TR Rotational Atherectomy: is it feasible and safe ?

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Apr. 28, 2019, Morning Round table Forum:
Meet the expert during breakfast, TCT-AP-2019

DR.AUTH

#25YearsofRota

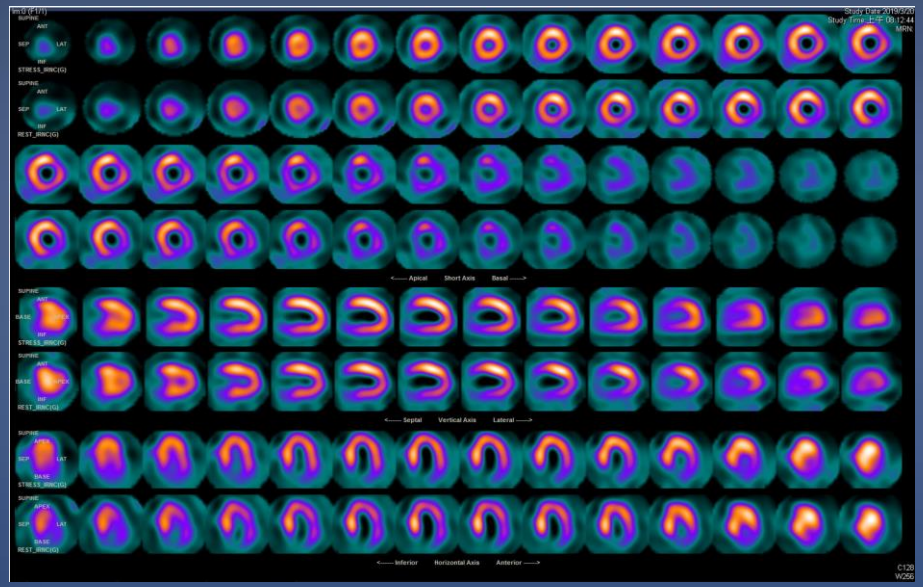
25

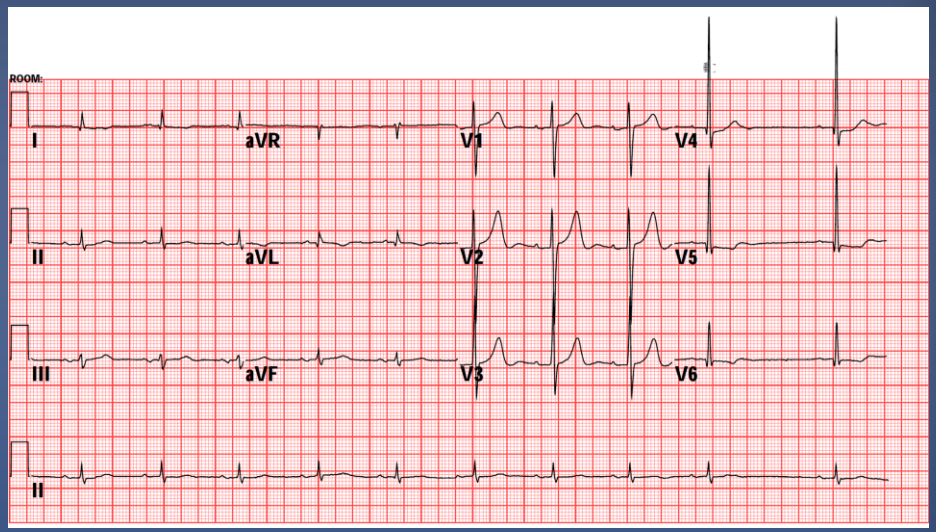
- ROTABLATOR “Rotational Atherectomy” System was invented by Dr. David Auth in 1981 and Rotablator First used in 1989

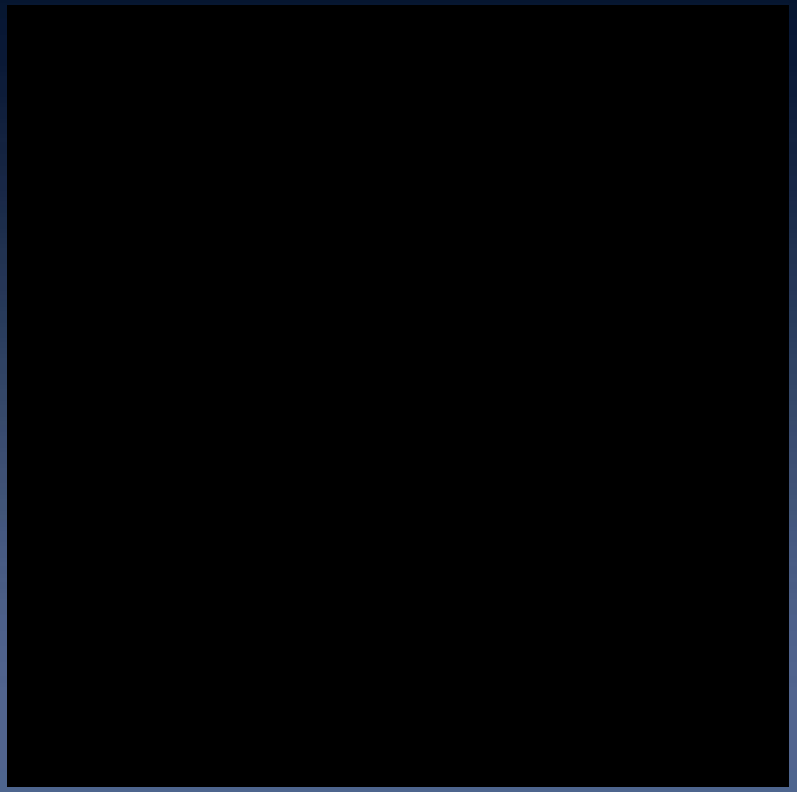
Case Example:

- A 69-year-old man had histories of triple vessel CAD, S/P DES to RCA and LCX, HTN, type II DM, anemia, bilateral multinodular goiter, ESRD with history of renal transplantati on on1995 and had left hand AV shunt. Transferred to us fo r preoperative assessment.
- **Echocardiography:** EF 54%, Grade II diastolic dysfunction, mild MR and TR
- **Tl-201 myocardial perfusion SPECT:-** Probably irreversibl e myocardial ischemia in the basal-inferior and basal-anterol ateral segments of LV.
- Hemoglobin 8.7 g/dL, Creatinine 1.89 mg/dL, Troponin-I 0.061 ng/mL

ECG and Tl-201 myocardial perfusion SPECT

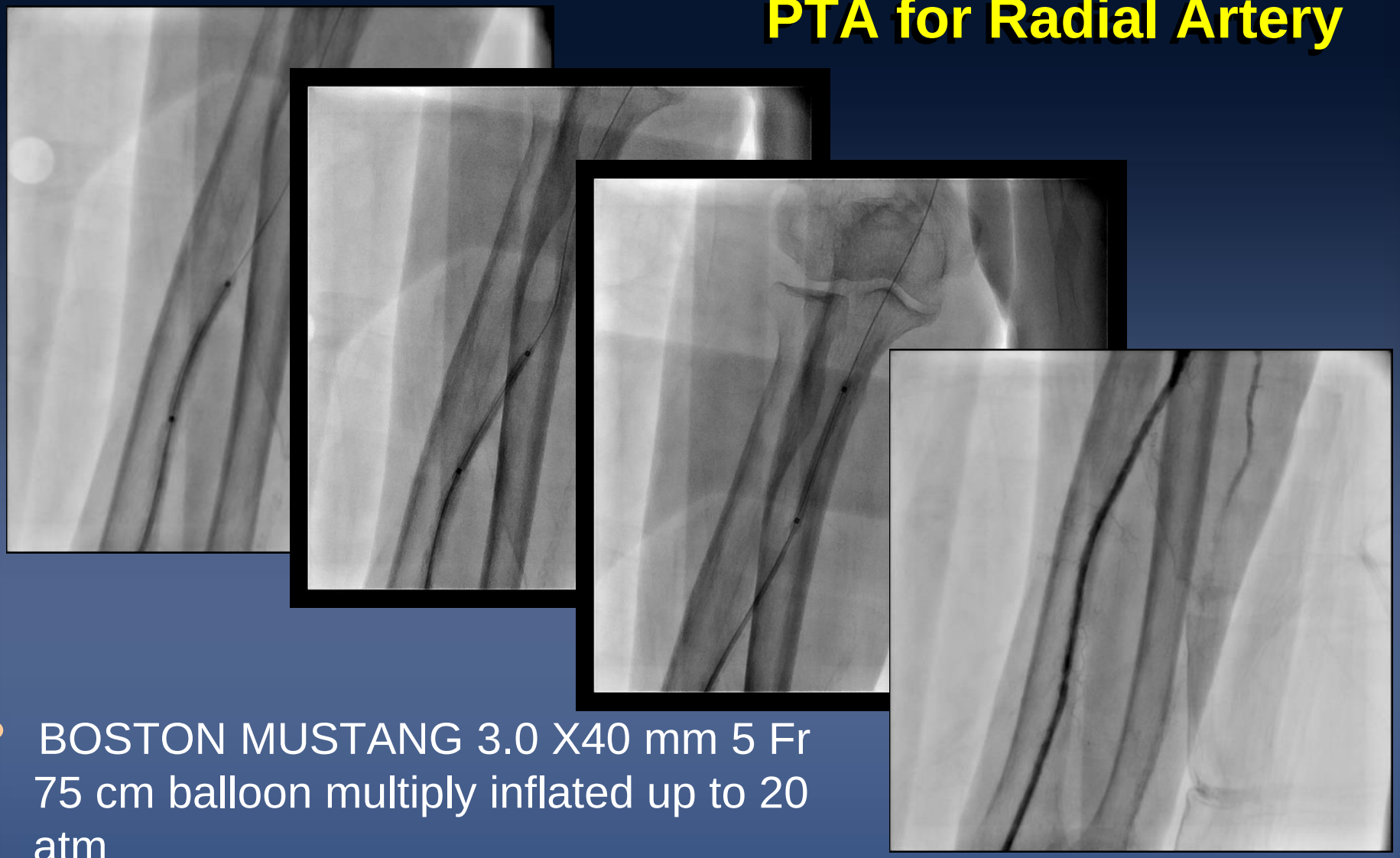




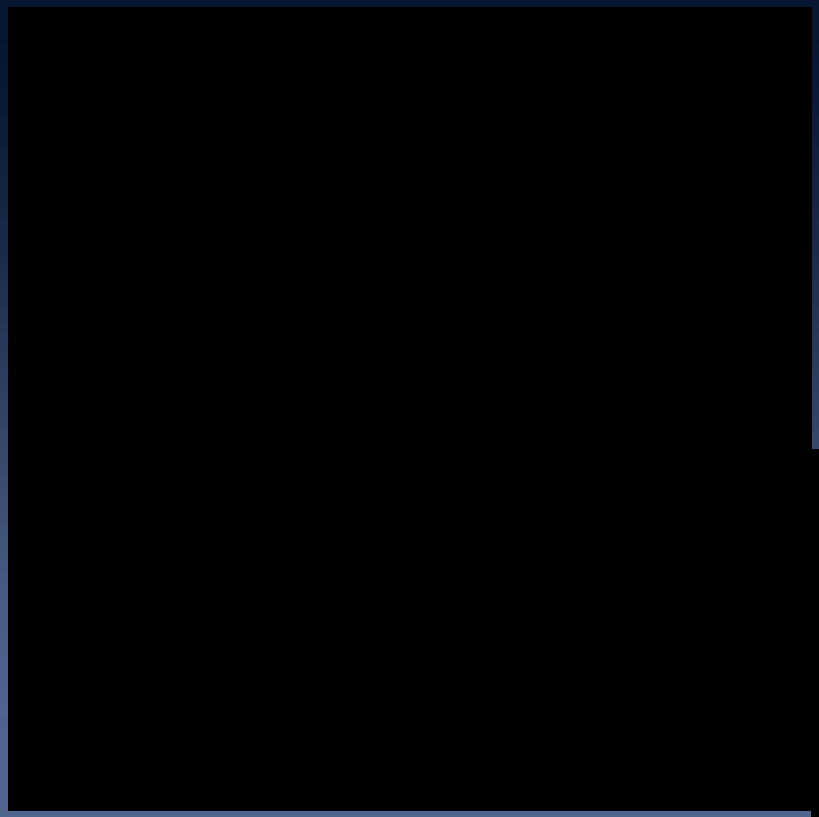


- A TERUMO 6Fr RADIFOCUS arterial sheath failed to pass through the radial artery even after changing to 5-6 Glidesheath and finally a 5Fr sheath can passed

PTA for Radial Artery

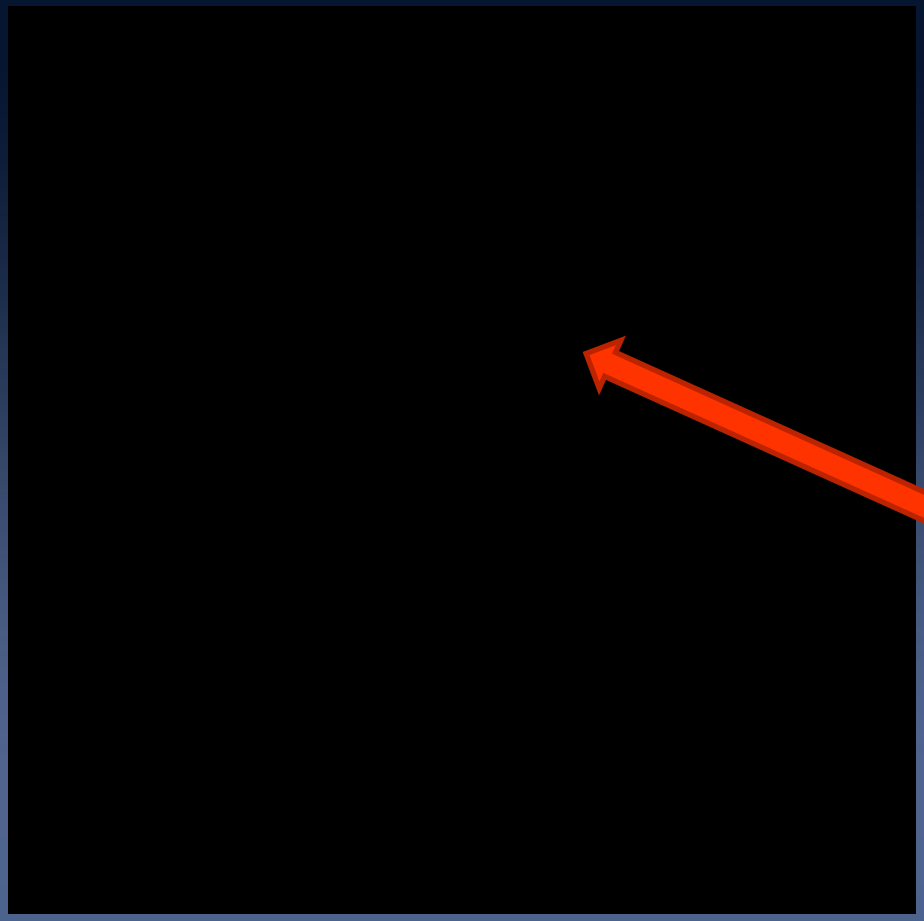


- BOSTON MUSTANG 3.0 X40 mm 5 Fr 75 cm balloon multiply inflated up to 20 atm
- Finally, the arterial sheath was changed to five in 6Fr Glidesheath Slender (Terumo)

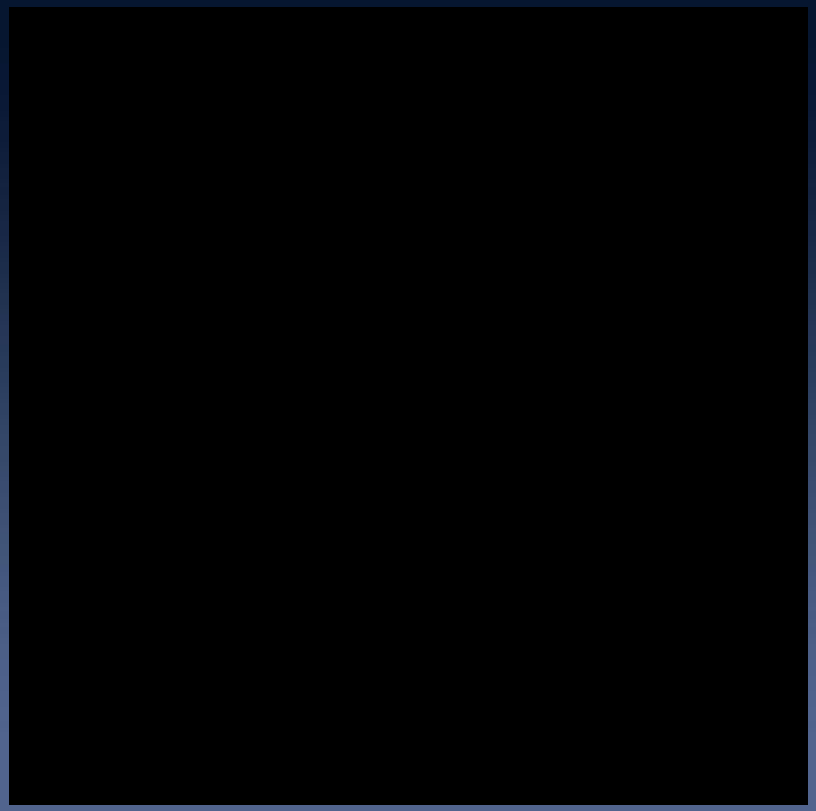


A 6 Fr IL 4.0 was used to engage the RCA and LM

Patent prior deployed DES to the RCA and LCX without significant ISR



Tight and calcific mid LAD stenosis



IVUS catheter (iLab Opticross) was tried to pass to distal LAD but failed due to heavily calcific lesion.

What is the plane

- High pressure balloon dilatation
- Cutting balloon
- Scoring balloon
- ELCA
- Rotabation debulking
- Don’t intervene; Let the patient go to surgery

ELSEVIER

Cardiovascular Revascularization Medicine

Available online 10 January 2019

In Press, Corrected Proof

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practice
lithotrip

George Kassimis [a]
Alex Zaphiriou [c], A

CJC Canadian Journal of Cardiology

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J'aime 9,9 K

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CORONARY INTERVENTIONS – THURSDAY MAY 23R

Plaque modification vs. debulking strategy in calcified coronary lesions. Long-term clinical outcome and technical determinants of the rotational atherectomy: the Rotablator Udine registry

Published on 21 May 2013

Conclusions: Rotational Atherectomy may be a safe technique in the treatment of complex lesions with high success rate. A “minimalistic approach” using small BAR and the CB (Rota-Cut technique) followed by DES implantation, seems promising in reducing complications and improving outcome. Further studies are necessary in order to support these registry data.

2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention

A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Society for Cardiovascular Angiography and Interventions

Class IIa

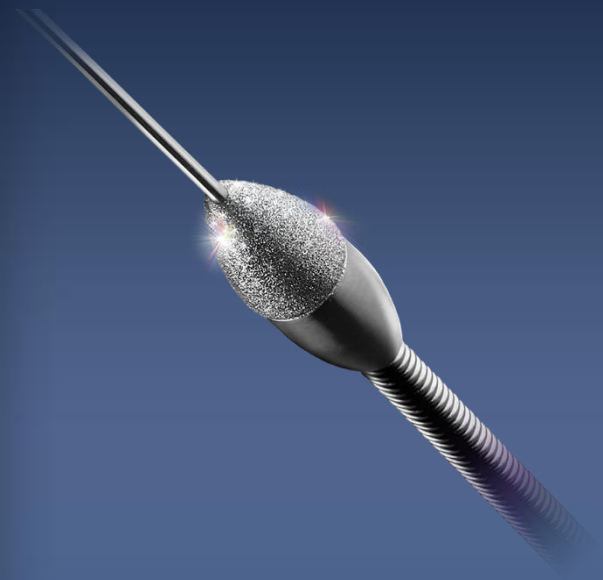
- **Rotational atherectomy is reasonable for fibrotic or heavily calcified lesion that might not be crossed by a balloon catheter or adequately dilated before stent implantation.(level of evidence C)**

Class III

- **Should not be performed routinely for denovo lesion or ISR (level of evidence C).**

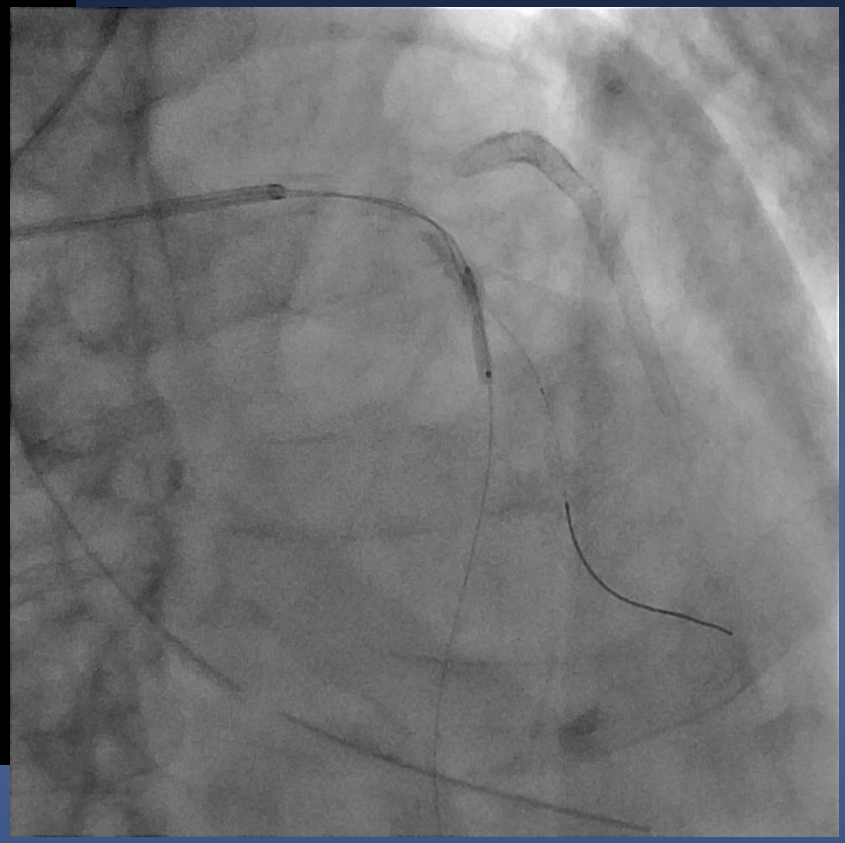
- **2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention. J Am Coll Cardiol 2011;58:e44–122.**

Debulking using Rotational atherectomy

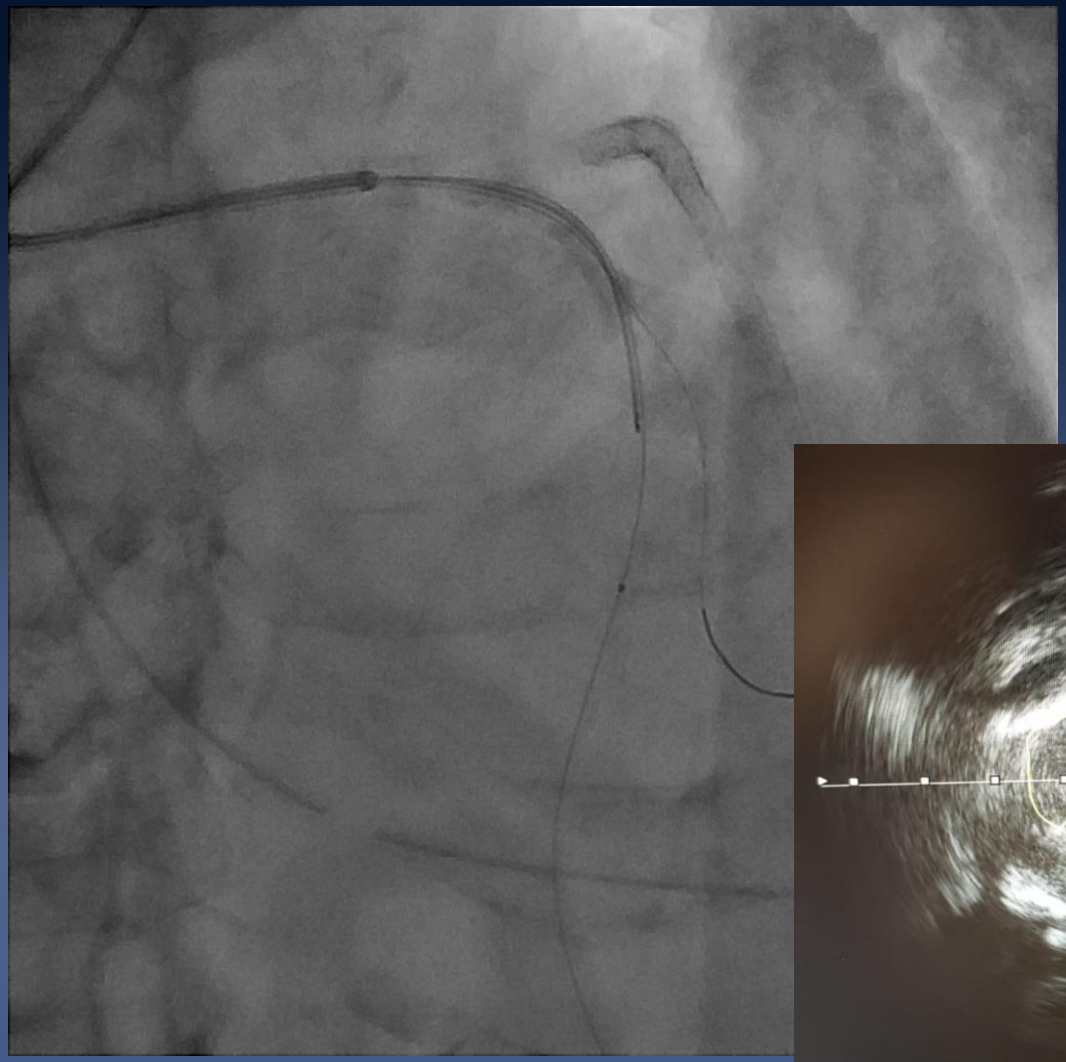


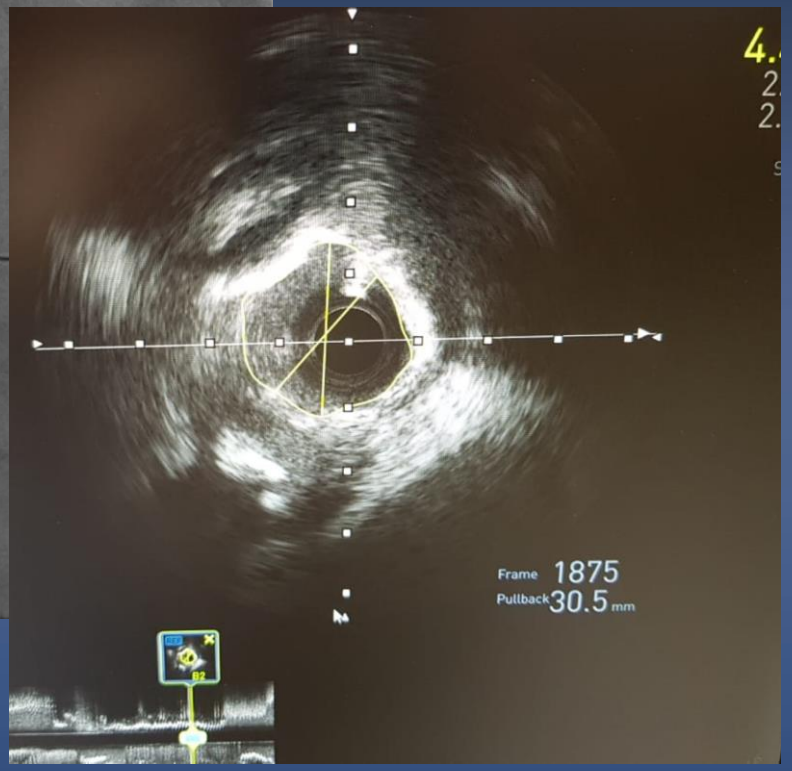
Debulking was successfully using Boston ROTA BURR 1.75 mm up to 180,000 rpm for 7-8 passes with burr run time of each < 10-15 sec

LAD after Rotablation

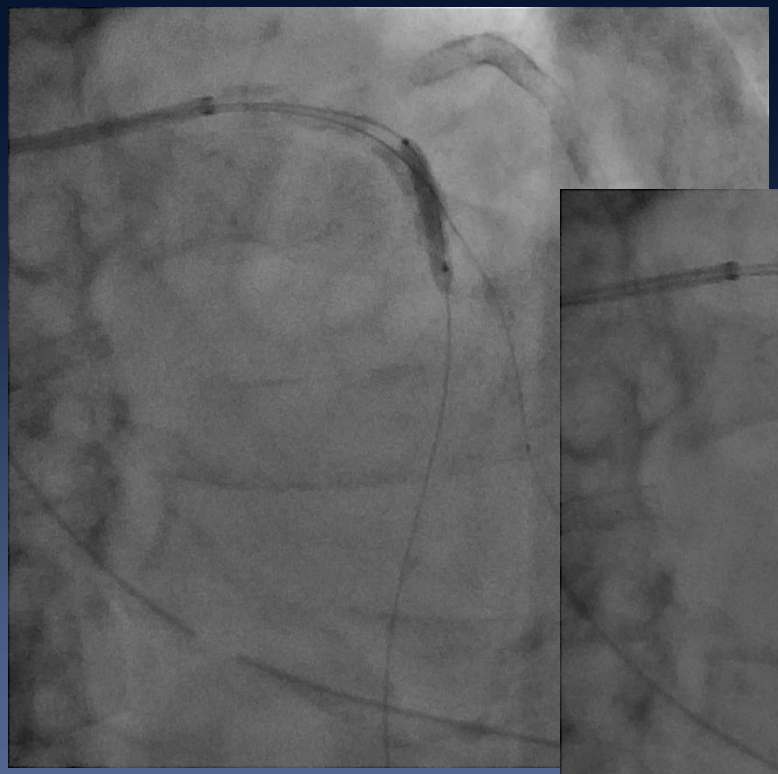


LAD dilatation using MINI TREK 2.5 X 15 mm balloon up to 16 atm

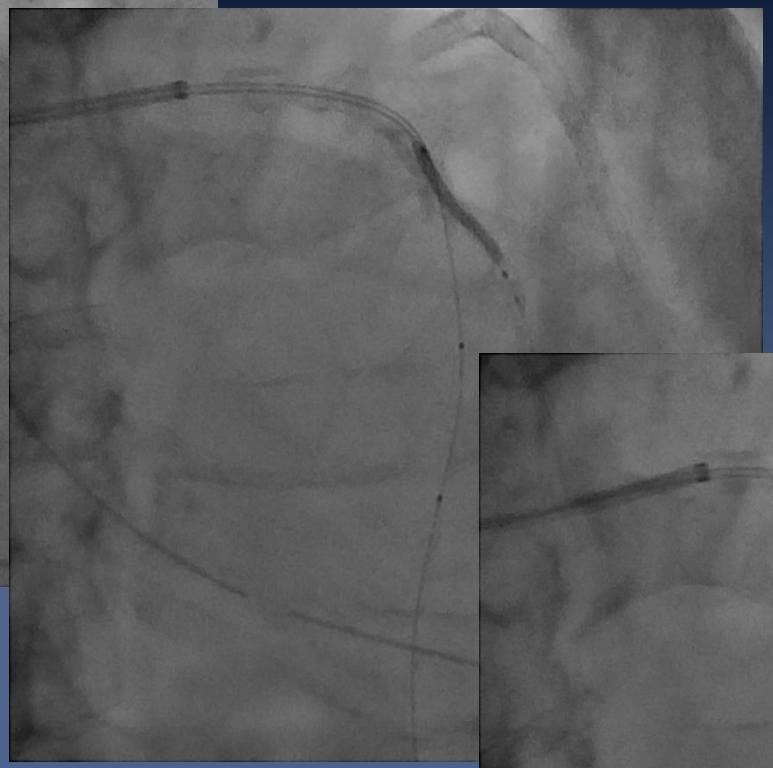




IVUS showing MLA 4.46 mm after Rota and dilatation

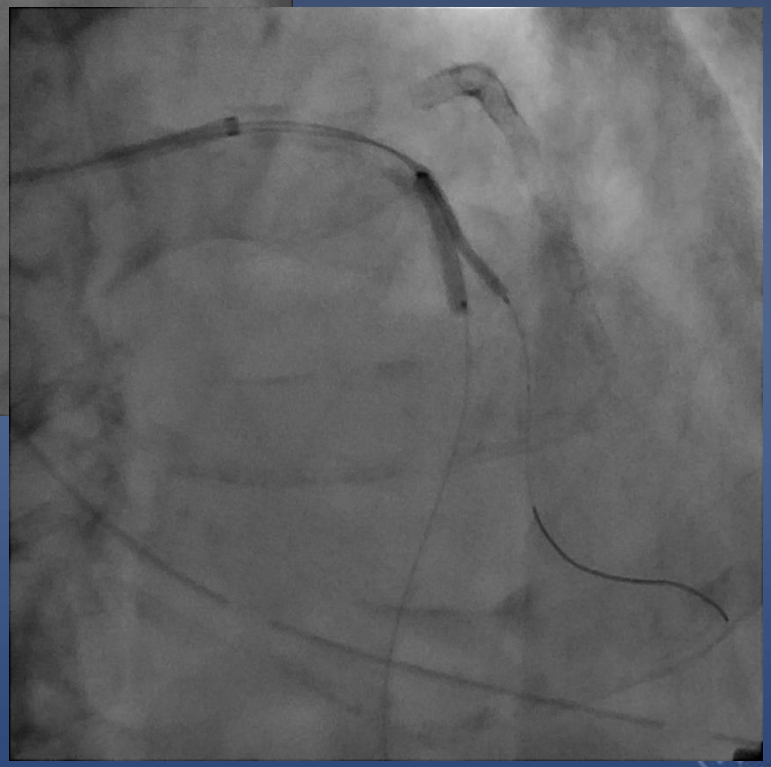


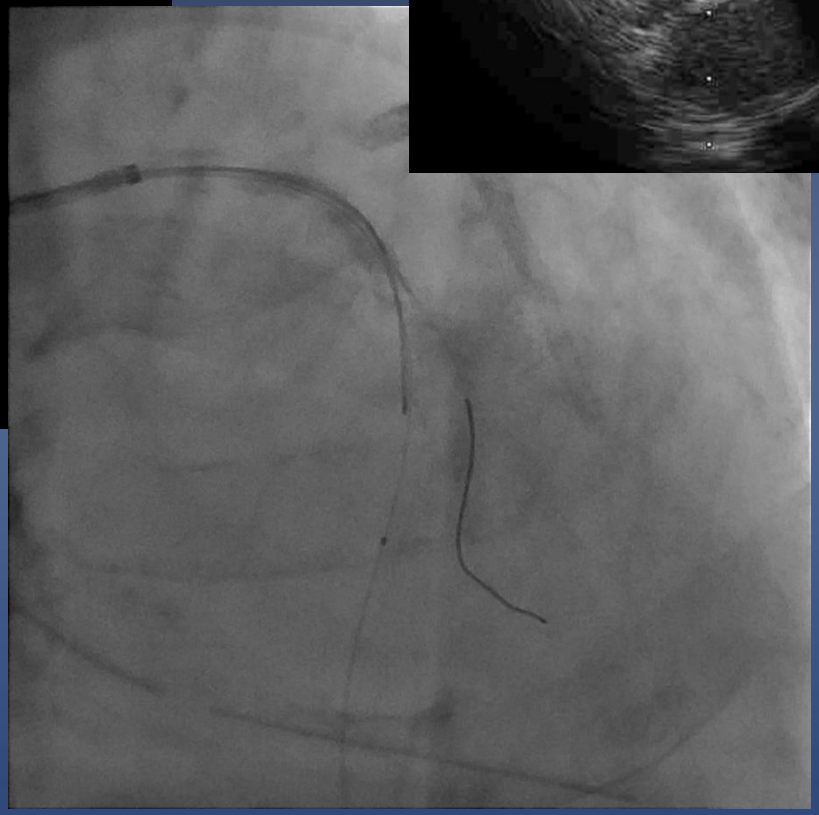
LAD dilatation using ACCUFORCE 3.0 X 20 mm balloon up to 12 atm



D1 dilatation using MINI TREK 2.00 X 20 mm balloon up to 8 atm

Final Kissing 8 atm

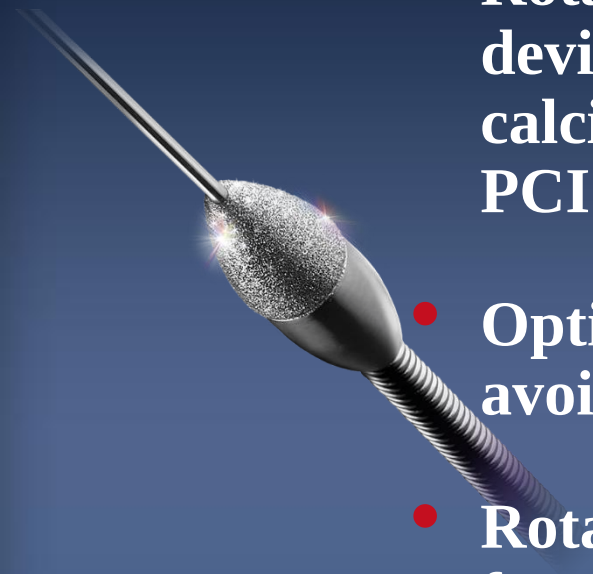




Final, IVUS MLA 6.11 mm

Final Radial Artery

Take-Home Message



- Rotational atherectomy is a useful indispensable device in interventional treatment of heavily calcified lesions and essential tool for complex PCI
- Optimal technique and strategy are pivotal to avoid any potential complications
- Rotablation remains an important rescuer device for uncrossable or undilatable coronary lesions.
- Rotational atherectomy and complex PCI can be done smoothly using a single 6Fr Ikari-L guiding catheter

Cardiovascular Revascularization Medicine

Available online 10 January 2019

In Press, Corrected Proof

How should we treat heavily calcified coronary artery disease in contemporary practice? From atherectomy to intravascular lithotripsy

George Kassimis [a, b], Tushar Raina [a], Nestoras Kontogiannis [a], Gopendu Patri [a], Joanna Abramik [a], Alex Zaphiriou [c], Adrian P. Banning [d]

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Plaque modification of severely calcified coronary lesions via orbital atherectomy: Single-center observations from a complex Veterans Affairs cohort

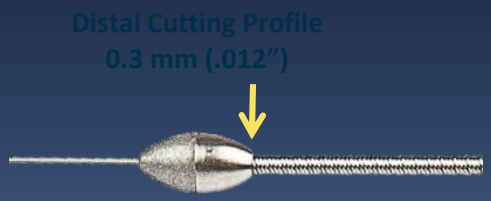
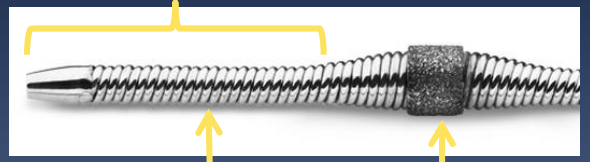
Rupak Desai, Omer Mirza, Brad J. Martinsen, Gautam Kumar

First published: 27 October 2018 | https://doi.org/10.1002/hsr2.99 | Cited by: 1

Conclusions

This study indicates that OA is a useful tool in performing high-risk percutaneous coronary intervention effectively in VA patients with severely calcified coronary lesions. OA plaque modification in combination with a high utilization rate of IVUS and Chocolate focal force angioplasty facilitates stent delivery and optimal stent expansion, resulting in a large MSA.

Rotational vs. Orbital Atherectomy

	Rotablator®	CSI Diamondback
Profile		
Cutting Mechanism	✓ Front cutting	✗ Circumferential cutting
Target Lesion Opening	✓ 0 – < 1.25 mm	✓ 0 – < 1.25 mm
	✓ 1.25 mm–1.84 mm	✗ 1.25 mm–1.84 mm
	> 1.84 mm	> 1.84 mm

*CSI Classic Crown. Data presented by J. Moses at CRF Fellows 2014. Diamondback 360 Coronary Orbital Atherectomy System IFU.

REVISTA ESPAÑOLA DE CARDIOLOGÍA

Drug-Eluting Stents and Other Anti-Restenosis Devices

Vol 58. Num 07. July 2005

Raúl Moreno [a]

[a] Unidad de Cardiología Intervencionista, Hospital Clínico San Carlos, Madrid, Spain.

In the treatment of *de novo* lesions, rotational atherectomy (RA) achieves better initial outcomes than balloon angioplasty in calcified lesions, and is especially useful in lesions which cannot be dilatated with balloon. In some studies, such as ERBAC

CJC Canadian Journal of Cardiology
Journal canadien de cardiologie

Challenges With Severe Coronary Artery Calcification in Percutaneous Coronary Intervention: A Narrative Review of Therapeutic Options

Jay S. Shavadia, MD, MHS[a], Minh N. Vo, MD[b], Kevin R. Bainey, MD, MSc[b,*]

occur. Coronary atherectomy with plaque modification provides a therapeutic alternative. As such, various modalities such as rotational, orbital or laser atherectomy, and more recently shockwave lithoplasty have become therapeutic options for PCI. We provide a summary of the principles, technique, and contemporary evidence for these currently approved devices designed to treat severe coronary calcific lesions.

December 2018 Volume 34, Issue 12, Pages 1564–1572

EuroIntervention
Official Journal of EuroPCR and the European Association of Percutaneous Cardiovascular Interventions (EAPCI)

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