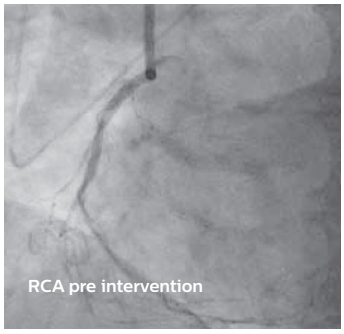
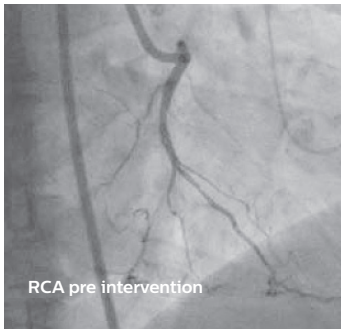
PHILIPS

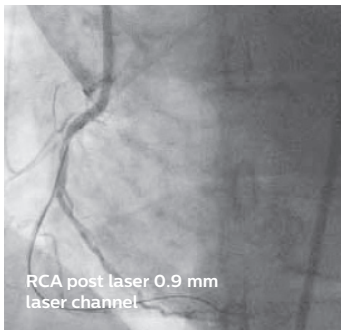
ELCA

Coronary laser atherectomy catheter

In-stent total occlusion of the RCA


RCA pre intervention


RCA pre intervention


RCA post laser 0.9 mm laser channel

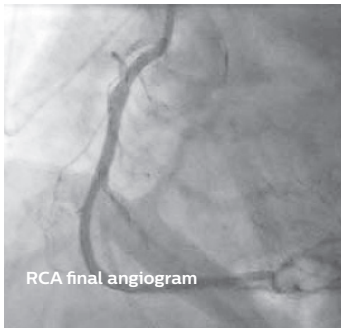

RCA final angiogram

Image courtesy of Dr. Gupta and Dr. Kirvaitis

Operator and facility

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Case history

- 43-year-old female
- History of CAD with previous RCA stenting, hypertension, hypertension, and hyperlipidemia
- Currently patient presents with exertional angina and dyspnea, stress test postive for inferobasal ischemia

Angiography

- OM2: 70% stenosis at the ostium
- RCA: 60-70% proximal lesion followed by a total occlusion mid-segment after the RV branch, with L>R collateral from the LAD to the distal RCA and R>R collaterals via the RV branch to the distal RCA and PDA.

RCA lesion intervention

1.5 x 15 mm Voyager balloon was advanced as back support over Whisper wire. The balloon and wire were advanced in a step-by-step method; unable to advance the balloon beyond the mid-distal segment, the Whisper wire was exchanged for a Miracle Bros wire. The Miracle Bros wire was then advanced across the occluded stent to the distal RCA. The balloon was unable to be advanced over the occluded stent and was exchanged for a 1.5 x 6 mm Sprinter. The Sprinter balloon was then advanced through the stent to the PDA. The Miracle Bros wire was then exchanged for an All Star wire.

Laser atherectomy of the RCA was performed using a 0.9 mm X 80 ELCA catheter at 45/60 for one pass, with settings increased to 60/60 for a second pass, under continuous saline flush. Total lasing time was 72 seconds. Confirmation of true intraluminal channel to the distal RCA was confirmed with an LCA injection, which delineated the LAD collaterals to the PDA and distal RCA.

Next, the 1.5 x 6 mm Sprinter was used to predilate from the distal RCA proximally at 10 ATM, followed by multiple inflations with a 2.0 x 20 Sprinter at 12 ATM. Post PTA angiogram confirmed intraluminal position.

Stenting was performed with a 2.5 x 2.8 mm Xience stent in the distal RCA followed by a 2.5 x 28 mm Xience stent in the mid-distal RCA, followed by a 3.0 x 28 mm Xience stent in the mid RCA, and a percutaneous transluminal coronary angioplasty and stenting of the distal right, mid-to-distal right, and mid-right coronary artery using a 2.5 x 28 Xience stent each in overlapping fashion.

Finally, a 3.5 x 23 Xience stent was placed in the proximal RCA. Final angiography revealed 0% residual stenosis throughout the RCA, with excellent flow in the distal RCA, PDA, PLA and terminal branches. There was no evidence of dissection or perforation and the TIMI 3 flow and excellent distal myocardial blushing.

OM2 lesion intervention

PTCA of the second obtuse marginal branch with a 2.0 x 10 mm Flextome Cutting Balloon at 6 ATM, with reduction in stenosis from 70% to 0%. No evidence of complication and TIMI 3 flow noted.

Results and conclusions

Succesful PTCA of the bifurcation of OM2 branch and circumflex using a 2.0 x 10 Flextome cutting balloon with reduction of the lesion from 70% stenosis to 0%.

Succesful laser recanalization of the RCA total occlusion using a 0.9 mm X80 Vitesse catheter, followed by PTCA and stenting using Xience stents with 0% residual stenosis, TIMI 3 flow and excellent myocardial blushing.

Devices

Guide	6F JR4 guide catheter
Wires	Abbott Vascular Whisper 0.014″
	Asahi Miracle Bros 0.014
	Guidant All Star 0.014″
Lasers	Philips ELCA catheter
Balloons	Abbott Vascular Voyager 1.5 x 1.5 mm
	Medtronic Sprinter 1.5 x 6 mm
	Medtronic Sprinter 2.0 x 20 mm
Stents	Abbott Vascular Xience: 2.5 x 28 mm, 2.5 x 28 mm, 3.0 x 28 mm, and 3.5 x 23 mm
Featured Philips product	ELCA coronary laser atherectomy catheter

"ELCA helped in debulking a long length of total occlusion, facilitating successful angioplasty and stent placement with excellent final results."

-Anjan Gupta, MD

Dr. Gupta and Dr. Kirvaitis have been compensated by Philips for their services in preparing this material for Philips' further use and distribution.

ELCA important safety information

Indications: The laser catheters are intended for use either as a stand-alone modality or in conjunction with percutaneous transluminal coronary balloon angioplasty (PTCA) in patients who are acceptable candidates for coronary artery bypass graft (CABG) surgery. The following indications for use, contraindications and warnings have been established through multicenter clinical trials. The Philips CVX-300 Excimer laser system and the multi-fiber laser catheter models are safe and effective for the following indications: occluded saphenous vein bypass grafts, ostial lesions, long lesions (greater than 20mm in length), moderately calcified stenosis, total occlusions traversable by a guidewire, lesions which previously failed balloon angioplasty, restenosis in 316L stainless steel stents, prior to the administration of intravascular brachytherapy. These lesions must be traversable by a guidewire and composed of atherosclerotic plaque and/or calcified material. The lesions should be well defined by angiography.

Contraindications: Lesion is in an unprotected left main artery. Lesion is beyond acute bends or is in a location within the coronary anatomy where the catheter cannot traverse. Guidewire cannot be passed through the lesion. Lesion is located within a bifurcation. Patient is not an acceptable candidate for bypass graft surgery.

Caution: Federal law restricts this device to sale by or on the order of a physician.

Potential adverse events: Use of the Philips CVX-300 Excimer laser system may contribute to the following complications: dissection of the arterial wall, perforation, acute reclosure, embolization, aneurysm formation, spasm, coronary artery bypass graft surgery, thrombus, myocardial infarction, arrhythmia, filling defects, death. No long term adverse effects of ELCA are known at this time.

Risks: The primary endpoint defined in the laser angioplasty of restenosis stents (LARS) randomized trial was the absence of major adverse cardiac events (MACE) at 6 months: Death; myocardial infarction; coronary artery bypass surgery. Procedural complications include: any dissection, acute thrombus, haziness, no reflow, arrhythmia, acute vessel closure, occlusion of side branch, occlusion non-target, coronary spasm, coronary embolism, coronary perforation, laser/stent damage, balloon/stent damage, and other serious complications.

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