Managing Complications

Our first issue of 2008 includes articles that focus on complications of percutaneous coronary intervention (PCI), with reviews on a variety of subjects that are of clear, daily practical importance. Particularly critical is the choice and management of arterial access. The ending of every procedure is in large part determined by the beginning; bleeding complications are statistically the most common we face and can be avoided to a degree by careful access. The management of complications remains one of the most challenging elements of PCI procedures because important complications are of low frequency, and we do not get to practice methods for dealing with them.

David R. Holmes, Jr, MD, and Mandeep Singh, MD, begin our featured articles with their consideration of predicting risks and complications. They provide several tables and figures and confirm that risk assessment is helpful to both patients and their providers.

New studies show that the rates of vascular complications after procedures performed from femoral artery access have been waning. Robert J. Applegate, MD, provides his insight on endovascular rescue for bleeding and ischemic complications, suggesting that collaboration will provide the right foundation for the best management of these patients.

In his article on the prevention of complications with the use of optimal femoral access, Zoltan G. Turi, MD, provides us with two useful tables, including a Checklist for Femoral Access and Possible Risk Factors for Vascular Access Complications. The time has come for a careful and scientific re-examination of our femoral access techniques.

Ian C. Gilchrist, MD, FACC, FSCAI, then explains the very rare but very critical transradial complications. These unique obstacles need to be understood and respected for the radial operator to minimize their occurrence.

According to Sandhir Prasad, MBBS, FRACP, and Ian T. Meredith, MBBS, PhD, FRACP, FACC, FSCAI, a working knowledge of the pathophysiology of slow flow and no-reflow phenomena is essential in understanding the preventative and treatment strategies of this PCI complication. They explain slow flow and no-reflow in acute myocardial infarction, saphenous vein graft PCI, and rotational atherectomy, asserting that prevention remains the best strategy.

Next, C. Bradley Jones, MD, and Joseph D. Babb, MD, FACC, FSCAI, discuss the role of contrast agent selection in the catheterization lab, concluding that the chief actions to prevent complications include careful upstream preventative measures, as well as contrast-sparing techniques to avoid nephrotoxicity and close attention to antiplatelet therapy to reduce major adverse cardiac events.

Contrast-induced nephropathy is one of the most common causes of acute renal failure among hospitalized patients after PCI. Eugenia Nikolsky, MD, PhD, and Roxana Mehran, MD, explain that the best approach to prevent contrast-induced nephropathy is to recognize at-risk patients, provide sufficient periprocedural hydration, and reduce the amount of contrast administered.

Michael W. Tempelhof, MD, and Sunil V. Rao, MD, stress that interventionists need to recognize and manage thrombocytopenia early. Their technical insights can help to improve outcomes among PCI patients with this significant adverse event.

In our Pediatrics article, Ralf J. Holzer, MD, MSC, and John P. Cheatham, MD, provide an overview on transcatheter device closure, the standard therapy for atrial septal defects. Their overview assures us that it can be performed safely, even in pediatric patients with large defects, with excellent short- and medium-term results. My colleagues, Benjamin Tyrrell, MD, FRCP(C), and Mark Reisman, MD, FSCAI, and I share our technique for the daunting task of crossing a patent foramen ovale in this month's Tips & Tricks department article.

Our first featured interview for the New Year is with Robert S. Schwartz, MD, who discusses the development of an advanced imaging program, the current focus of his research, and the future developments for cardiac imaging.

These reviews contain many pearls that I hope will be of practical use. Let us know what you think and what topics you would like to see covered in future issues. ■

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