PHILIPS

Case review

Laser atherectomy

Recanalization of a CTO in the LAD

Laser ablation for coronary intervention

Operator and facility

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Case history

- 58-year-old male
- History: c/o CP. HTN, SOB, dyslipidemia. and stress echo showed exercise induced wall motion abnormality of anterior wall
- Current: Patient presents with CP and no previous cardiac history

Angiography

- RCA – large, dominant and patent
- LAD – totally occluded after 1st septal
- CX – Moderately large with no significant disease

Intervention

- LAD was engaged with a 6F AL1 guide
- 0.014 Shinobi wire with a 0.014 Quick-Cross catheter used to cross proximal CTO cap (figure 1)
- Shinobi exchanged for 0.014 Choice PT (via Quick-Cross) to get down to distal vessel
- Choice PT exchanged for 0.014 BHW wire (via Quick-Cross)
- 0.9mm X80 ELCA laser catheter was used to debulk and modify the LAD lesion (figure 2)
- 1st pass @ fluence of 50 and rate of 40
- 2nd pass @ fluence of 60 and rate of 60
- PTCA performed to the LAD with a 2.5 x 20mm Maverick balloon at low pressure with no plaque shift to the diagonal
- PTCA was also performed on the diagonal with a 1.5x15mm Maverick
- Final angiogram revealed excellent angiographic results with TIMI 3 flow and no residual dissection

Results and conclusion

- Successful revascularization of the LAD and diagonal (figures 3 and 4)
- No complications and the patient tolerated the procedure well

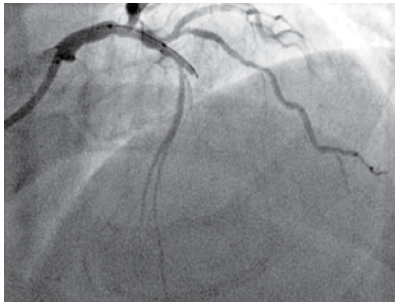

Figure 1: LAD CTO with Quick-Cross

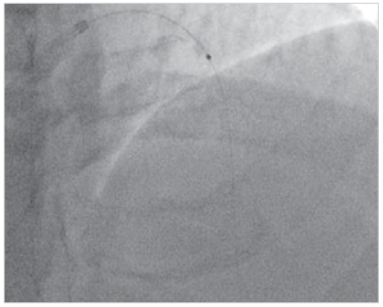

Figure 2: LAD with 0.9mm X80 Laser

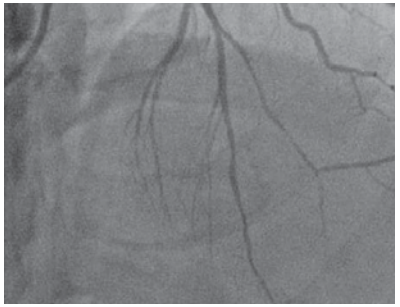

Figure 3: LAD post-laser, pre balloon

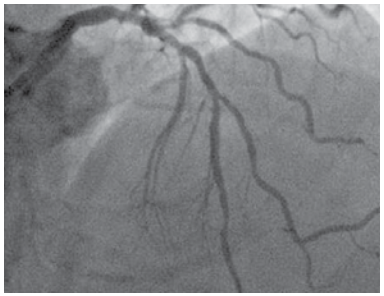

Figure 4: Four month post follow up

"ELCA is novel strategy dealing with CTO in the coronary circulation and allows you to debulk the plaque burden and makes it easy for eventual delivery of the stent with better expansion and long term patency."

Rakesh Bhan, MD

Dr. Bhan has been compensated for his services in preparing this material for further use and distribution by Philips.

Devices

Guide: Right radial access, 6F AL1 guide

Wires: 0.014 Shinobi (Asahi), 0.014 Choice PT (Boston Scientific), 0.014 BHW (Abbott Vascular)

Crossing solution: 0.014 Quick-Cross (Philips)

Lasers: 0.9mm X80 ELCA (Philips)
2 Passes at settings of 50/40 and 60/60

Balloon: 2.5x15mm Maverick (Boston Scientific)

Anticoagulation: Angiomax (The Medicines Company)

Featured: Philips ELCA coronary laser atherectomy catheter, Philips Quick-Cross support catheter

Important safety information

ELCA

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.

Quick-Cross support catheter

Indications: Quick-Cross support catheters are guidewire exchange and infusion devices designed for use in the vascular system. The catheters are intended to support a guidewire during access of vasculature, allow for exchange of guidewires and provide a conduit for the delivery of saline solutions or diagnostic contrast agents.

Contraindications: None known. See complete IFU for more information before attempting use of Quick-Cross.

Potential adverse events: Atherectomy or any other surgical procedure has inherent risks. For a completing listing, see the IFU.

Warnings: Maximum infusion pressure is 300 PSI. The catheter is designed and intended for intravascular use only. This catheter is designed and intended for one-time use only. Do not re-sterilize and/or reuse. Careful inspection before use should verify that the catheter has not been damaged in shipment and that its condition is suitable for the procedure. The catheter should not be advanced through an area of resistance unless the source of resistance is identified by fluoroscopy and appropriate steps are taken to reduce or remove the obstruction. Catheter manipulation should occur only under fluoroscopy. If the catheter is used for infusion, reference the table of flow rates and ensure infusion pressure does not exceed the recommendations. Avoid introducing air or any other gas through the catheter into the vascular system.

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.

Images provided courtesy of Rakesh Bhan, MD.

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