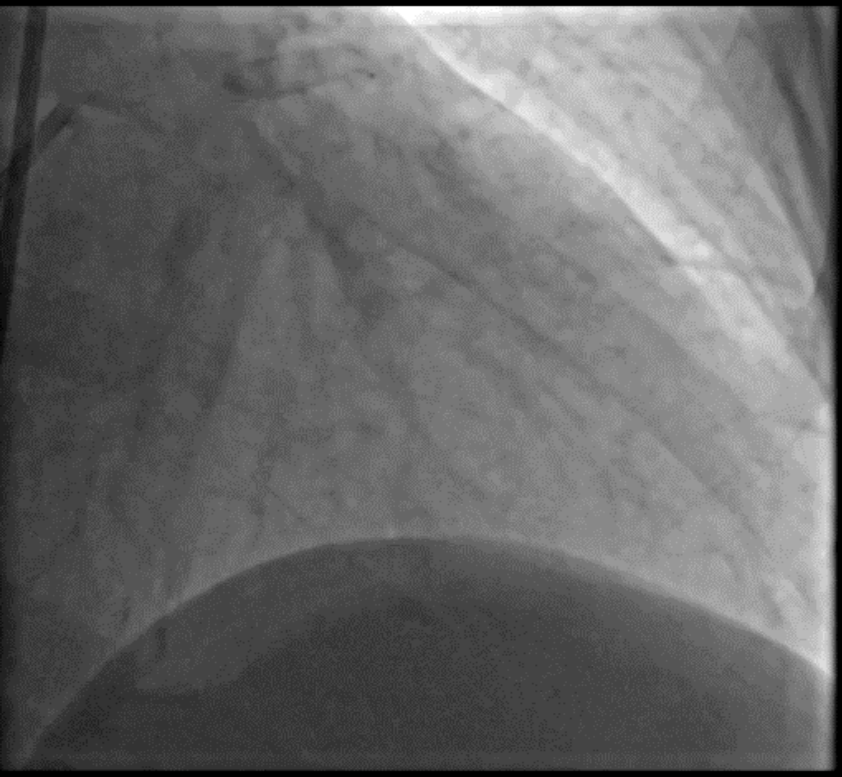


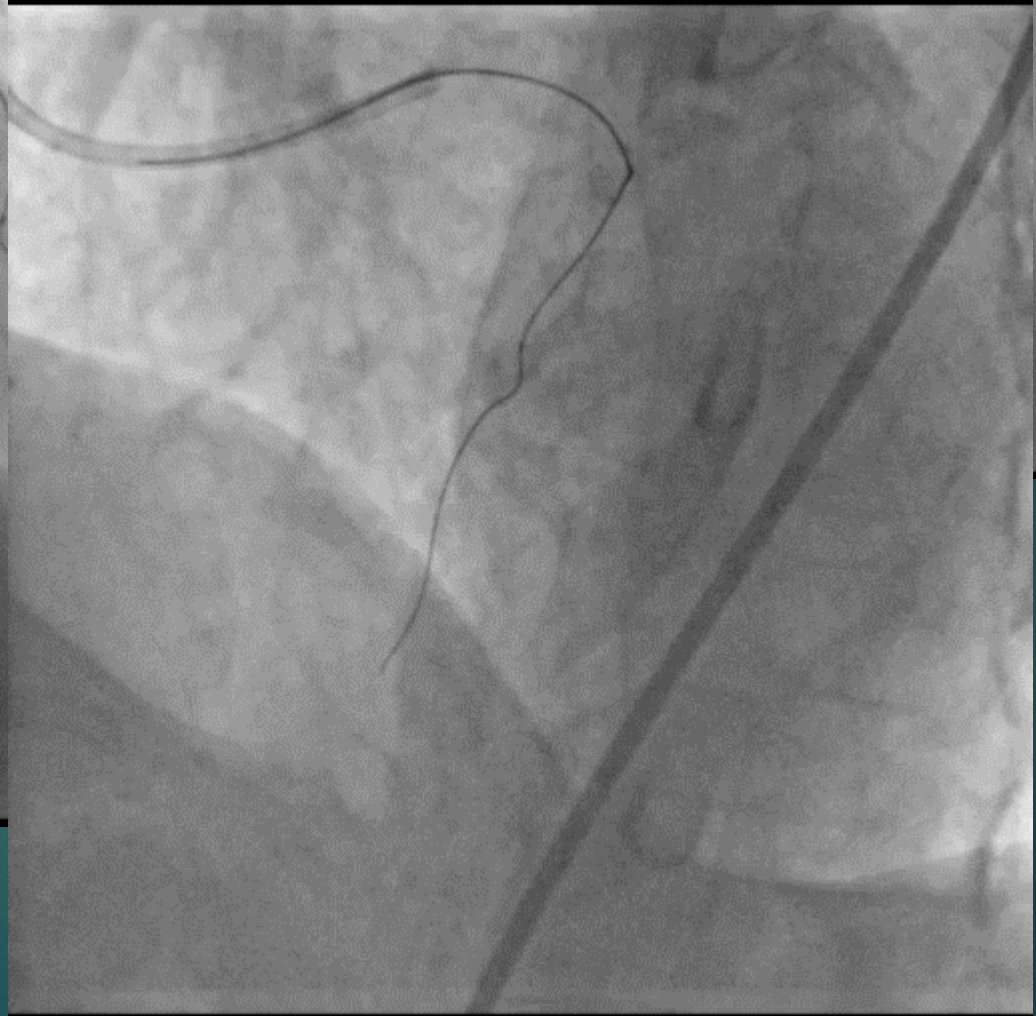
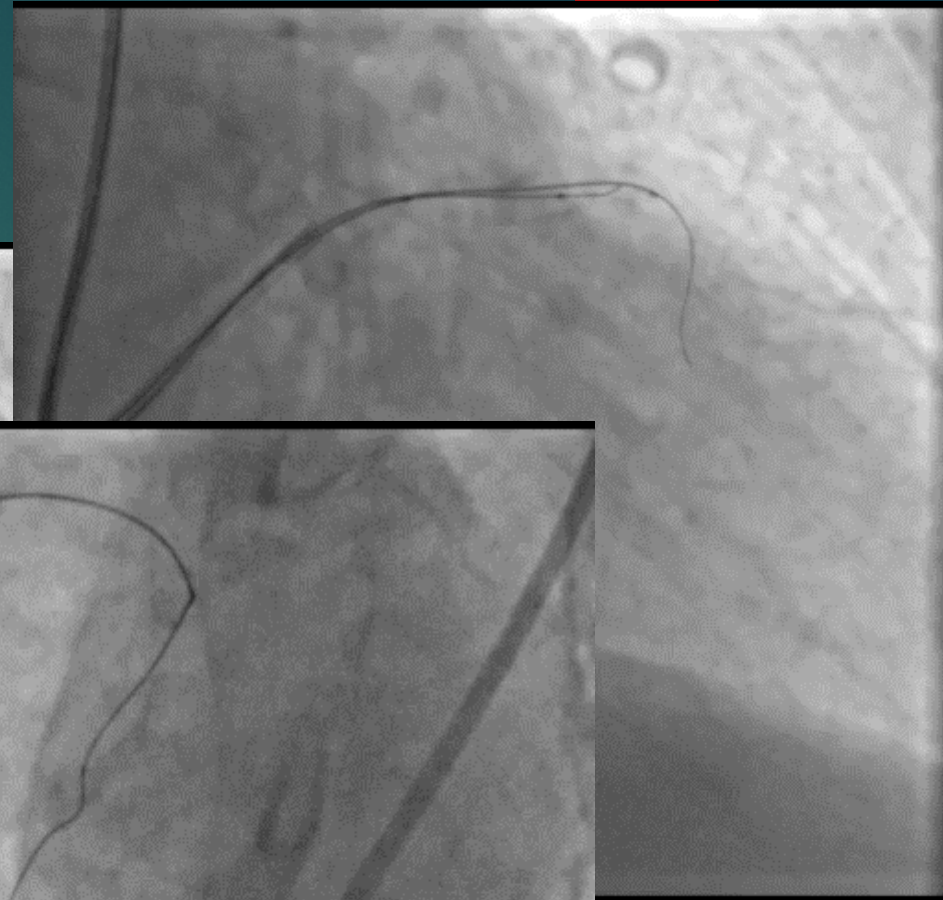
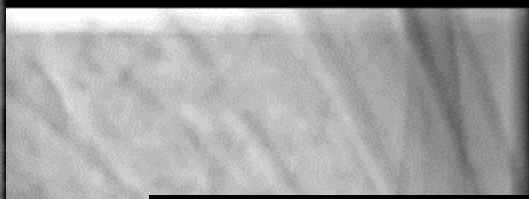
Finecross- conquest-pro

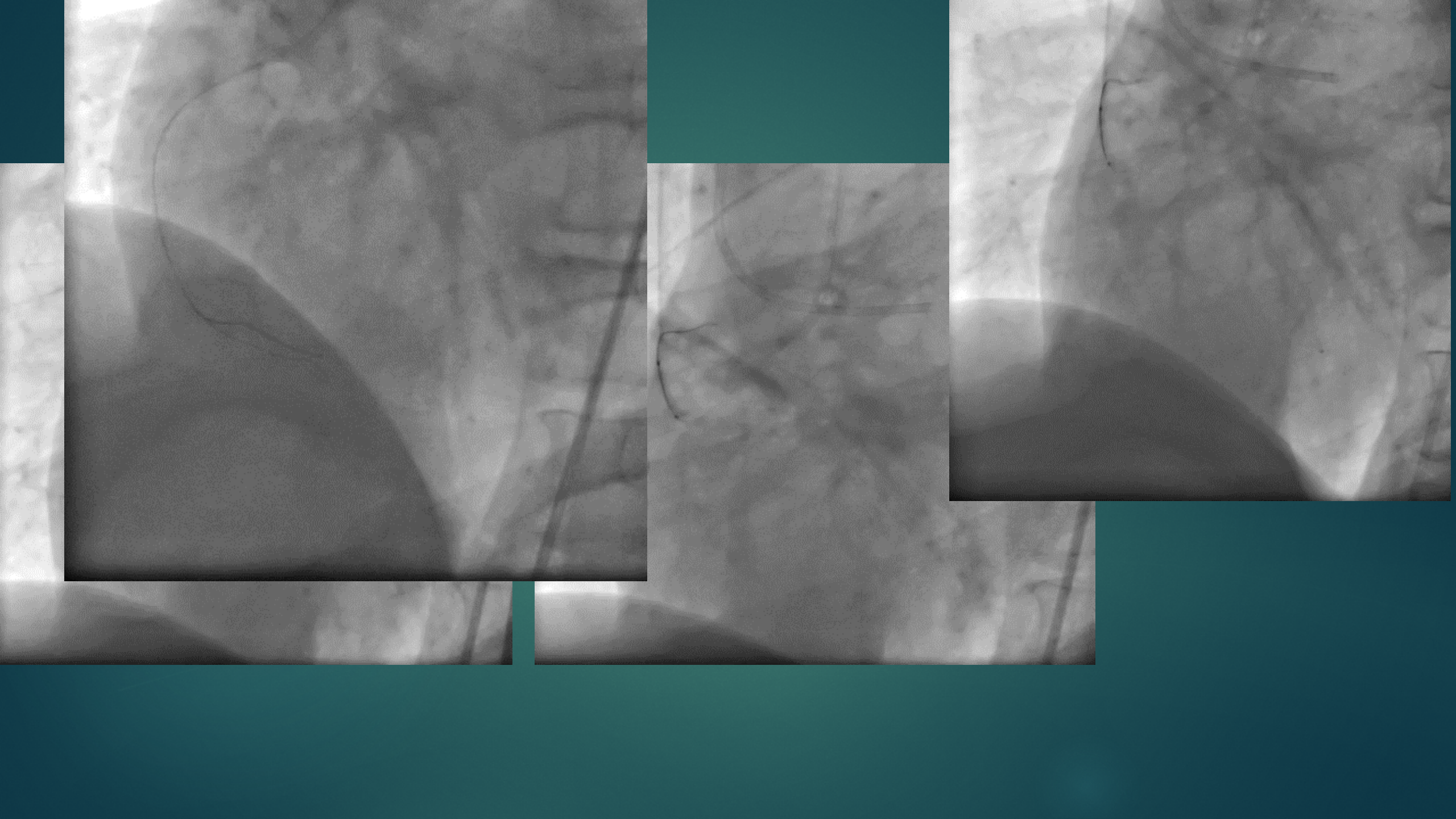
De-esc



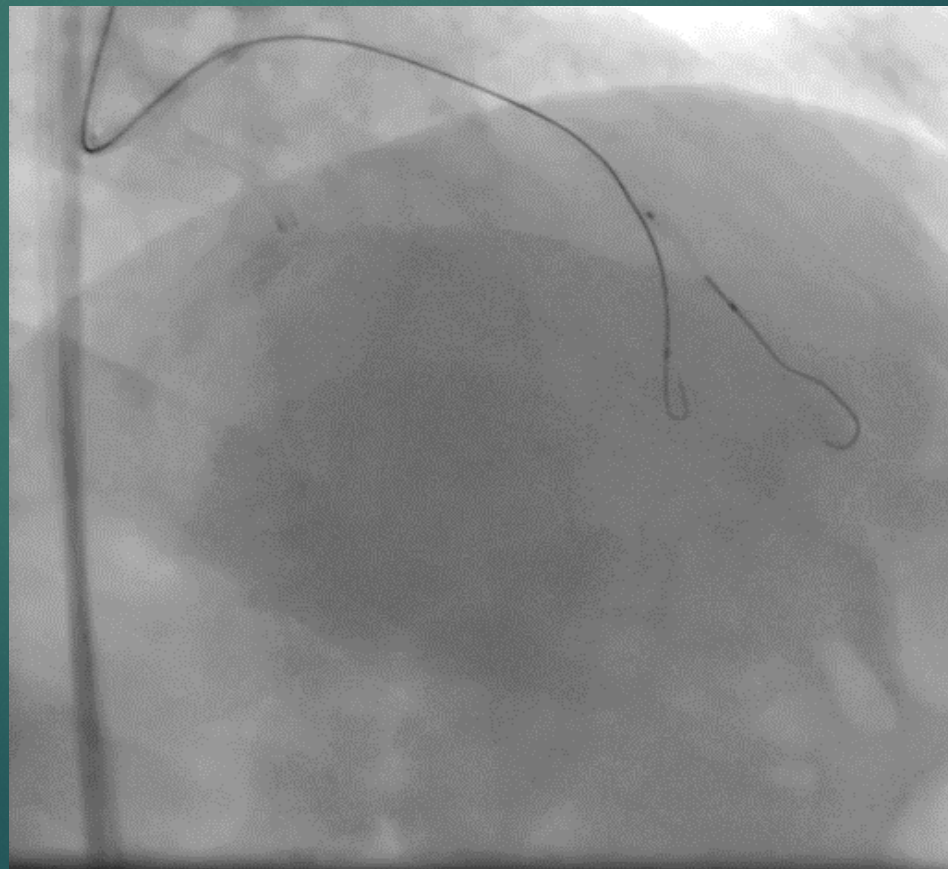
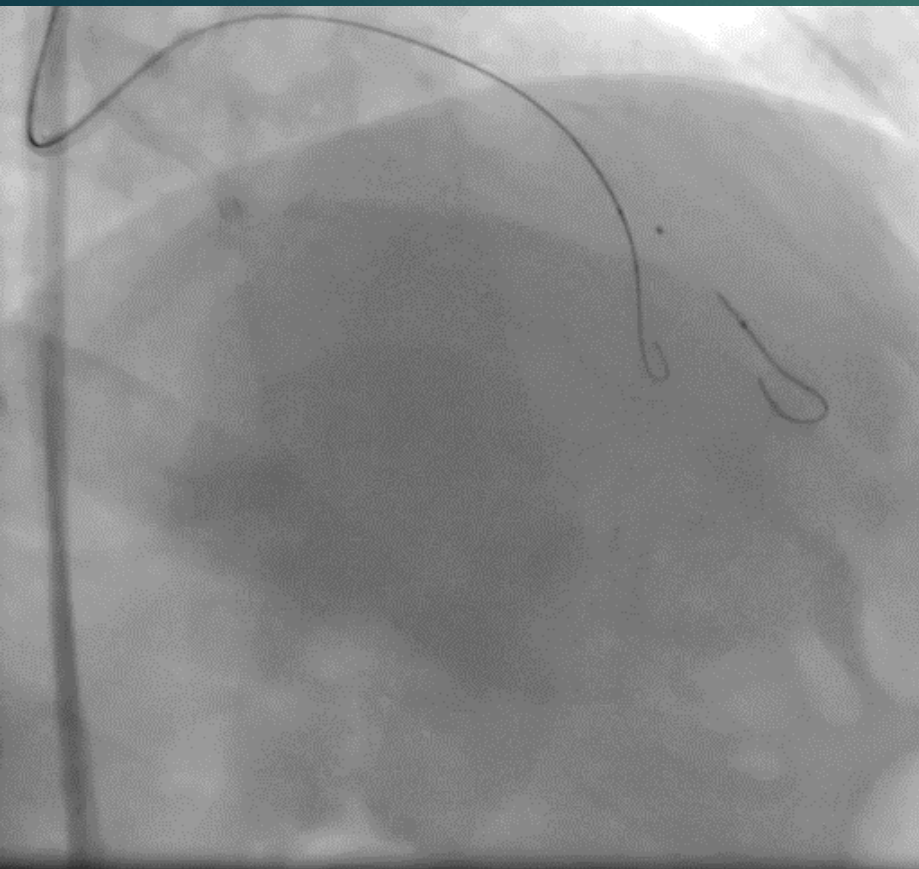
Proximal cap yok, retro geiř uygun
deyil

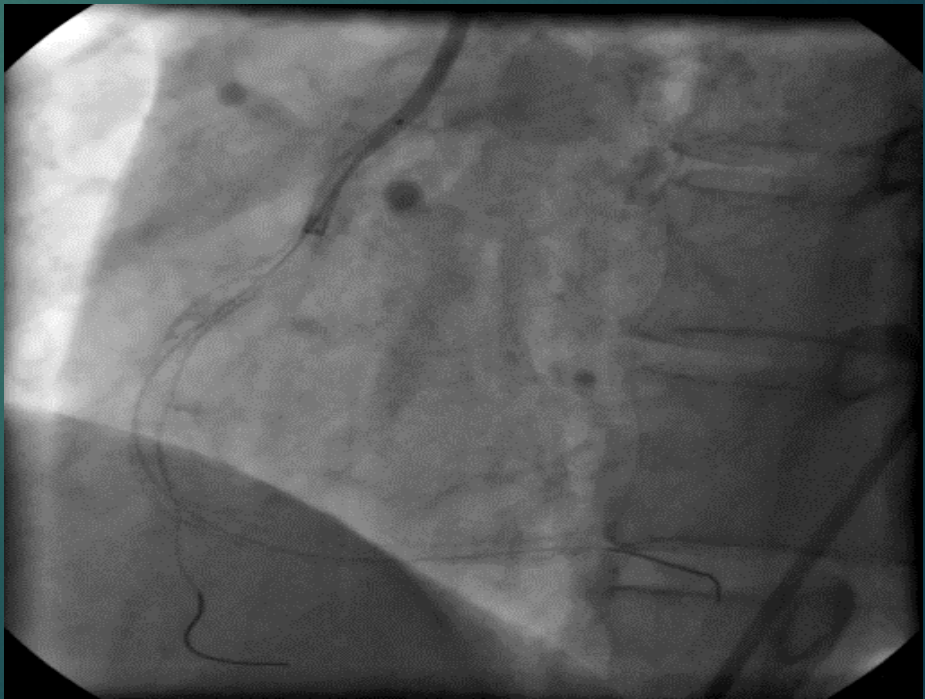
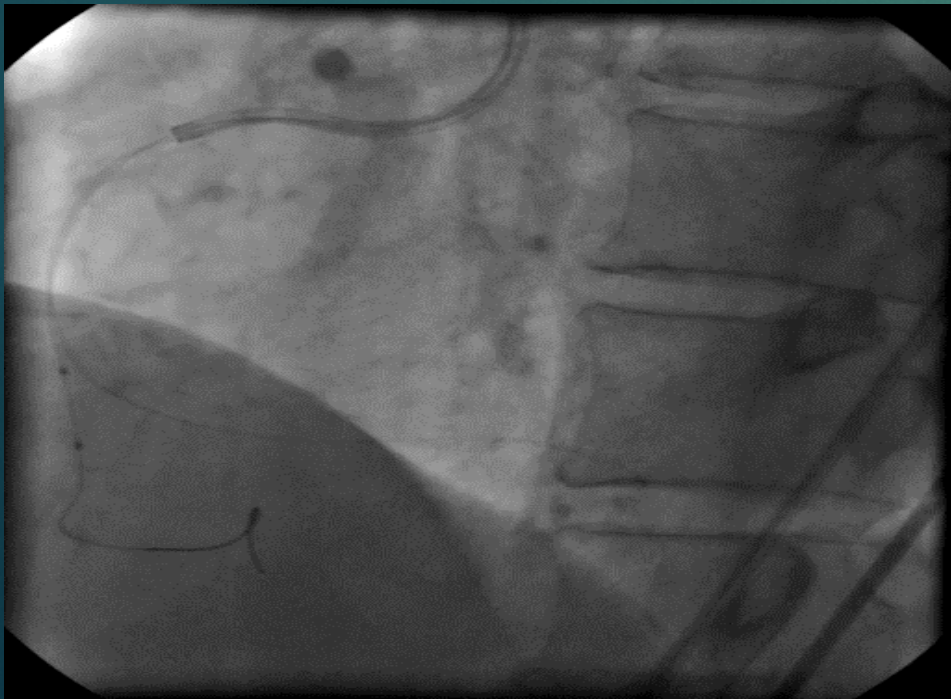
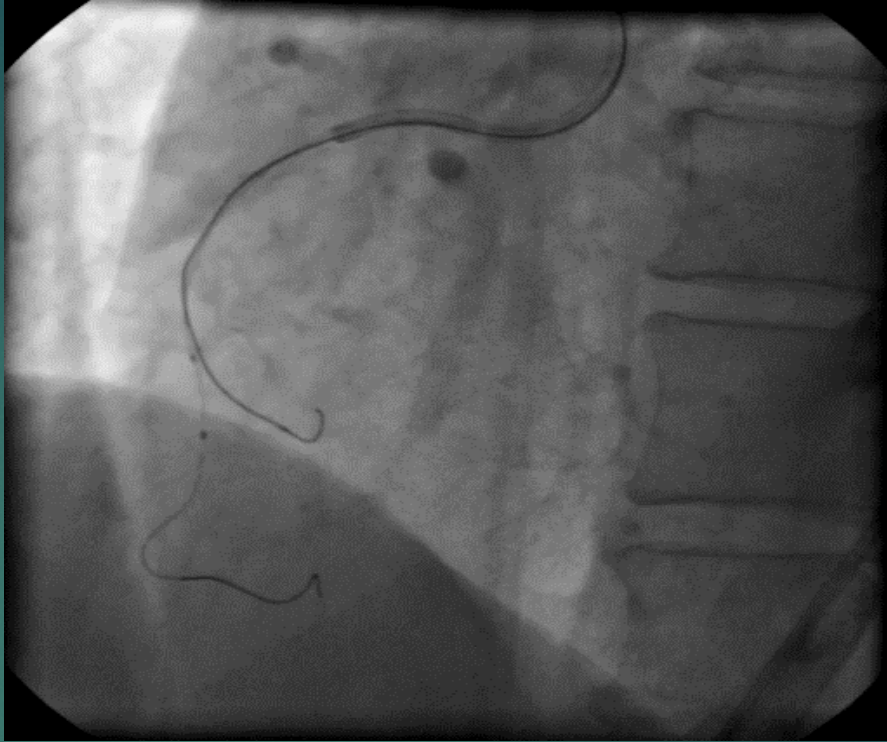
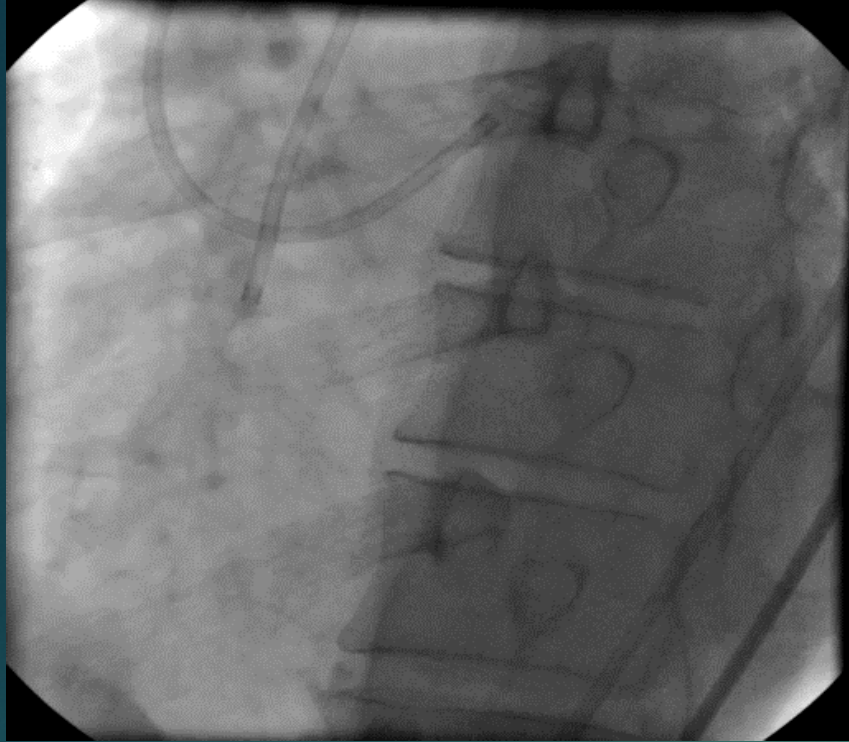






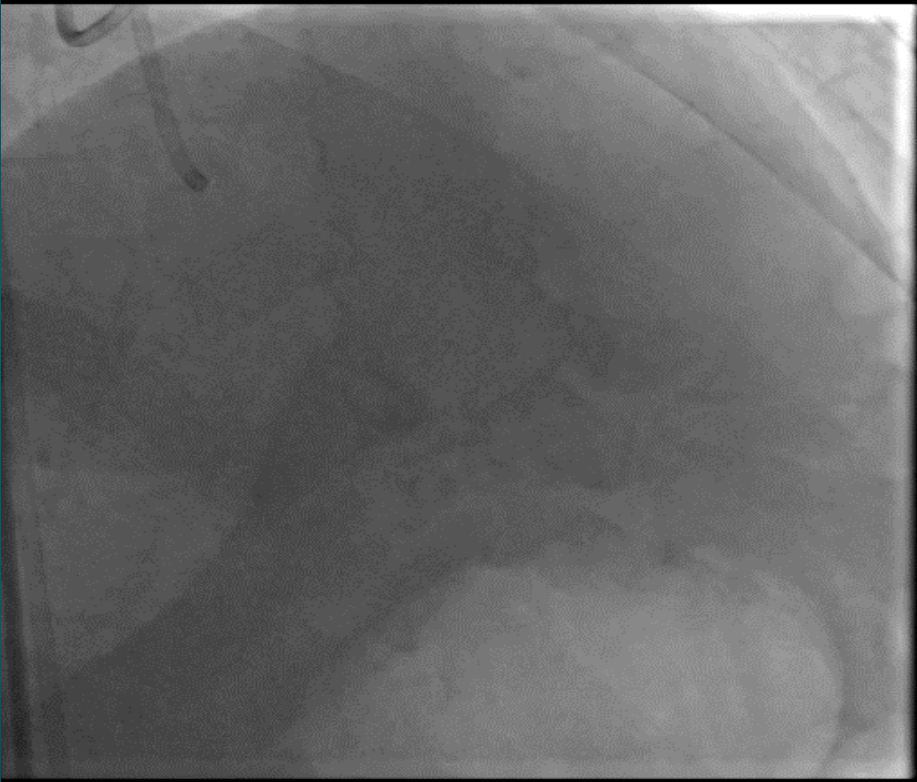
Gaia-2



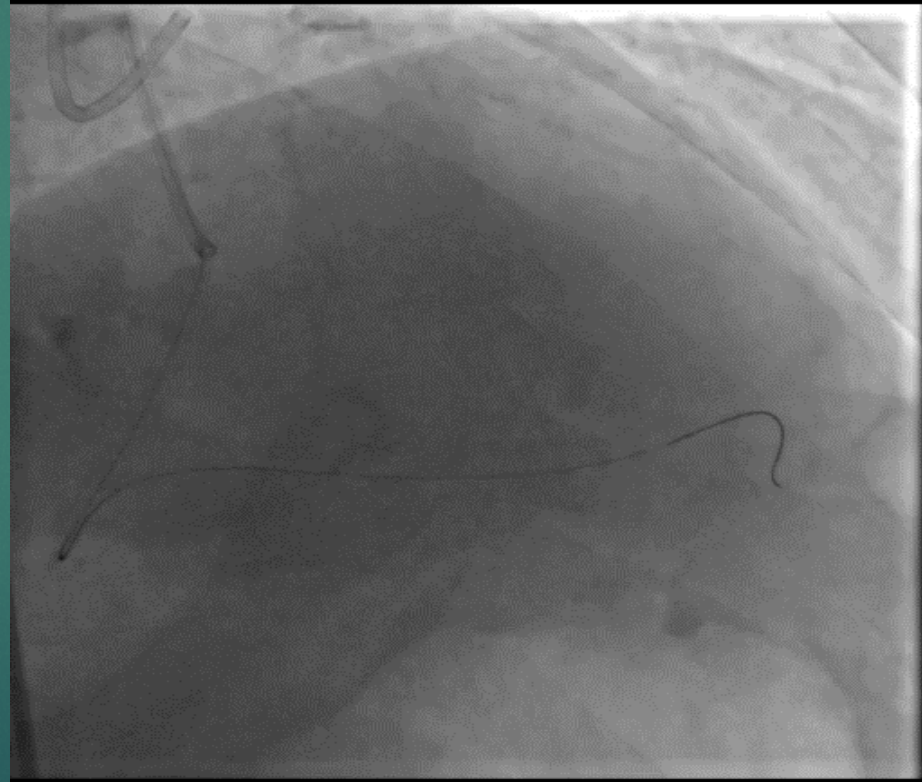


Retrograd prosedur

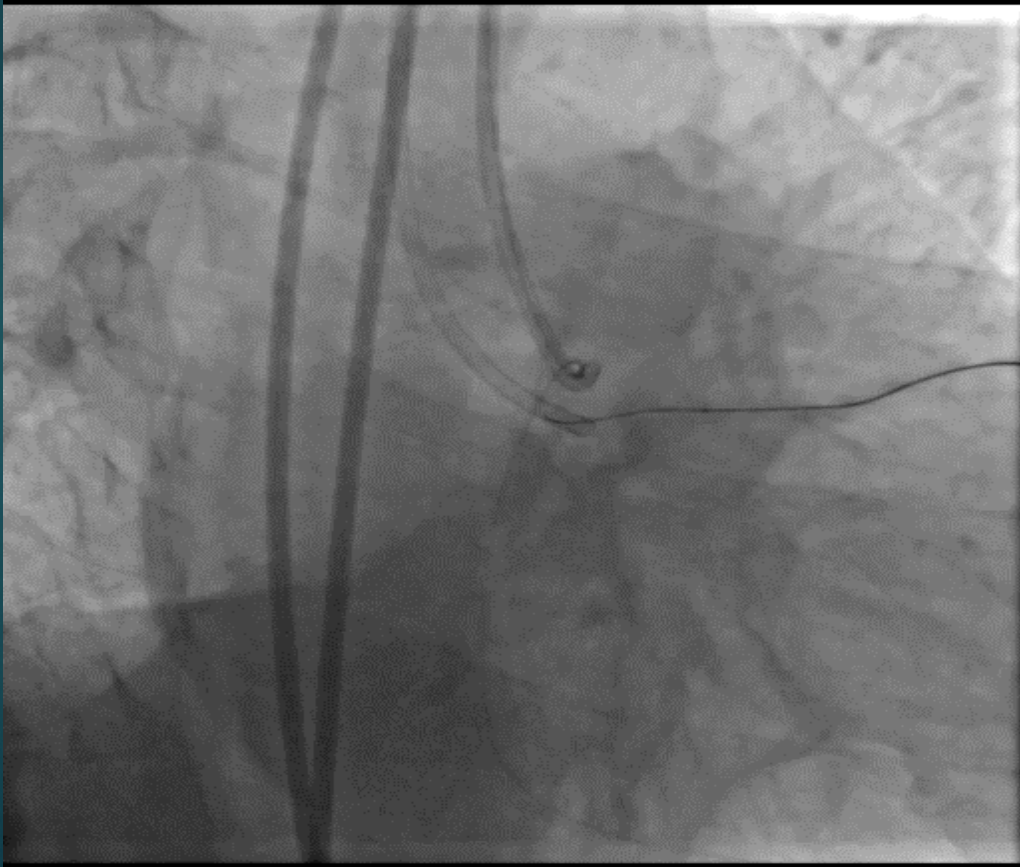
LAD-CTO (PROX CAP
BELİRSİZ)



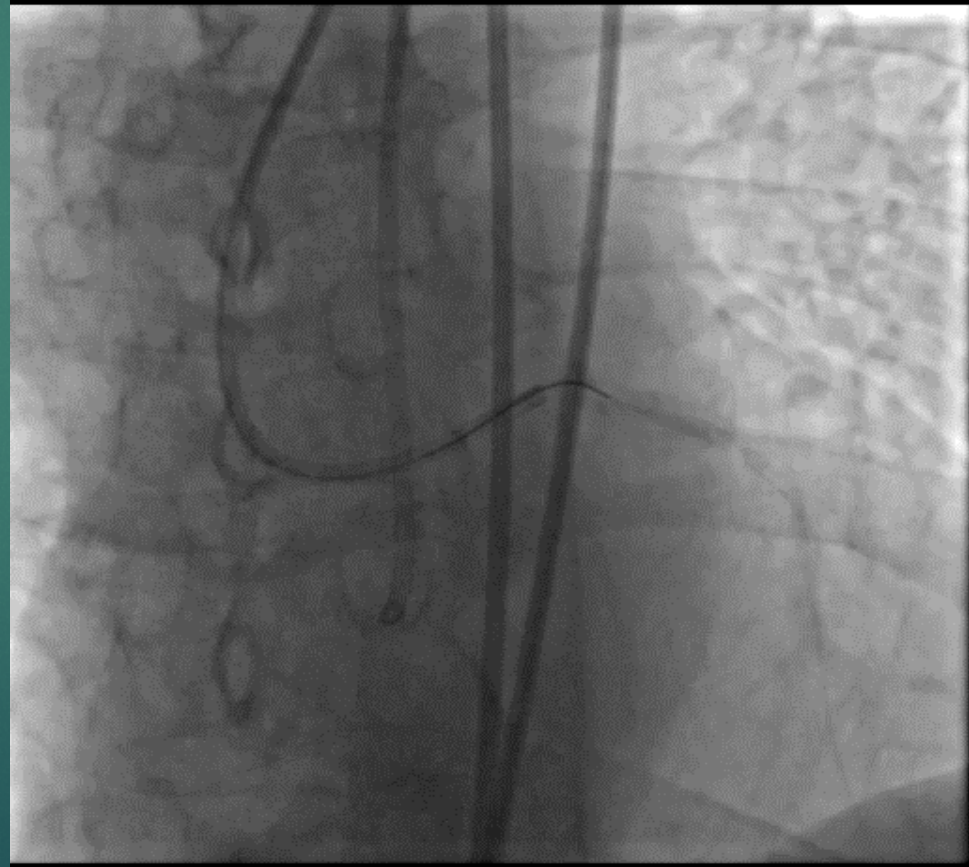
FLOPPY İLE GEÇİŞ

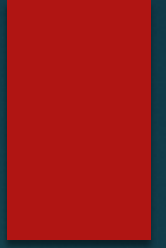
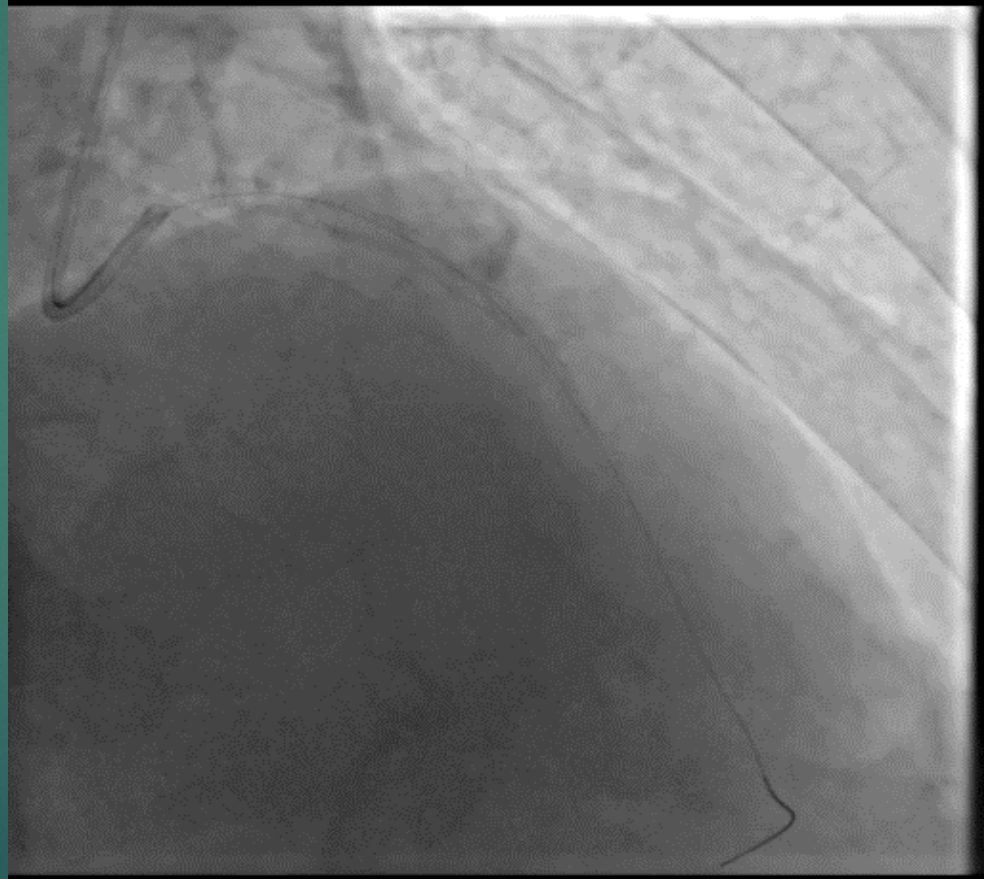
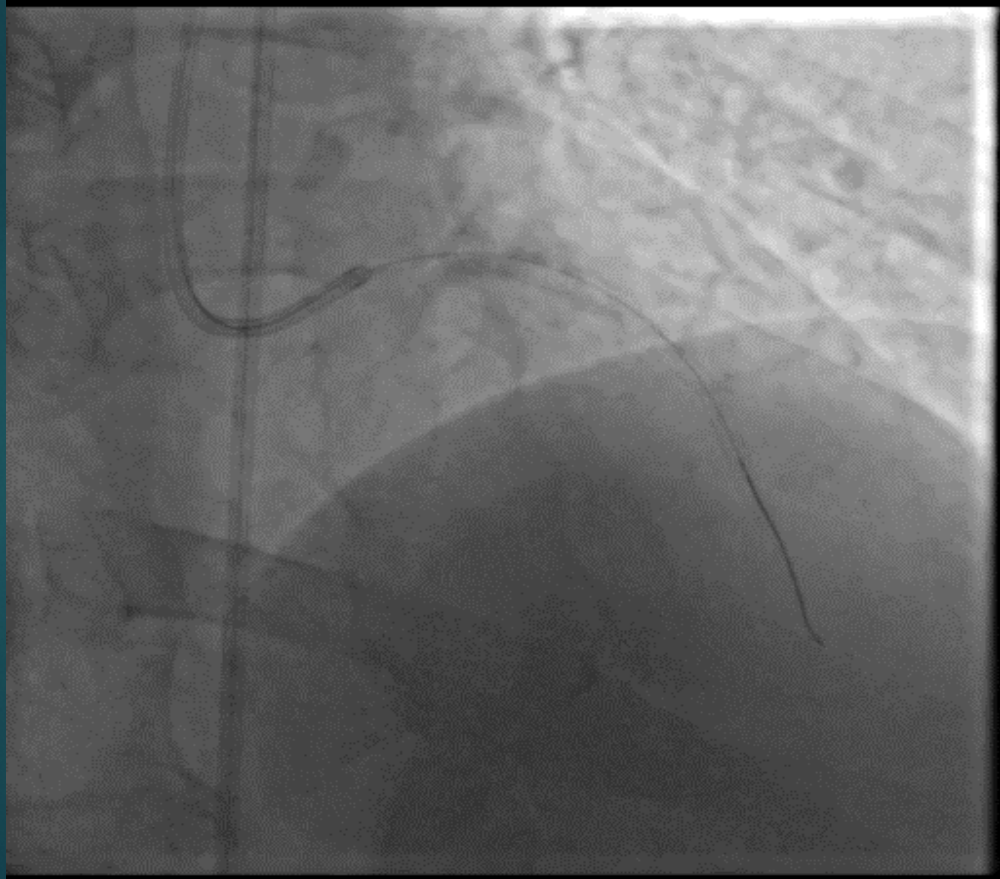


SİON-BLACK KATATERE GİRİŞ



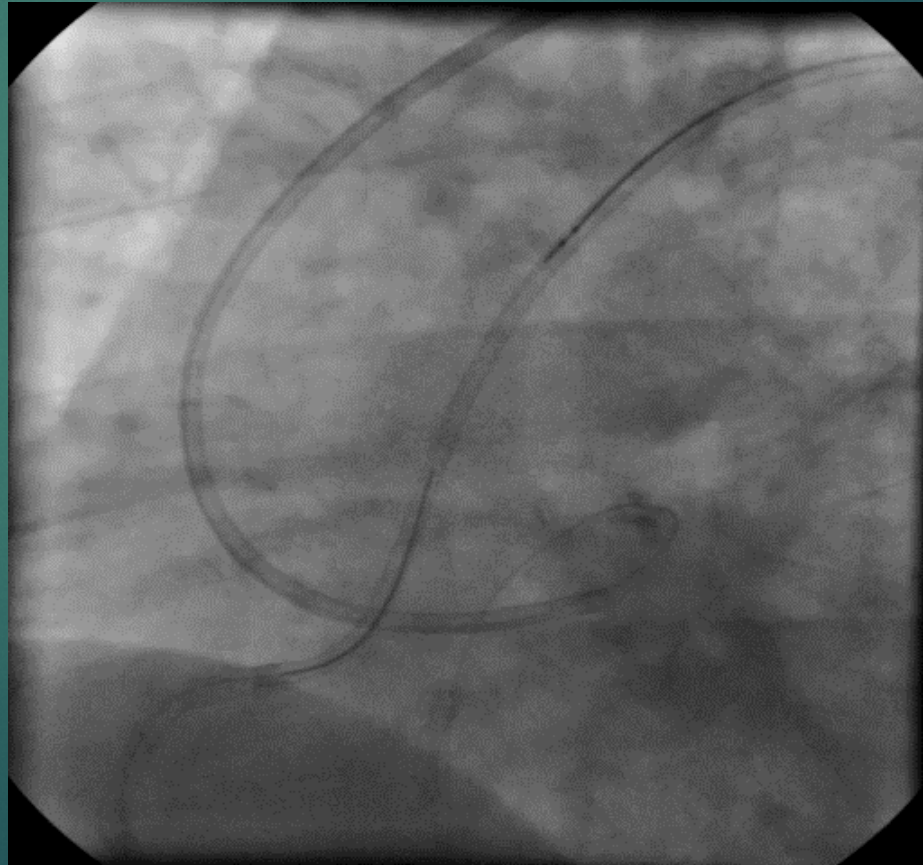
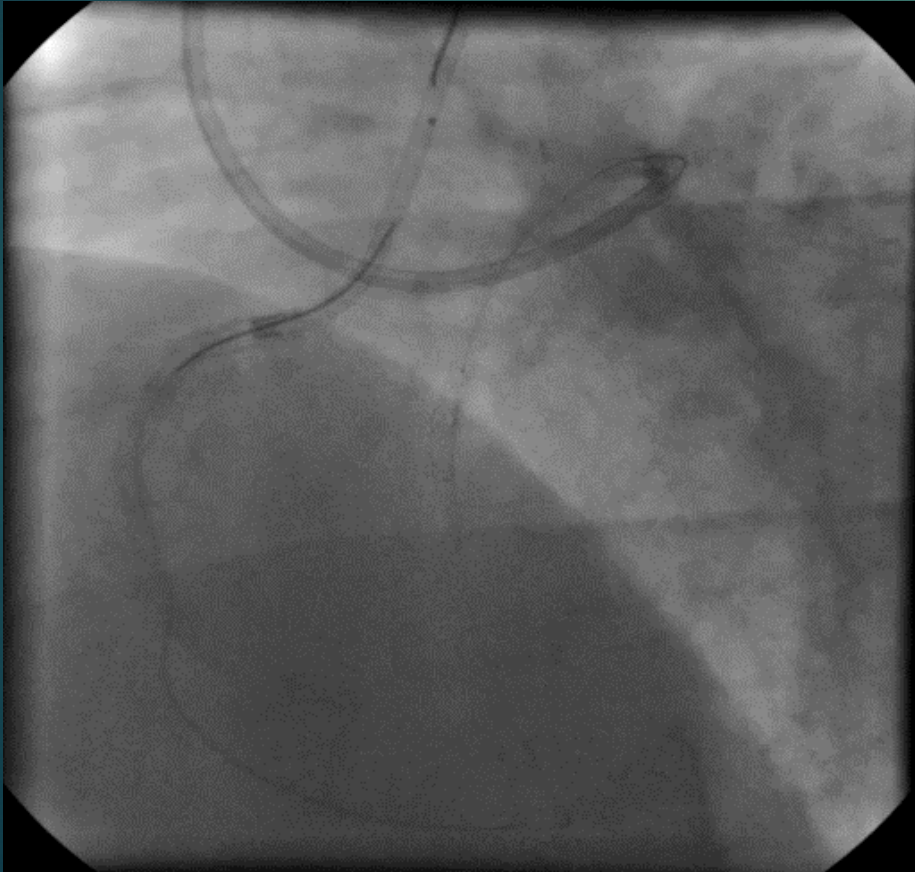
R-TİP-İN





R-tip in nedir?

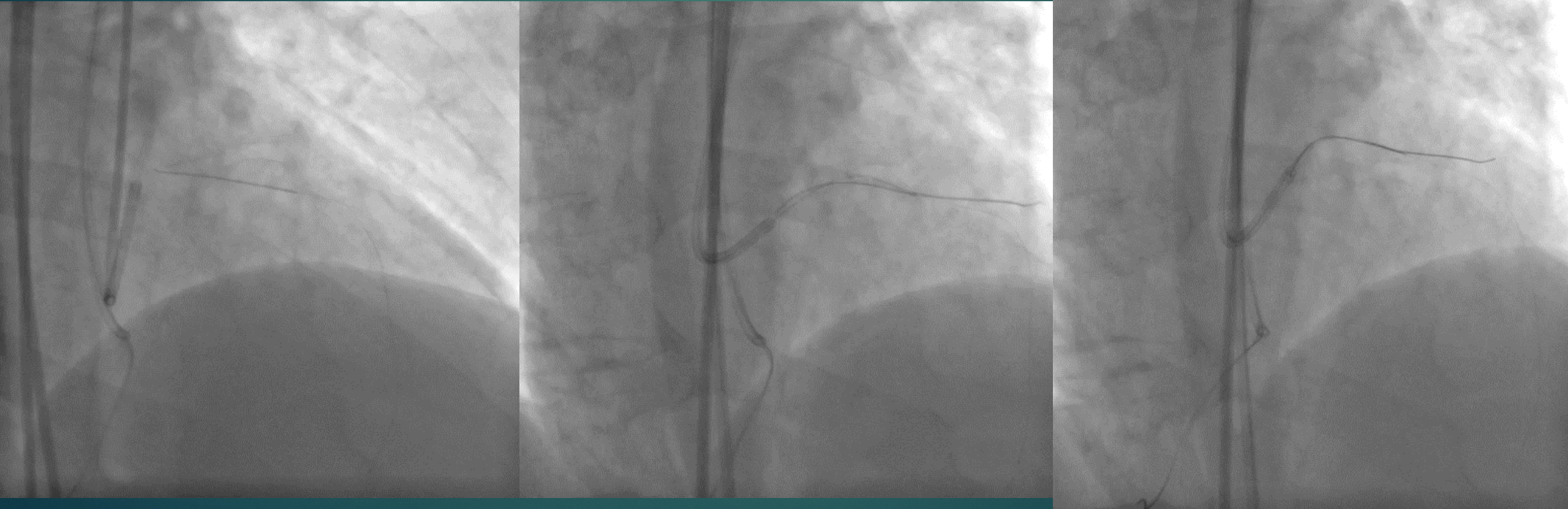
Olmursa?>>>>



Retro tel katater içine girmirse ne edek?

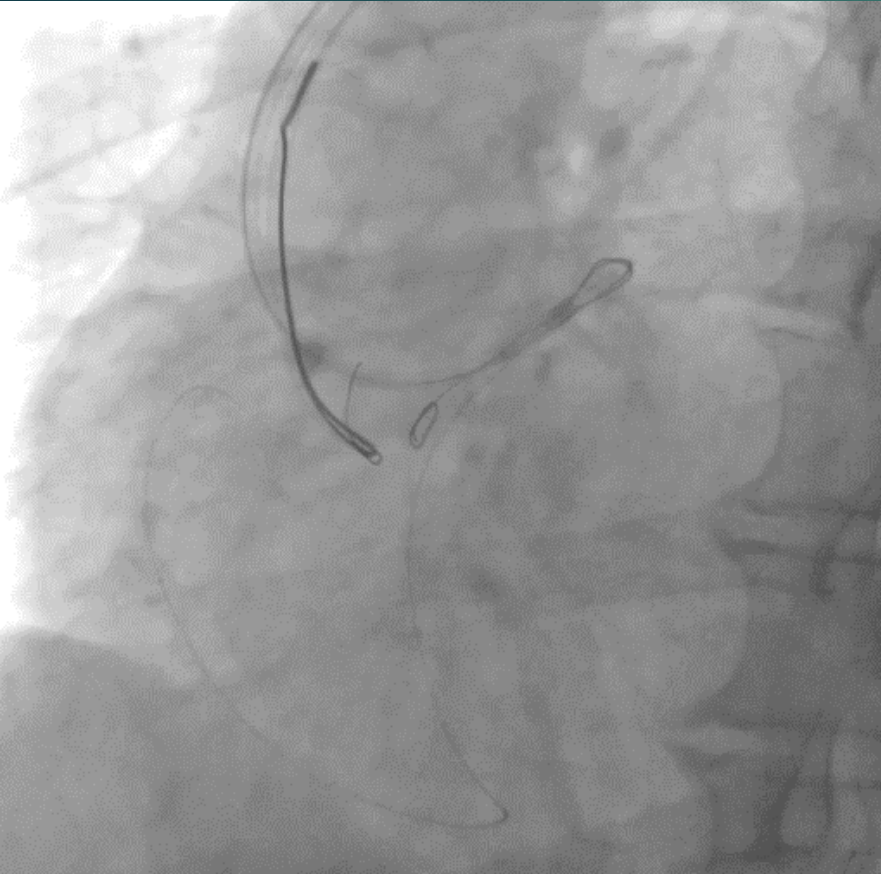
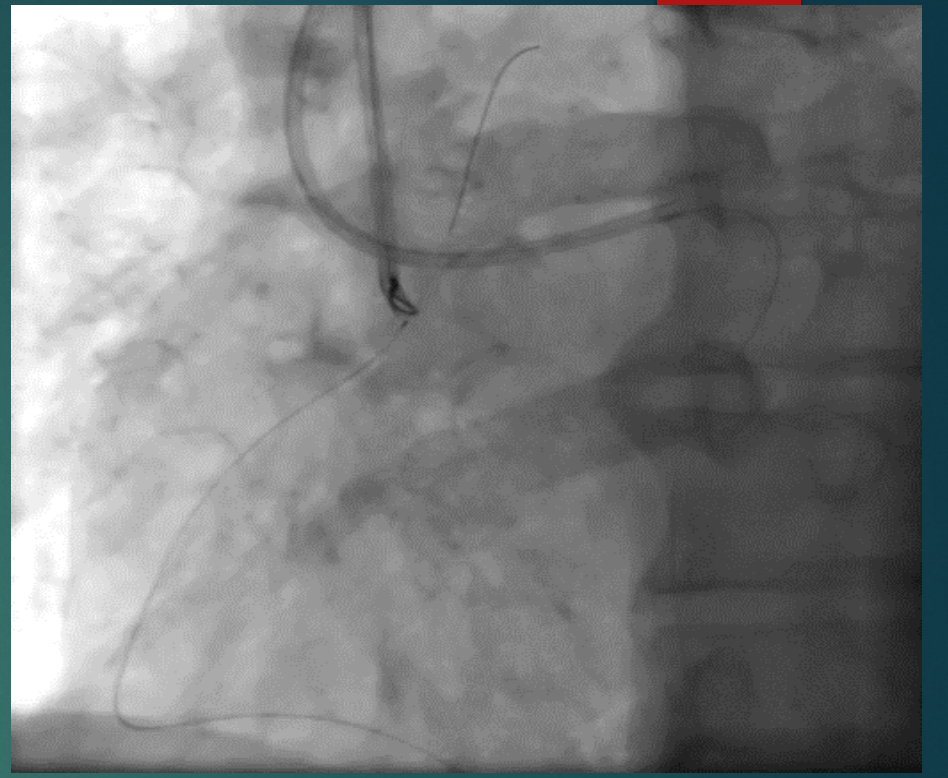
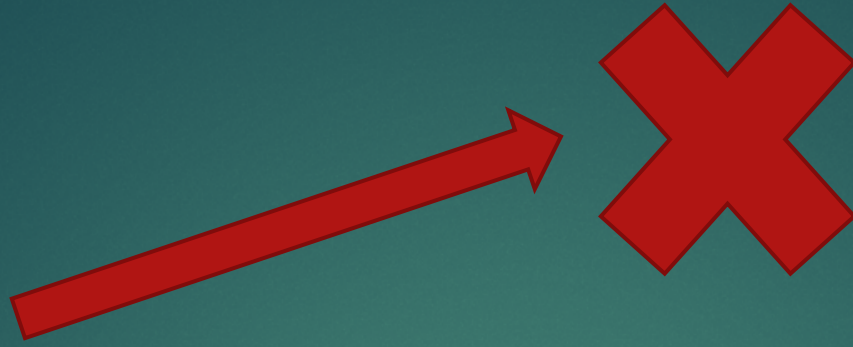
Mikro ilerlemir>>ballon
septal keçmir

Guideliner

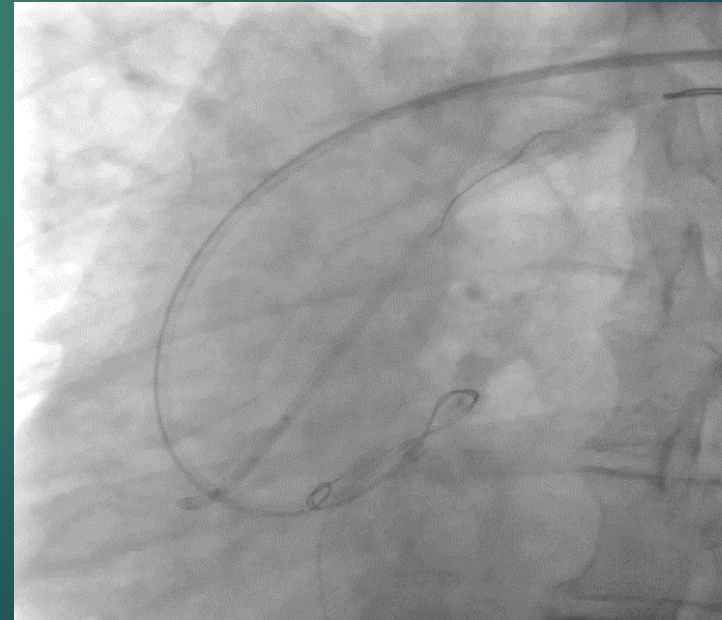


Snare

Telin uc kismından



Snare'in ehtiytli
ayrilmasi



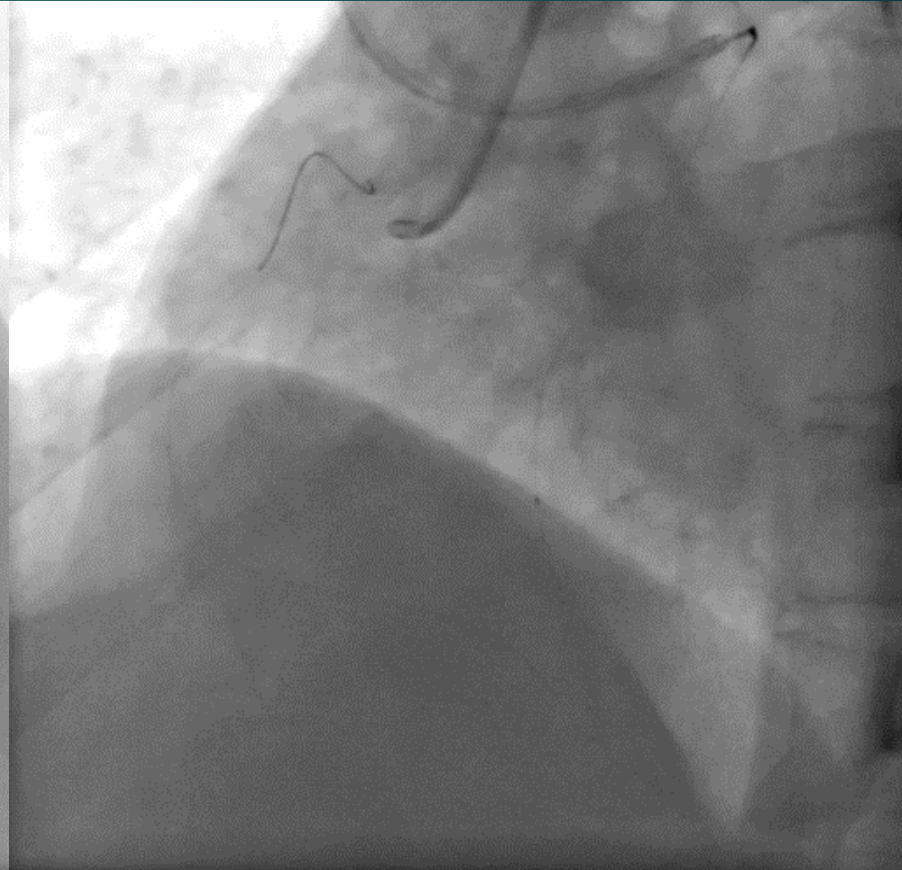
SEPTAL ENJEKSİYON



SİONBLACK GEÇİŞ

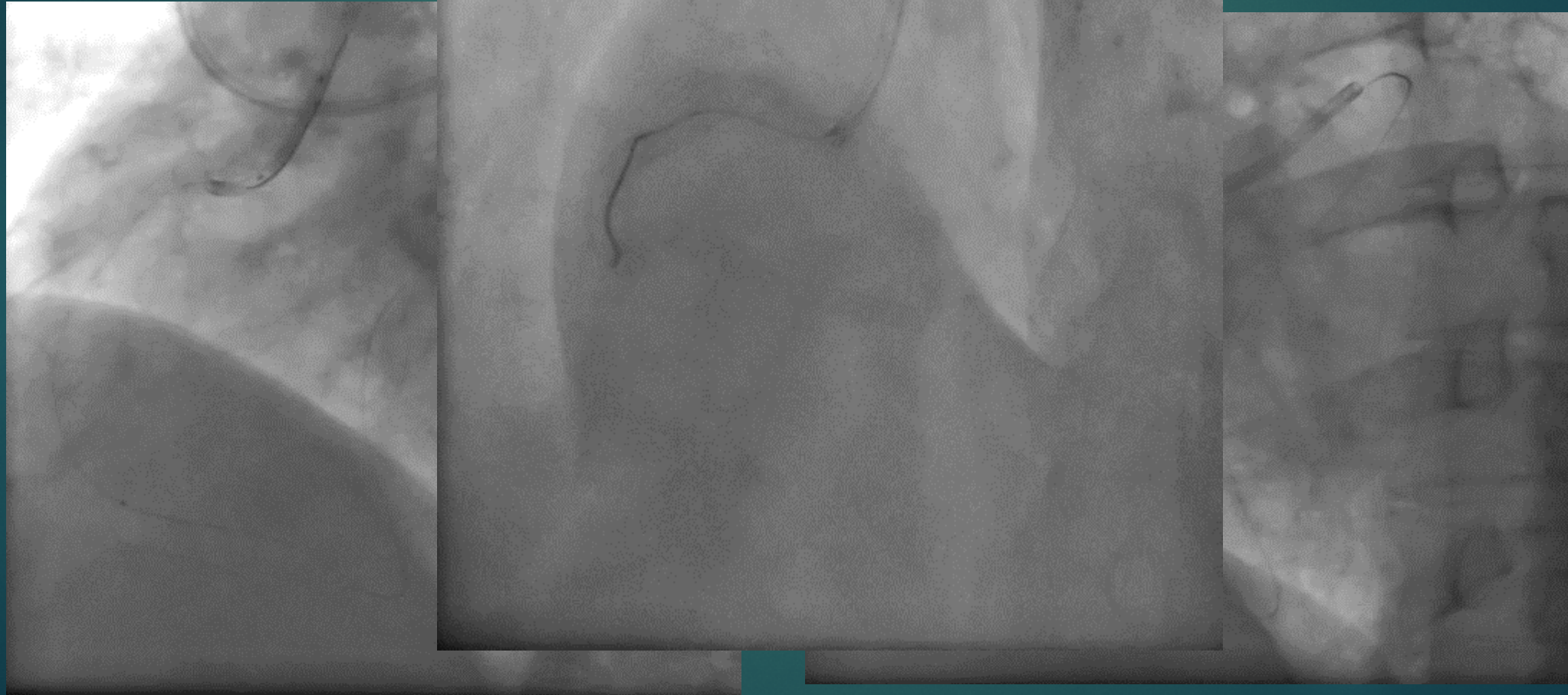


CONUS ARTER GEÇİŞ



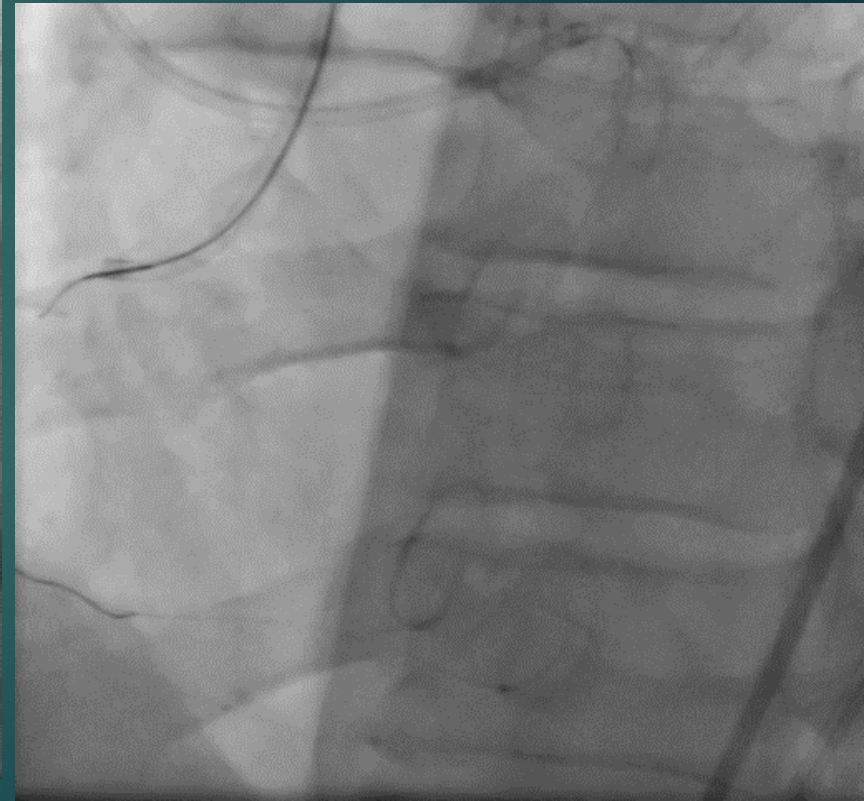
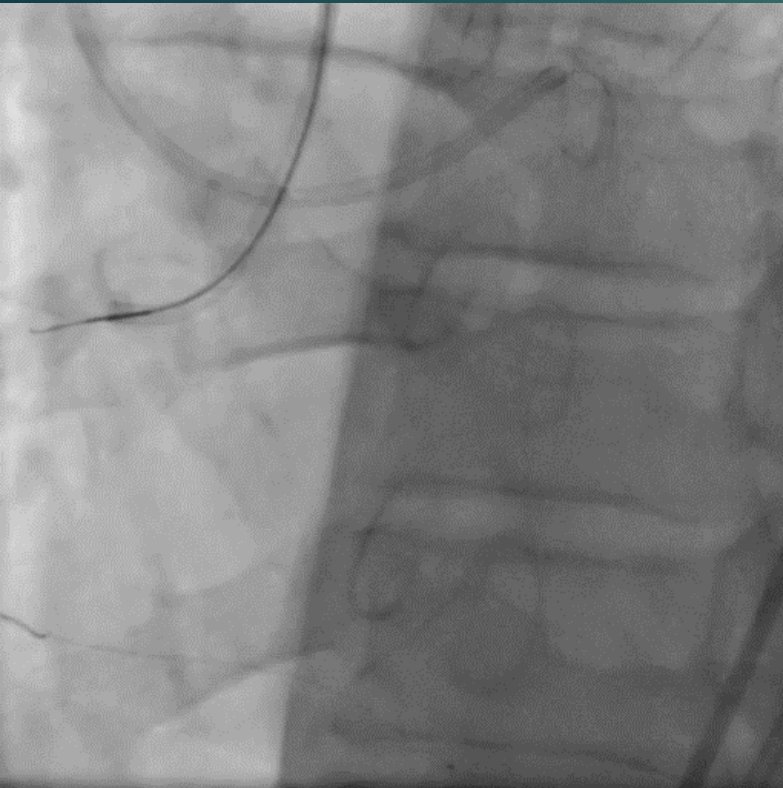
MİKRO KEÇMİRSE NE EDEK?

330 cm TELİMİZ YOXS A NE EDEK?



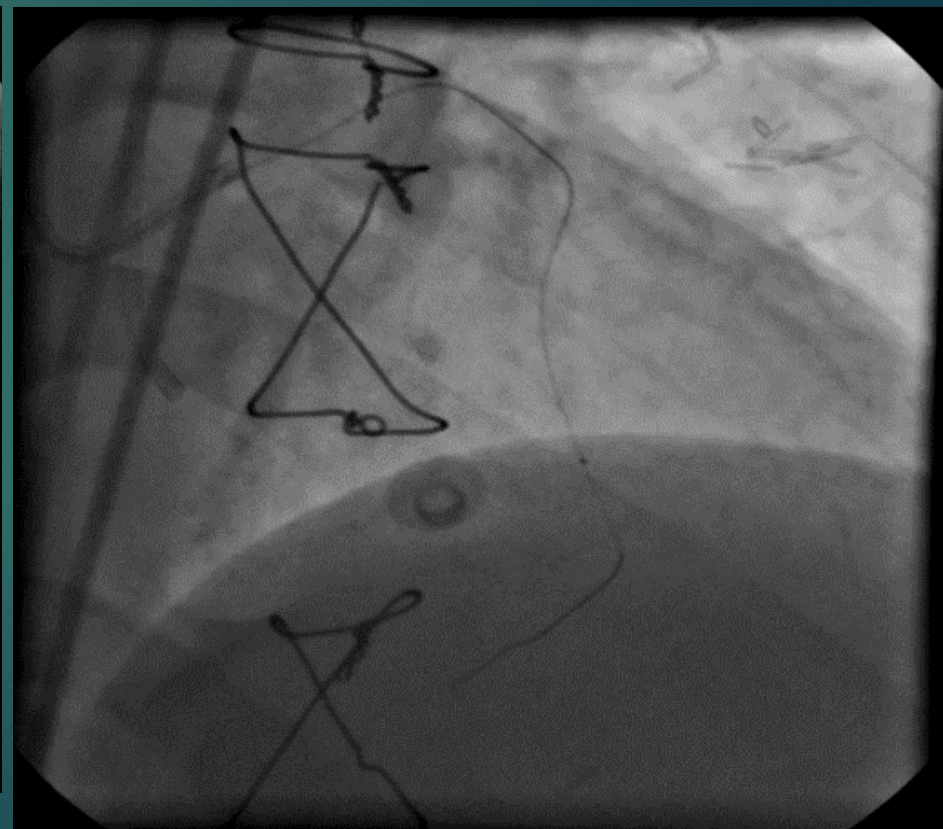
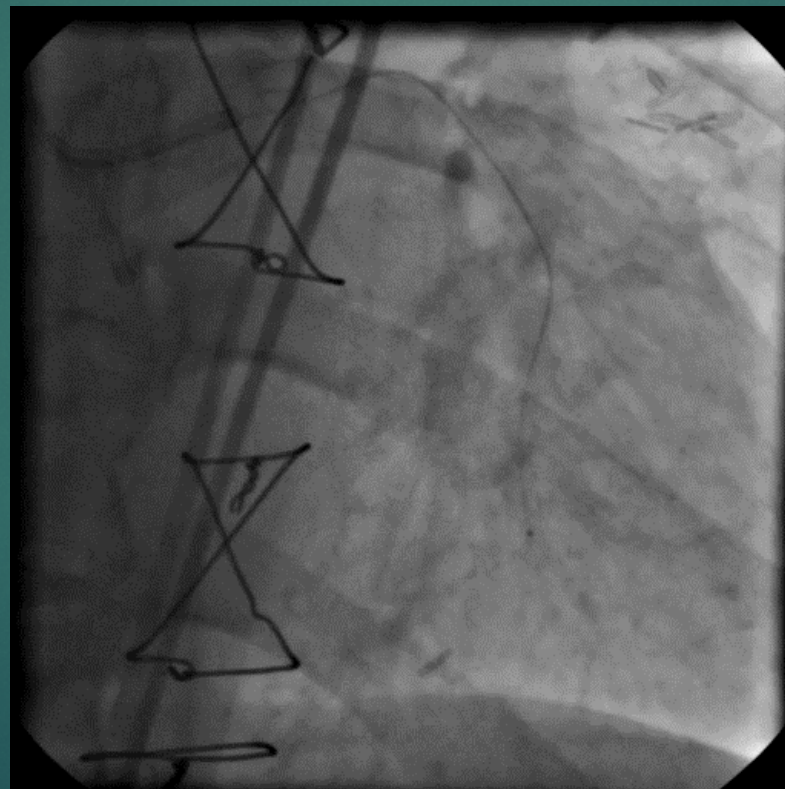
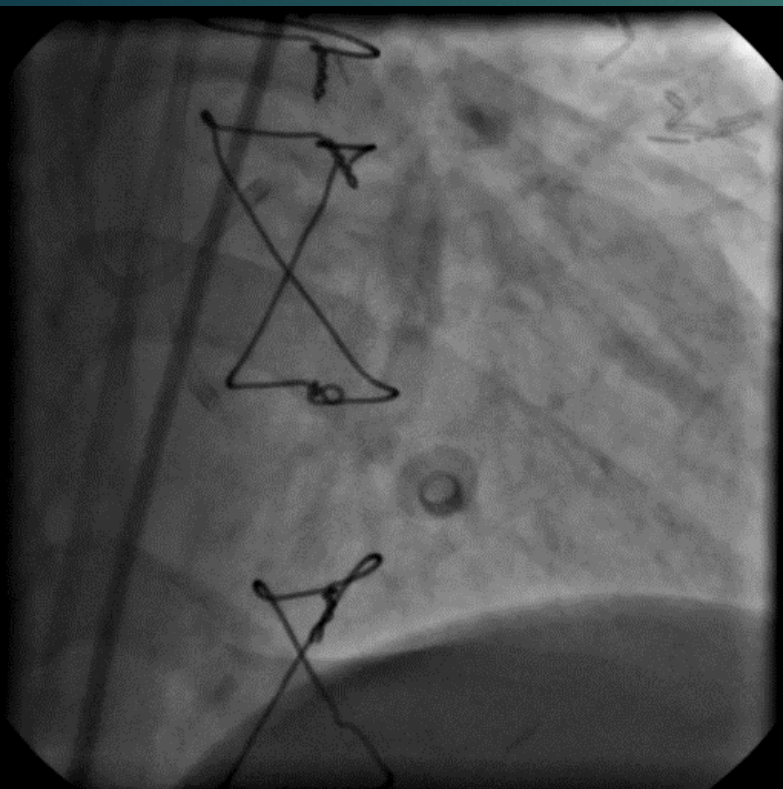
Kollateral ballon dilatasyon

1.0*15 mm cto ballon



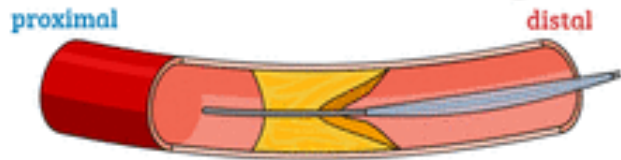
Epikardial kollateral

SHOU-3 TEL



Retrograde CTO Crossing Techniques

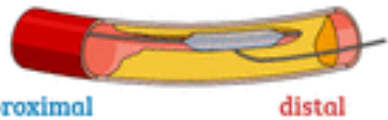
1-Retrograde wire escalation



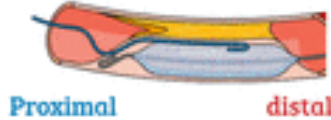
Short occlusion (<20 mm)
tapered distal cap

2-Retrograde dissection reentry

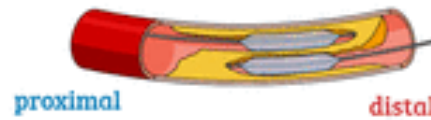
Reverse CART



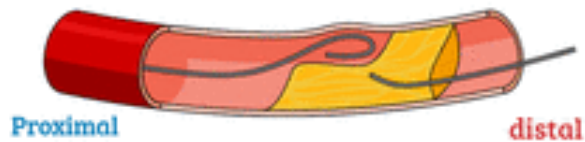
CART



Confluent balloons



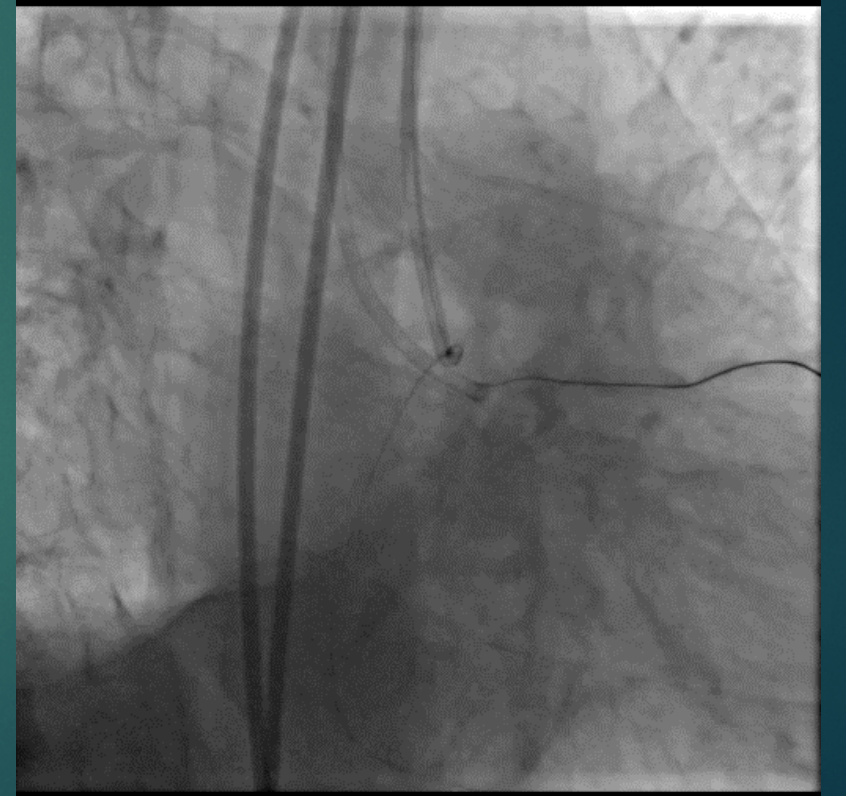
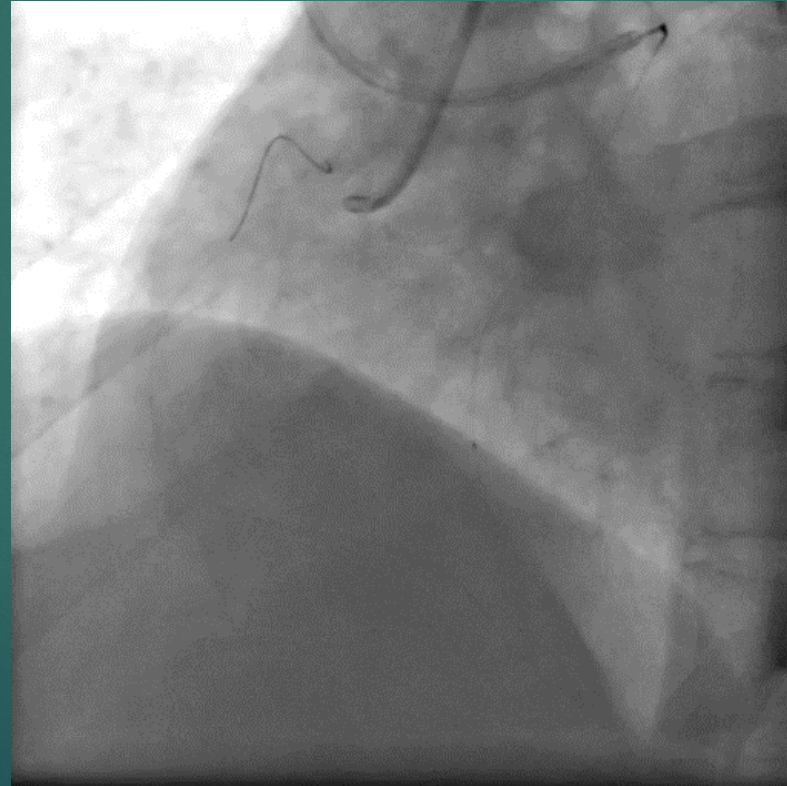
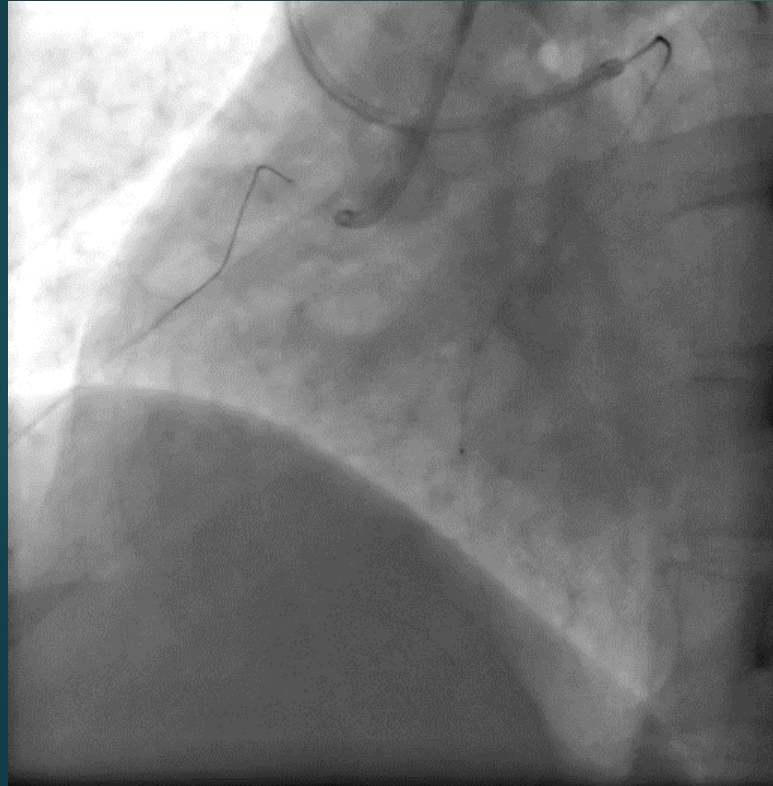
3- Marker for antegrade wiring



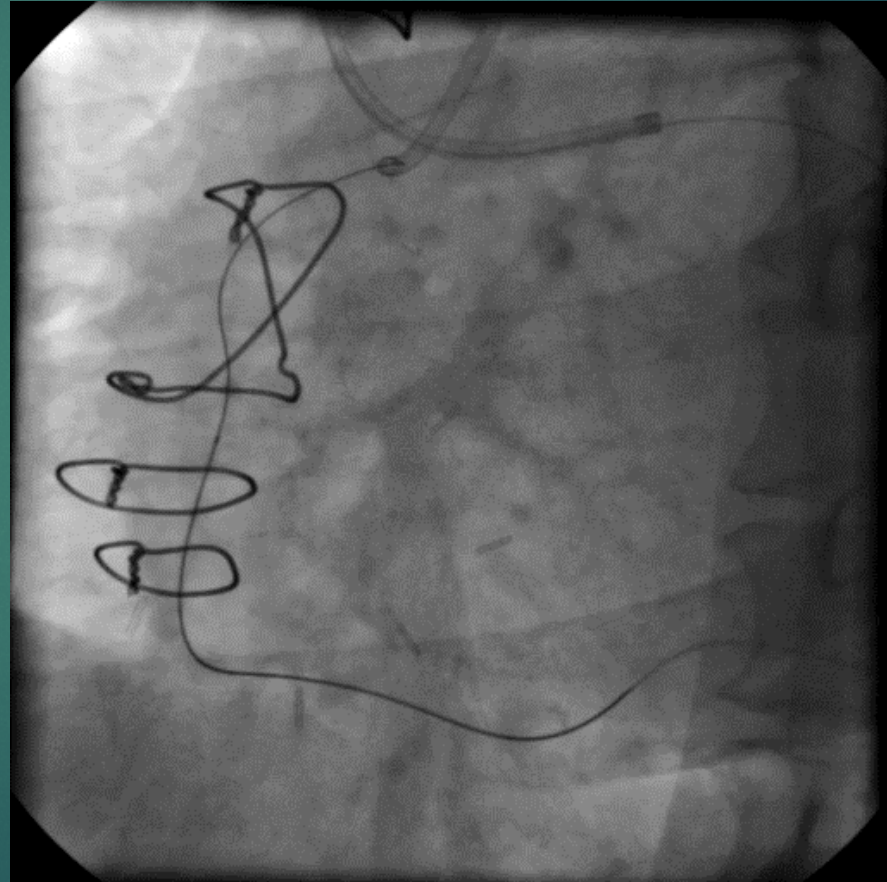
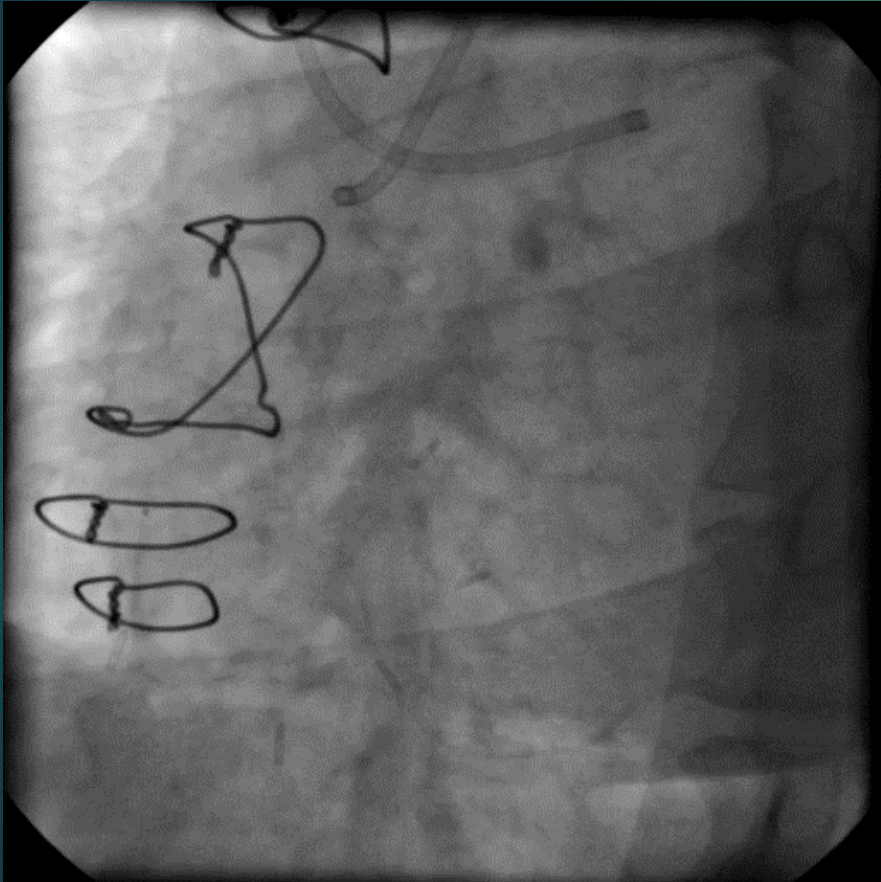
When other measures fail

RETROGRAD GEÇİŞ TEKNİKLERİ

DİREK GEÇİŞLER

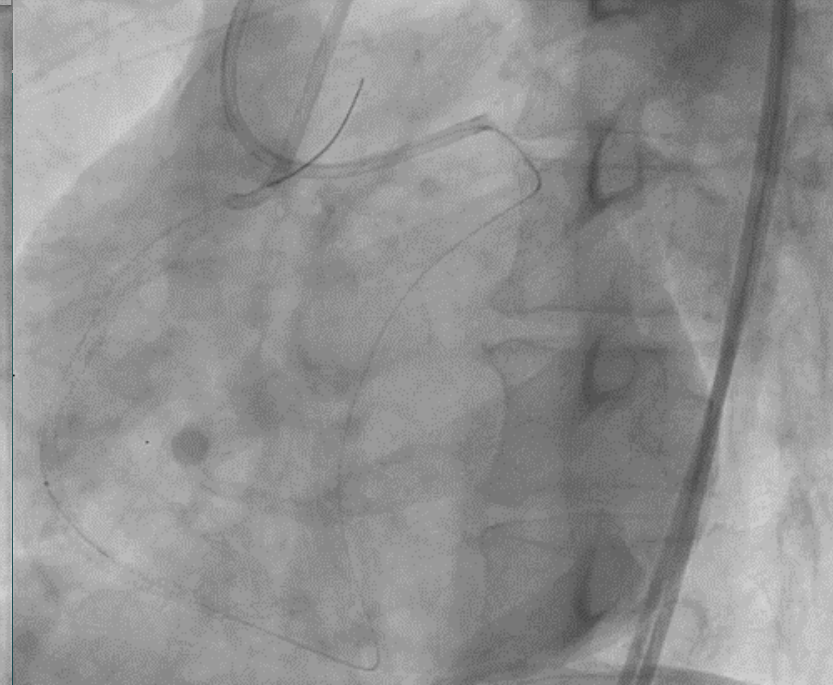
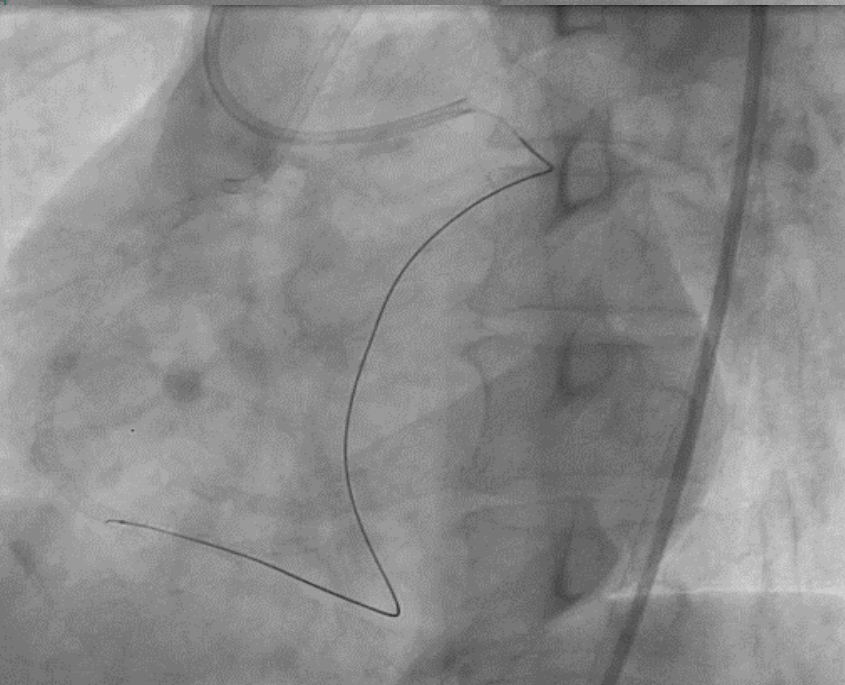
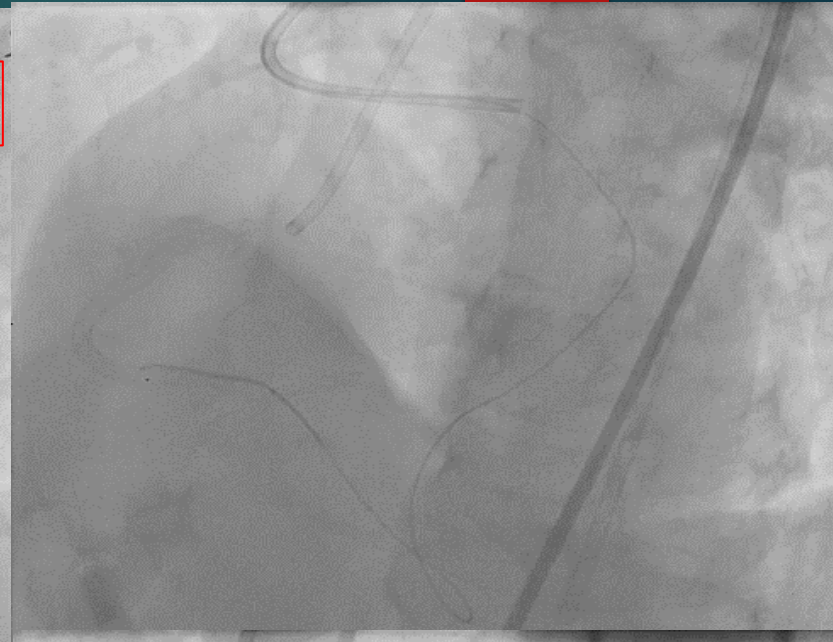
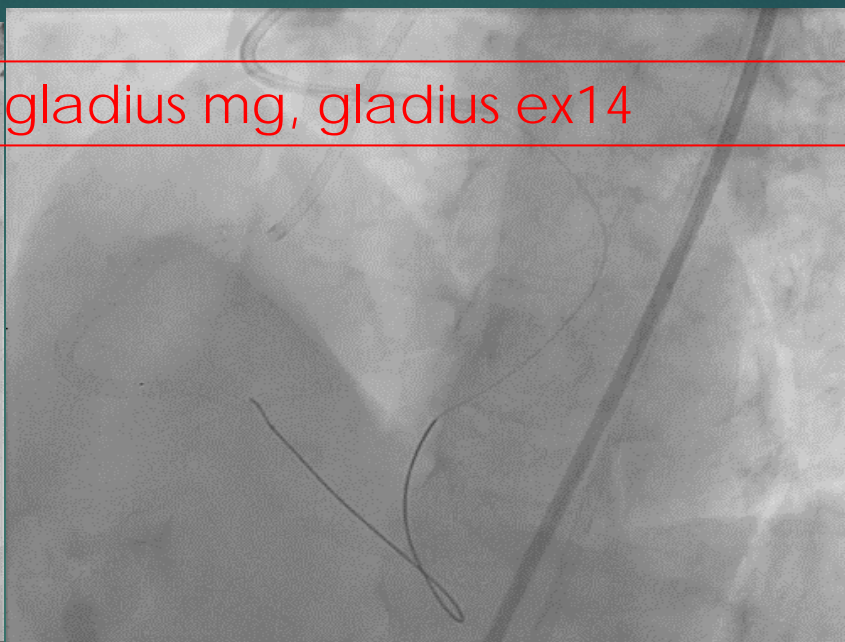
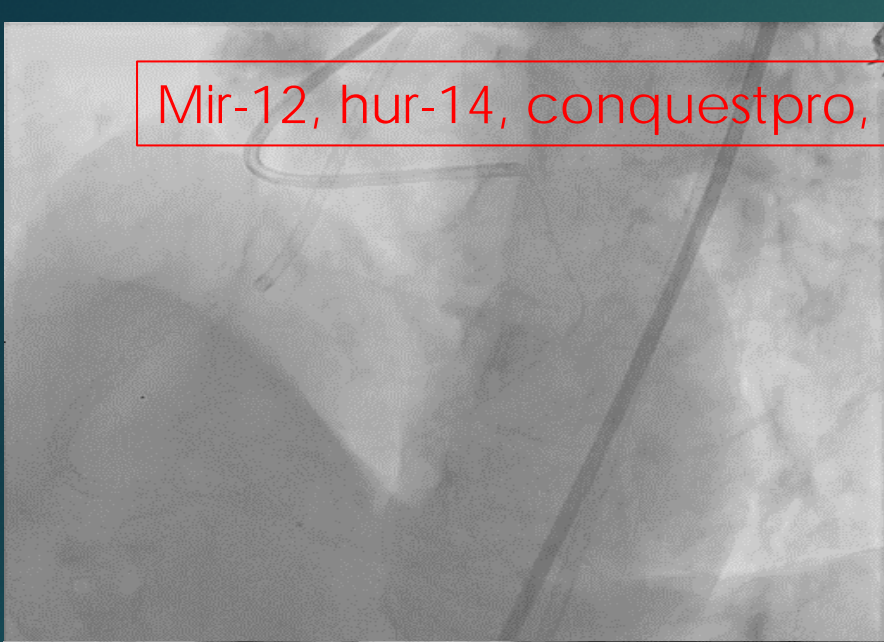


Gaia-2 direk keçiş



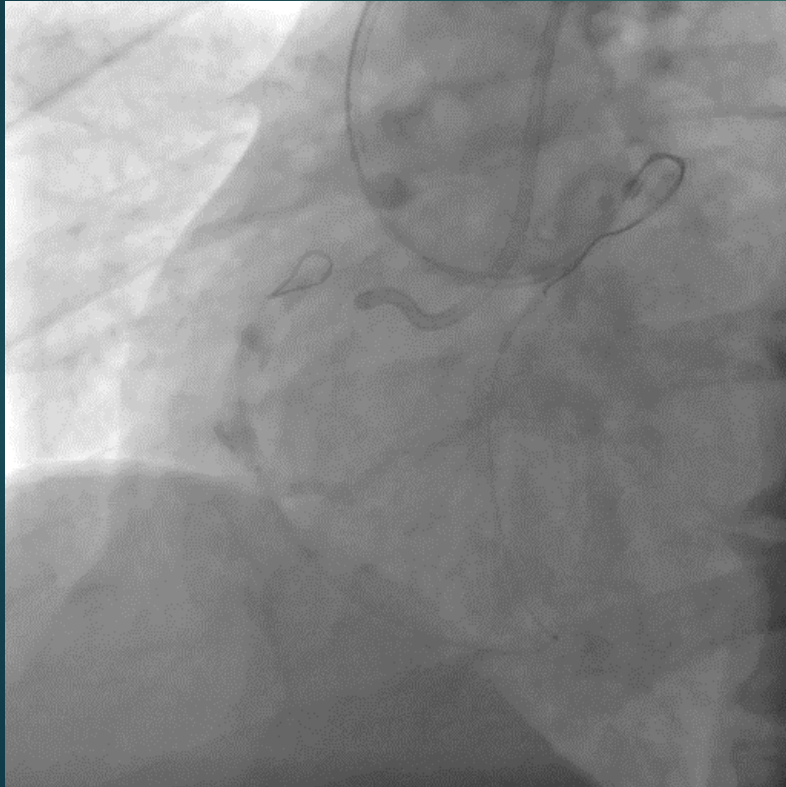
RETRO WIRE ESCALASYON

Mir-12, hur-14, conquestpro, gladius mg, gladius ex14

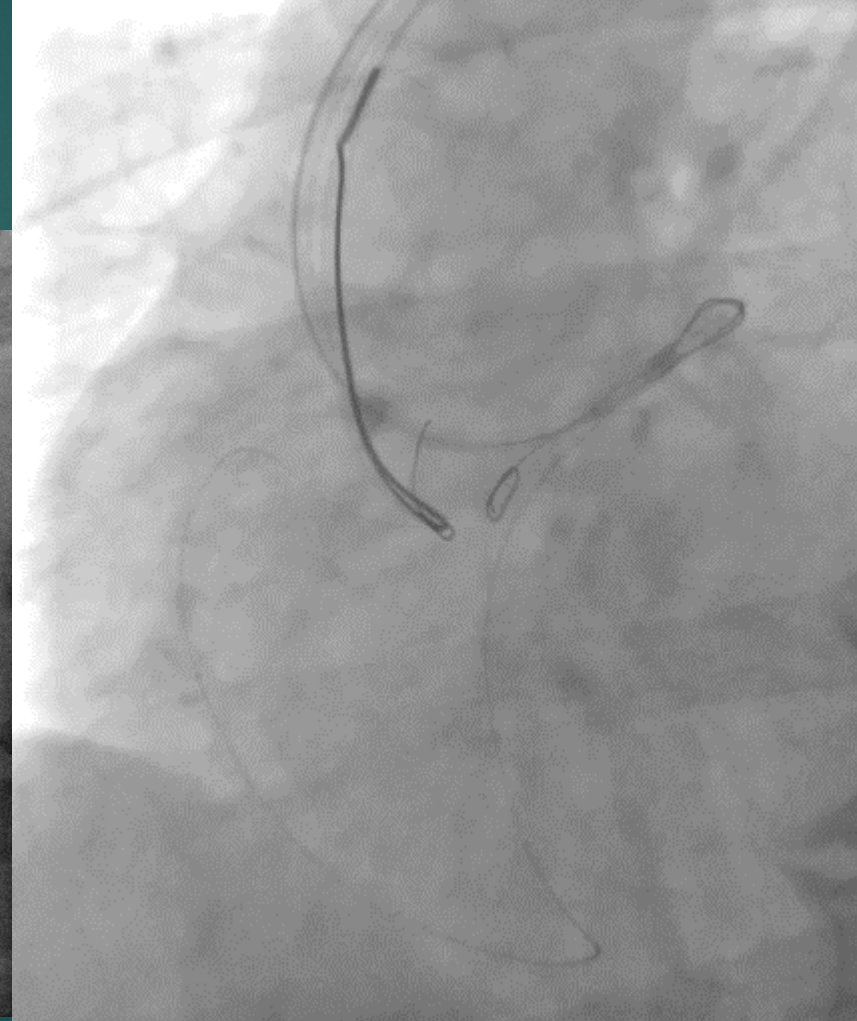
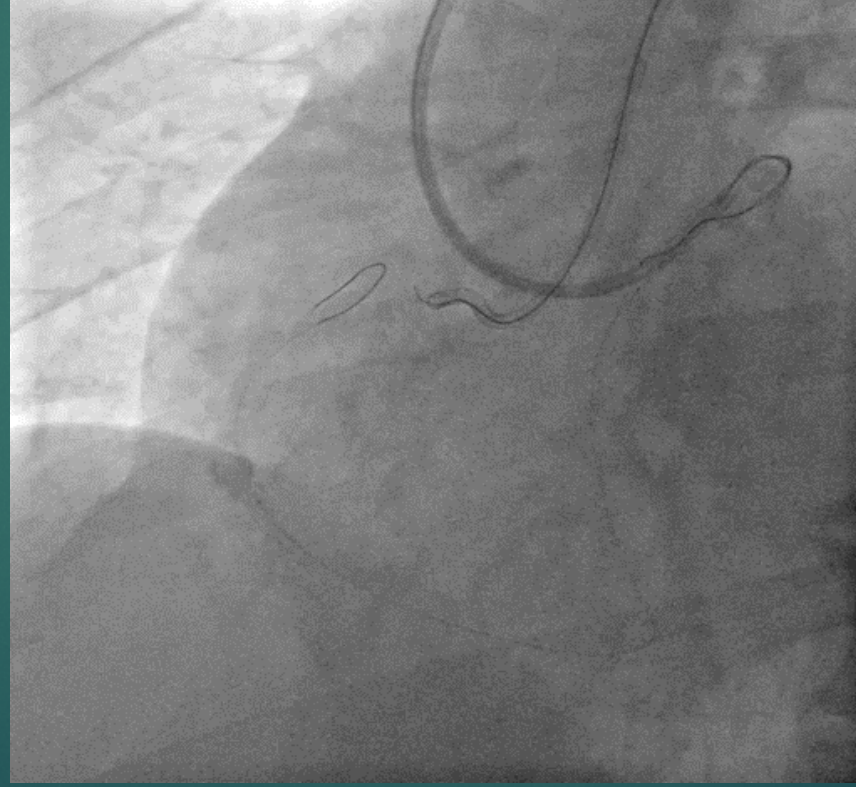


Knuckle wire

Gladius mg

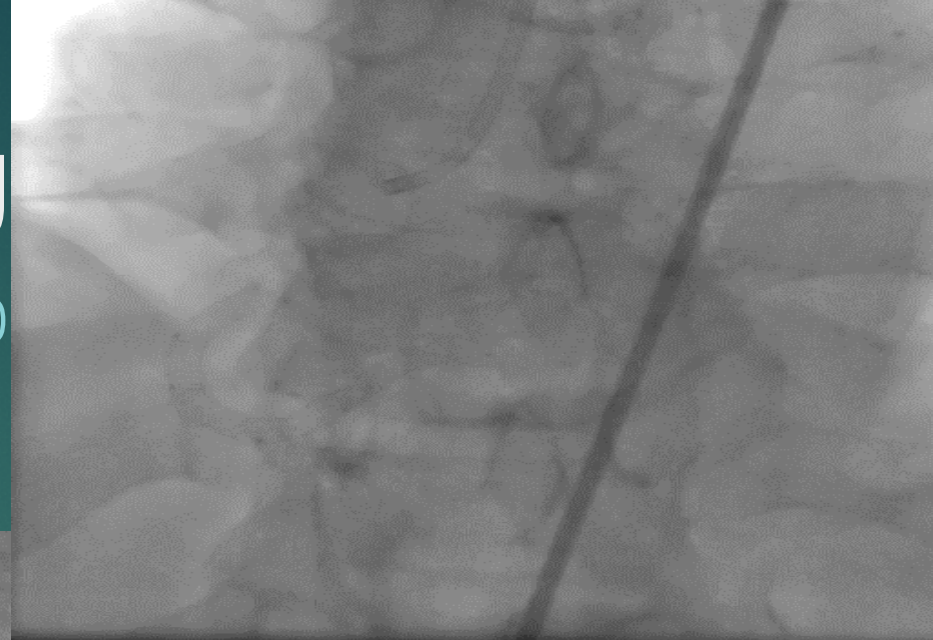
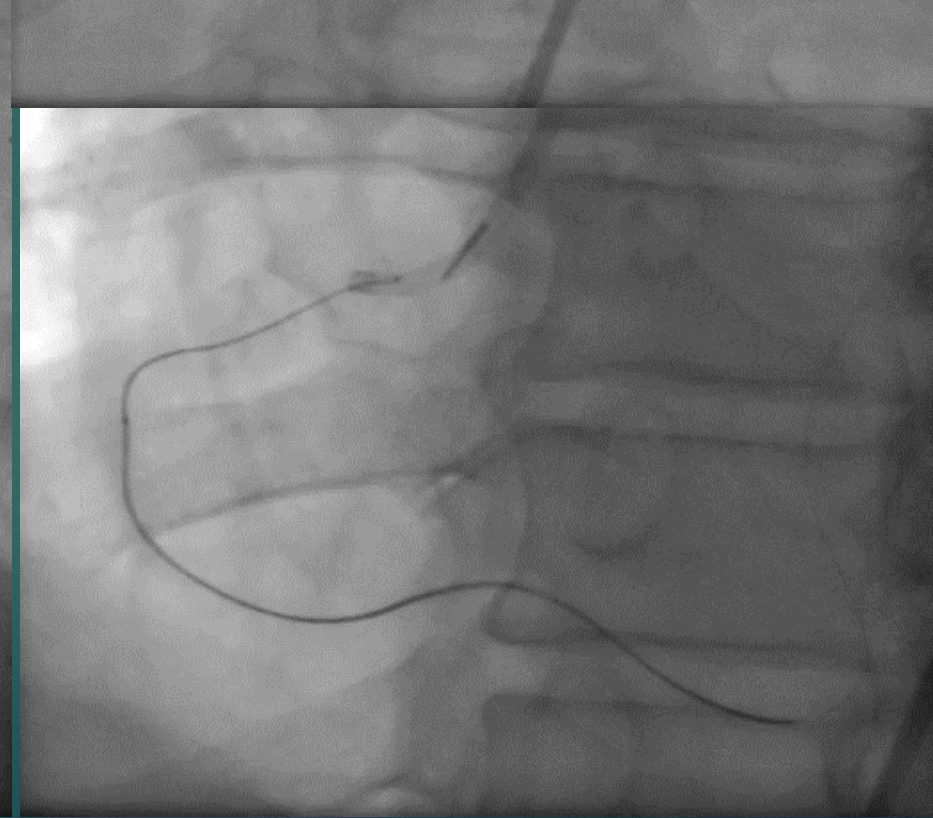
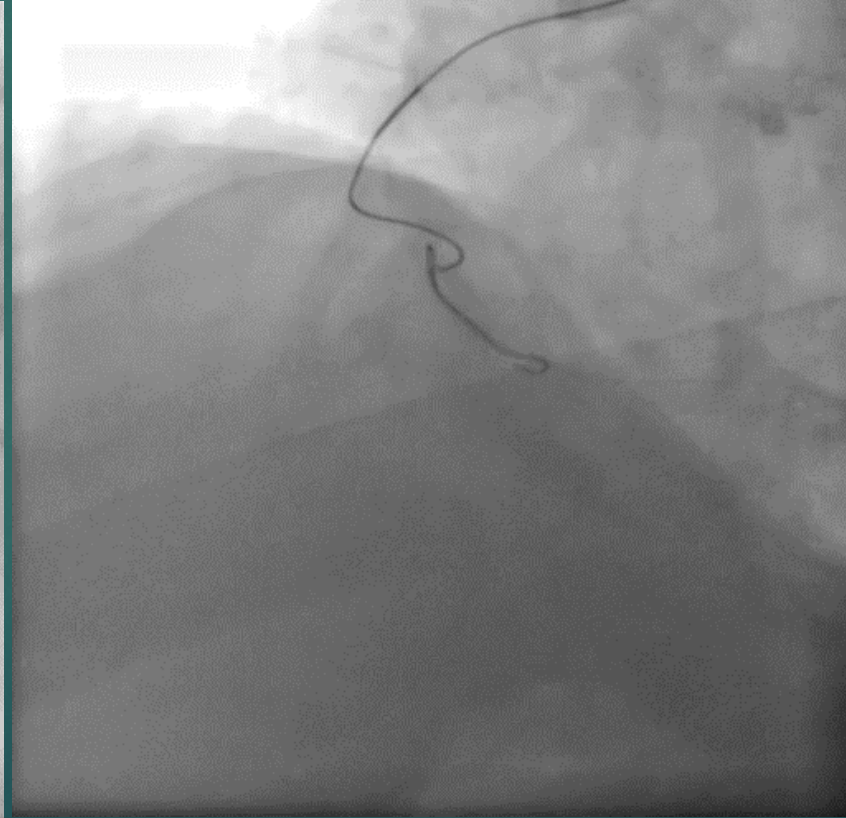
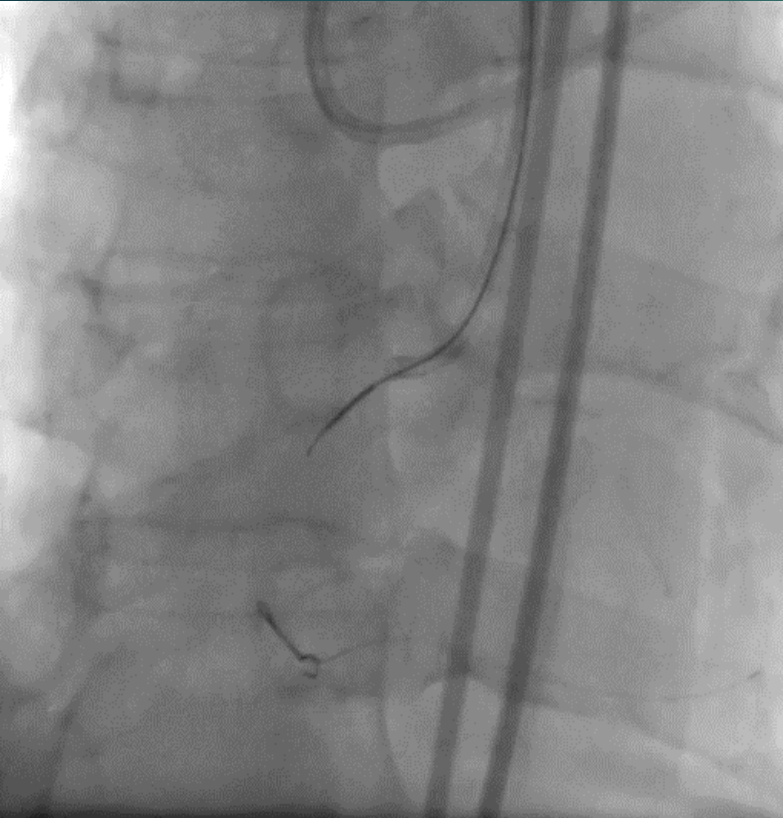


Ante gaia-2 subintimal
zayıflatıp gladius mg geçiş



Marker for antegrade wiring

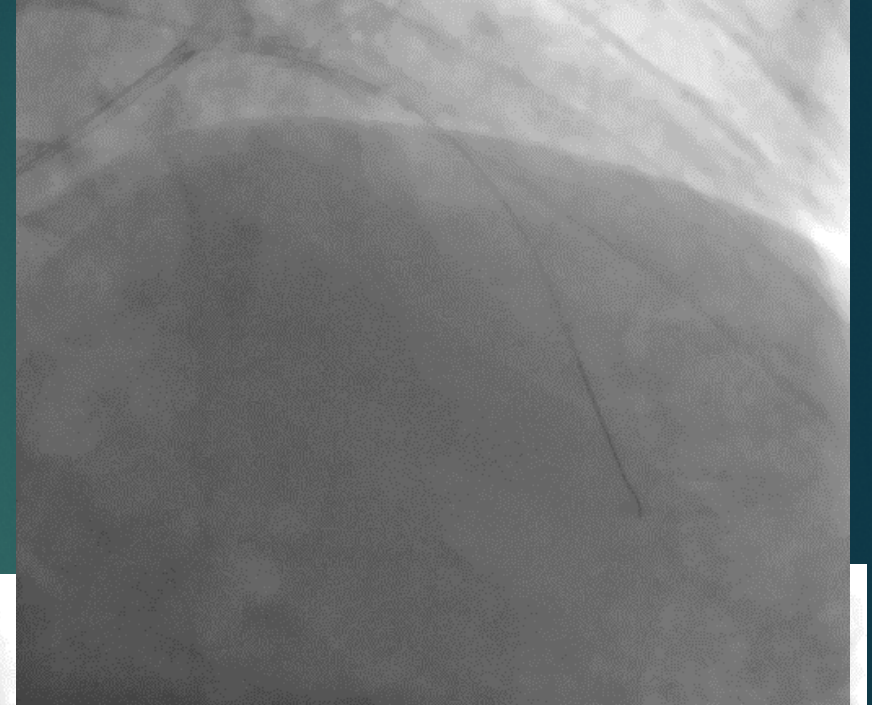
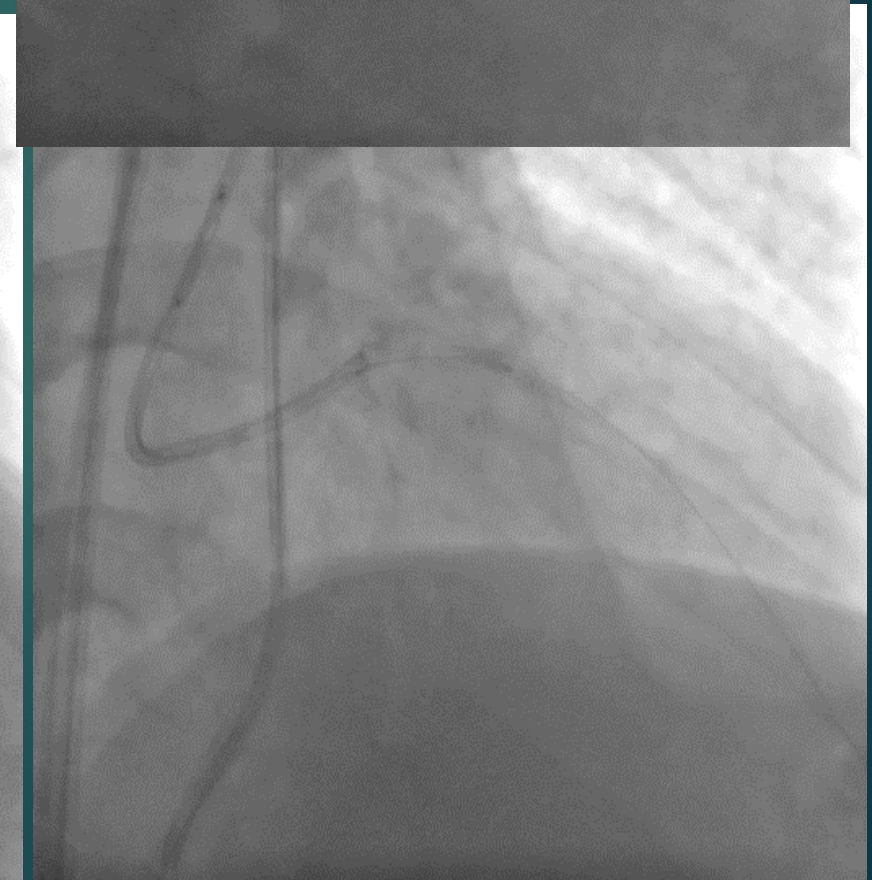
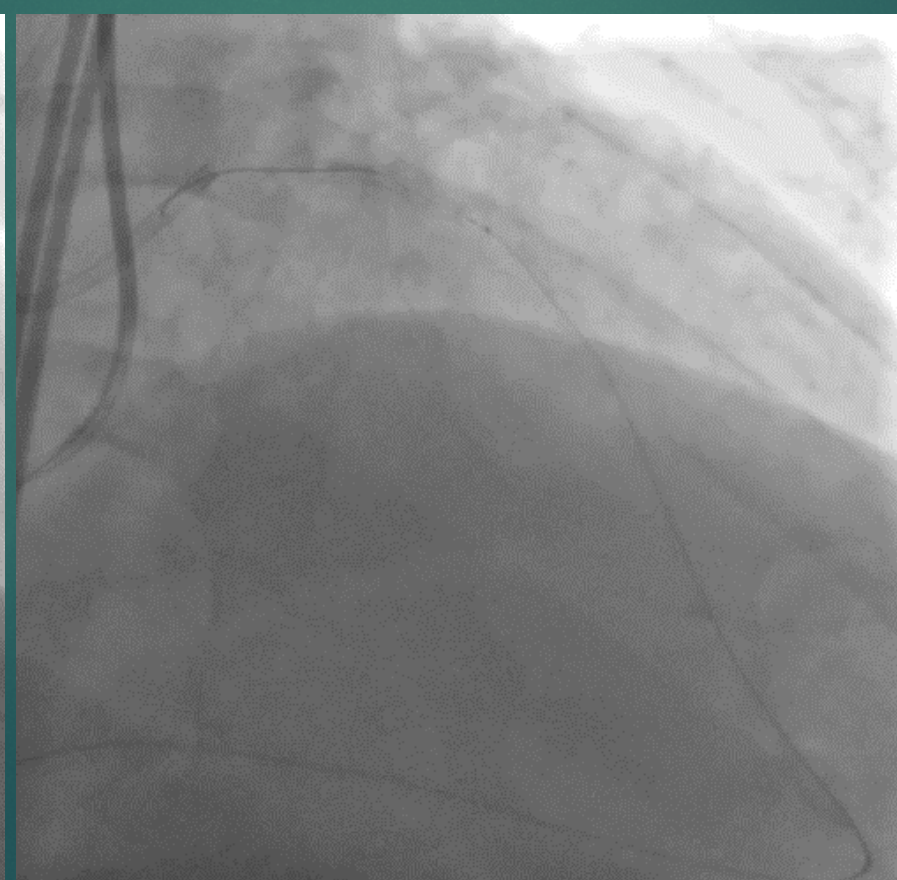
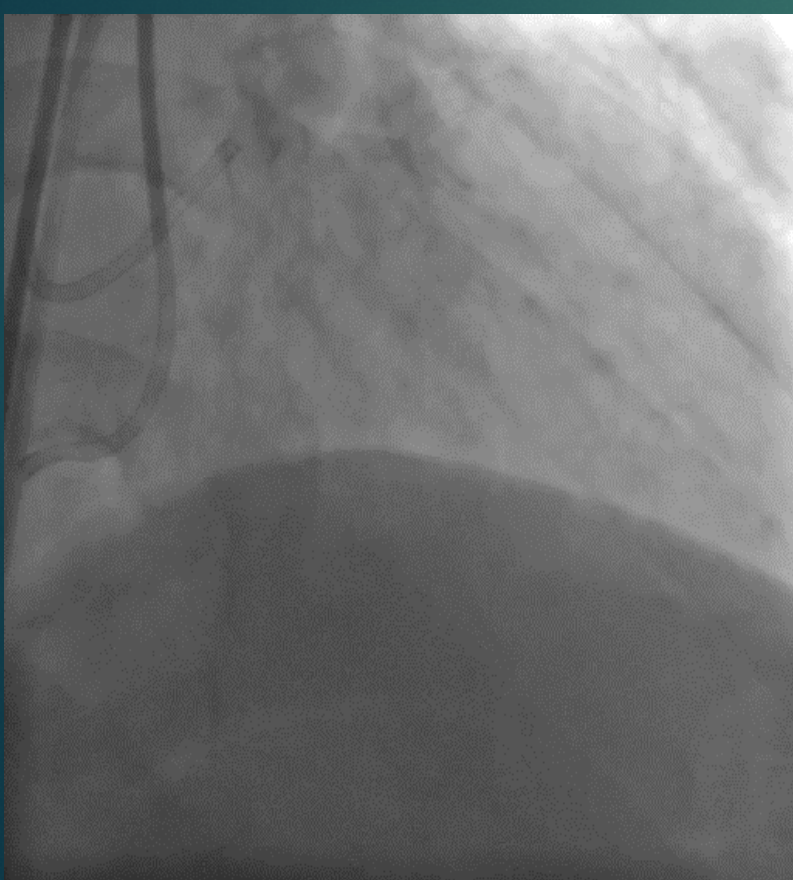
Prox cap belirsiz(knucle pilot150) Gaia-2 ile antegrad başarısız(pilot150 marker olarak istifade ettik) Gaia-2 retro keçiş



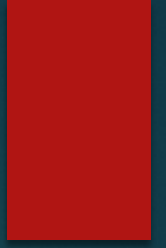
CART demo?

İnstant restenoz (ante uğursuz)

Tüm çabalara rağmen mikro lezyondan geçmedi



Reverse CART



RCA CTO

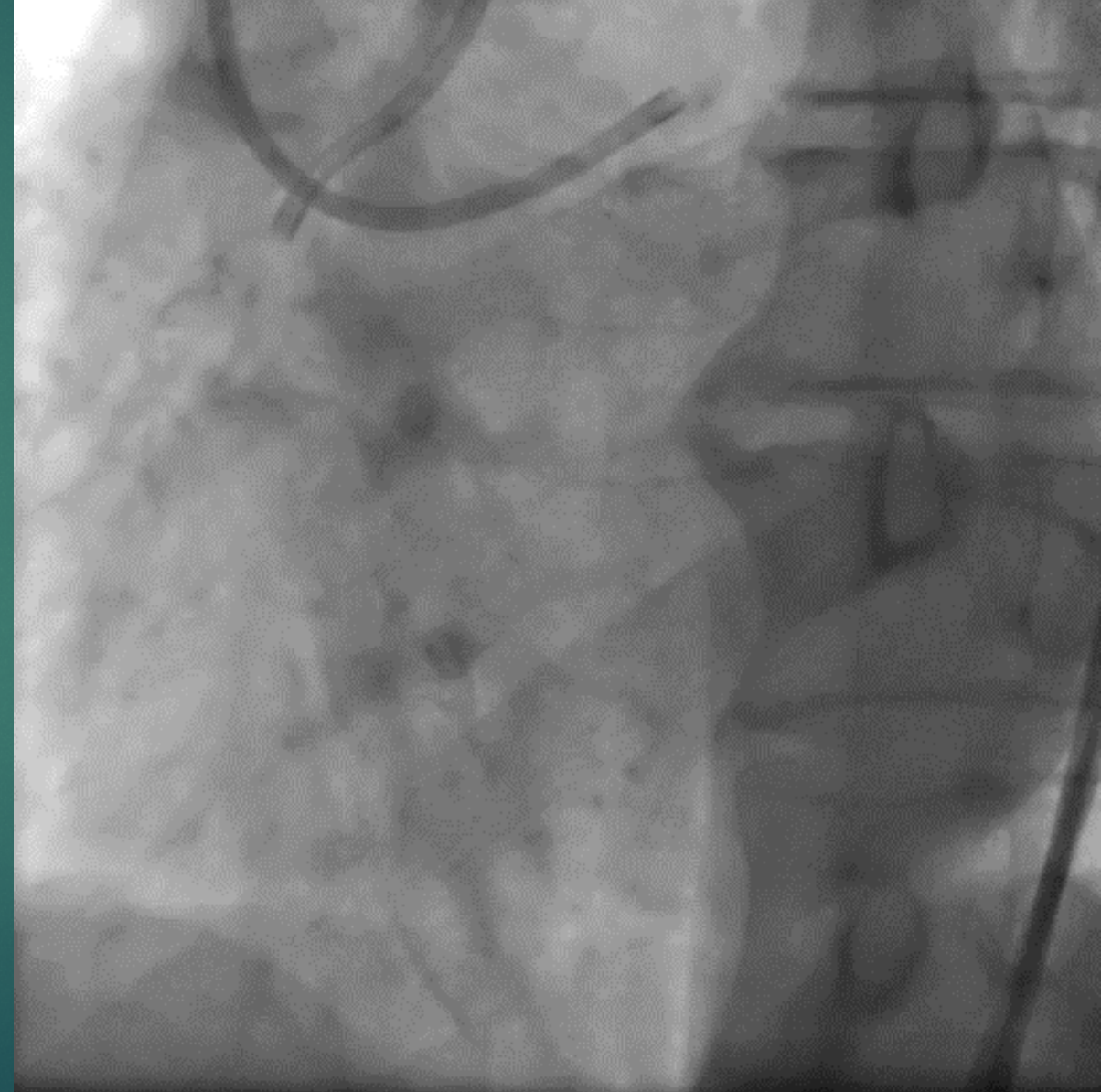
CCS-III anjina

HT,HL++

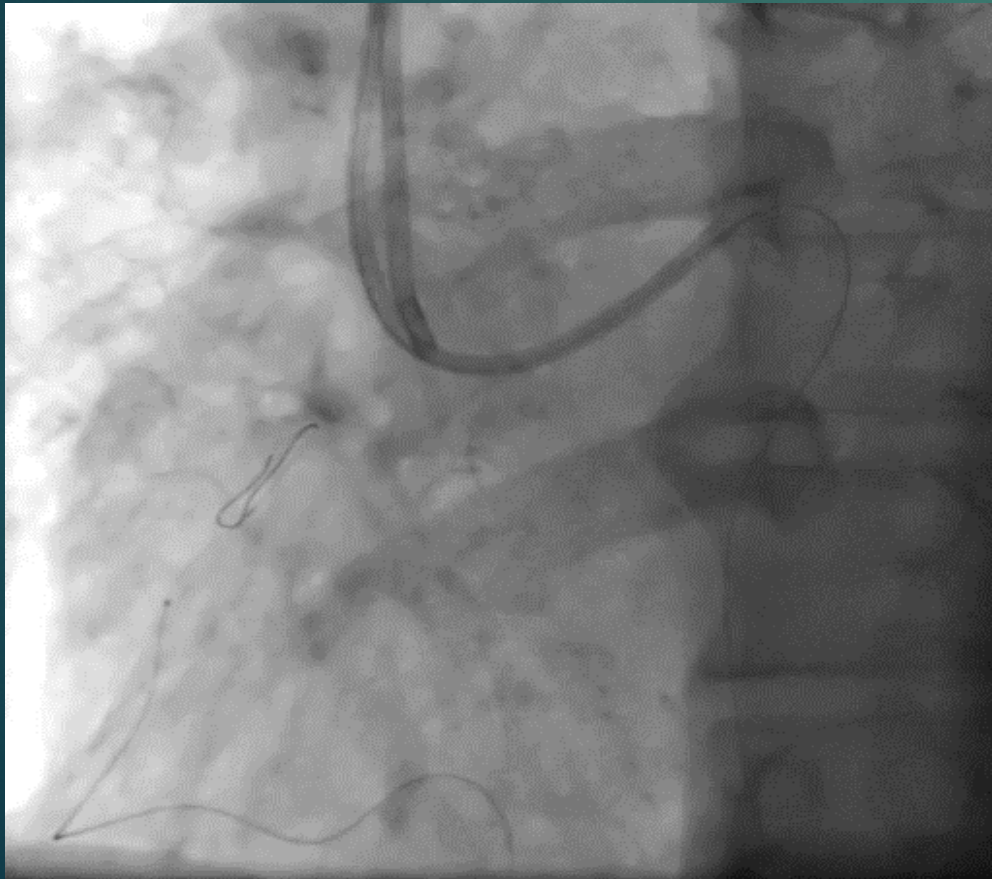
J-CTO SCORE: 3 (başarısız antegrad girişim, lezyon uzun>20 mm, belirsiz prox cap)

Werner sınıflaması: CCS-II

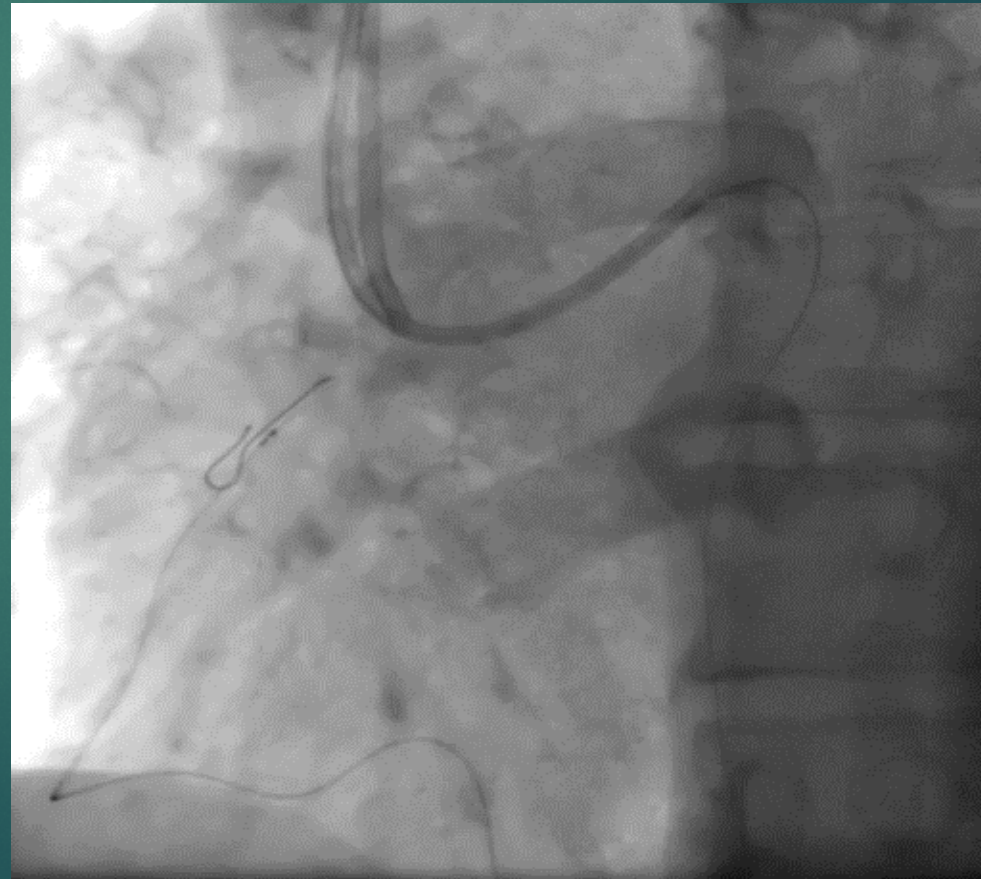
Set-up: Bi-femoral EBU3.5 7Fr, LAmpitz-1 7Fr.



PILOT-200 knuckle wire



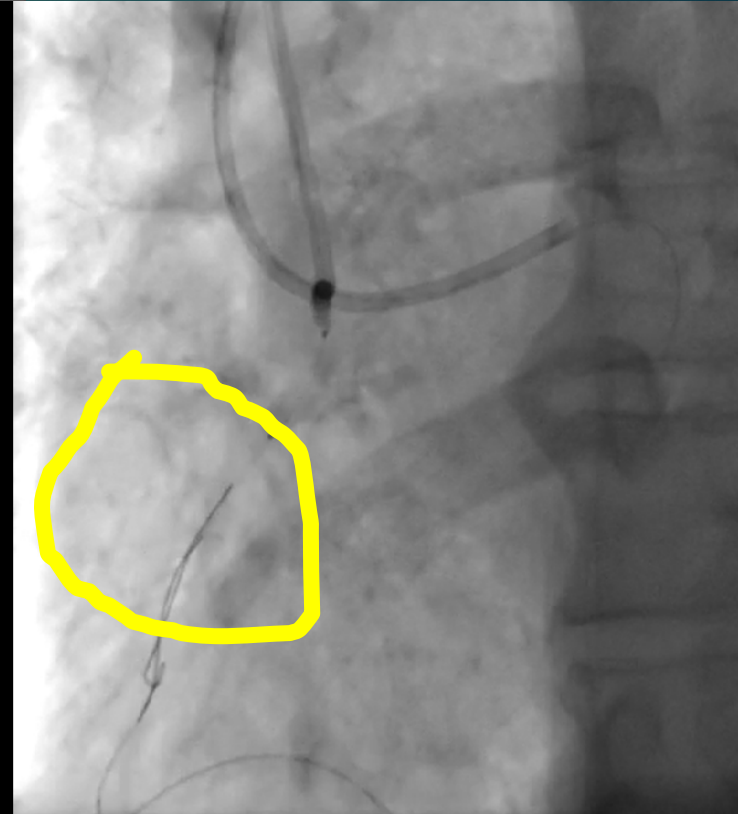
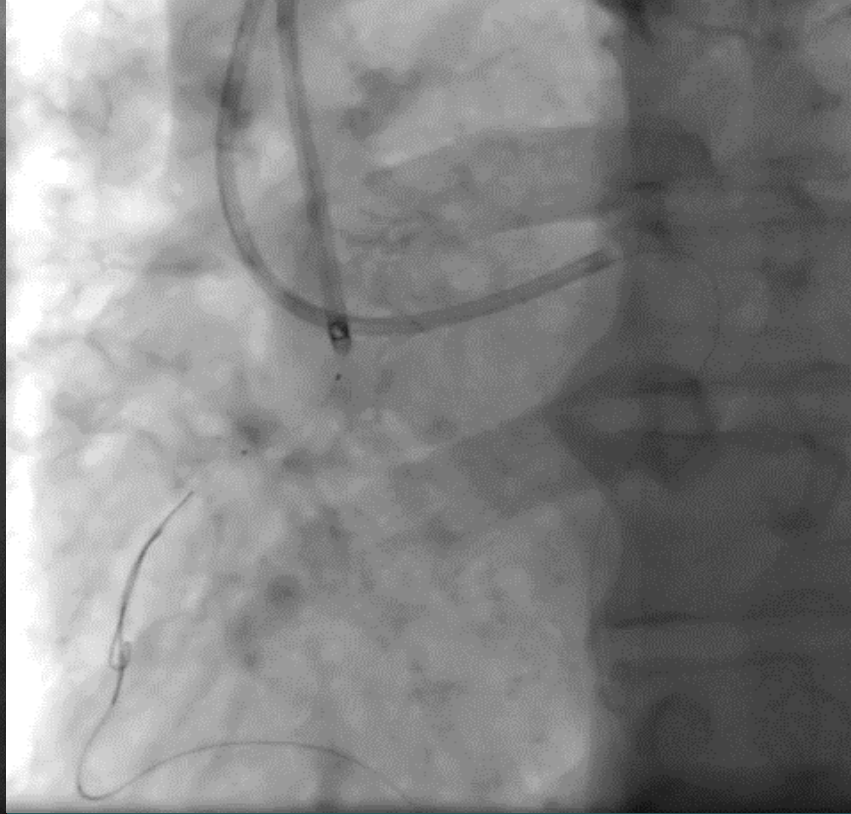
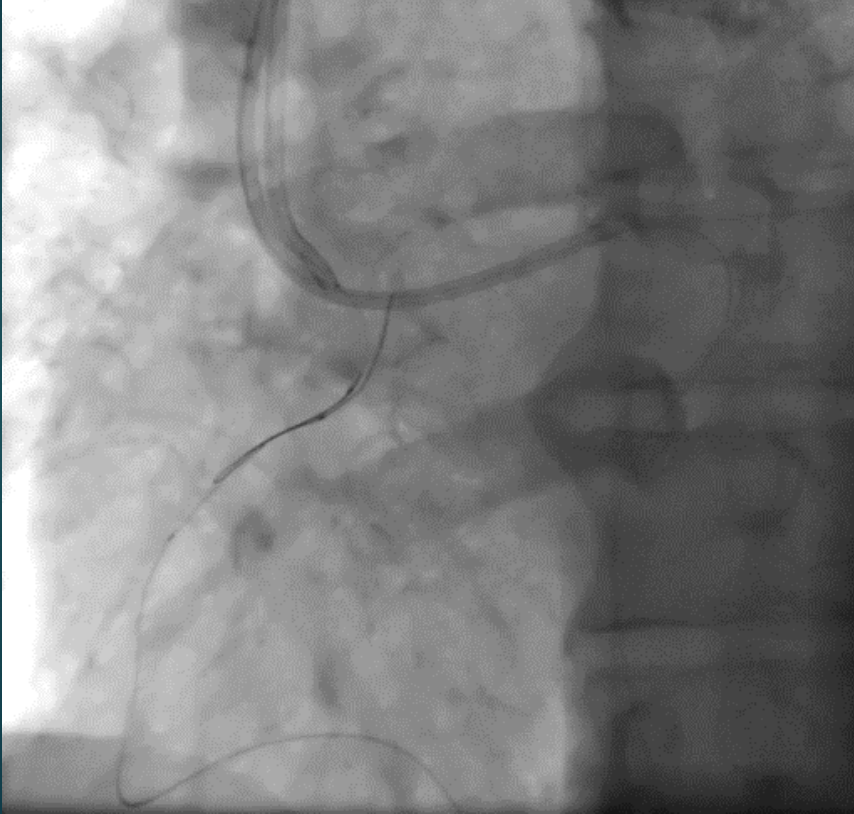
Finecross ilerleyiş-Subintimal
diseksyon



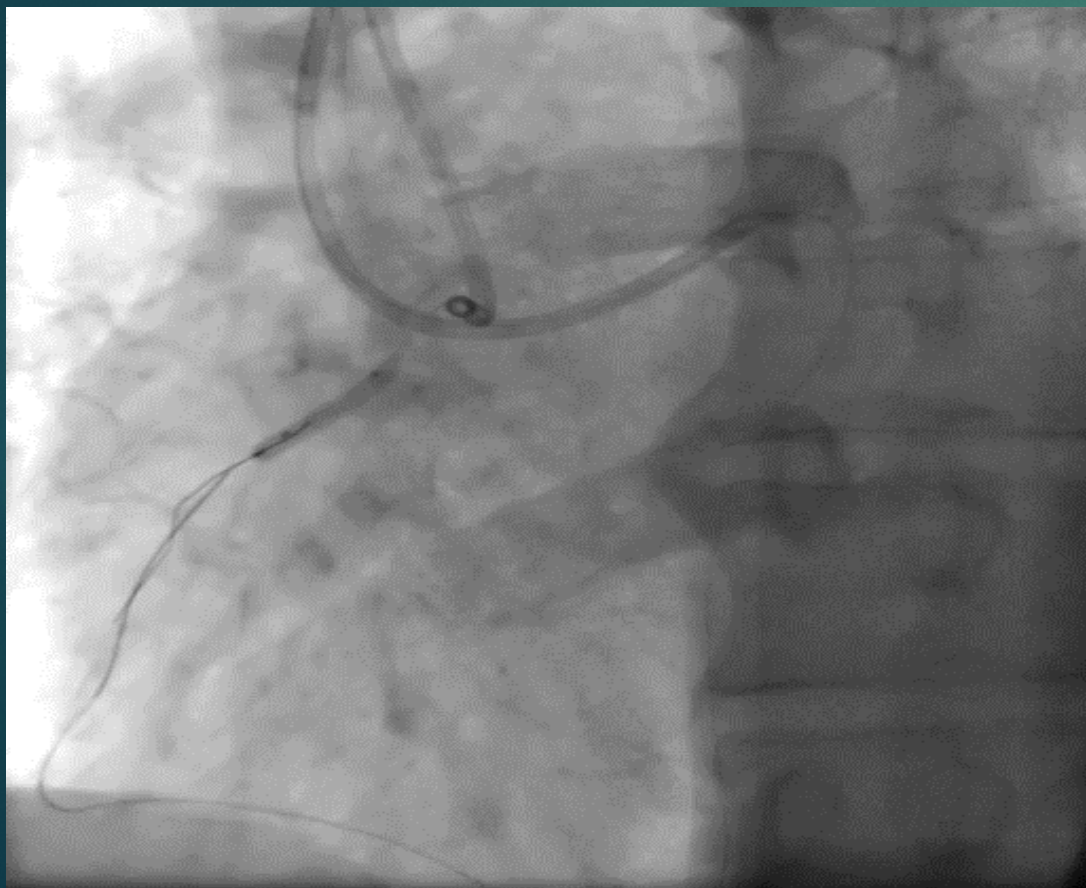
Retro Knuckle Başarısız Olunca

2.0*20 mm OTW ballon+Fighter
wire

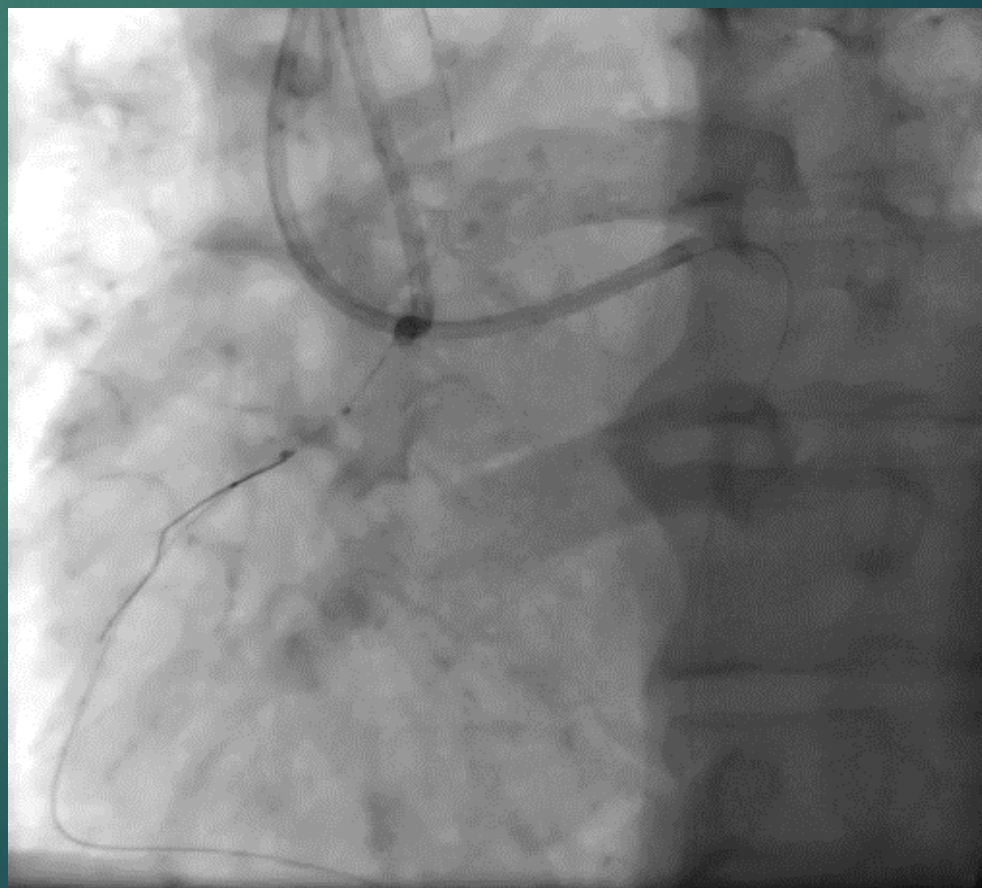
Tellerin bir birine en yakın
bölgesi



2.0*20 otw ballon 20 atm



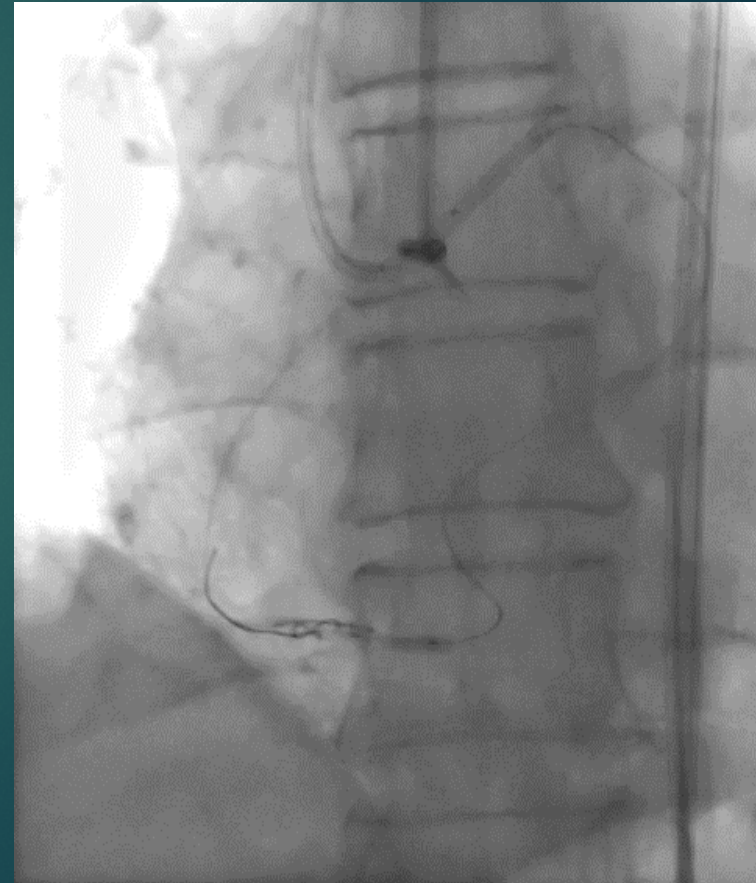
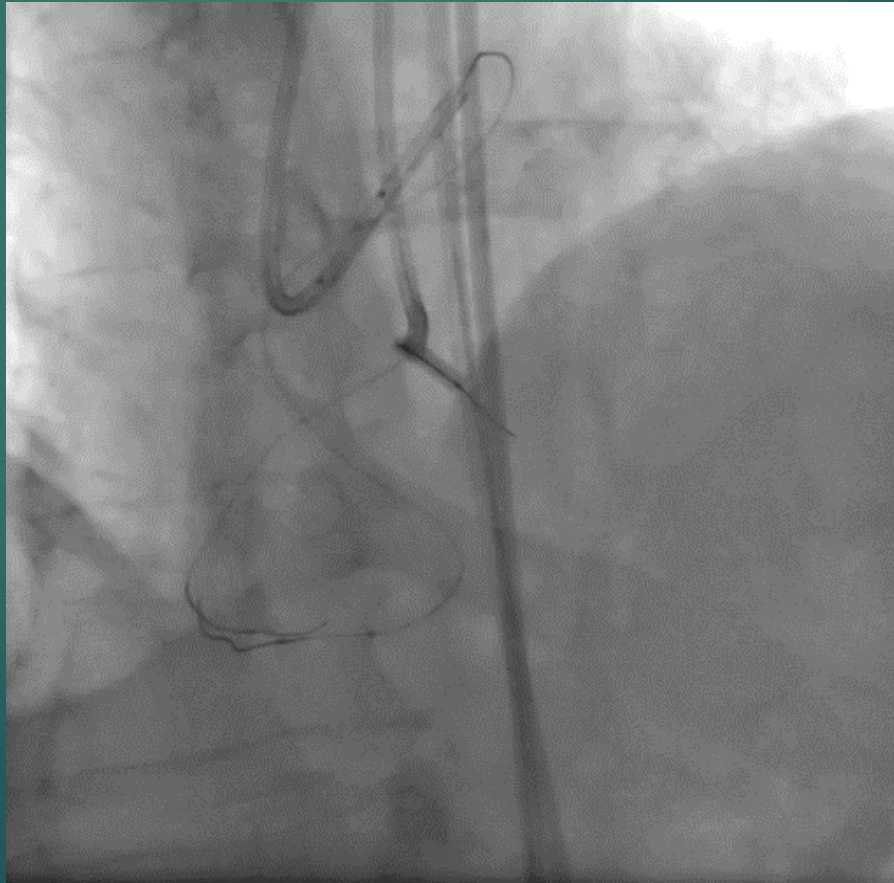
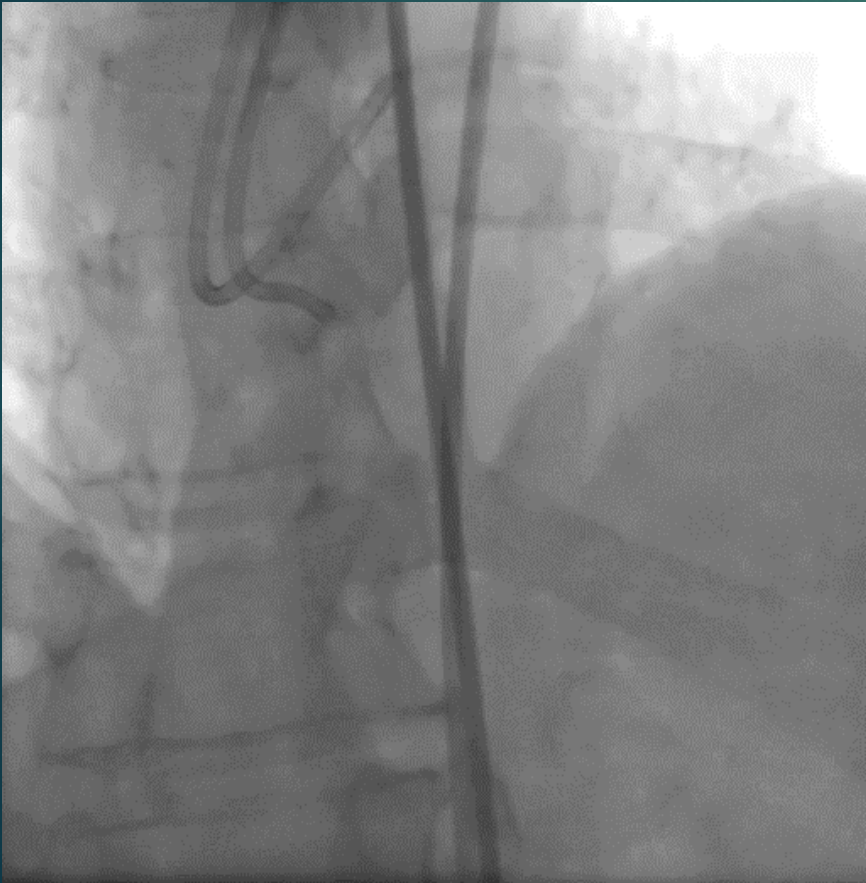
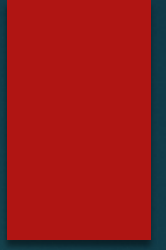
R-CART pilot-200



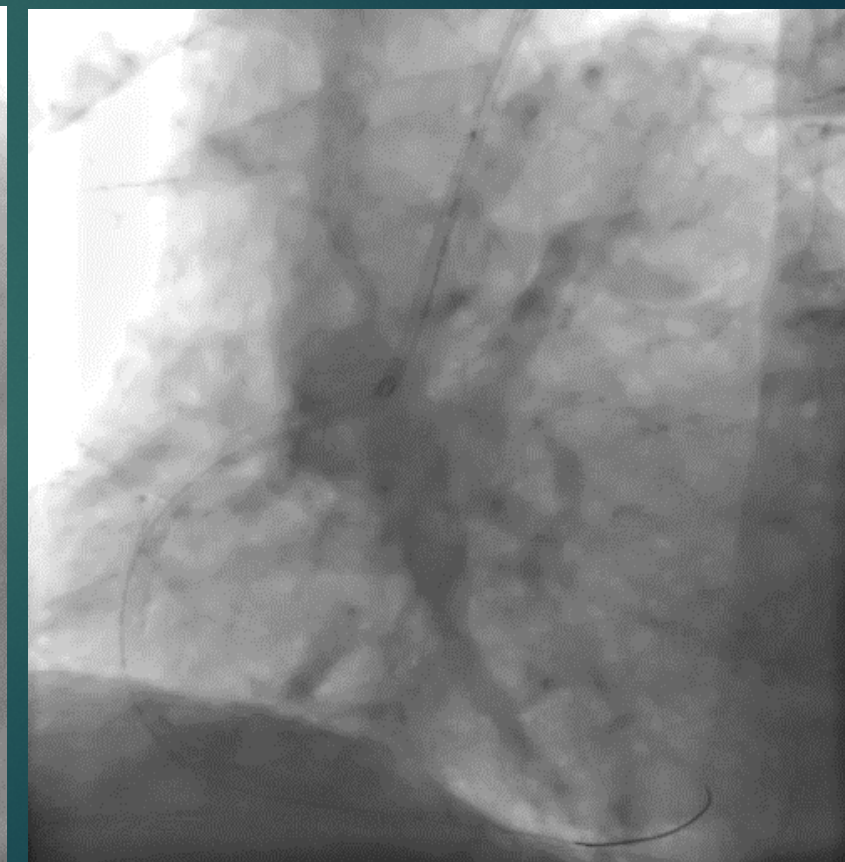
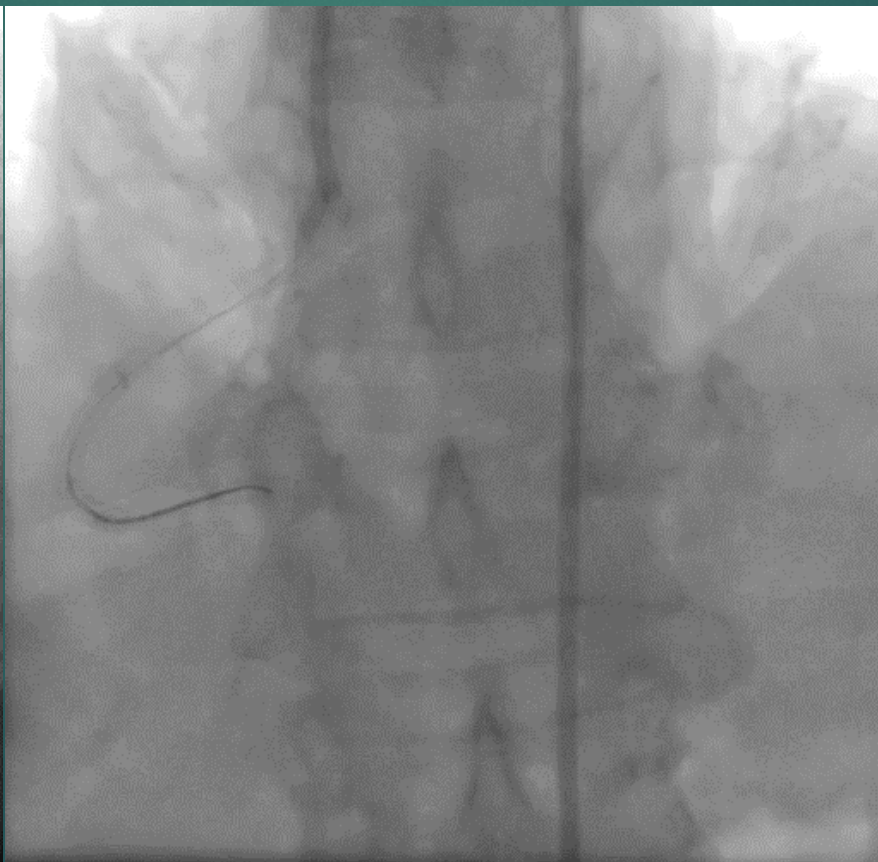
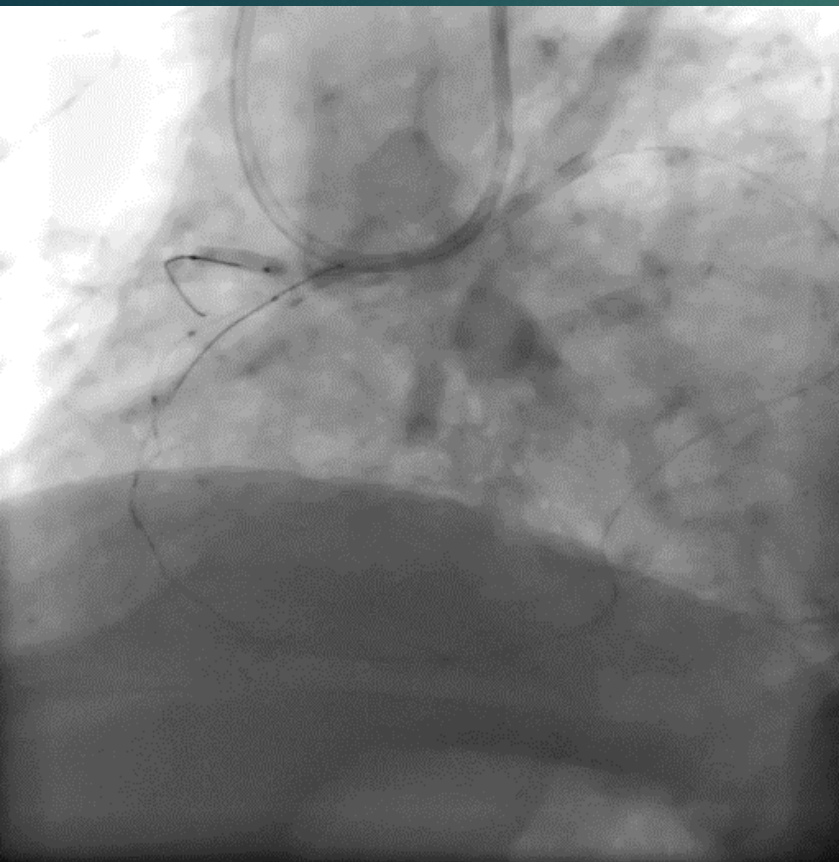
CART+RCART

RCA-CTO: J-CTO;3

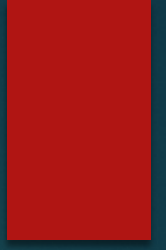
2.5*20 BALON CART>>
UĞURSUZ



3.0*10 MM BALON R-CART



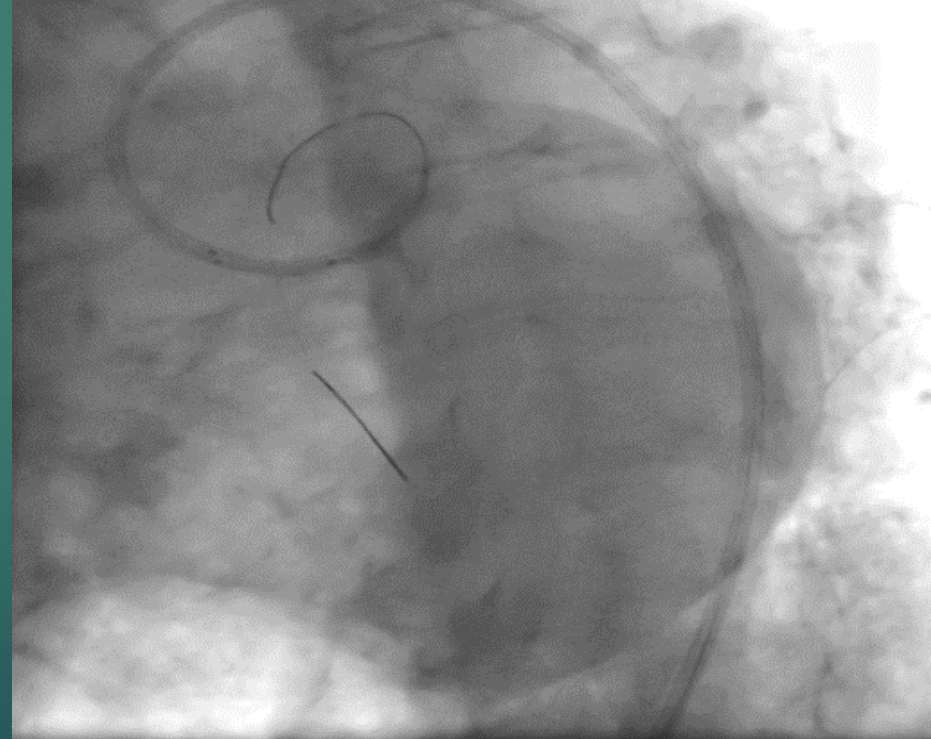
KOMPLİKASYONLAR



BALON İLE SIKIŞTIRILARAK YAPILARAK ÇIKARILMASI

BALON KIRILMASI

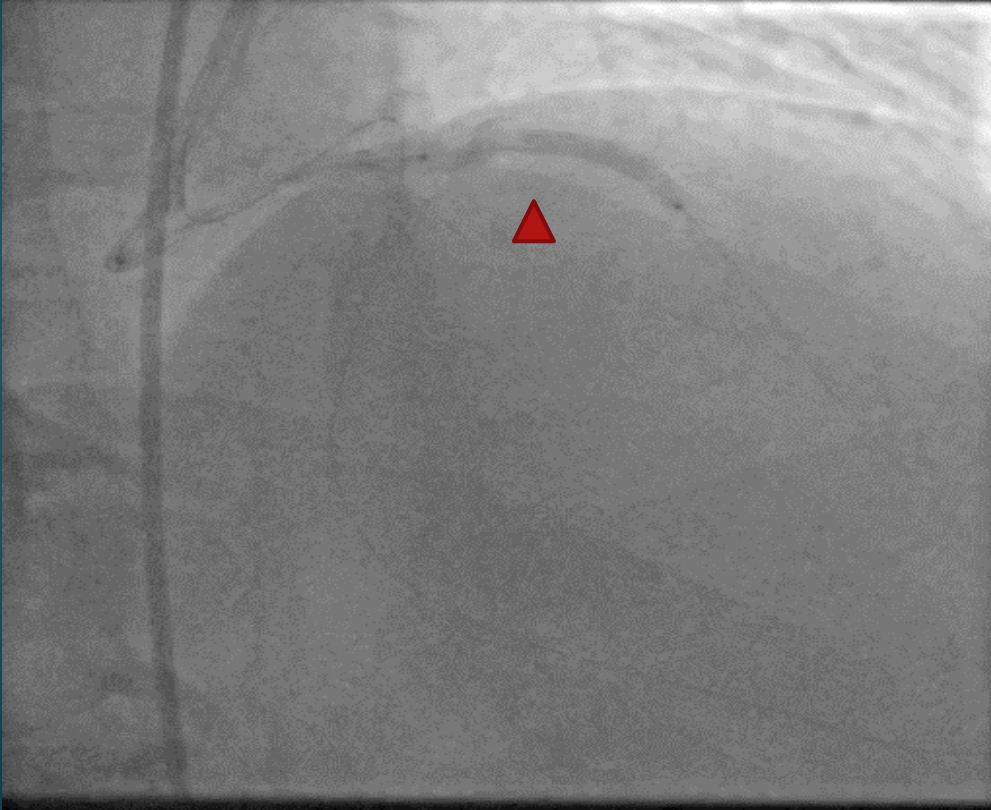
STENT KIRILMASI



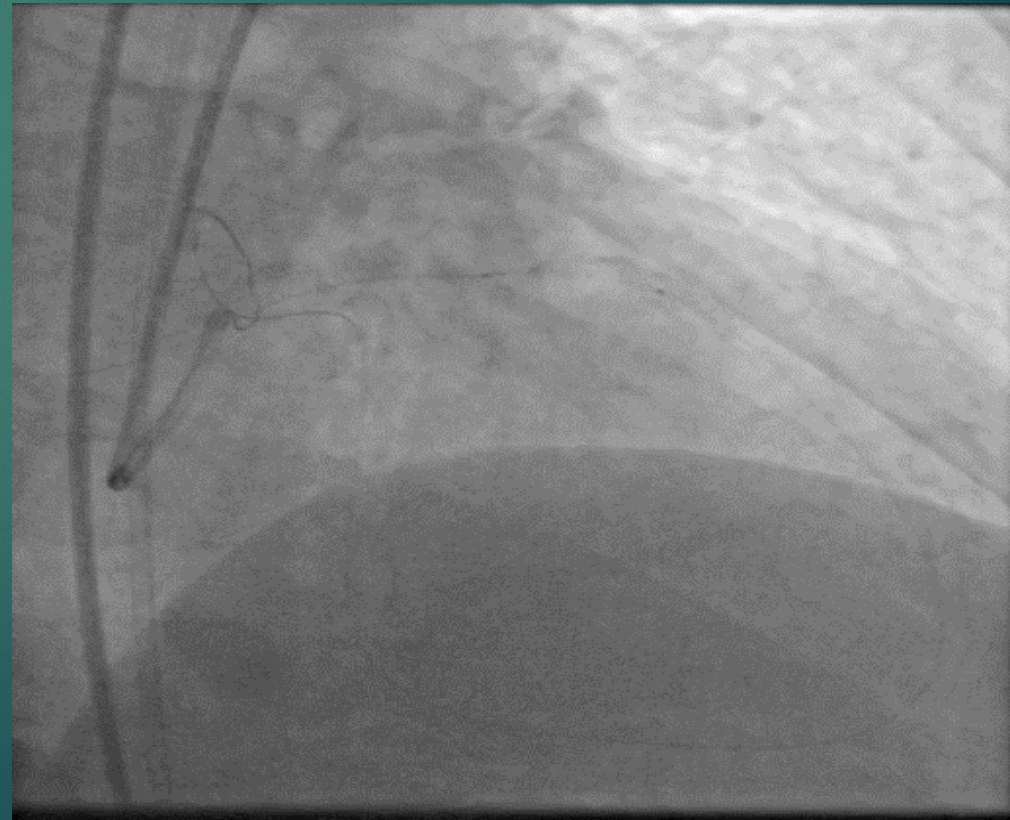
LEZYON HAZIRLIĐI ÖNEMLİ

3.0*33 MM DES

AÇILMAMIŞ PROXİMAL STENT



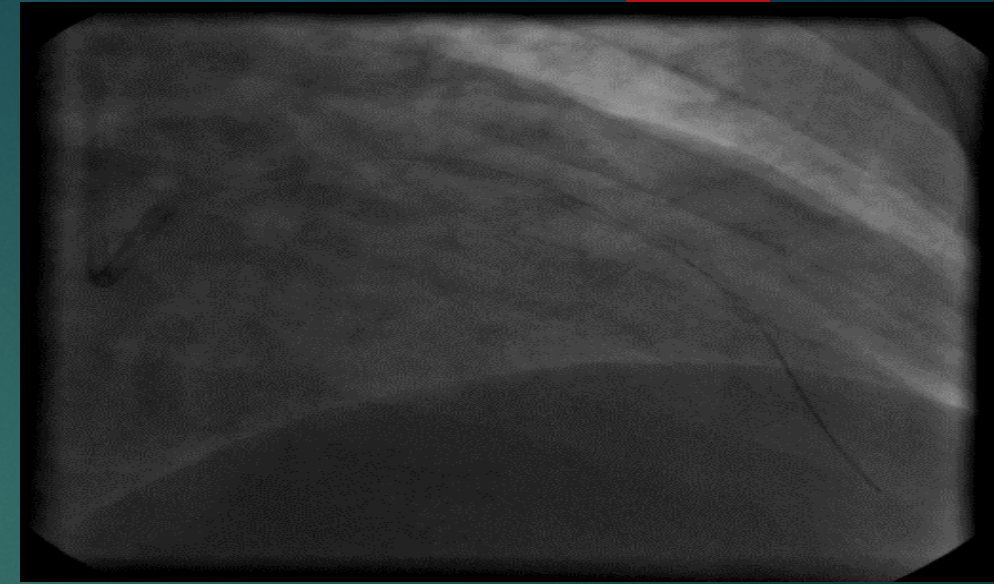
KOPAN BALON



SIKIŞAN TEL VE KOPAN BALON>>> CERRAHİ



KORONER PERFERASYON



- ▶ Koroner rüptür oranı %2-5
- ▶ Tedavi gerektiren rüptür %5-8
- ▶ Retrograde CTO larda rüptür %6.9 iken bu rüptürlerin %61 antegrade olarak görülüyor.
- ▶ Tamponat genel %0.3 görülürken bu oran retrograde CTO işlemlerinde %1.4
- ▶ Prediktörler;
- ▶ **OPEN-CLEAN skor**; 1- CABG olması

2-Tıkanlık uzunluğu

3-EF

4-Yaş

5-Kalsifikasyon

1- blunt/no stump

2-antegrade
disekyonve re-enrty

3-retrogadre işlem

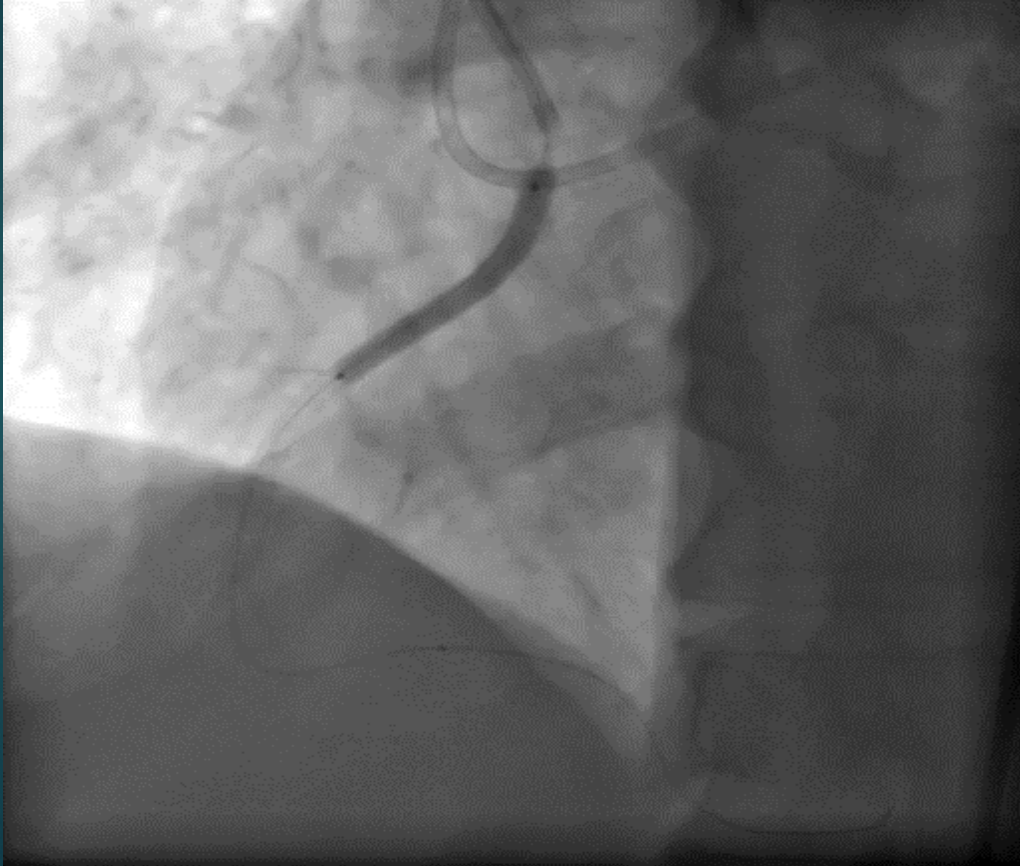
4- yaş

5-orta/ileri

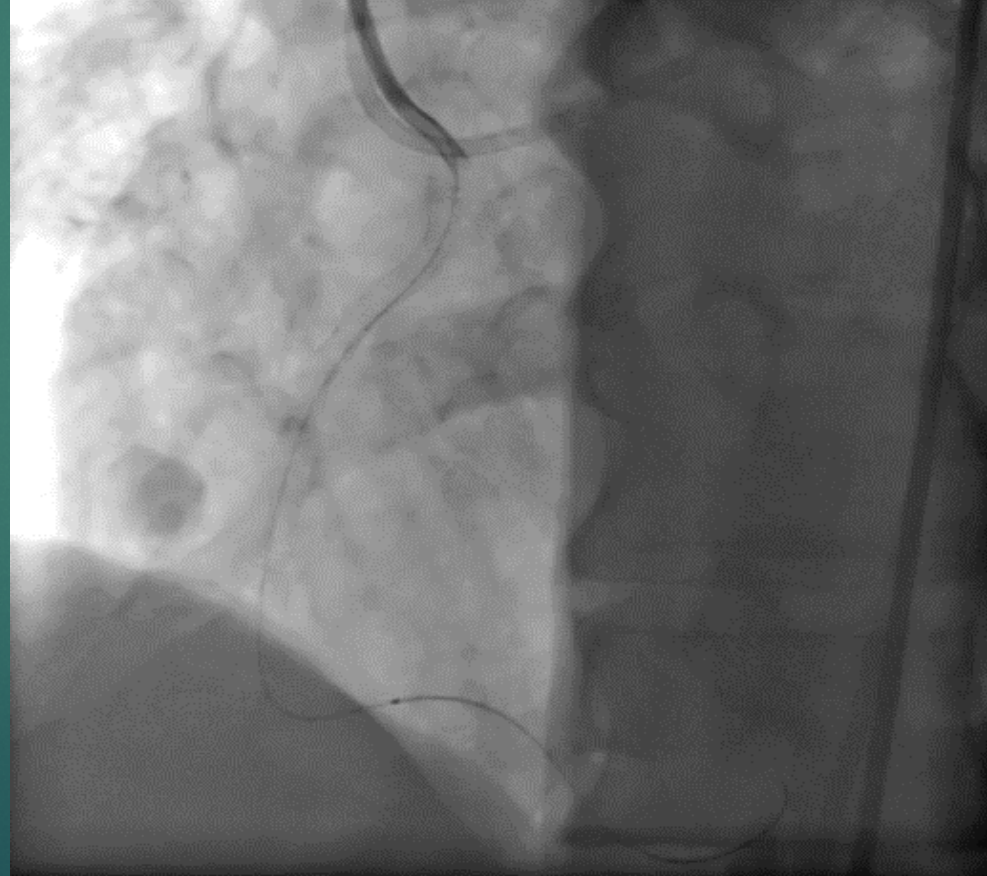
kalsifikasyonu

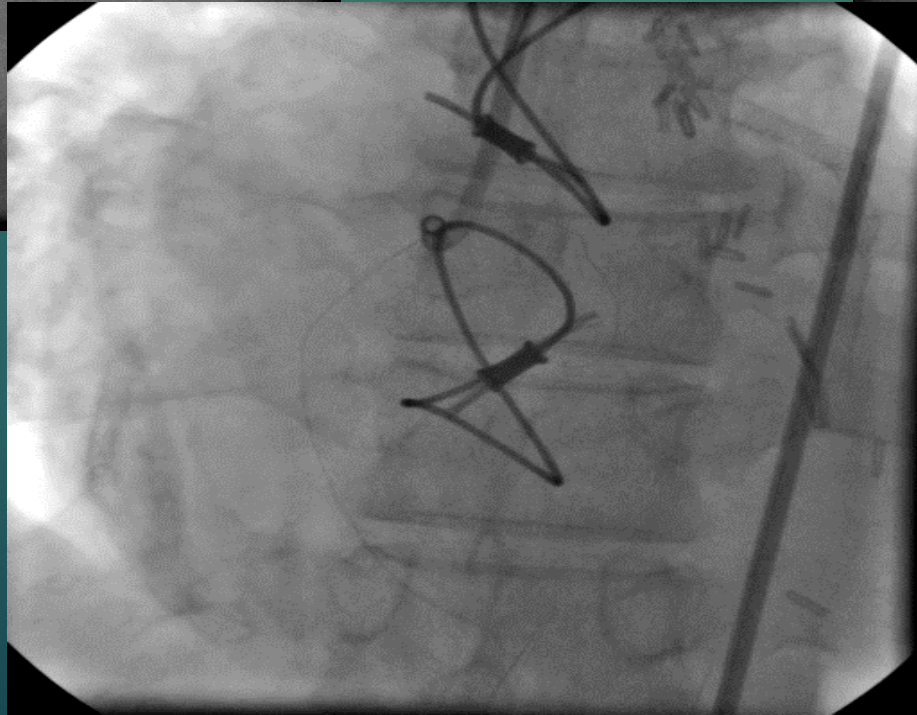
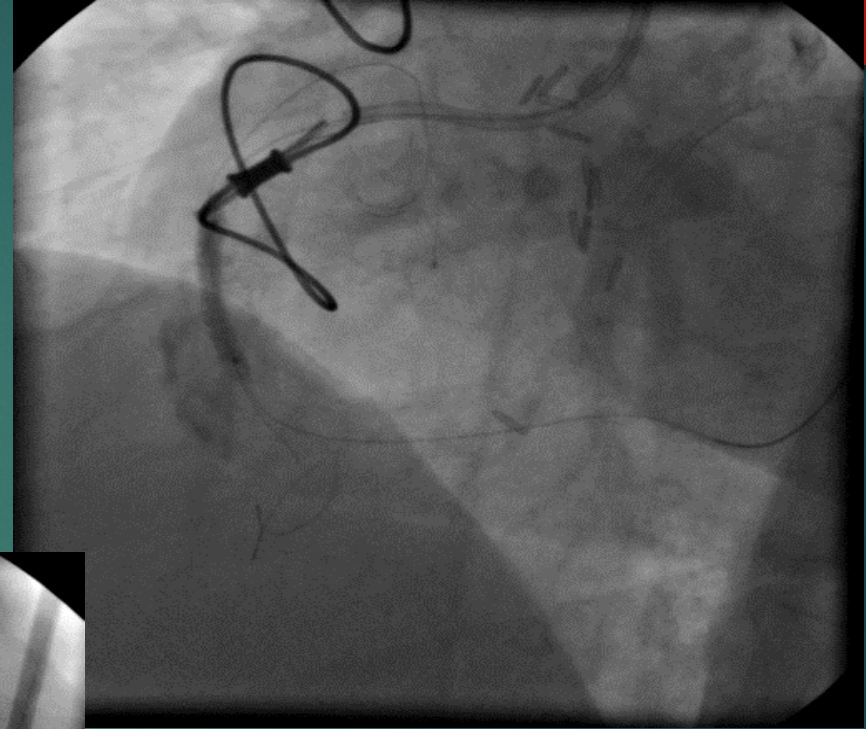
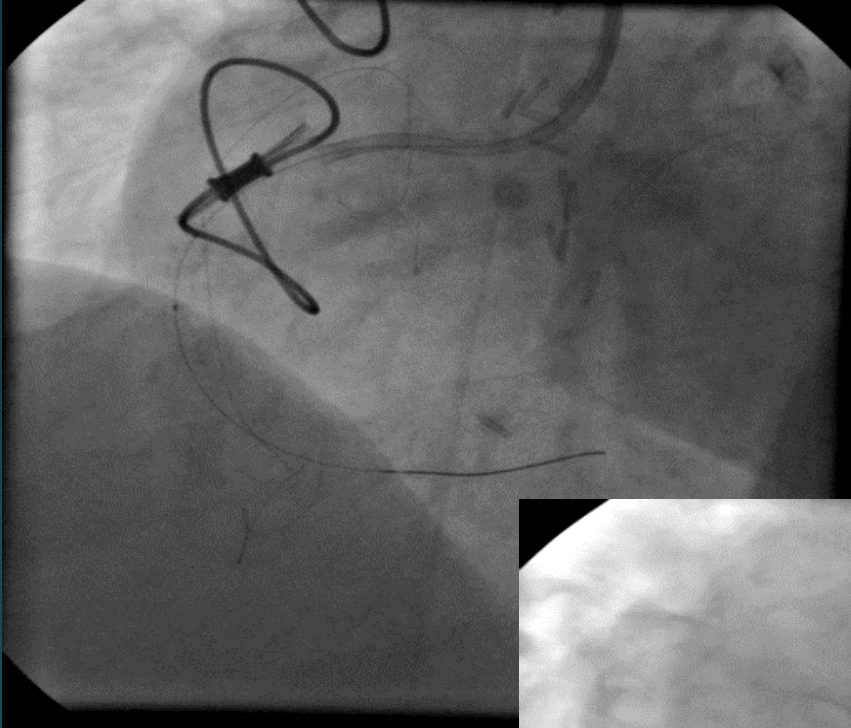
PROGRESS-CTO perf S

3.0*38 ve 3.5*32 mm DES stent



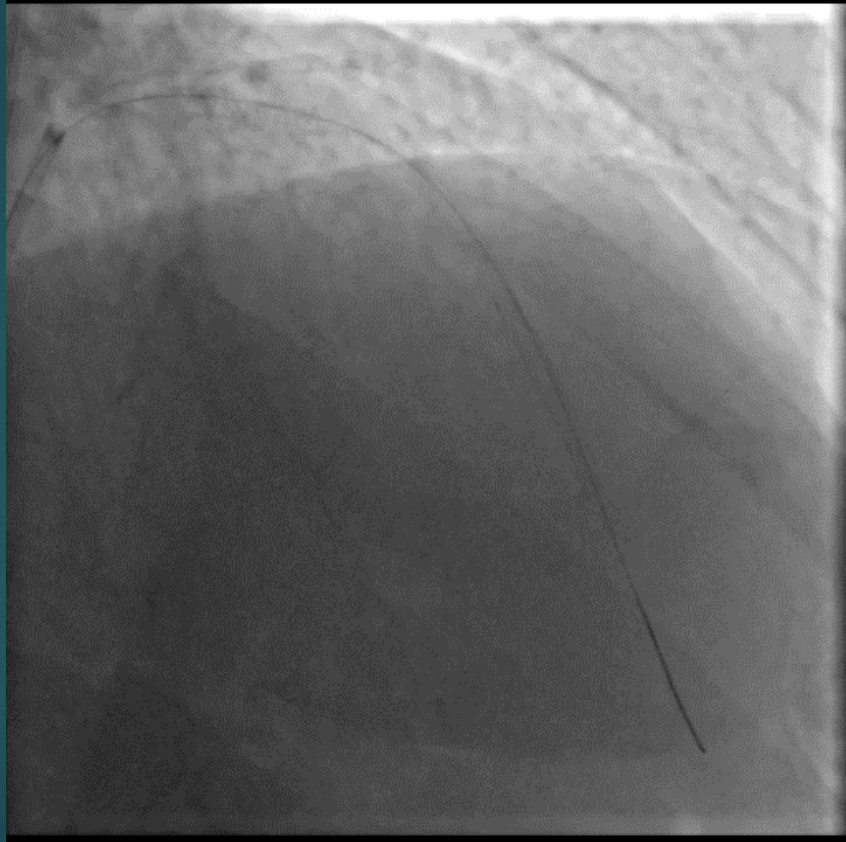
3.5*32 mm overlap sonrası
SONUÇ



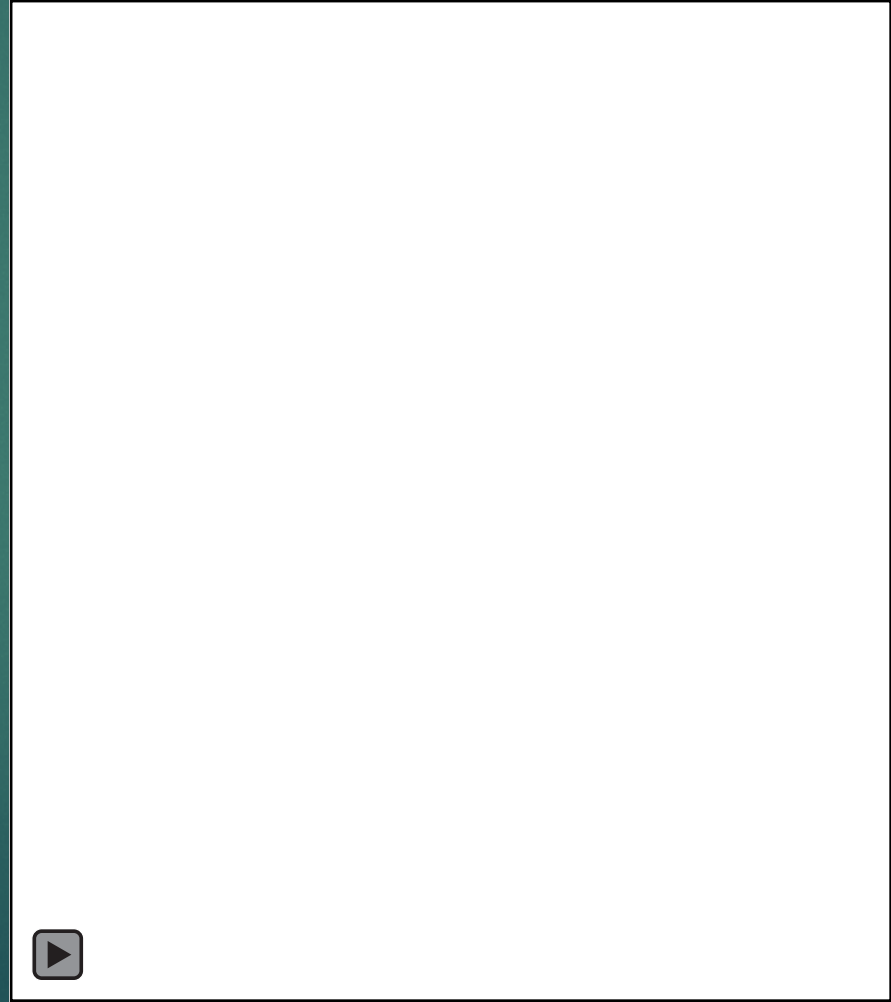
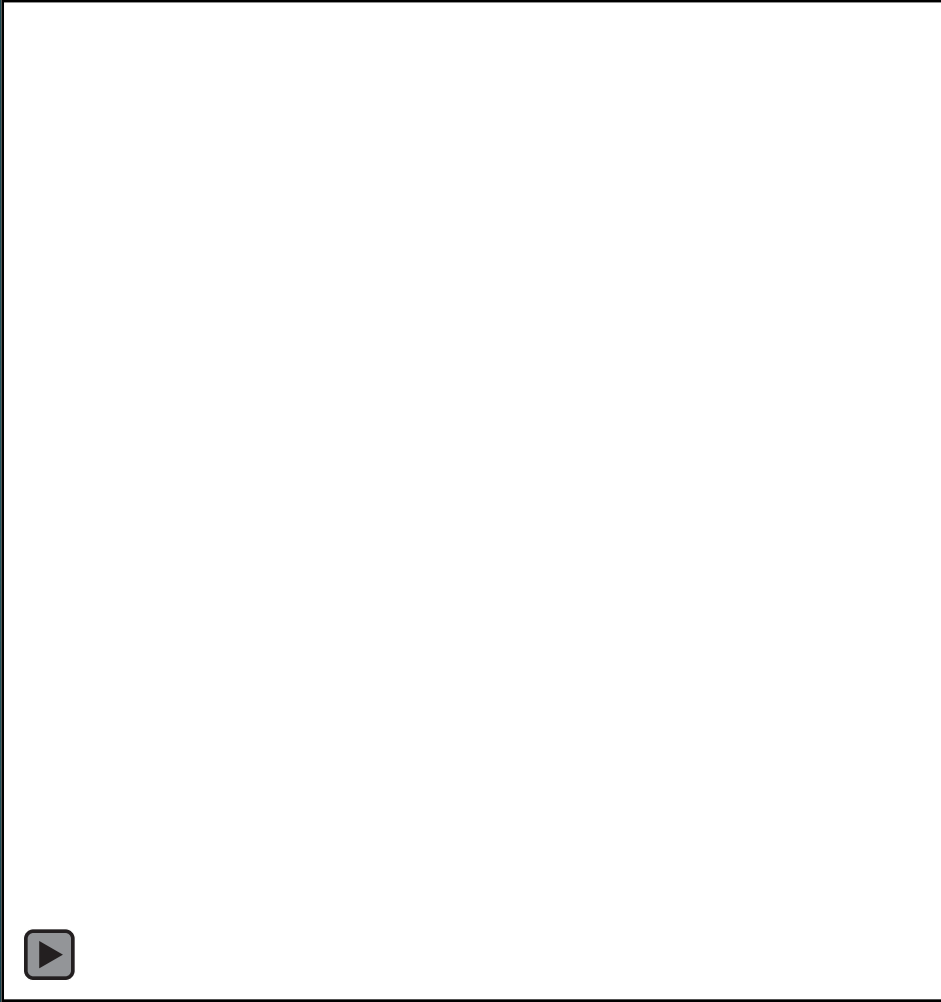


ELLİS TİP-2 RÜPTÜR

STENT SONRASI RÜPTÜR VE GREFT STENT



Lad distal dal rüptür / BALON DİLATAYSON



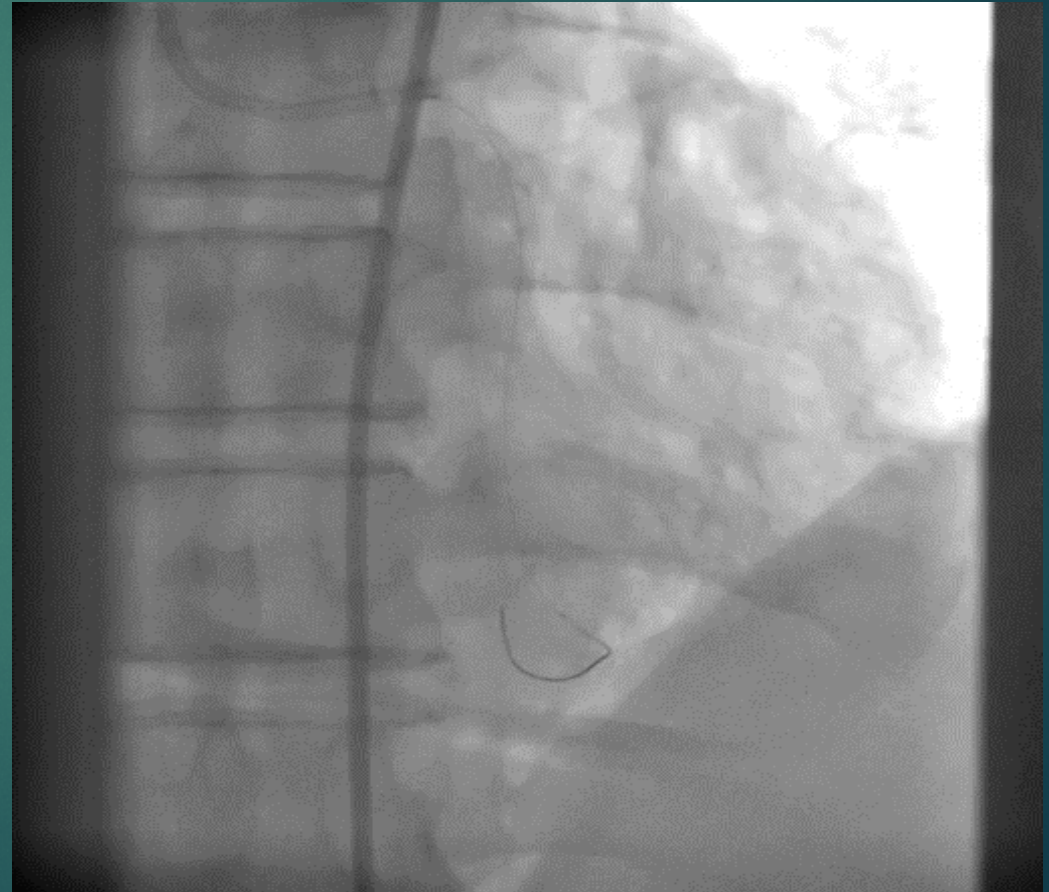
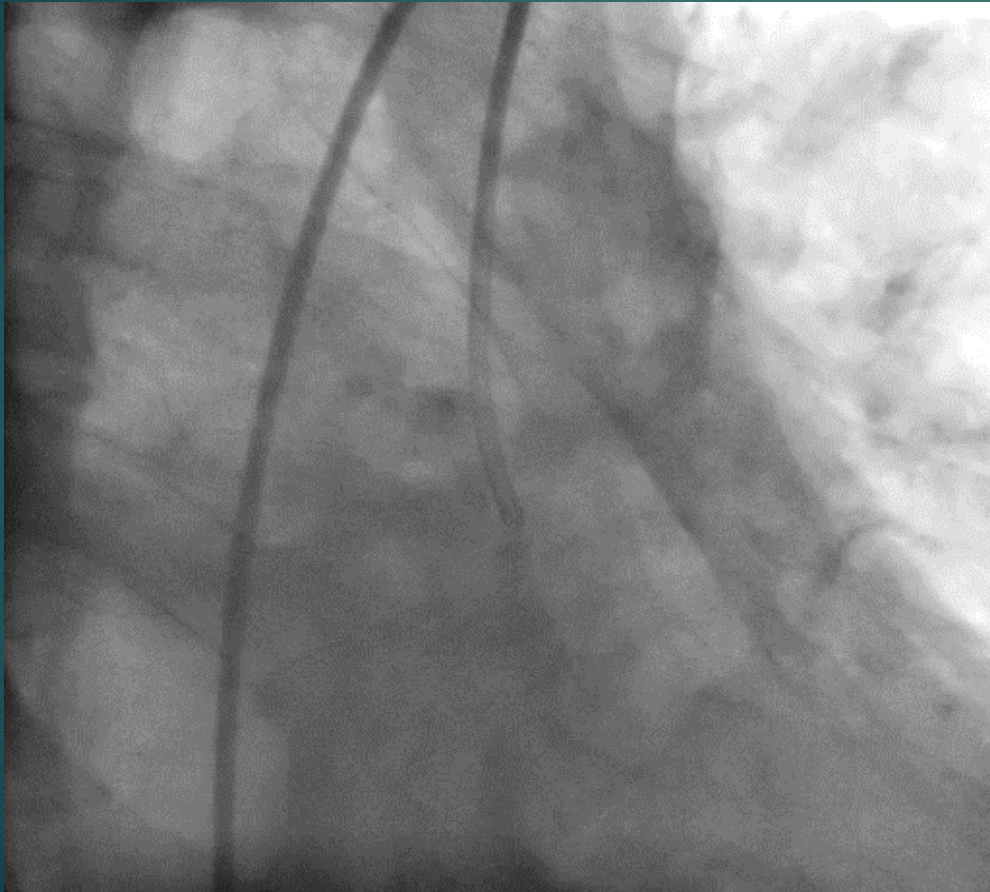
YAĞ EMBOLİZASYONU



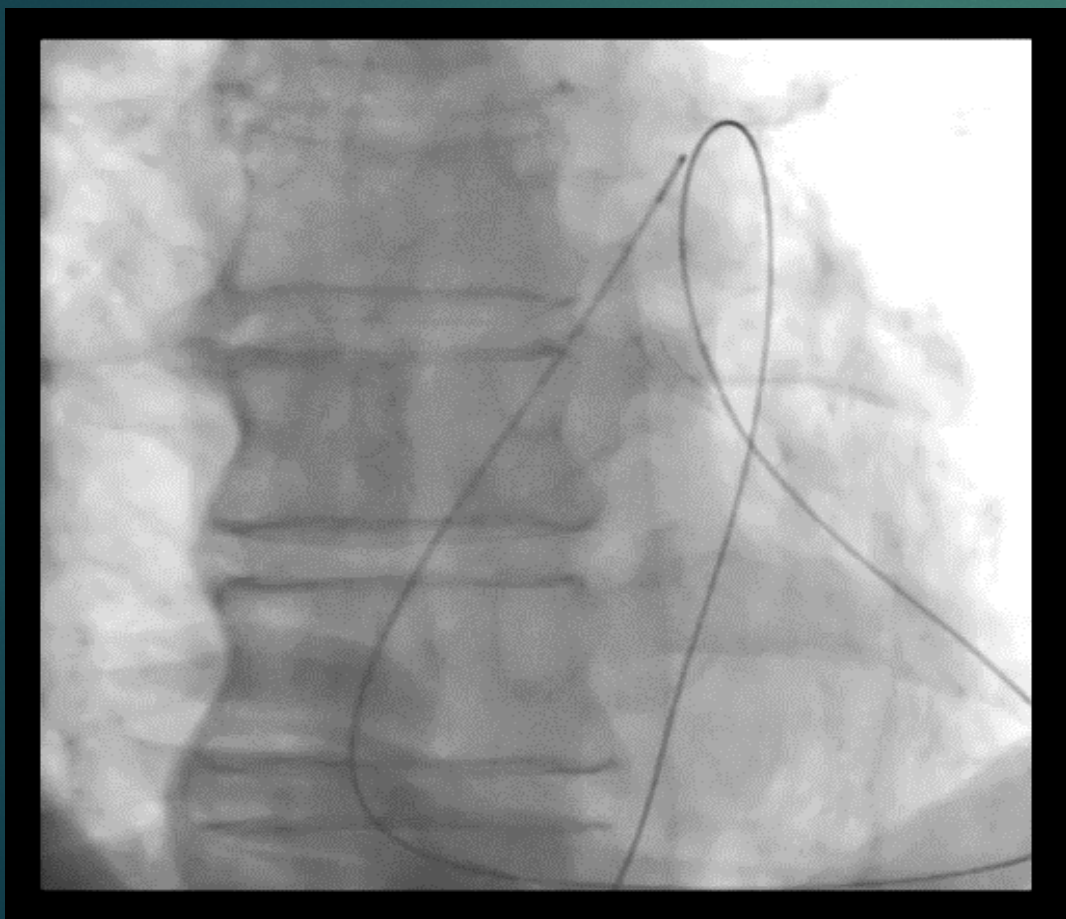
SONUÇ



CX CTO-ELLİS TİP3-4 RÜPTÜR



Tamponat > cto stop > greft stent



Sebriniz için teşekkür edirem