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Cath Lab Digest
A Product, News and Clinical Update for the Cardiac Catheterization Laboratory Specialist

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Cath Lab Spotlight



Rapid City Hospital Cardiac Catheterization Lab

Carole Branstetter, RN, Cath/EP Lab Manager, Todd Swenson, MD, Cath/EP Lab Supervisor, Rapid City, South Dakota

Not all about your facility and cath lab.
Rapid City Hospital is located in the center of the Black Hills in Rapid City, South Dakota. We are associated with Regional Health-Heart and Vascular Institute. Our outpatient area includes over 300 visits and our ambulatory program encompasses 3 states, including South Dakota, North Dakota, Wyoming, Montana, and Nebraska.

We have 3 cardiac cath labs, 1 hybrid suite and a cath lab for diagnostic and interventional cardiology and catheterization surgeons, 1 electrophysiology EP lab with 10 ablates, 1 EP device lab, and a 7-foot procedure area. Cath lab staffing consists of 3 clinical intensive nurses, 10 registered nurses (RN), 3 registered cardiovascular specialist assistants (RCSAs), 2 registered cardiovascular machine operators (RCMOs), and one registered radiologic technician (RRT). EP lab staffing consists of one clinical research nurse, 2 RNs, one RRT/EP RCSA, and 2 RTs. Staff experience ranges from 20 years to a nurse that recently turned 8 months ago. We also have many nurses and technologists that have been here 50 years.

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OF INTEREST

Strategies to Circumvent the Delayed Mechanism of Action of Oral Antiplatelets in the Cardiac Catheterization Lab



Mark Korn, MD, with Mark Ebers, MD, Chief Physician at Wayne State University School of Medicine, Detroit, Michigan, Chief, Professor at Michigan State University College of Osteopathic Medicine, East Lansing, Michigan

Recently there was a change in the prescribing information (PI) of all the oral P2Y12 receptor inhibitors (i.e., oral antiplatelets) recommending the regimen of aspirin, such as aspirin 81 mg twice daily, to be continued on their antiplatelet effect. These changes to the label is the cath lab. The majority of cath lab in the country, along with the published literature in general, are not aware of this change. This is important as many patients in the cath lab will not have aspirin, and if aspirin is not given, the effect of the antiplatelet will be delayed.

With this and similar to aspirin there is an increased risk of bleeding for the majority of interventional cath lab procedures. Hence, this report that provides a review of the literature on the use of aspirin, and the use of aspirin in the cath lab. The use of aspirin in the cath lab is discussed in this report. The use of aspirin in the cath lab is discussed in this report. The use of aspirin in the cath lab is discussed in this report.

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CASE REPORT

Shockwave Intravascular Lithotripsy to Unprotected Left Main Stent: Pushing the Boundaries of Calcified Plaque Intervention



Brendan Wang, MD, MPH, Milwaukee County, WI, USA, Gary Armstrong, MD, PhD, Loyola University, IL, USA, Mithy, Department of Cardiology, Milwaukee County Health Board, Milwaukee, WI, USA

Calcified coronary lesions affect over 50% of patients undergoing percutaneous coronary intervention (PCI). While intravascular lithotripsy (IVL) is a novel technique for treating calcified lesions, there is a paucity of data on its use in the left main coronary artery. We report a case of a patient with a heavily calcified unprotected left main coronary artery lesion treated with IVL. The patient had a successful outcome with no complications. This case demonstrates the potential of IVL in the treatment of heavily calcified lesions in the left main coronary artery.

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February 2018

vol. 25, no. 2

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Clinical Case Update

CLINICAL CASE UPDATE

How to Treat Complex CLI Chronic Total Occlusions (CTOs)

J.A. Mostafa, MD

Critical limb ischemia (CLI) chronic total occlusions (CTOs) are the most complex and unpredictable of all CTOs. There is no one treatment for all scenarios. In fact, when it comes to CLI CTOs, the approach to each should be unique.

There are many different types of CTOs and CTO caps. The discussion starts with understanding the morphology of the CTO caps, and learning the best tips and tricks to increase chances of successful CTO crossing.

Almost all CTO caps are composed of two types of geometry morphology known as convex and concave. Figures 1a-2 show the most common combination of concave and convex CTO types, and are referred to as PRIME CTO Types I, II, III, and IV.

Access

Before discussing how to cross concave vs. convex CTO caps, let's discuss the best method of access to ensure the highest rate of successful CTO crossing. Newer sheaths such as the Slender sheath (Terumo Medical) have significantly increased the options for access and delivery of crossing tools from an alternative route. A low-profile 4/5 Fr Slender sheath can be safely placed where needed, allowing the operator to take advantage of the CTO crossing support by advancing crossing tools into the concave caps of the CTO. With this simple alternative access, the operator can increase the crossing success rate, lower the complication rate, and decrease contrast and radiation utilization.

In this author's practice, retrograde access in combination with antegrade access is the most common form of CLI crossing—but it's far from the only approach. CLI CTOs are typically multilevel and impact multiple vessels, so to ensure revascularization to the intended target vessel, obtaining retrograde access in that targeted vessel is essential before proceeding with a retrograde angiogram. Next, the operator progresses to antegrade access, followed by an angiogram and finally crossing.

Of course, not all cases require retrograde tibial access. However, if the proximal CTO cap is in the S1/Apopical region, and recanalization is at the mid to distal tibials, retrograde tibial access can be an optimal approach.

Tips and Tricks in Crossing a Convex CTO Cap

The attempt to cross a CTO should be taken very seriously. To achieve a high rate of successful CTO crossing, one must align the CTO crossing tool into the concave portion of the CTO cap. It makes sense to attempt to cross a cap that is already shaped in a way that is going to welcome the crossing tool, rather than redirecting from the center of the CTO. A sure way to cross the convex CTO cap is by placing an angled, robust catheter, such as the Navicross 0.031" (Terumo Medical) followed with a preferred crossing wire. The Navicross possesses the ability to deflect one-to-one dependable pushability. Combining torque and pushability are two of the most valuable features of CTO crossing.

The convex CTO cap scenario is definitely far more challenging to cross than a concave CTO cap, but is far from impossible. One should be realistic when attempting to cross a convex CTO cap. Any forces exerted onto the convex cap will immediately direct the crossing tool into the path of least resistance, which in this case will be the junction between the base of the CTO cap and the vessel wall. From this starting point, the procedure becomes somewhat more predictable and realistic. Focus should now shift to using the torque and pushability to the operator's advantage.

Again, using the angled Navicross, take it down to the junction as mentioned above. Take multiple views to orient to the direction of the tip of the Navicross around the base of the convex cap, and the center of the target artery or vein. Now the operator is ready to advance the wire of choice to cross the most complex portion of the CTO.

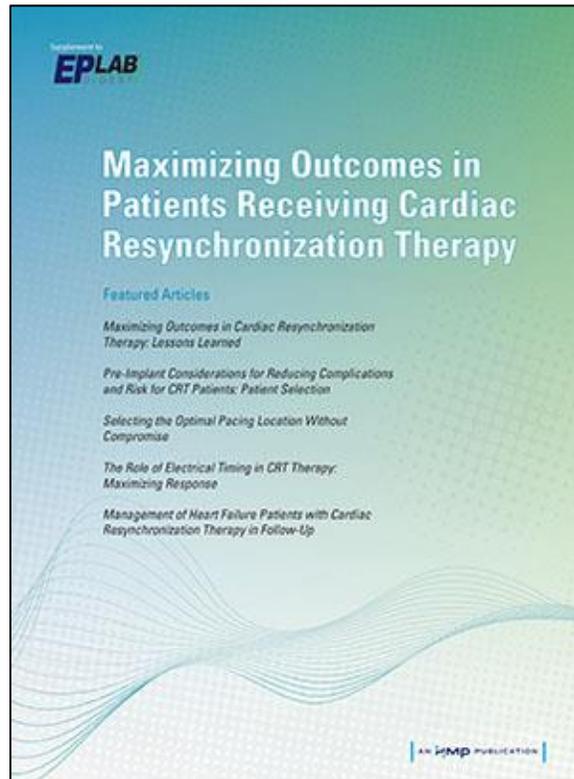
Dr. Mostafa is a consultant to Terumo Medical, Covid and Cook Medical.

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