PHILIPS

ELCA

Coronary laser atherectomy catheter

Excimer laser atherectomy and bifurcation stenting for a subtotal occlusion of the CFX artery

Operator and facility

Antonis Pratsos, MD
Bryn Mawr Hospital,
Main Line Health System
Bryn Mawr, Pennsylvania

Case history

- 51-year-old male
- Diabetes, hypertension, history of mild CAD documented three years earlier on angiography; presented in clinic with crescendo angina of 3-months duration, outpatient nuclear stress demonstrated a new inferior scar with ischemia, and mild anterior ischemia, LVEF 48%

Angiography

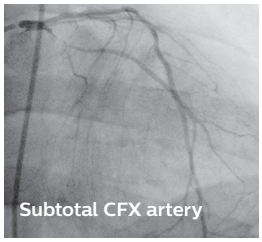
- LM: Mild disease
- LAD: Ostial 60%
- CFX: Dominant, 99% proximal occlusion extending to first OM, which was also subtotally occluded; TIMI 1 flow
- Left-to-left and right-to-left collaterals noted to small left PDA
- RCA: Non-dominant
- LV Gram: Posterior-basilar akinesis and moderate infero-apical hypokinesis
- EF: 45%

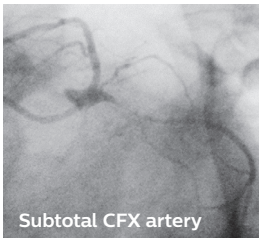
Intervention

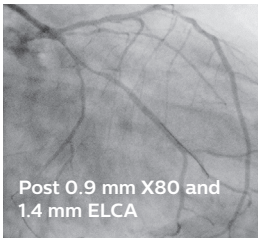
- Left main was engaged with an 8F XB 3.5 Cordis guide.
- 0.014″ PROWATERflex Asahi guidewire was advanced into the first OM branch, and a second 0.014″ PROWATERflex Asahi guidewire was successfully crossed with some difficulty into the native CFX artery.
- Excimer laser coronary atherectomy of the proximal CFX, first OM and distal CFX was performed utilizing the Philips 0.9 mm X80 and 1.4 mm ELCA catheters in a sequential fashion.
- Subsequent injections revealed restoration of TIMI 3 flow in the dominant CFX artery.
- 2.75 x 20 mm Maverick balloon was used to sequentially dilate the first OM and the proximal and distal CFX artery.
- First OM was stented with a TAXUS 3.0 x 32 mm DES at 24 ATM. Then a 2.75 x 16 mm TAXUS DES was placed in the distal CFX artery.
- 3.0 x 20 mm TAXUS DES was placed in the proximal CFX overlapping with the OM1 stent.
- CFX/OM1 stent was then deployed at 20 ATM utilizing a “crushing stent” technique. The distal CFX was then re-wired and final “kissing balloon” inflations were performed using a 3.5 x 15 mm Quantum balloon in the OM1-CFX and a 3.0 x 12 mm Quantum balloon in the distal CFX at 12 ATM each.
- Final angiographic images indicated an excellent result with no residual stenosis in the CFX or OM branch. TIMI 3 flow was noted. A PCI was performed five days later to the LAD artery lesion.

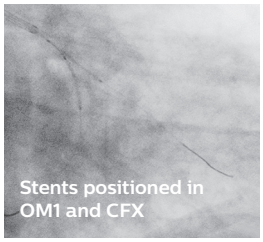
Results and conclusion

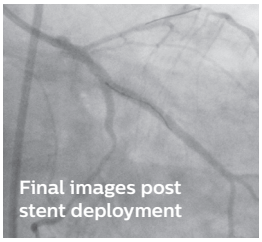
- Adjunctive use of excimer laser ablation in sub-total occlusions is valuable to establish improved coronary flow while minimizing distal embolization in the process.
- As demonstrated in this case, laser atherectomy is the only device that enables debulking while maintaining “buddy wire” access to both major branches in a complex bifurcation lesion. In a complex intervention, such as a reverse T-stent with crush technique, sidebranch rewiring and high-pressure balloon inflations are paramount to achieving complete stent apposition and minimizing sidebranch restenosis and target vessel failure.


Subtotal CFX artery


Subtotal CFX artery


Post 0.9 mm X80 and 1.4 mm ELCA


Stents positioned in OM1 and CFX


Final images post stent deployment

Images courtesy of Dr. Pratsos. The opinions and clinical experiences presented herein are for informational purposes only. Individual results may vary depending on a variety of patient-specific attributes and related factors. Results from this case study are not predictive of future results.

"When contemplating multi-vessel intervention, it is important to consider the subtotal or total occlusion first. Using this strategy, had PCI been unsuccessful then surgical revascularization would still have been a viable alternative.

In this case, one could argue that the successful percutaneous approach resulted in a more complete revascularization given the ensuing excellent perfusion of the left PDA, which was angiographically a very poor surgical target."

– Antonis Pratsos, MD

Dr. Pratsos has been compensated by Philips for his/her services in preparing this material for Philips' further use and distribution.

Devices

Guide	8F XB 3.5 Cordis guide (Johnson & Johnson)
Wire(s)	0.014" PROWATERflex Asahi guidewire (Abbott Vascular)
Atherectomy	0.9 mm X80 and 1.4 mm ELCA (Philips)
Balloon	2.75 x 20 mm Maverick (Boston Scientific) 3.5 x 15 mm and 3.0 x 12 Quantum (Boston Scientific)
Stent	3.0 x 32 mm, 2.75 x 16 mm, and 3.0 x 20 mm TAXUS (Boston Scientific) DES
Anticoagulation	Heparin Integrilin (Millennium Pharmaceuticals)
Featured Philips product	ELCA coronary laser atherectomy catheter

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.

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.

Caution:

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

Philips
3721 Valley Centre Drive, Suite 500
San Diego, CA 92130 USA
www.philips.com/IGTdevices