

# Recanalization of LAD

## OPERATOR / FACILITY

Robert Lee Jobe, MD  
WakeMed Health & Hospitals  
Raleigh, NC

## Case History

- 85-year-old male
- History: Significant for essential hypertension, chronic lymphatic leukemia, peptic ulcer disease, bilateral cataract surgery, chronic sinusitis. Father died of myocardial infarction at 60.
- Current: Patient presents with chest tightness and dyspnea on exertion, dizziness. Cardiolute stress test shows mild ischemia of the apex and inferior apex. Left ventricular function was normal. Due to symptoms and abnormal stress test, patient referred for cardiac catheterization to fully define cardiac status.

## Significant Angiographic Findings

- Heavily calcified 95% stenosis at bifurcation of LAD and first diagonal branch

## Intervention

- LCA cannulated using 7F Judkins left #4 angioplasty guiding catheter.
- Angiomax anticoagulation administered.
- LAD lesion easily crossed with short 0.014 Luge guidewire.
- The first intervention attempted was with the Quantum Maverick noncompliant balloon, which could not dilate the lesion even at over 20 atmospheres pressure.
- Initial attempt at laser coronary atherectomy using Spectranetics 1.4 atherectomy catheter, for 33 seconds at 45/25 for a total of 1,075 pulses, then for 1 minute 15 seconds at 60/40 for a total of 2,400 pulses.
- Laser then exchanged for 0.9mm ELCA RX catheter and LAD lesion treated for 4 minutes at 60/40 and 80/80 for a total of 12,306 pulses.
- Over the LAD guidewire a 2.5mm Quantum Maverick angioplasty balloon was used to easily dilate the lesion at 20 atmospheres.
- Another short 0.014 Luge guidewire was placed in the diagonal branch for side branch protection and the LAD was stented with a 3.5mm Boston Scientific Promus 12mm drug-eluting stent, delivered at 20 atmospheres.
- The ostium of the diagonal branch was then dilated using a 2.5mm Abbot Voyager 12mm angioplasty balloon at 10 atmospheres.
- Final inflation performed with stent delivery balloon in diagonal branch and a 3.5mm Quantum angioplasty balloon in LAD, both at 6 atmospheres.

## DEVICES

### Access

- 7F Judkins left #4 angioplasty guiding catheter

### Wires

- 0.014 Luge™ Guidewire (Boston Scientific®)

### Lasers

- 1.4mm ELCA® (Spectranetics®)
- 0.9mm X80 ELCA® (Spectranetics®)

### Balloons

- 2.5mm Voyager™ 12mm Angioplasty Balloon (Abbott Vascular®)
- 3.5mm Quantum Maverick® Balloon (Boston Scientific®)

### Stents – Endeavor

- 3.5mm Promus® 12mm drug-eluting stent (Boston Scientific®)

## FEATURED SPECTRANETICS PRODUCT

- ELCA® Coronary Laser Atherectomy Catheter



Pre-Laser



Post-Laser

## Recanalization of LAD

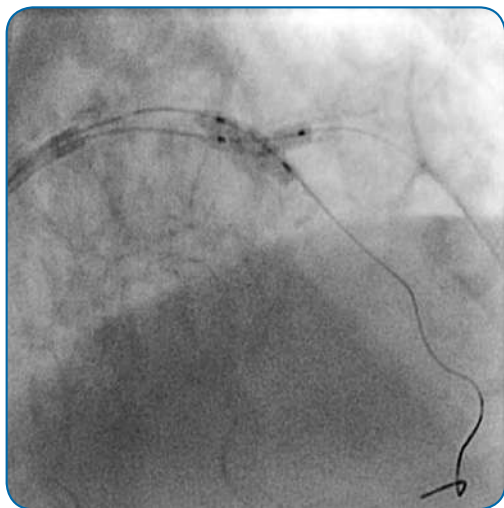
### Results / Conclusions

- Successful laser atherectomy and stent angioplasty of the left anterior descending and diagonal branch.
- Final angiography demonstrated excellent angiographic result, with 0% residual stenosis at the site of angioplasty and no evidence of dissection, distal embolization or loss of side branch

*In this case, treatment with the laser catheters modified and converted a nondilatable coronary lesion into a dilatable lesion, even without the laser catheter fully crossing the lesion.*

– Robert Lee Jobe, MD

At the time of publication, Dr. Jobe does not have a consulting agreement with Spectranetics.



Stent to LAD and Diagonal



Final

### Important Safety Information

#### ELCA® X-80 Coronary Laser Ablation Catheter

##### INDICATIONS

The X-80 Laser Catheters are intended for use 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 Spectranetics CVX-300® Excimer Laser System and the multifiber 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 stenoses.
- Total occlusions traversable by a guidewire.
- Lesions which previously failed balloon angioplasty - This includes those lesions that were treated unsuccessfully by PTCA. Lesions that have undergone a complicated PTCA procedure are not included in this category.

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

- Patient has acute thrombosis.
- Lesion is in an unprotected left main artery.
- Patient has experienced an acute myocardial infarction.
- Patient has ejection fraction of less than 30%.
- 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.
- See complete IFU for more information before attempting use of ELCA X-80.

##### WARNINGS

Federal (USA) law restricts this device to sale by or on the order of a physician with appropriate training. A clinical investigation of the Spectranetics CVX-300® Excimer Laser System did not demonstrate safety and effectiveness in lesions amenable to routine PTCA or those lesions not mentioned in the Indications for Use, above. The effect of adjunctive balloon angioplasty on restenosis, as opposed to laser alone, has not been studied. The use of the CVX-300® Excimer Laser System is restricted to physicians who are trained in the use of the product.

##### PRECAUTIONS

This device has been sterilized using Ethylene Oxide and is supplied STERILE. The device is designated and intended for SINGLE USE ONLY and must not be resterilized and/or reused. Store in a cool, dry place. Protect from direct sunlight and high temperatures (greater than 60°C or 140°F). During the procedure, appropriate anticoagulant and coronary vasodilator therapy must be provided to the patient. Anticoagulant therapy should be administered per the institution's PTCA protocol for a period of time to be determined by the physician after the procedure. Percutaneous Excimer Laser Coronary Atherectomy (ELCA) should be performed only at hospitals where emergency coronary bypass graft surgery can be immediately performed in the event of a potentially injurious or life-threatening complication. The results of clinical investigation indicated that patients with the following conditions are at a higher risk for experiencing acute complications:

- Patients with diabetes.
- Patients with a history of smoking.
- Lesions with tortuous vessels.