



RETROGRAD KOLLATERAL DONÖRÜ ARTERLERİN HEMODİNAMİK DEĞERLENDİRİLMESİ

Doç. Dr. M. Kürşat Tigen
Marmara Üniversitesi Tıp Fakültesi
Kardiyoloji Anabilim Dalı

- 
- M.Y.
 - 62 yaş, erkek hasta
 - HT
 - Sigara (10 yıl/paket, 20 yıldır kullanmıyor)
 - Yaklaşık 3 aydır tipik efor anjinası mevcut

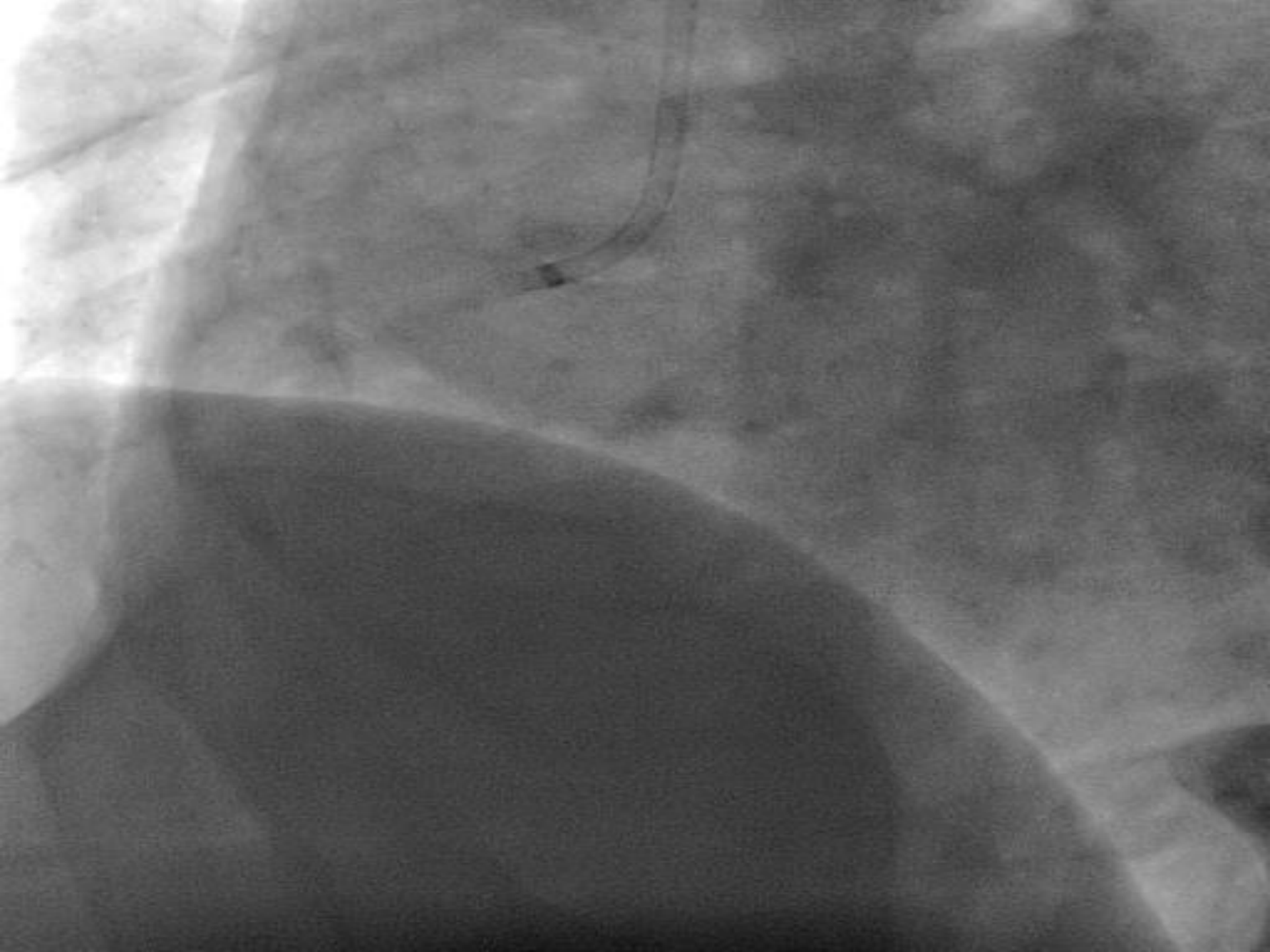
- S1, S2 normal,
- Mezokardiyak odakta 2/6 sistolik üfürüm
- Kalp hızı 74 vuru/dakika
- Kan basıncı: 145/85 mmHg

- EKG: DII, DIII, aVF patolojik Q dalgası
- Transtorasik ekokardiyografi:
 - İnferior, posterolateral ileri hipokinetik
 - EF:%35
 - Orta mitral yetersizliği
 - Hafif triküspit yetersizliği
- Stres Eko: Viabilite (+)

- 
- Troponin (-)
 - Total kolesterol: 198 mg/dl
 - LDL: 115 mg/dl
 - HDL: 44 mg/dl
 - Trigliserid: 196 mg/dl
 - Hb: 14,6 g/dl









PressureWire™ Certus™

FFR Measurement System with Agile Tip Technology

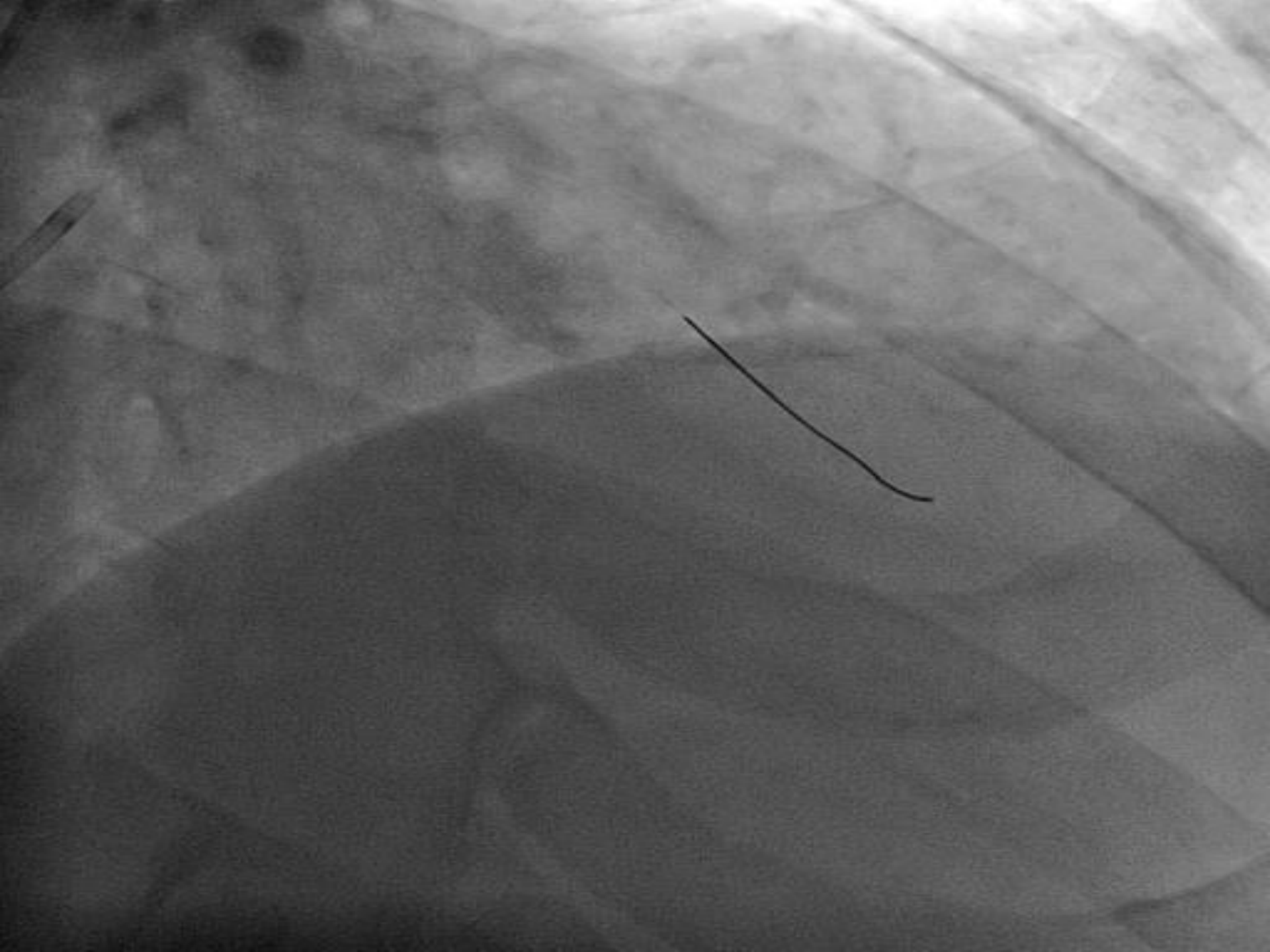
FFR Functionality and Handles like a Workhorse PCI Guidewire¹

PressureWire FFR Measurement System with Agile Tip technology was designed to replicate the performance of workhorse PCI guidewires. The new Agile Tip provides exceptional handling performance, and the new hydrophilic coating delivers interventional tools more easily, which may reduce procedure time and provide more cost-effective procedures.

¹ St. Jude Medical. Data on File: R3149 PressureWire Generation 8 PMS Report.

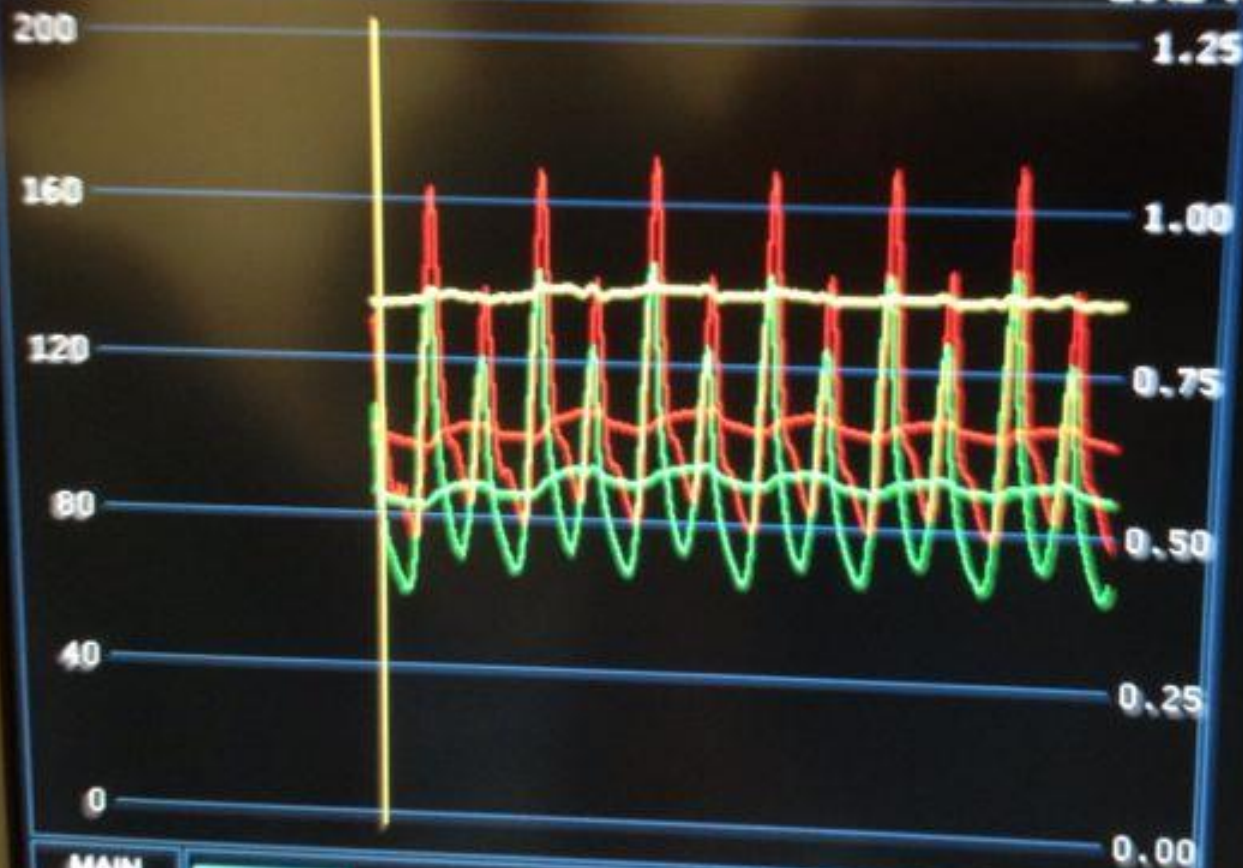
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MEHMET YILDIZAC

2012-11-07 17:46



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0.83
FFR

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VIEW

LIBRARY

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PC

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NEXT

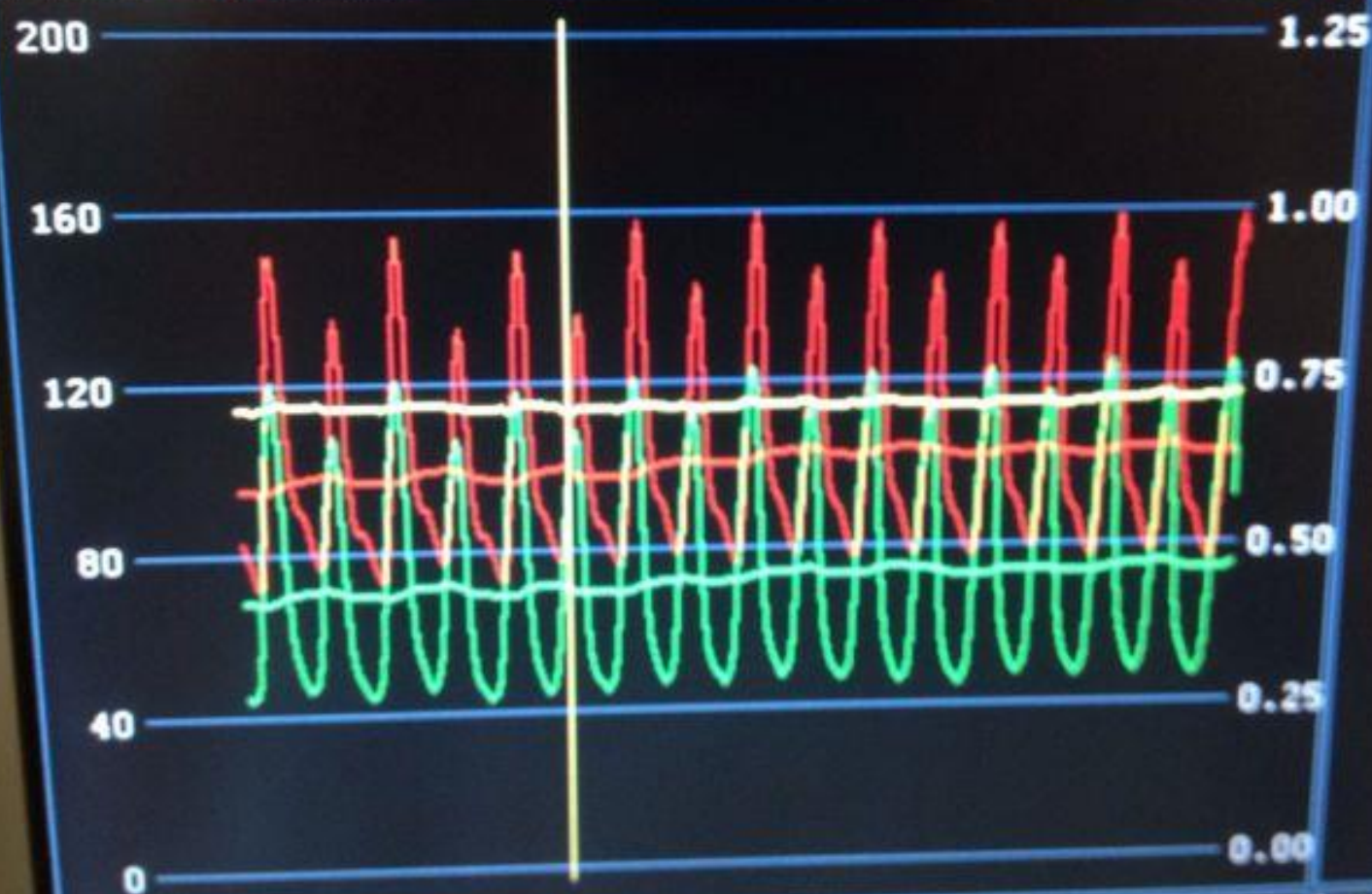
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RADI

PRESSURE WIRE®

MEHMET YILDIZAC

2012-11-07 17:47



(99)
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Pd

0.70
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Length 00:11
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PT²® Moderate Support Guide Wire

Overview

Offers increased resiliency with the ability to help steer and deliver devices in tortuous anatomy and highly resistant lesions.

Product Information



Tip Flexibility/Style: Intermediate/Polymer

Tip Radiopacity: 2cm

Rail Support: Moderate

Core Material: Linear elastic nitinol

Coating: Hydrophilic

Extension: AddWire® Extension Wire

Order Code (Qty 5)	Product Name	Length (cm)	Tip Shape	Diameter (in)
H749 38931-03 2	PT ² ® Moderate Support	185	Straight	.014
H749 38931-03J 2	PT ² ® Moderate Support	185	J Tip	.014
H749 38931-04 2	PT ² ® Moderate Support	300	Straight	.014
H749 38931-04J 2	PT ² ® Moderate Support	300	J Tip	.014
H749 22150-01 2	AddWire® Extension Wire	145	n/a	.014



Simpass® Plus PTCA Balloon Dilatation Catheter

Simpass® Plus Balloon Catheter; all the features of the Simpass Balloon Catheter and **Plus** hydrophilic coating.

- Hydrophilic coating
- Atraumatic Tapered Soft Tip: Low lesion entry profile for excellent crossability and trackability
- Superior Crossability: Special folding treatments bring in low crossing profile and tight re-wrap
- Semi-Compliant Balloon:
- Enhanced Pushability: one piece structure of corewire and PTFE coated hypotube provides best force delivery to the distal shaft.

- 1,5 x 10 mm 20 ATM
- 2,5 x 20 mm 18 ATM



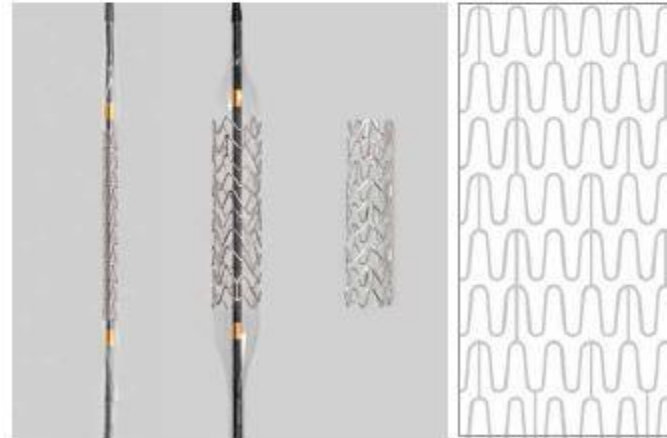


COMMANDER

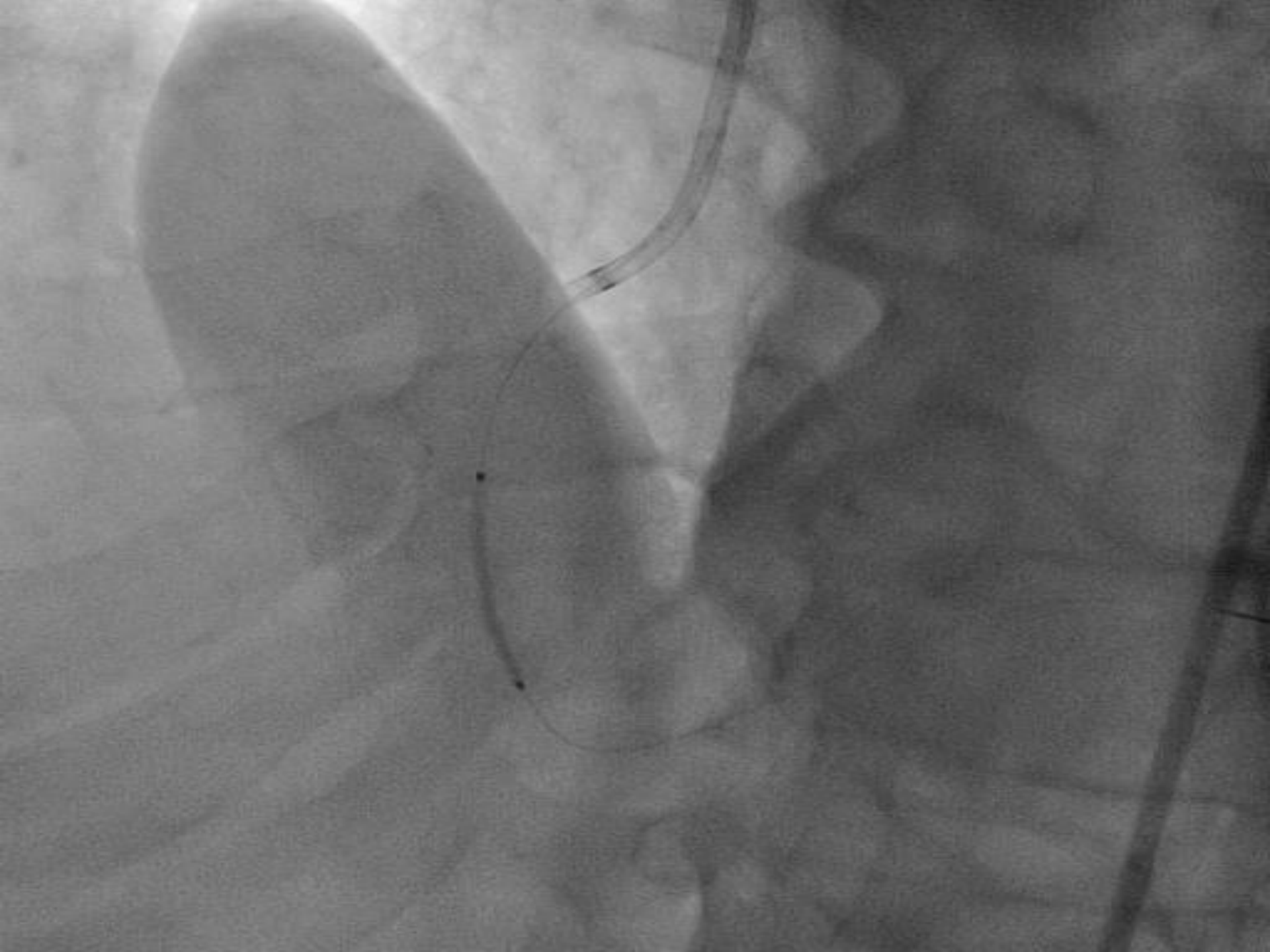
KORONER STENT YERLEŐTİRİM SİSTEMİ

Kobalt Krom
Yüksek Esneklik
Optimum Radyal Dayanım
Daha İnce Strat
Düşük Restenoz Riski

Kobalt Krom'dan yapılan Commander yüksek esnekliğe sahip bir stenttir. Malzeme özelliğinden dolayı daha ince strat dizaynına olanak sağlar ve restenoz riskini azaltır. Paslanmaz çelik stentle karşılaştırıldığında, Commander stent, daha yüksek radyal dayanıma ve benzer elektronegatiflikte daha yüksek radyopasileye sahiptir. Düşük nikel oranı sayesinde, nikel alerjisi olan hastalarda da güvenlidir.



- 3,5 x 25 mm 18 ATM
- 4,0 x 28 mm 18 ATM







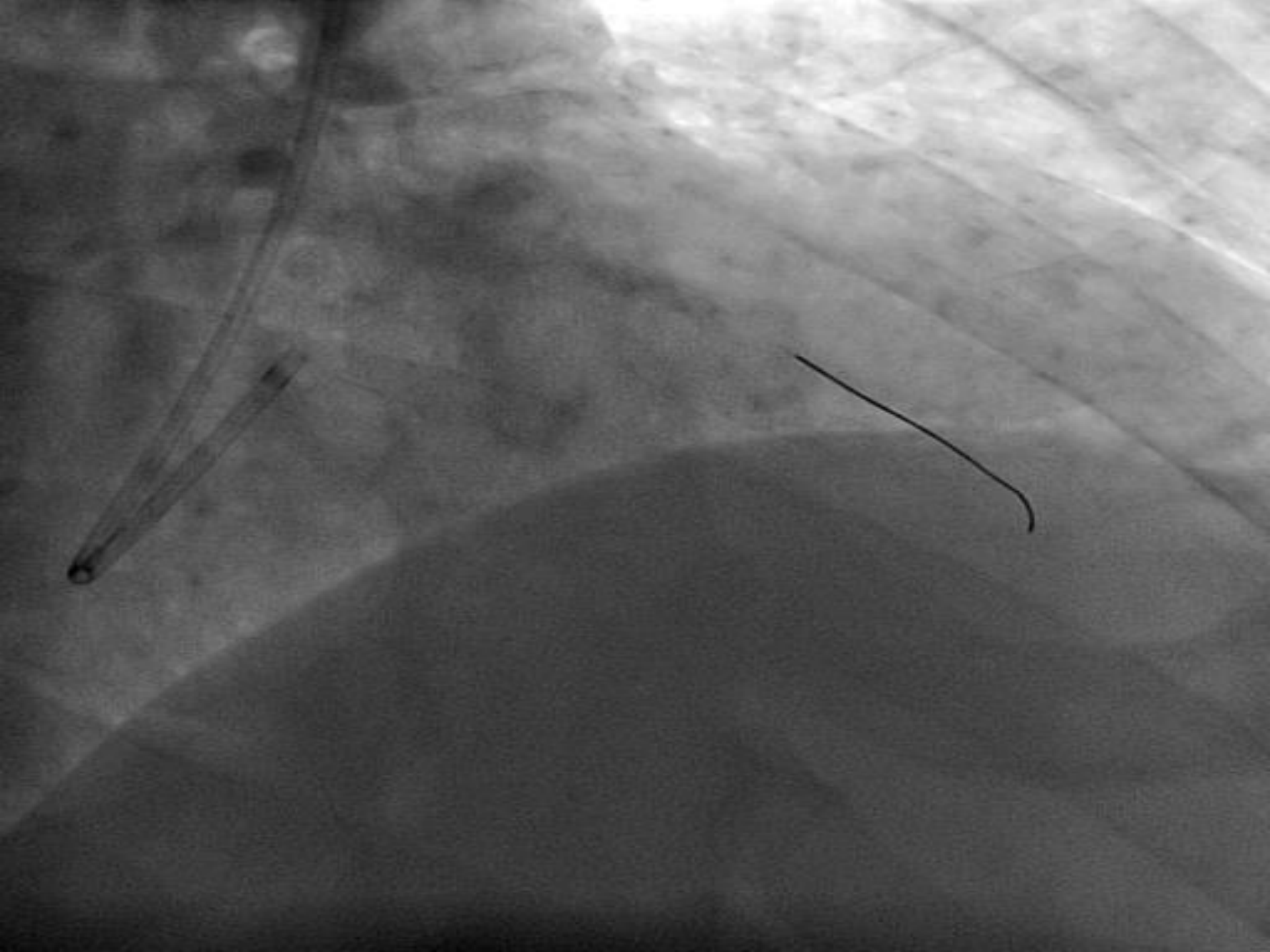








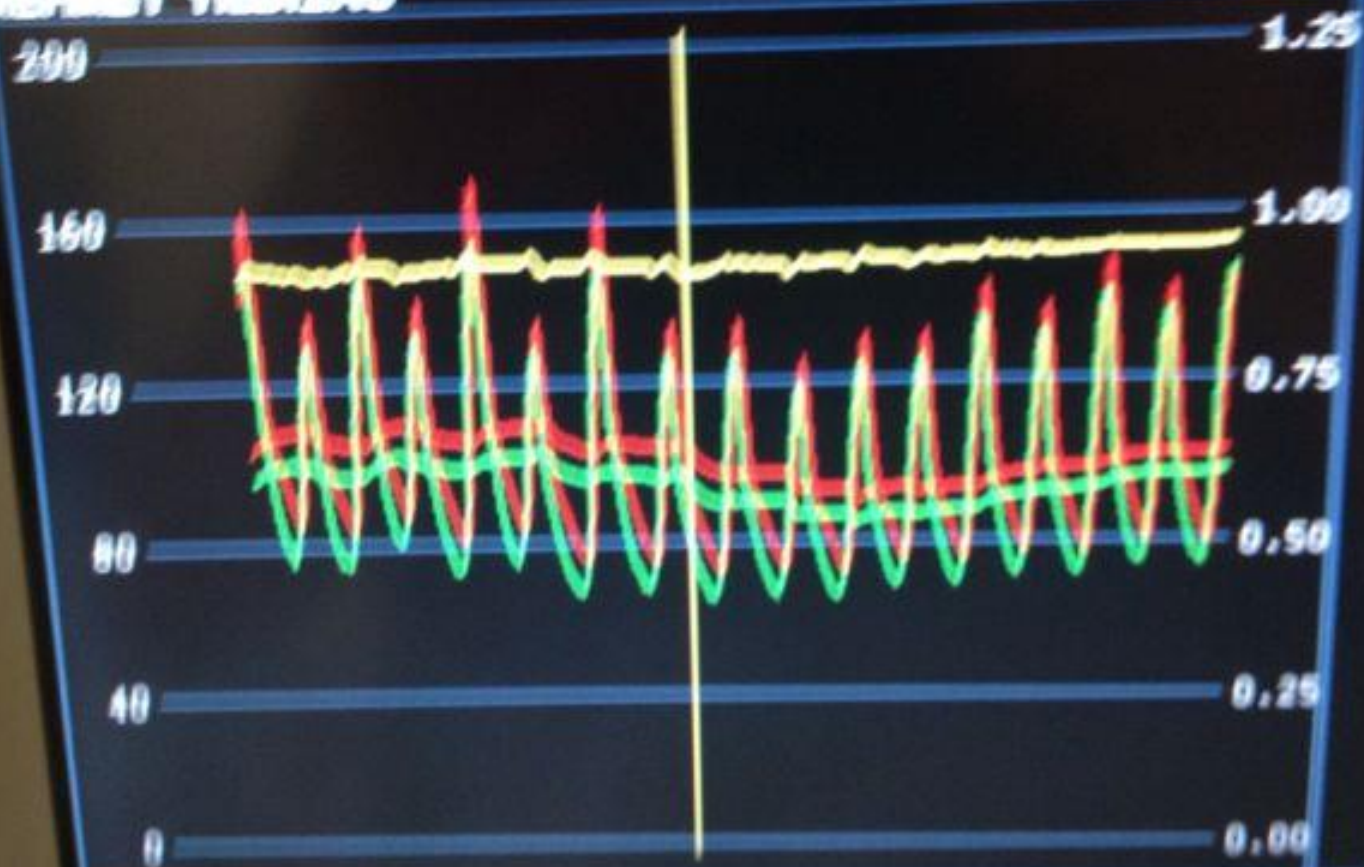




PRESSURE WIRE

MEHMET YILDIZAC

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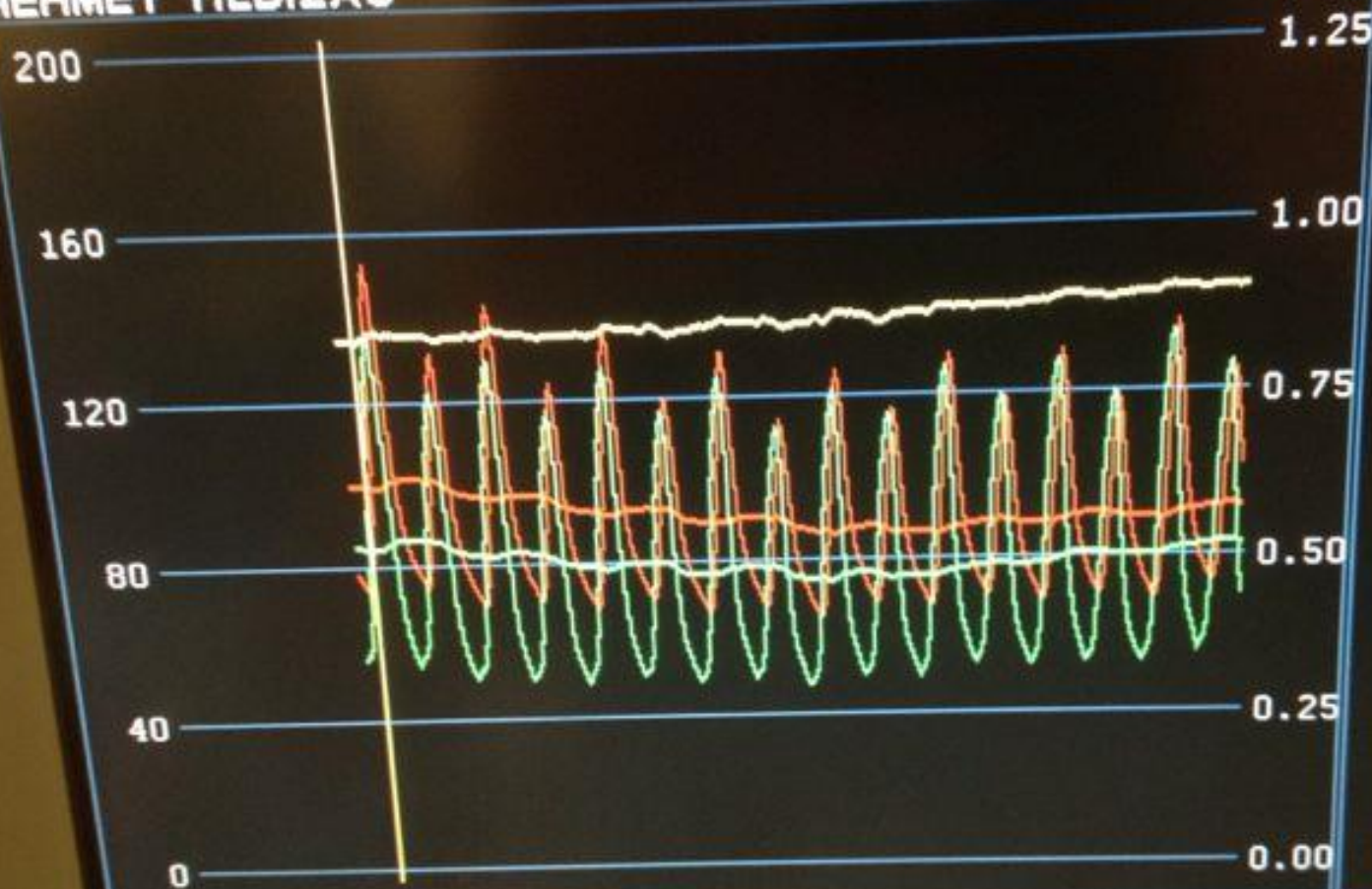
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MEHMET YILDIZAC

2012-11-07 18:44

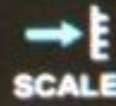
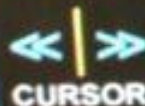


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FFR

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RADI

- İyi gelişmiş kollateral dolaşım myokardiyal canlılığın korunmasında önemlidir
- Yaygın kollateral dolaşım egzersiz ve maksimal hiperemi (adenozin ve papaverin) sırasında coronary steal sendromuna sebep olabilir

- FFR kılavuzluğunda girişim:

Güvenli

Cost-Effective

Prognostik öneme sahip

- Gelişmiş kollateral dolaşım FFR sonuçlarını etkileyebilir
- Donör arter FFR sonuçları abartılı olabilir:
Coronary steal syndrome

- 
- Kollateral dolaşımın yoğunluğu
 - Donör arterdeki darlığın şiddeti
 - Girişim yapılacak arterin dominansı
 - CTO distalindeki diğer kritik darlıklar

- Donör arter darlığının lokalizasyonu
(septal kollaterallerin proksimalinde yerleşim)
- Gözden kaçan epikardiyal veya atriyal kollateraller
- LV disfonksiyonu ??? (LVEDP artışı)

- Donör arterin hemodinamik değerlendirmesi CTO revaskülarizasyonu öncesi ve sonrasında yapılmalı
- Yeterli kollateral dolaşım yokluğunda FFR sonuçları daha kararlı
- İleri anatomik değerlendirme: IVUS, BT Anjiyografi

- Donör arter FFR değerlendirmesi

CTO girişimlerinin öneminin artması

Gereksiz donör arter girişimlerin azaltılması

- 
- Gereksiz cerrahi işlemlerin önlenmesi
 - Komplikasyonların azaltılması

Long-Term Patency of Internal Mammary Artery Bypass Grafts

Relationship With Preoperative Severity of the Native Coronary Artery Stenosis

Alexandre Berger, MD; Philip A. McCarthy, PhD, MRCP; Uwe Siebert, MD, MPH; Stéphane Carlier, MD; William Wijns, MD; Guy Heyndrickx, MD; Jozef Bartunek, MD; Hugo Vanermen, MD; Bernard De Bruyne, MD

(0.76 ± 0.7 versus 0.51 ± 0.5 ; $P=0.001$), and diameter stenosis of the native artery ($73 \pm 25\%$ versus $84 \pm 16\%$; $P<0.0001$) in OCC versus PAT, respectively. In the multivariate analysis, only percent diameter stenosis was an independent and statistically significant predictor for graft patency. Among IMA placed on coronary arteries with a diameter of stenosis $<50\%$ ($n=28$), the occlusion rate was very high (79%).

(OCC group) were compared with a group of patients with patent artery grafts (PAT group). The degree of stenosis in the native coronary artery on which the IMA was placed was analyzed by off-line quantitative coronary angiography. Multivariate stepwise logistic regression was used to identify independent clinical and angiographic predictors of occlusion. The OCC group comprised 96 patients (67 ± 10 years) with 103 native bypassed arteries analyzed. The PAT group comprised 127 patients (69 ± 8 years) with 170 native bypassed arteries analyzed. Both groups were similar except for gender (42% versus 32% female; $P=0.04$), height (166 ± 8 versus 169 ± 8 cm; $P=0.006$), minimum lumen diameter (0.76 ± 0.7 versus 0.51 ± 0.5 ; $P=0.001$), and diameter stenosis of the native artery ($73 \pm 25\%$ versus $84 \pm 16\%$; $P<0.0001$) in OCC versus PAT, respectively. In the multivariate analysis, only percent diameter stenosis was an independent and statistically significant predictor for graft patency. Among IMA placed on coronary arteries with a

Conclusion—The degree of stenosis in the native vessel is a major predictor of internal mammary artery bypass graft patency. The association between nonsignificant stenosis of the native artery and high occlusion rate of the arterial bypass conduit raises concerns about the use of IMA in the treatment of native vessels with only mild or moderate stenosis. (*Circulation*. 2004;110[suppl II]:II-36–II-40.)

In contrast to saphenous vein grafts, the long-term patency rate of arterial bypass conduits is very high, with 85% to 95% of grafts free of significant stenosis at 7 to 10 years.^{1–4} This is supposed to be because of physiological, anatomic, and hemodynamic characteristics.⁵ Therefore, the use of arterial conduit is now unanimously accepted as the best choice for surgical revascularization. Although rare, occlusion of internal mammary artery conduits (IMA) significantly limits future revascularization options.

Causes of occlusion of the arterial bypass grafts remain controversial. Doppler studies suggested that a moderate stenosis in the target vessel is associated with competitive

flow, thereby leading to a decreased antegrade flow in the arterial graft, which may lead to early failure ("disuse atrophy").⁶ However, the clinical importance of this process remains controversial. Canine experiments have shown that arterial conduits grafted on fully patent native arteries remained patent.^{8,10} Yet in the latter studies, patency was assessed at a maximum of 2 months, which is not enough to predict the long-term effect of competitive flow. In humans studies on potential predictive factors of IMA occlusion, control angiograms were also obtained relatively soon after coronary artery bypass grafting (CABG).^{11–14}

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Circulation is available at <http://www.circulationaha.org>

DOI: 10.1161/01.CIR.0000141256.05740.69

The relationship between target coronary artery stenosis and ITA patency remains controversial. Sabik *et al.* [6] studied 2999 angiograms of 2121 ITAs. They found that a lesser degree of proximal coronary stenosis is a major risk factor associated with ITA occlusion and concluded that ITA patency decreases as coronary competitive flow increases. However, the nature of this relationship indicates ITAs should not be abandoned at moderate grades of stenosis.

arterial lesion to avoid graft occlusion. saphenous vein graft is the only conduit that is not significantly affected by flow competition, mainly because of its nonresistivity and common reimplantation in the aorta. Graft configuration is the second important factor influencing the equation between graft flow and native coronary flow. Therefore, composite grafting should be reserved for the case of severely stenotic coronary target, especially if multiple arterial sequential wall of the heart. Finally, an accurate tool such severity should be the milestone of coronary to improve arterial grafting functionality.

Conclusion

Competition flow plays a crucial role in arterial by appropriate graft choice and configuration.

Keywords

arterial graft, competition flow, sequential ana

INTRODUCTION

In the absence of atherosclerotic lesions, epicardial coronary arteries are low-resistance conduits able to provide adequate blood supply to myocardial cells, even in conditions of maximal flow demand such as

contrary, Berger *et al.* [7] studied a cohort of patients in whom occlusion of at least one ITA had been documented at angiography and compared it with a group of patients with patent ITA grafts. They found that only percentage diameter stenosis was a significant predictor for graft patency. They concluded that the degree of stenosis in the native vessel is a major predictor of ITA graft patency.

Coronary bypass surgery: is it

Jude Hanel²

arterial grafting. This phenomenon can lead to graft occlusion.

ed arterial conduit to withstand the competition flow thanks to tight gastroepiploic arteries support much less flow competition and endothelial function than that of internal thoracic artery, these two arterial conduits should be used only in case of

Kawasuji *et al.* [20] performed angiography 1 month after coronary artery bypass grafting in 100 patients with ITA to left anterior descending (LAD) grafts. Fifteen percent of those performed to coronary arteries with less than or equal to 50% stenosis were severely constricted. Shah *et al.* [21]

commonly used as single free grafts, are large conduits with limited vasomotion [1,2]. Their resistance to blood flow is negligible due to a large diameter and usually short length, but their long-term patency is limited by the development of some form of premature atherosclerosis. Arterial grafts are usually of smaller diameter and more responsive to vasoconstrictor stimuli. The demonstrated superiority of the internal thoracic artery (ITA) over SVG

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Cur Opin Cardiol 2012; 27:820–828

DOI:10.1097/HCO.0b013e318283583000



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