

KRONİK TOTAL OKLÜZYON KILAVUZ TELLER

DOÇ. DR. CEVAT KIRMA

DOÇ. DR. MÜSLÜM ŞAHİN

KARTAL KOŞUYOLU YÜKSEK İHTİSAS EĞİTİM VE ARAŞTIRMA HASTANESİ

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- Perkütan koroner işlemlerin belki de en önemli parçasıdır.
- Bu nedenle kılavuz tellerin özelliklerini ve hangi özelliğinin nerede işimizi kolaylaştıracağını iyi bilmeliyiz ki hem zamandan (dolayısıyla radyasyondan) hem de kontrast kullanımından tasarruf edelim ve başarılarımızı artıralım.

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- Kılavuz tel gövdesi(CORE);
- Kılavuz tel ucu (TIP)
- Kılavuz tel kaplaması(COATING);

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- **Merkezi gövde(CORE);** genellikle ÇELİK ve NİTİNOL
- **ÇELİK;**
- **AVANTAJLARI;** iyi bir destek sağlar, İtme kuvvetini uca iyi iletir, şekil alma yeteneği iyidir, proksimalden verdiğiniz dönme kuvveti uca bire bire yakın iletilir(torquability)
- **DEZAVANTAJLARI;** kink yapmaya eğilimlidir, flexibilitesi daha azdır.

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- **Merkezi gövde(CORE);**
- **NİTİNOL;**
- **AVANTAJLARI;** ucuna kolay şekil verilebilir ve bunu uzun zaman koruyabiliyor, daha flekibil, steerebale, trackable dur ve daha az prolabe ve kink olur.
- **DEZAVANTAJLARI;** torquabilitesi azdır. Verilen dönme hareketini toplayarak uca iletmeyebilir.

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- **Merkezi gövde (CORE);**
- Bazen de Composite (Composite Core Design) olabiliyor. Uzun segment çelik ancak distal uç kısım nitinol yada rope coil olabilir.(Terumo Runthrough DuoCore, Abbot BMW, Asahi sion)
- **Merkezi gövde (CORE); kalınlık**
- **Kalın çap;** daha iyi destek, daha iyi itme ve torque gücü iletilmesi sağlar
- **İnce çap;** daha iyi flexibilitite sağlar,

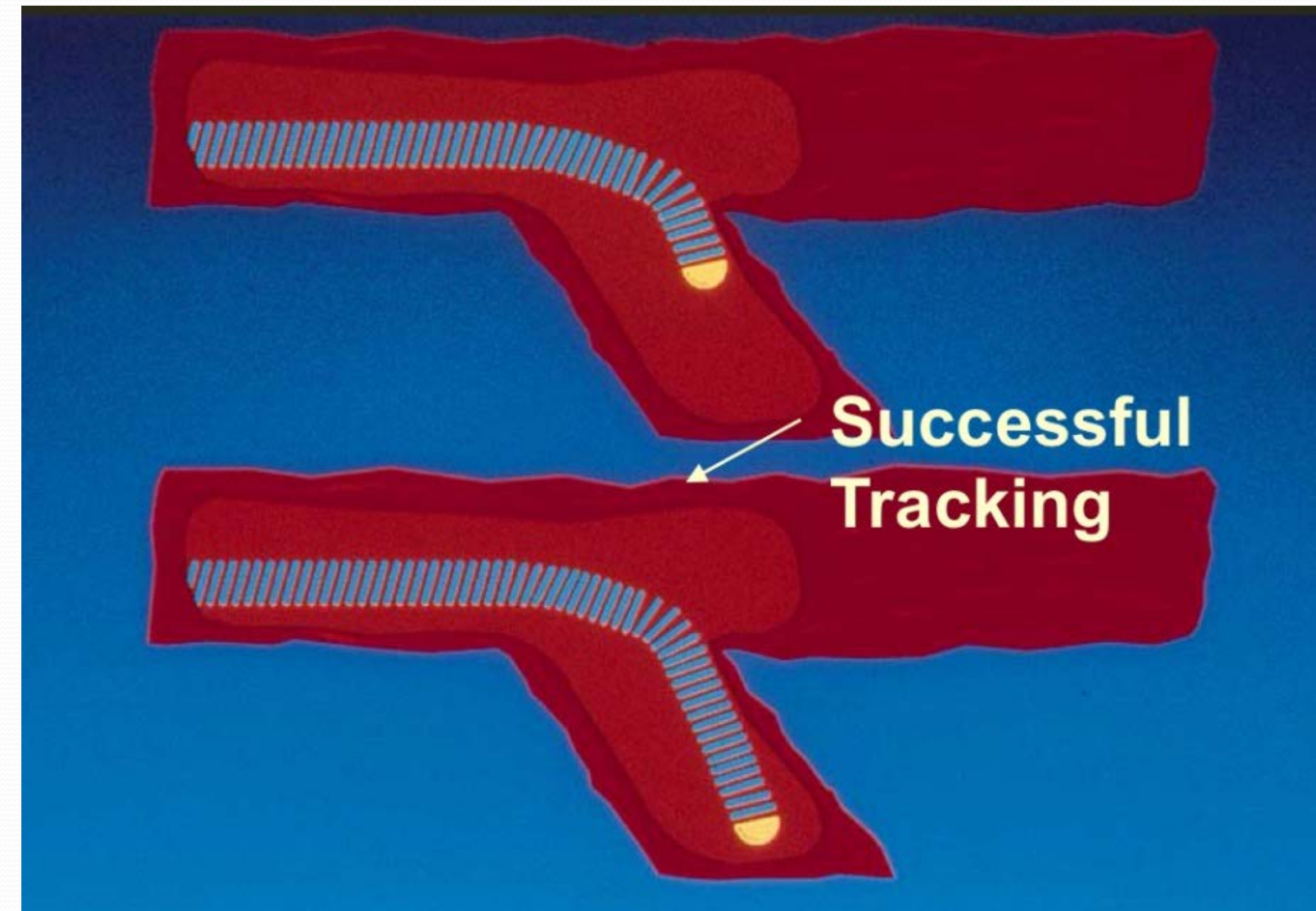
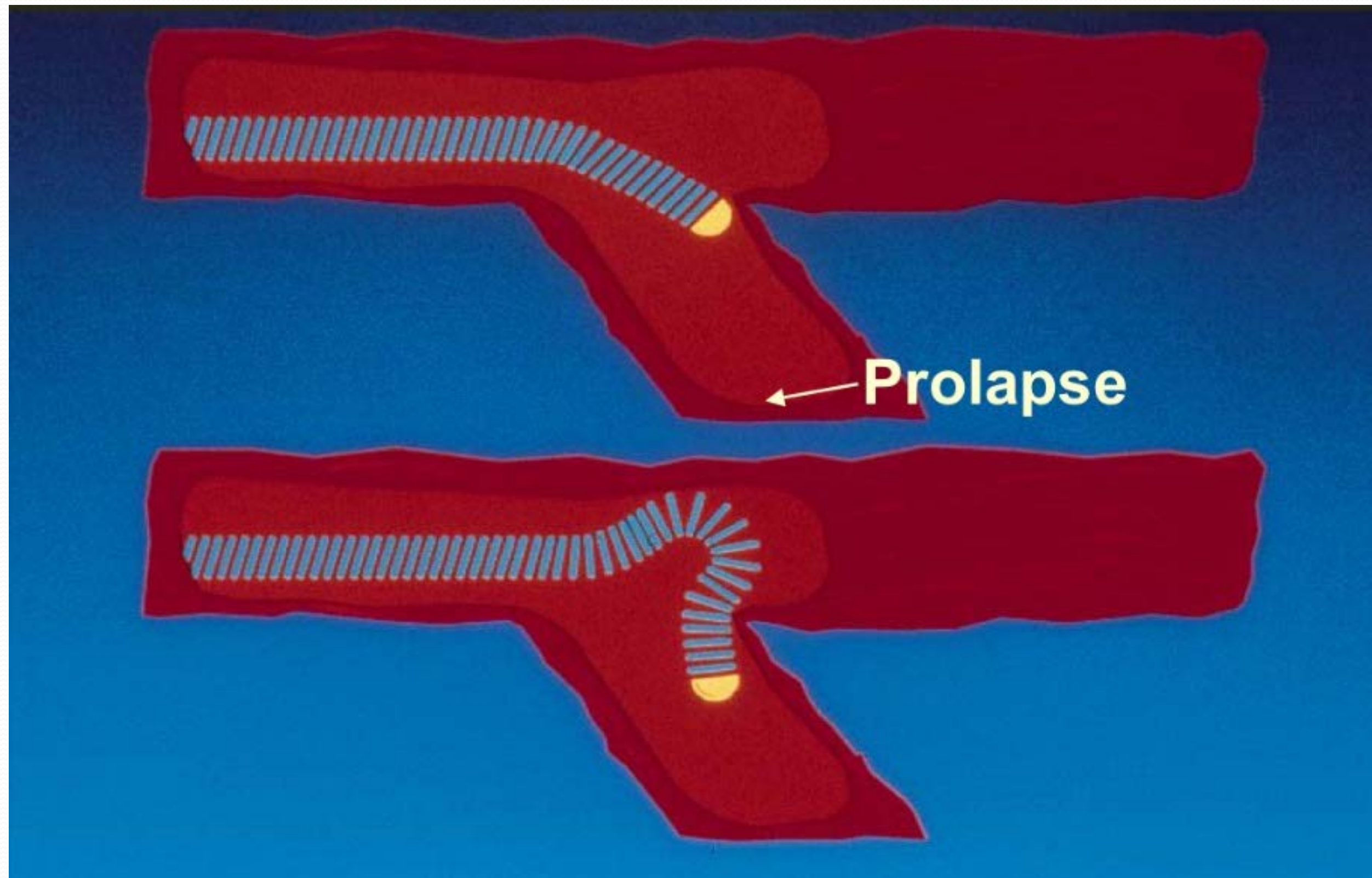
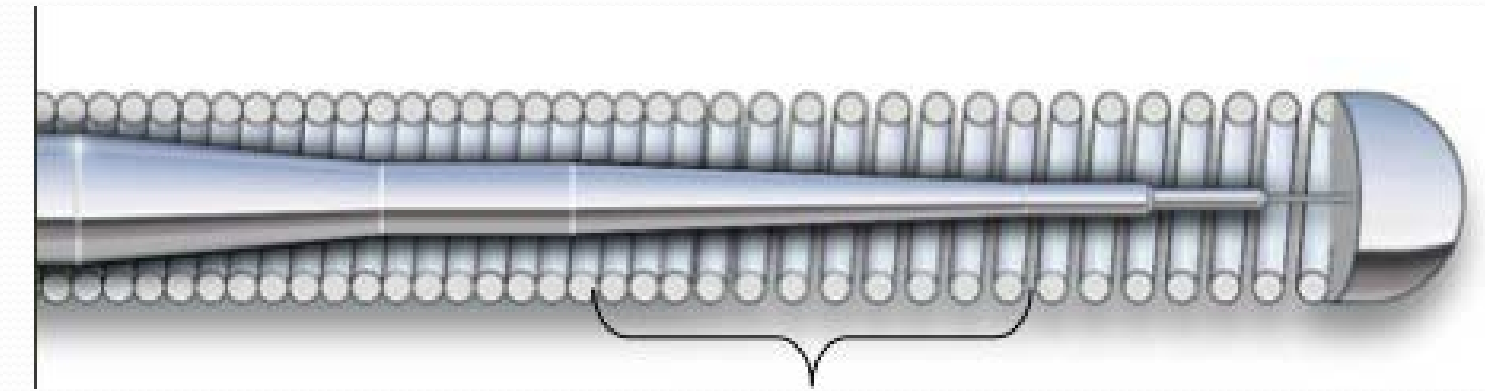
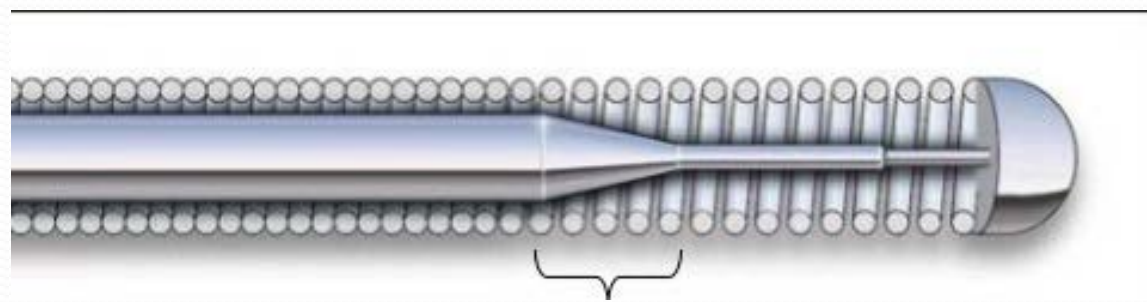
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- **Kılavuz tel ucu kaplaması;** coil, polimer ve mikro kesim nitinol kılıf
- **Coil(sarmal yay teller);** flexibilitiyi, desteđi, trackabilitiyi, tel ucu hissini artırır, telin radyoopasitesini artırır.
- **Polimer kaplama;** trackabilitiyi artırır, ancak tel ucu hissini azaltır,
- **Micro-cut Nitinol;** diđerlerine göre yüksek torque iletimine sahiptir.

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- Tel ucu incelemek sonlanır;
- **Uzun segment;** trackabilite daha iyi, daha az prolaps, daha az destek
- **Kısa segment;** daha iyi destek, trackabilite daha az ve prolaps olmaya eğilimli

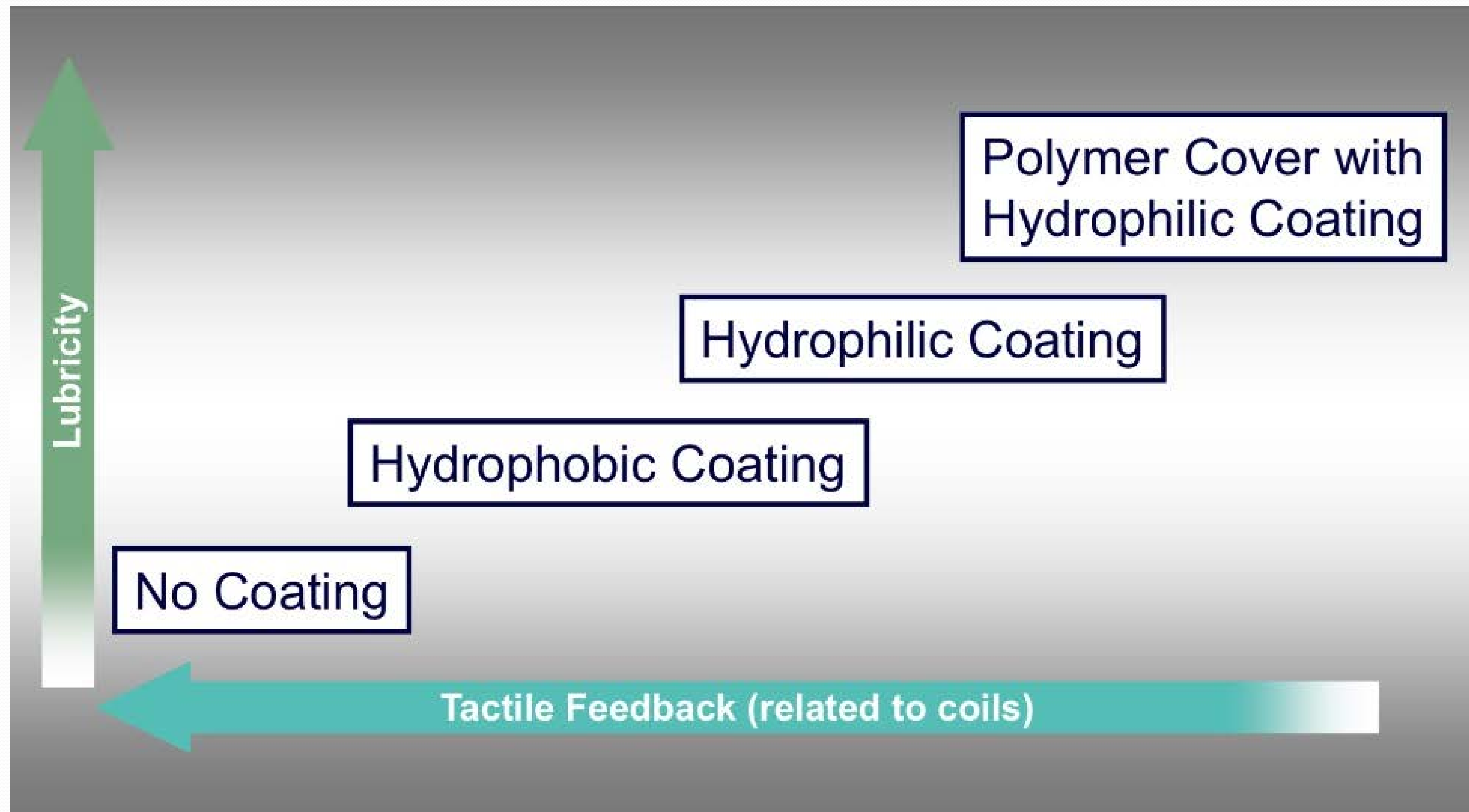
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- **Gövde yüzey kaplama;** amaç düz ve interaktif olmayan bir yüzey sağlamak.
- Proksimal segment genellikle PTFE veya teflon ile kaplanır.
- Distal 20-30 cm segment ise **hidrofobik veya hidrofilik** materyal ile kaplanır. (koroner içinde sürtünme yapmayan ve telin hareketini kolaylaştıran kaplamalar)

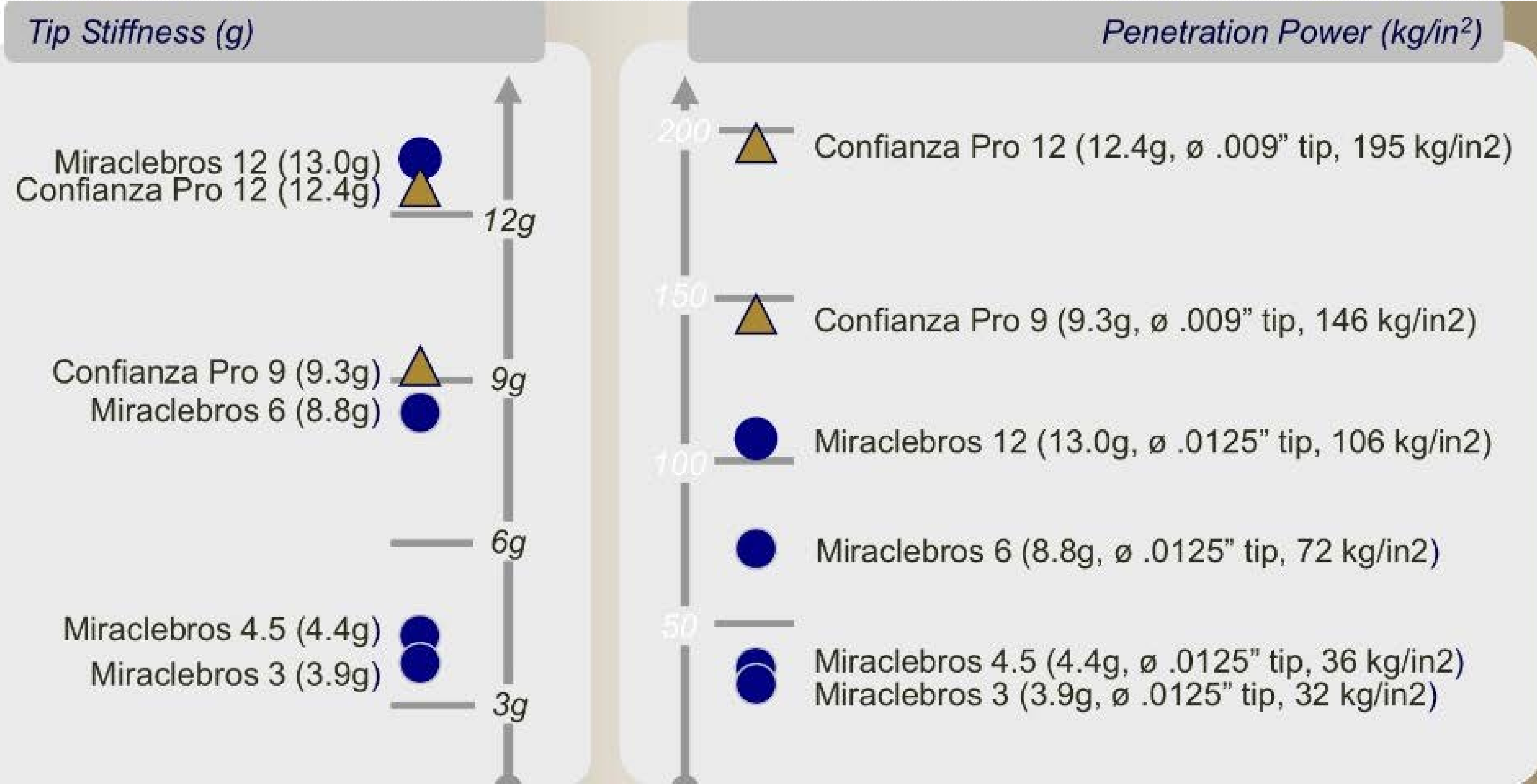
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Tracability	Tel ucunun damar seyirini takip edebilmesi
Steerability	İstenilen pozisyona tel ucunun ilerletilebilmesi
Torque control	Yapılan dönme hareketinin tel ucuna iletilmesi
Flexibility	Olabilecek kuvvetlere karşı telin bükülebilmesi
Prolapse tendency	Bel verme özelliği
Tactile feedback	Tel ucunun hareketlerini elle hissedebilme
Support	Bir başka cihazın tel üzerinden geçebilmesi
Radiopacity	Floroskopide telin görünürlüğü
Durability	Tel ucu şeklini koruma, bükülmeme
Penetration	Fibröz kılıfı delip oklüde segmente girebilmesi
Pushability	Proksimalden iletilen kuvvetle telin ilerlemesi
Crossing	Telin lezyon içinden az kuvvetle geçebilmesi
Malleability	Telin kırılmadan eğilip bükülebilmesi

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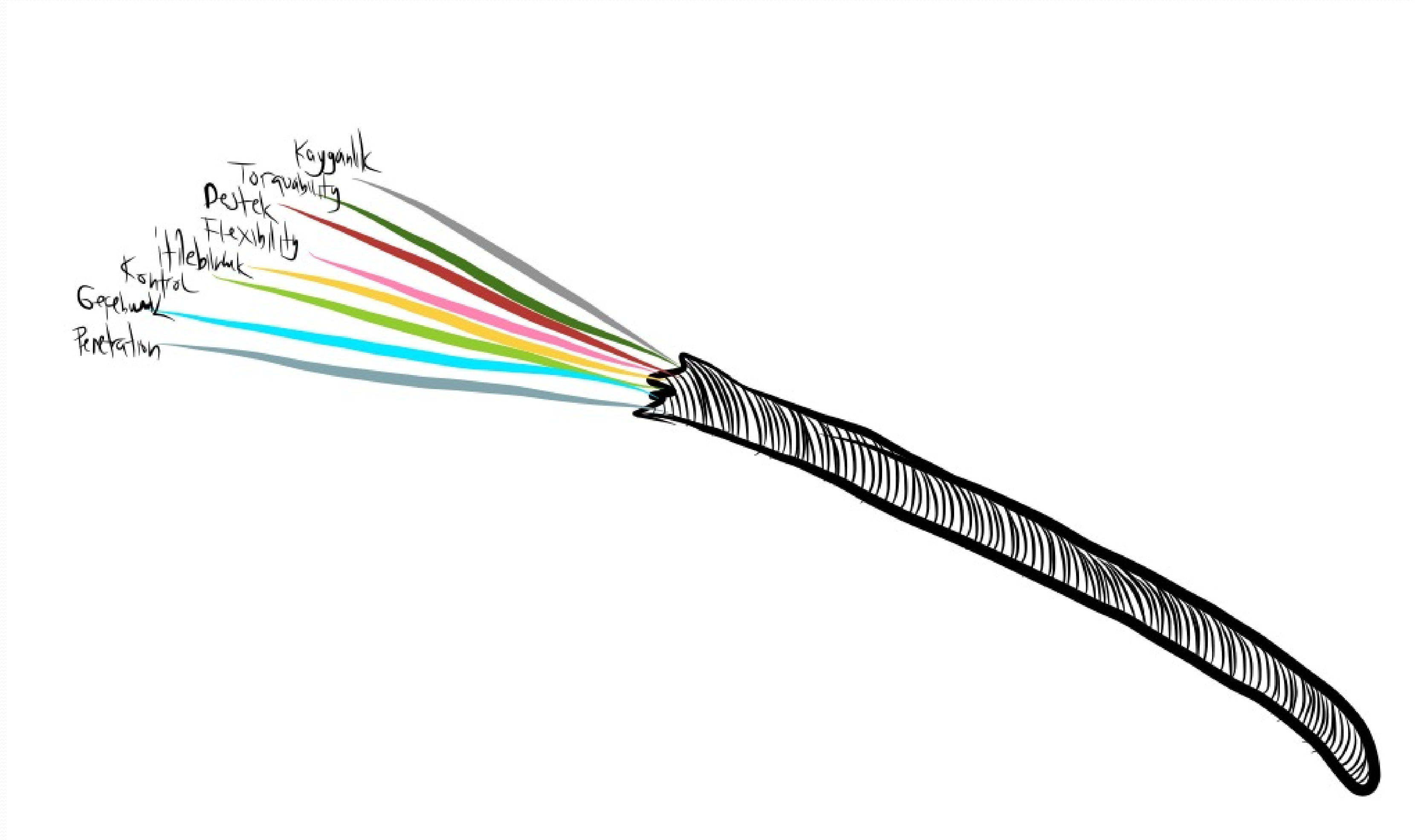
PENETRASYON; telin fibröz kılıfı geçmesi ve oklüde segmentte ilerlemesi

Uç ağırlığı: artıkça PENETRASYON kabiliyeti artar

PENETRASYON gücü; birim yüzeye uç ağırlık kuvvetinin etkisi

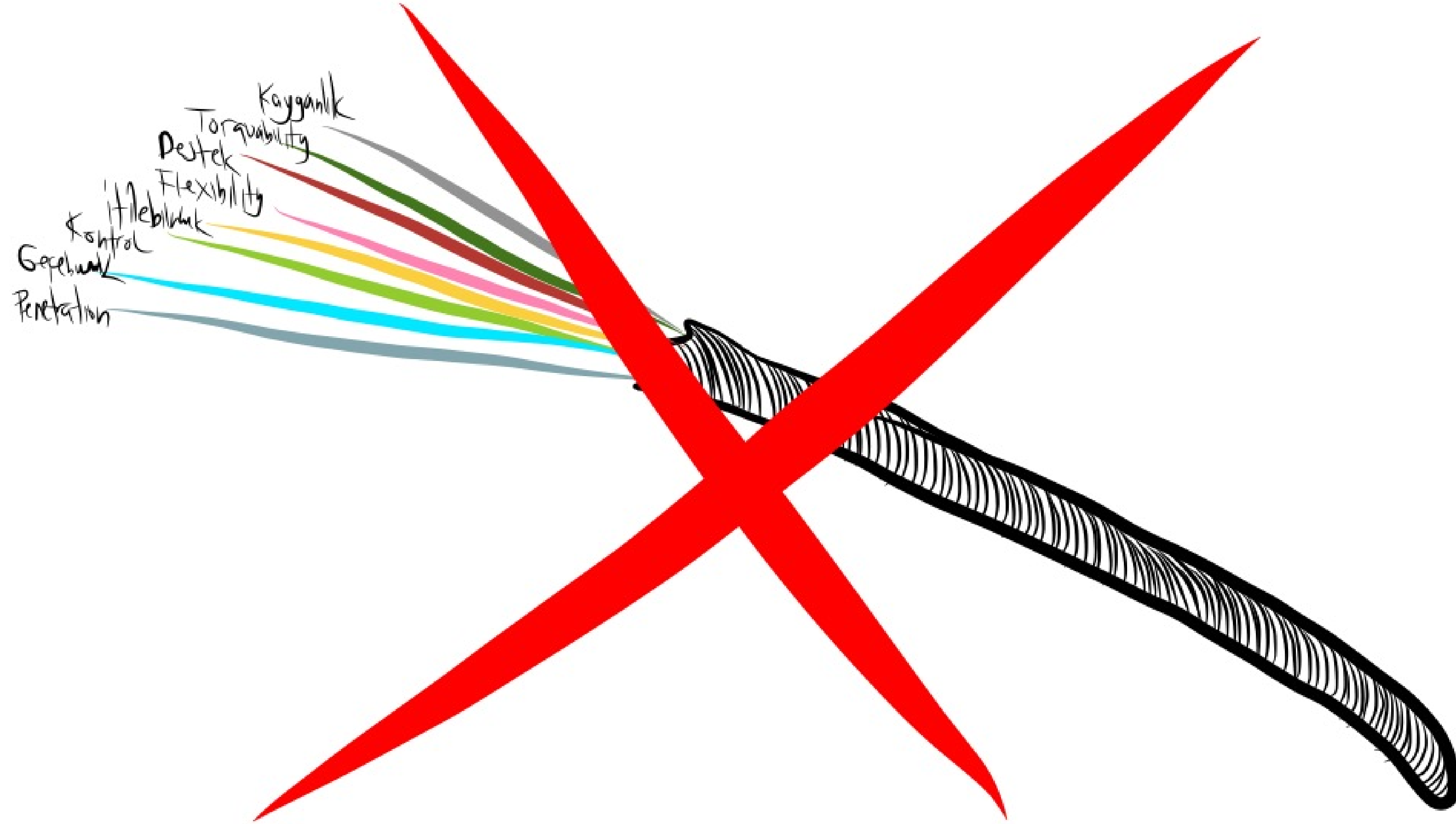
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Tüm özellikler tek telde



KTO Kılavuz Teller

Tüm özellikler tek telde



KTO Kilavuz Teller

Wire	Manufacturer	Design/Lengths	Coating	Tip load (g)	Penetration force kg/in. ²
Fielder FC	Asahi	Non-tapered tip. 0.014 in., 180 and 300 cm lengths.	Hydrophilic, polymer jacket	0.8	N/A
Fielder XT	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 and 300 cm lengths	Hydrophilic, polymer jacket	0.8	N/A
Fielder XT – A (A for antegrade)	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 and 300 cm lengths	Hydrophilic, polymer jacket	1.0	N/A
Fielder XT – R (R for retrograde collateral cross)	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 and 300 cm lengths	Hydrophilic, polymer jacket	0.6	N/A
Pilot 50	Abbott	Non-tapered tip. 0.014 in., 190 and 300 cm lengths	Hydrophilic, polymer jacket	1.5	N/A
Sion	Asahi	Non-Tapered tip. 0.014 in., 180 and 300 cm lengths	Hydrophilic, non-jacketed over spring coil and tip.	0.7	N/A
Sion Blue Workhorse wire for procedure completion	Asahi	Non-Tapered tip. 0.014 in., 180 and 300 cm lengths	Hydrophilic, non-jacketed over spring coil. Hydrophobic tip.	0.5	N/A
Gaia First	Asahi	Tapered tip 0.010 in. Shaft 0.014 in., 190 cm	Hydrophilic, non-jacketed. Tip hydrophilic	1.5	Penetration efficiency rather than power. On par with miracle 6
Gaia Second	Asahi	Tapered tip 0.011 in. Shaft 0.014 in., 190 cm	Hydrophilic, non-jacketed. Tip hydrophilic	3.5	Penetration efficiency rather than power. On par with miracle 12
Gaia Third	Asahi	Tapered tip 0.011 in. Shaft 0.014 in., 190 cm	Hydrophilic, non-jacketed. Tip hydrophilic	4.5	Penetration efficiency rather than power. On par with Conquest Pro 12
Miracle 3/MIRACLEbros 3	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	3.0	20
Miracle 4.5/MIRACLEbros 4.5	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	4.5	30
Miracle 6/MIRACLEbros 6	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	6.0	39
Miracle 12/MIRACLEbros 12	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	12.0	78
Ultimate Bros 3	Asahi	Non-tapered tip. 0.014 in., 180 and 300 cm lengths	Hydrophilic, non-jacketed	3	20
Pilot 150	Abbott	Non-tapered tip. 0.014 in., 190 and 300 cm length	Hydrophilic, polymer jacketed	2.7	N/A
Pilot 200	Abbott	Non-tapered tip. 0.014 in., 190 and 300 cm length	Hydrophilic, polymer jacketed	4.1	N/A
Conquest/Confianza	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 cm length. Spring coil length 20 cm	Hydrophobic (silicone)	9.0	142
Conquest Pro/Confianza Pro	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 cm length. Spring coil length 20 cm	Hydrophilic non-jacketed over spring coil. Hydrophobic tip and shaft	9.0	142
Conquest Pro 12/Confianza Pro 12	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 cm length. Spring coil length 20 cm	Hydrophilic non-jacketed over spring coil. Hydrophobic tip and shaft	12.0	189
Conquest Pro 8-20/Confianza Pro 8-20	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 cm length. Spring coil length 17 cm	Hydrophilic non-jacketed over spring coil. Hydrophobic tip and shaft	20.0	315
High Torque CROSS IT 100 XT	Abbott	Tapered tip 0.010 in. Shaft 0.014 in., 190 and 300 cm length.	Hydrophilic including tip, non-jacketed	1.7	22
High Torque CROSS IT 200 XT	Abbott	Tapered tip 0.010 in. Shaft 0.014 in., 190 and 300 cm length.	Hydrophilic including tip, non-jacketed	4.7	60
High Torque CROSS IT 300 XT	Abbott	Tapered tip 0.010 in. Shaft 0.014 in., 190 and 300 cm length.	Hydrophilic including tip, non-jacketed	6.2	79
High Torque CROSS IT 400 XT	Abbott	Tapered tip 0.010 in. Shaft 0.014 in., 190 and 300 cm length.	Hydrophilic including tip, non-jacketed	8.7	110
High Torque Progress 40	Abbott	Non-Tapered tip 0.014 in. 190 and 300 cm length.	Hydrophilic, non-jacketed.	4.8	30
High Torque Progress 80	Abbott	Non-Tapered tip 0.014 in. 190 and 300 cm length.	Hydrophilic, non-jacketed.	9.7	63
High Torque Progress 120	Abbott	Non-Tapered tip 0.014 in. 190 and 300 cm length.	Hydrophilic, non-jacketed.	13.9	90
High Torque Progress 140T	Abbott	Tapered tip 0.0105 in. Shaft 0.014 in., 190 and 300 cm length.	Hydrophilic, non-jacketed.	12.5	144
High Torque Progress 200T	Abbott	Tapered tip 0.009 in. Shaft 0.014 in., 190 and 300 cm length.	Hydrophilic, non-jacketed.	13.3	209
Galeo Hydro S	BIOTRONIK	Non-tapered tip. 0.014 in. 175 cm length.	Hydrophilic 12 cm including tip. Hydrophobic shaft. Non-jacketed	3.1	N/A
Galeo Hydro F	BIOTRONIK	Non-tapered tip. 0.014 in. 175 cm length.	Hydrophilic 12 cm including tip. Hydrophobic shaft. Non-jacketed	6	N/A
Galeo Hydro M	BIOTRONIK	Non-tapered tip. 0.014 in. 175 cm	Hydrophilic 12 cm including tip.	4.5	N/A

Wire	Manufacturer	Design/Lengths	Coating	Tip load (g)	Penetration force kg/in. ²
PT Graphix	Boston	length. Non-Tapered tip. 0.014 in. 182 and 300 cm lengths	Hydrophobic shaft. Non-jacketed Hydrophilic, non-jacketed.	4.0	26
Shinobi	CORDIS	Non-tapered tip. 0.014 in. 180 and 300 cm lengths	Hydrophilic. Teflon coated.	2.0	13
Shinobi Plus	CORDIS	Non-tapered tip. 0.014 in. 180 and 300 cm lengths	Hydrophilic Teflon coated.	4.0	26
Persuader 3	MEDTRONIC	Non-tapered tip. 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	5.1	33
Persuader 6	MEDTRONIC	Non-tapered tip. 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	8	52
Persuader 9	MEDTRONIC	Tapered tip. 0.010 in., Shaft 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	9.1	96
Provia 3	MEDTRONIC	Non-tapered tip. 0.014 in. 180 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	3	19
Provia 6	MEDTRONIC	Non-tapered tip. 0.014 in. 180 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	6	39
Provia 9	MEDTRONIC	Tapered tip. 0.009 in., Shaft 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	9	142
Provia 12	MEDTRONIC	Tapered tip. 0.009 in., Shaft 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	12	189
Provia 15	MEDTRONIC	Tapered tip. 0.009 in., Shaft 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	15	236
Muskie	Vascular Solutions, Inc.	Non-Tapered tip. 0.014 in. 195 and 300 cm lengths.	Hydrophilic, non-jacketed	3	20
Muskie	Vascular Solutions, Inc	Non-tapered tip. 0.014 in. 195 and 300 cm lengths.	Hydrophilic, non-jacketed	4.5	30
Muskie	Vascular Solutions, Inc	Non-tapered tip. 0.014 in. 195 and 300 cm lengths.	Hydrophilic, non-jacketed	6	39
Muskie	Vascular Solutions, Inc	Non-tapered tip. 0.014 in. 195 and 300 cm lengths.	Hydrophilic, non-jacketed	9	58
Muskie	Vascular Solutions, Inc	Non-tapered tip. 0.014 in. 195 and 300 cm lengths.	Hydrophilic, non-jacketed	12	78
High Torque floppy extra support	Abbott	Soft tip, high shaft support	Hydrophobic	0.6	N/A
Grand slam	Asahi	Soft tip, high shaft support	Hydrophobic	0.7	N/A
Stabiliser	CORDIS	Soft tip, high shaft support	Hydrophobic	Very soft tip	N/A
Stabiliser Plus	CORDIS	Soft tip, very high shaft support	Hydrophobic	Very soft tip	N/A
RG 3	Asahi	Non-tapered tip. Tip 0.014 in., Shaft 0.010 in. 330 cm length	Hydrophilic, non-jacketed over the shaft	3.0	N/A
Rotawire	Boston Scientific	Monofilament wire. Tip 0.014 in. Shaft 0.009 in. 325 cm	Hydrophobic	N/A	N/A
ViperWire Advance	Cardiovascular systems	Non-tapered tip. 0.014 in. 330 cm	Hydrophobic	N/A	N/A

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Fielder XT — R (R for retrograde collateral cross)	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 and 300 cm lengths	Hydrophilic, polymer jacket	0.6	N/A
Pilot 50	Abbott	Non-tapered tip. 0.014 in., 190 and 300 cm lengths	Hydrophilic, polymer jacket	1.5	N/A
Sion For retrograde collateral cross	Asahi	Non-Tapered tip. 0.014 in., 180 and 300 cm lengths	Hydrophilic, non-jacketed over spring coil and tip.	0.7	N/A
Sion Blue Workhorse wire for procedure completion	Asahi	Non-Tapered tip. 0.014 in., 180 and 300 cm lengths	Hydrophilic, non-jacketed over spring coil. Hydrophobic tip.	0.5	N/A
Gaia First	Asahi	Tapered tip 0.010 in. Shaft 0.014 in., 190 cm	Hydrophilic, non-jacketed. Tip hydrophilic	1.5	Penetration efficiency rather than power. On par with miracle 6
Gaia Second	Asahi	Tapered tip 0.011 in. Shaft 0.014 in., 190 cm	Hydrophilic, non-jacketed. Tip hydrophilic	3.5	
Gaia Third	Asahi	Tapered tip 0.011 in. Shaft 0.014 in., 190 cm	Hydrophilic, non-jacketed. Tip hydrophilic	4.5	
Miracle 3/MIRACLEbros 3	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	3.0	Penetration efficiency rather than power. On par with miracle 12
Miracle 4.5/MIRACLEbros 4.5	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	4.5	
Miracle 6/MIRACLEbros 6	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	6.0	
Miracle 12/MIRACLEbros 12	Asahi	Non-tapered tip. 0.014 in., 180 cm length	Hydrophobic (silicone)	12.0	
Ultimate Bros 3	Asahi	Non-tapered tip. 0.014 in., 180 and 300 cm lengths	Hydrophilic, non-jacketed	3	20
Pilot 150	Abbott	Non-tapered tip. 0.014 in., 190 and 300 cm length	Hydrophilic, polymer jacketed	2.7	N/A
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Conquest Pro 12/Confianza Pro 12	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 cm length. Spring coil length 20 cm	Hydrophilic non-jacketed over spring coil. Hydrophobic tip and shaft	12.0	189
Conquest Pro 8-20/Confianza Pro 8-20	Asahi	Tapered tip 0.009 in. Shaft 0.014 in., 180 cm length. Spring coil length 17 cm	Hydrophilic non-jacketed over spring coil. Hydrophobic tip and shaft	20.0	315
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Shinobi	CORDIS	Non-tapered tip. 0.014 in. 180 and 300 cm lengths	Hydrophilic. Teflon coated.	2.0	13
Shinobi Plus	CORDIS	Non-tapered tip. 0.014 in. 180 and 300 cm lengths	Hydrophilic Teflon coated.	4.0	26
Persuader 3	MEDTRONIC	Non-tapered tip. 0.014 in. 190 and 300 cm lengths.	Available in hydrophilic (non-jacketed) and hydrophobic forms. Tip hydrophobic in all variants	5.1	33
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Stabiliser	CORDIS	Soft tip, high shaft support	Hydrophobic	Very soft tip	N/A
Stabiliser Plus	CORDIS	Soft tip, very high shaft support	Hydrophobic	Very soft tip	N/A
RG 3	Asahi	Non-tapered tip. Tip 0.014 in., Shaft 0.010 in. 330 cm length	Hydrophilic, non-jacketed over the shaft	3.0	N/A
Rotawire	Boston Scientific	Monofilament wire. Tip 0.014 in. Shaft 0.009 in. 325 cm	Hydrophobic	N/A	N/A
ViperWire Advance	Cardiovascular systems	Non-tapered tip. 0.014 in. 330 cm	Hydrophobic	N/A	N/A

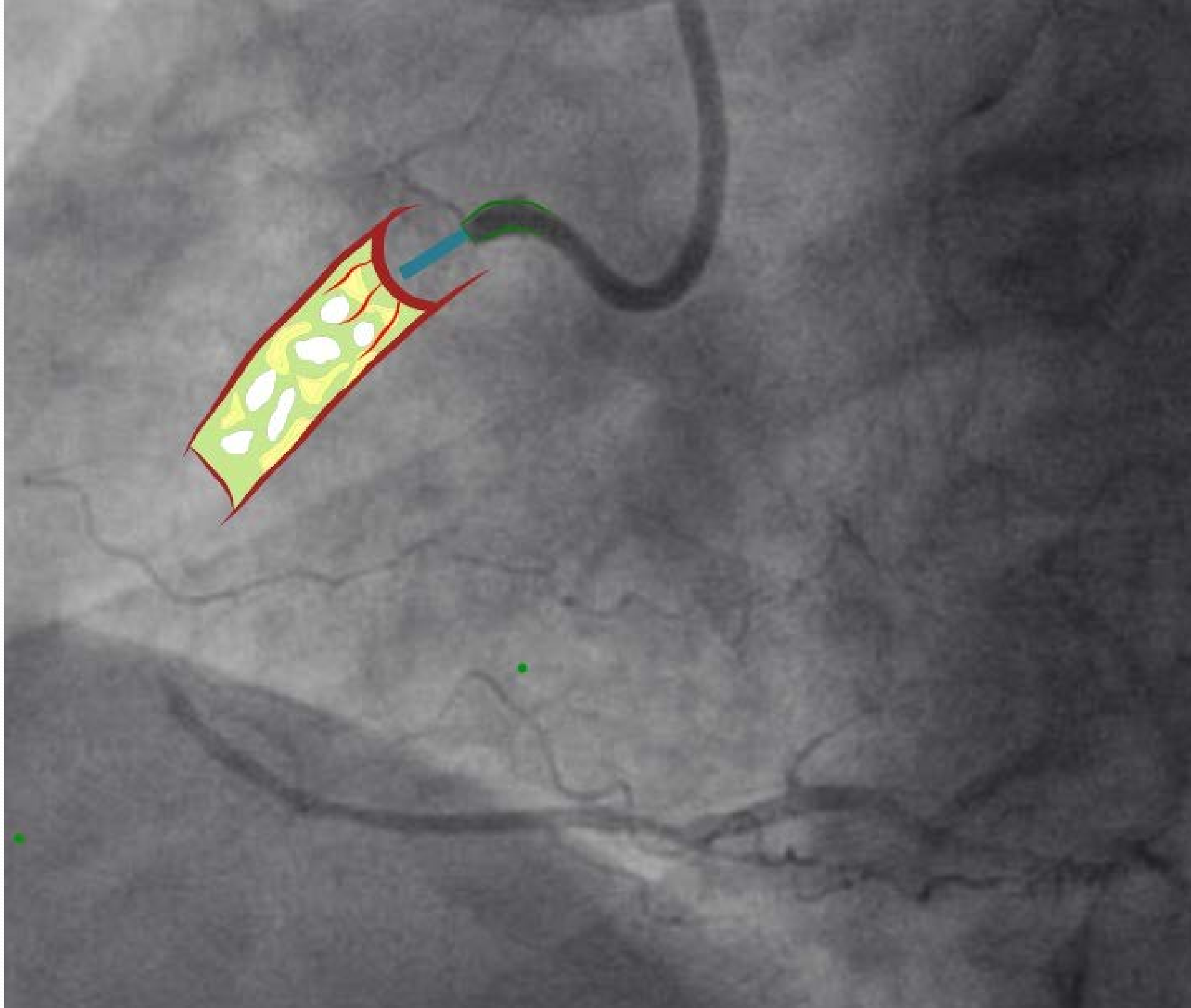
GUIDE WİRE KARŞILAŞTIRMA

	Uç profili	Uç ağırlığı	Kaplanma	Tork	Penetrasyon
Miracle 3g-4.5g-6g-12g	0,014	3-12g	-	Mükemmel	Orta
Fielder XT(A,R)	0.009-0.010	0.6-1.0	Polimer	Orta	Kötü
Confianza Pro 9,12, 8-20	0.008-0.009	9-20	Hidrofilik	Kötü	Mükemmel
Gaia 1.,2.,3.	0.010-0.011	1.7-4.5	Hidrofilik	Mükemmel	İyi/mükemmel

KTO Kılavuz Teller

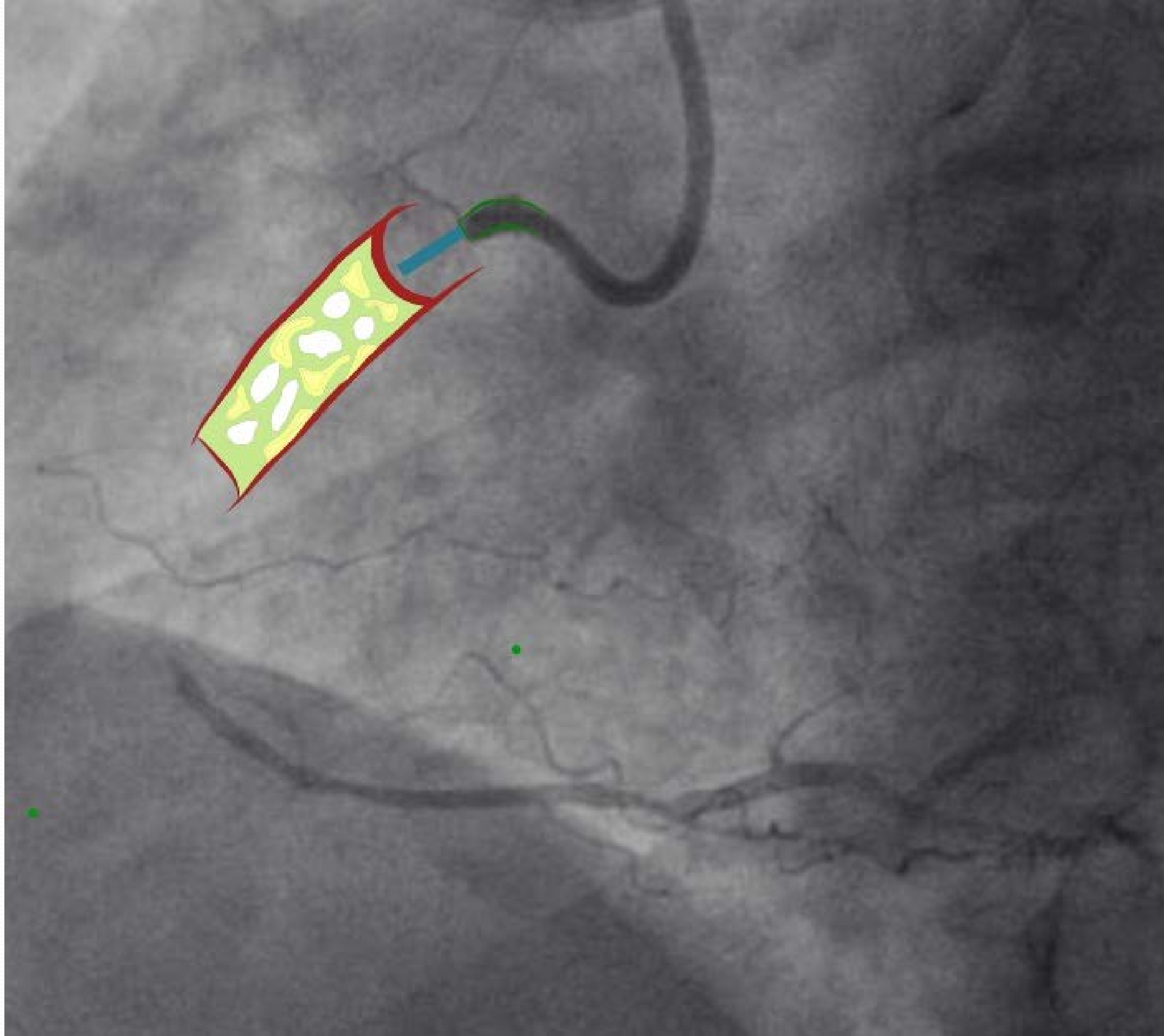
- KTO da kullandığımız kılavuz teller; (antegrad için)
- Günlük kullandığımız telleri başlangıçta lezyona ulaşmak için kullanıyoruz, mikrokateteri lezyona bu tel üzerinden gönderiyoruz.
- Proksimal fibröz kılıfa ulaştığımızda kılavuz tel seçimi yapmak durumundayız.

KTO Kılavuz Teller



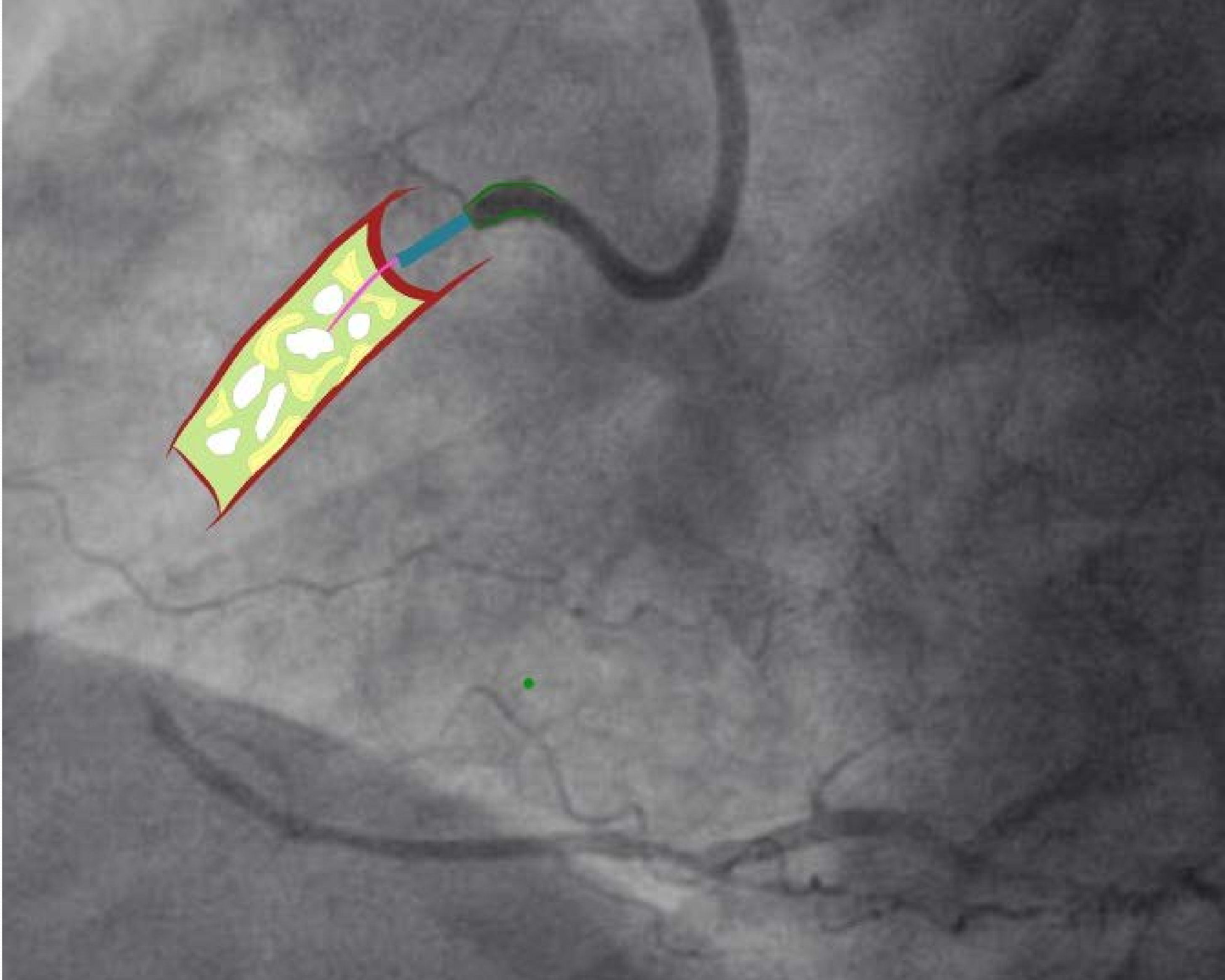
- Mikrokanal varlığında;
- Kaygan (polimer ve hidrofilik kaplama), geçişi kolay olacak şekilde ince bir tel
- Fielder XT, Whisper, Pilot50

KTO Kılavuz Teller



- Mikrokanal yok veya ince tel ile başarısız kalınmışsa;
- Penetrasyon (Composite) gücü yüksek bir tel (miraclebros 3-12 gr, pilot200, confianza pro 9-12 gr, progress 4.8-13 gr)

KTO Kılavuz Teller



- Kaygan ve ince tel ile plak içine girip ilerleyememe;
- Penetrasyon gücü yüksek ve 1:1 torqable bir tele ihtiyaç olacaktır. (Gaia serisi ve diğerleri)

KTO Kılavuz Teller

- Gaia kılavuz telleri;
- Ucu incelen özellikte (0.010-0.011-0.012")
- 1.7-3.5-4.5 gr uç ağırlığında üç seçeneğindeki var
- 1:1 torque özelliği var
- Polimer kaplama yok spring coil ve 40 cm hidrofilik
- Ucu microcone kesim (penetrasyonu kolaylaştırıyor)



KTO Kılavuz Teller



- Gaia serisi yoksa diđer sert tellere geçilebilir.
- Eđer oklüde segmentin seyri biliniyorsa confianza pro serisi
- bilinmiyorsa miraclebros veya pilot serisi kullanılabilir.

KTO Kılavuz Teller

- Tek tel tekniđi ile başarılı olamadığımızda diđer sert telleri kullanarak paralel tel tekniđine geçebiliriz.
- Ancak bunda da başarısız kalırsak disseksiyon stratejileri için yeni tellere ihtiyacımız olacak.

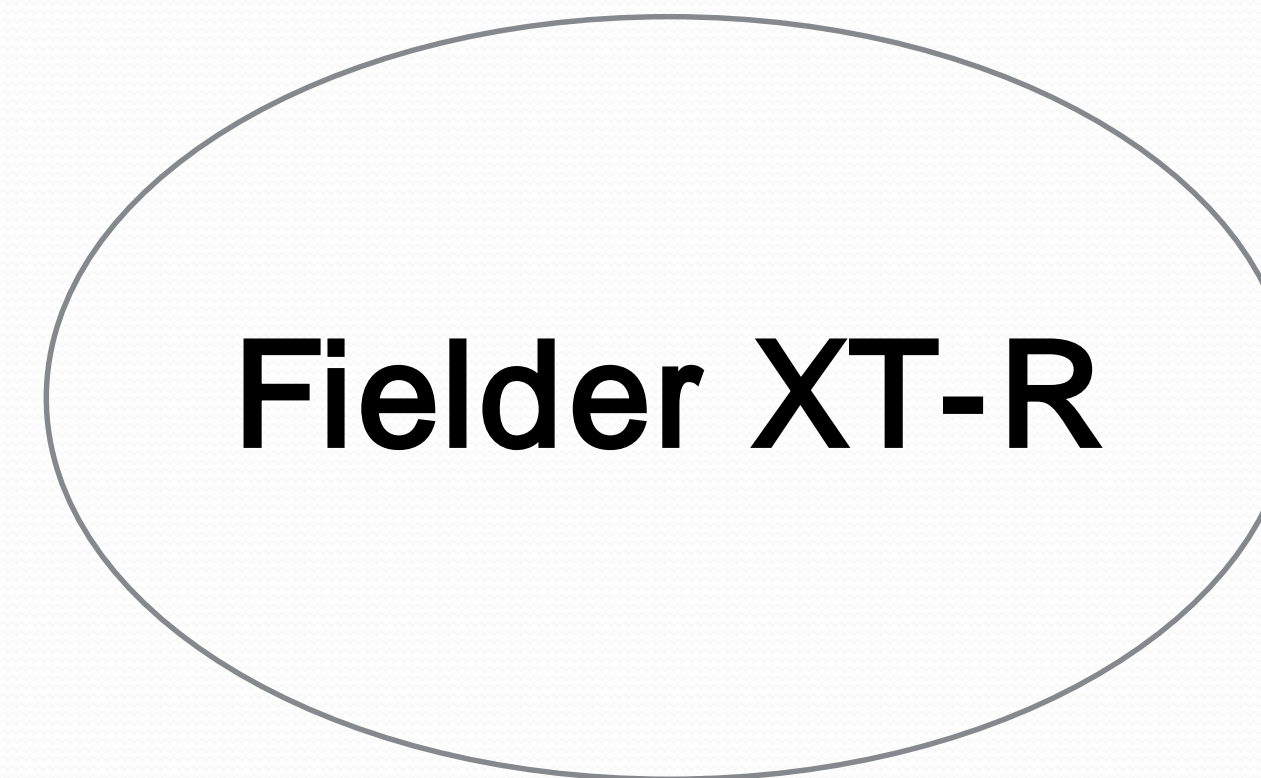
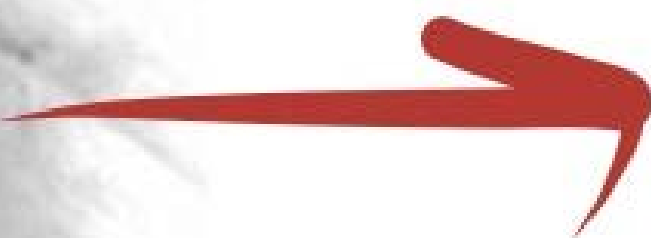
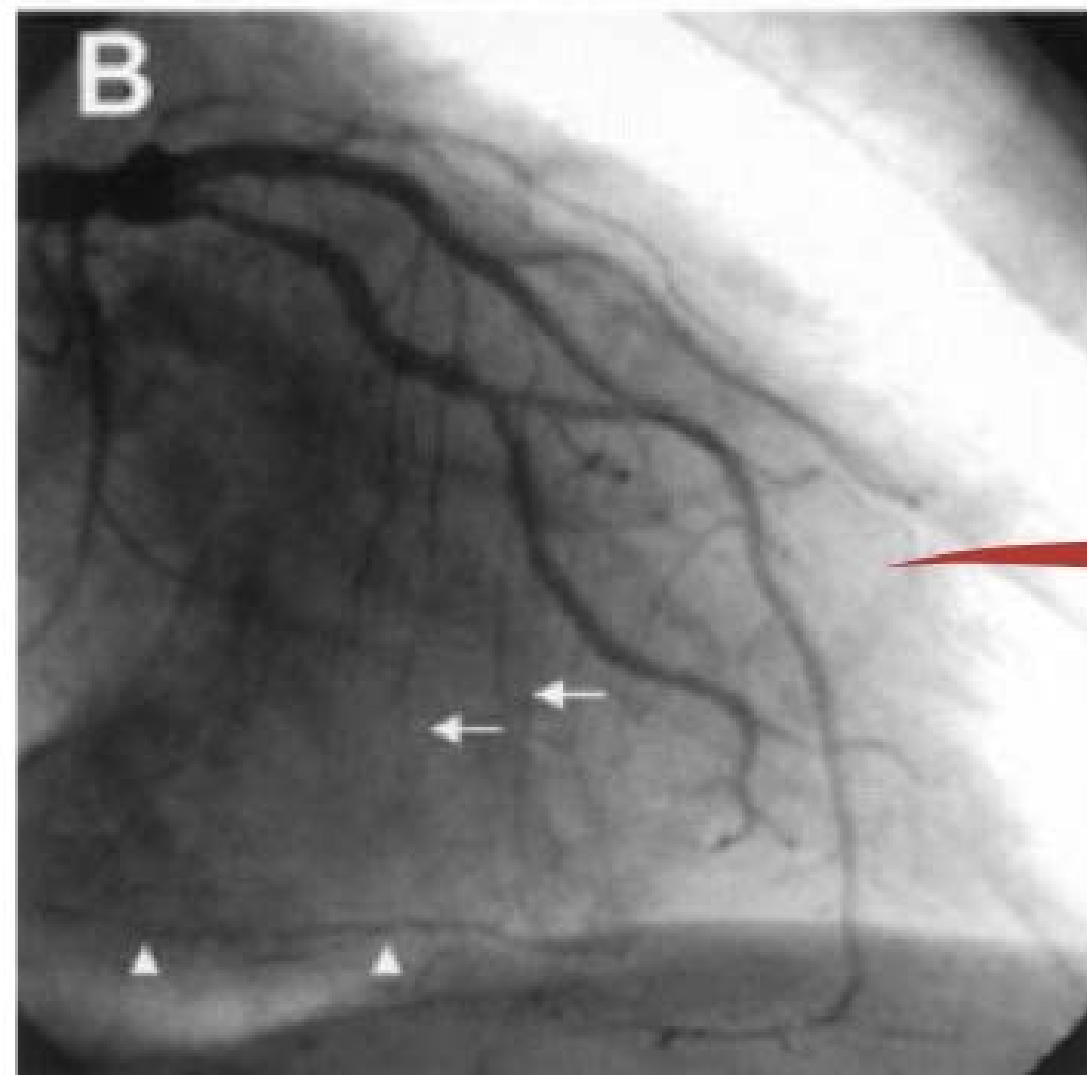
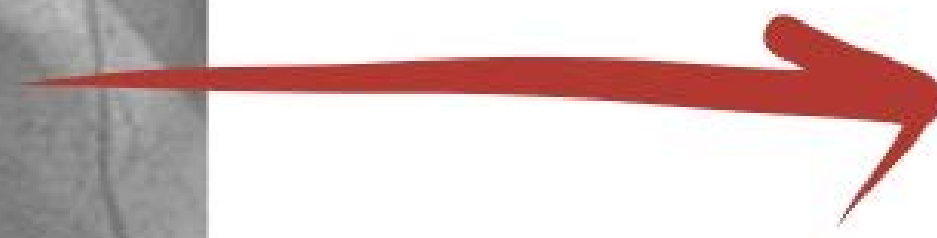
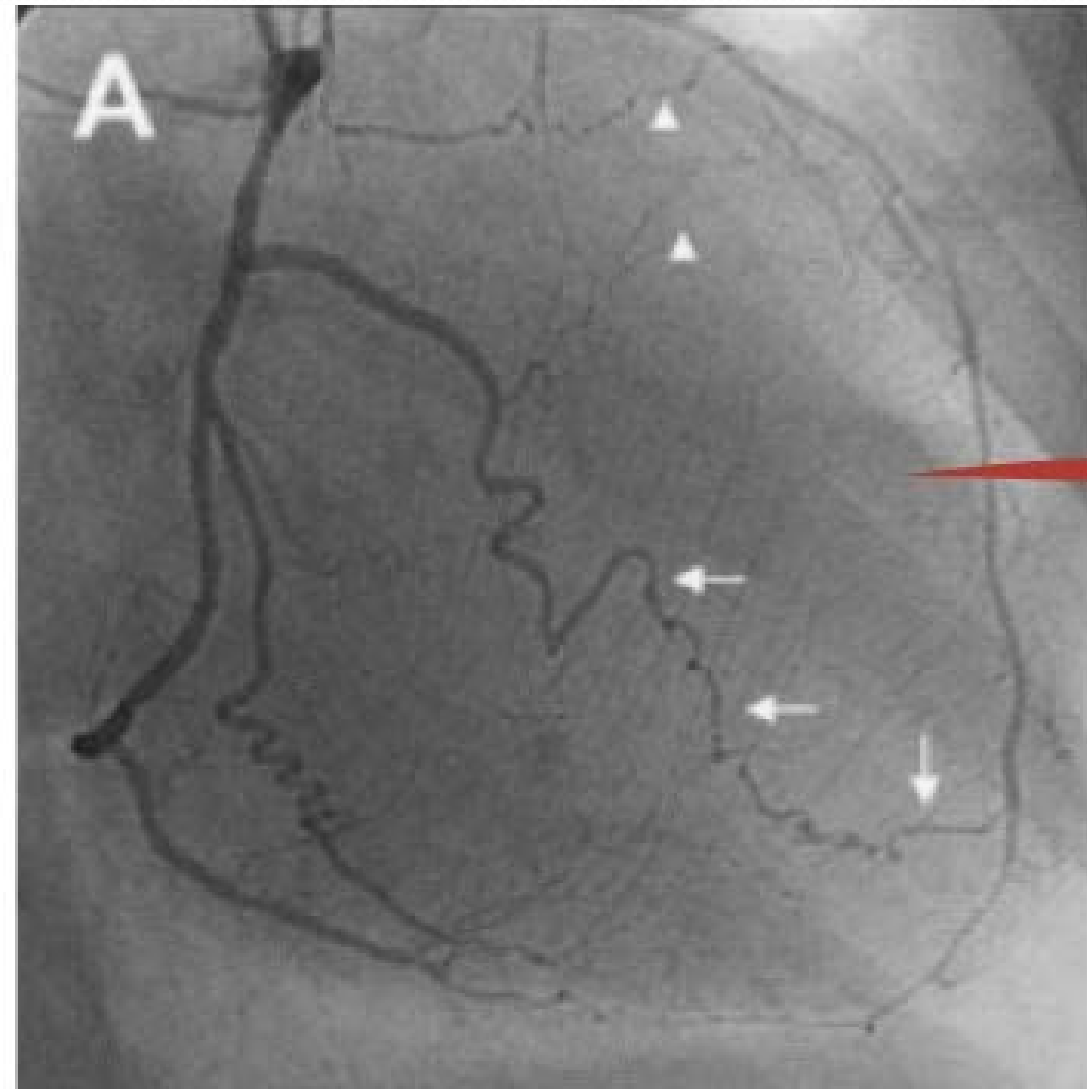
KTO Kılavuz Teller

- Antegrad disseksiyon stratejisi elde varsa crossboss katater ve stingray balon-reentry teli kullanılabilir.
- Yoksa knuckle tekniđi kullanılabilir. Sınırlı küçük disseksiyon için Fielder serisi ve pilot50 kullanılabilir.
- Nispeten büyük bir disseksiyon için ise pilot200 kullanılabilir.
- Sonrasında Re-entry için sert, ucuna dik açılı bir eğim verilen tel kullanılabilir.

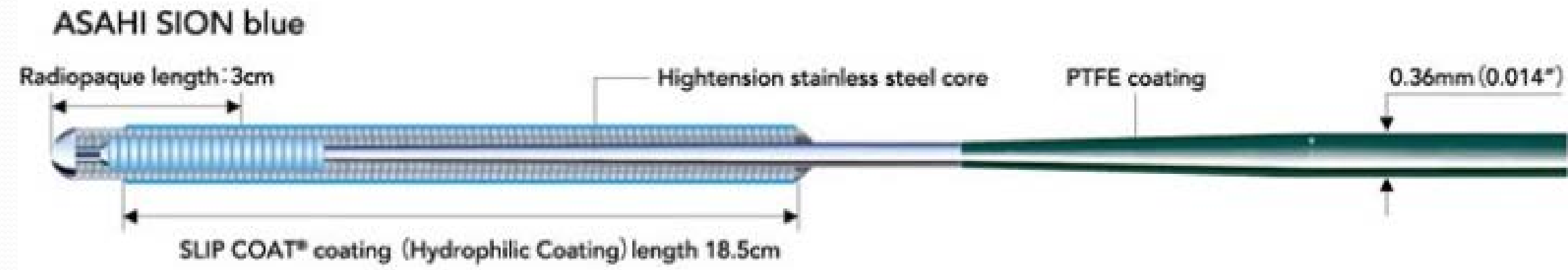
KTO Kılavuz Teller

- KTO da kullandığımız kılavuz teller; (retrograd için)
- Antegradda olduğu gibi istenilen yere ulaşınca ya da günlük telimizi kullanabiliriz.
- Ancak retrogradda lezyona ulaşmak için ya septal ya da epikardiyal kollateralleri kullanmak zorundayız.

KTO Kilavuz Teller



KTO Kılavuz Teller

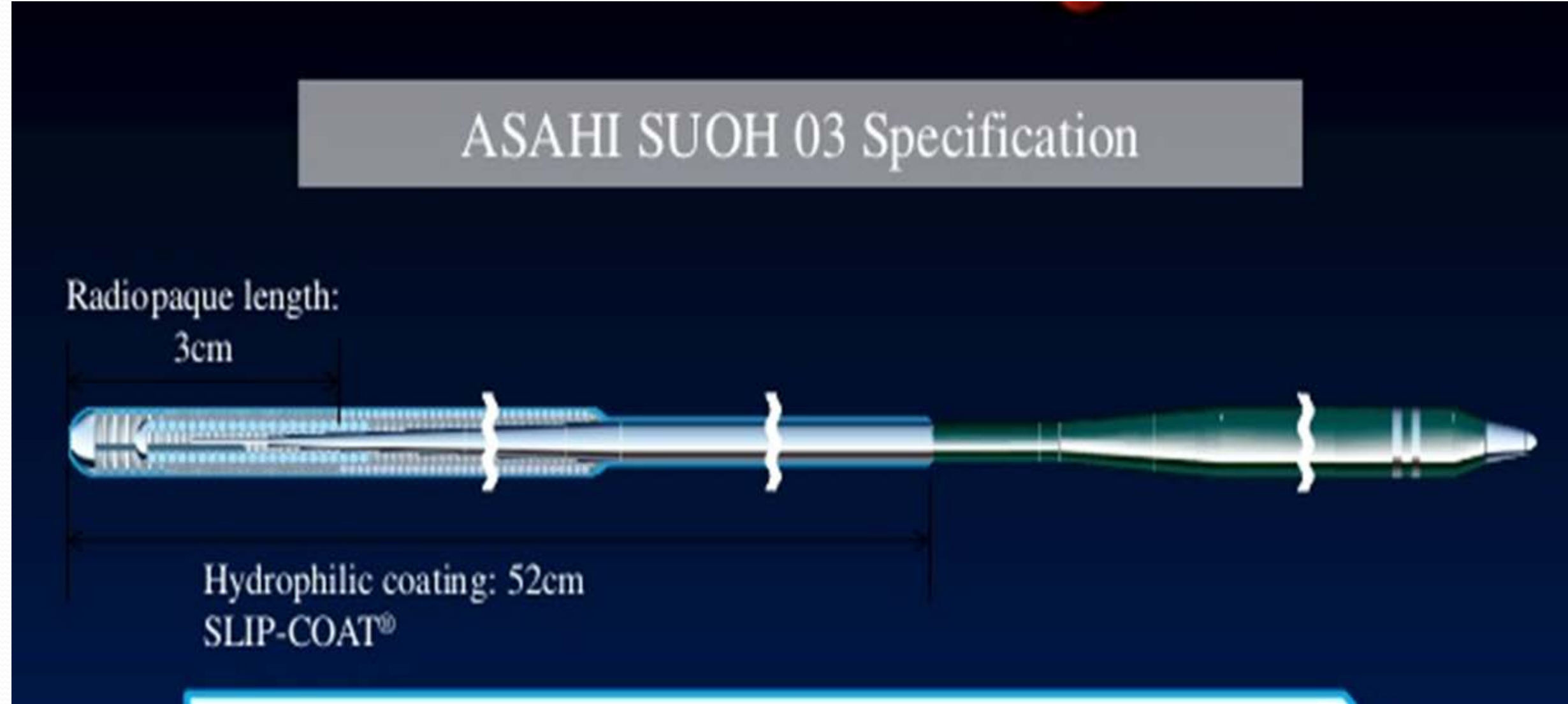


Performance Chart



- 0.014" , uç ağırlığı 0.5 -07gr
- Double core teknolojisi
- Uç 1.5cm hidrofobik kaplama
- 18.5 cm hidrofilik kaplama
- 20 cm spring coil, 3 cm radyopak
- 180-300 cm uzunlukta
- 1:1 torque kuvvet iletimi var

SUOH 03



- 0.014", uç ağırlığı 0.3 gr
- Full hidrofilik kaplama (52 cm)
- Coil uzunluğu 19 cm
- radyopak kısım 3 cm
- 190 cm uzunlukta
- Uç şekli düz/ kendiliğinden şekilli

Kollateral geçişinde Guide-wire seçimi

	Septal	Epikardiyal
Continous tortuosity, küçük yandalları varlığı	SION SUOH 03 XT-R	SUOH 03 SION XT-R
Akut bend	SUOH 03 SION SION black	SUOH 03 SION SION black
Görünmeyen kanalı geçmek	XT-R SION black SION	-

KTO Kılavuz Teller

- Kollateralleri geip lezyona ulařılınca antegrad uygulanan telleri kullanabiliriz.
- Bu yntemler bařarısız kalınca disseksiyon tekniđine geilir (knuckle tekniđi). Yine antegrade olarak kullanılan (knuckle ve Re-entry) aynı teller geerlidir. Genellikle reverse CART tekniđi kullanılır.
- Bir kez lezyon geilip kılavuz tel antegrad katatere iletildiđinde externalizasyon yapılmalıdır.

KTO Kılavuz Teller

- Eksternalizasyon için ise 300 cm uzunlukta teller kullanılmaktadır
- **RG3**; 0.010", 330 cm , Asahi
- **R350**; gövde 0.012", uç 0.006", nitinol, gövde ve uç yumuşak, kink rezistant (Vascular Solutions)
- **ViperWire**; 0.014" perifer için, sert itmesi kolay
- **Rotawire**

KTO Kılavuz Teller

- Tüm telleri raflarımızda bulunduracak mıyız? HAYIR
- Mikrokanal aramak için; **Fielder XT**
- Penetrasyon ve Re-entry için sert tel; **Confianza pro, Pilot 200**
- Disseksiyon stratejisi için; **Fielder XT, Pilot 50 ve Pilot 200**
- Kollateral geçişi için; **Fielder ve Sion** serisinden birer tel
- Externalizasyon için bir tel; **RG3**