

Popliteal Interventions

This month, *Endovascular Today* highlights interventions in the popliteal anatomy. Due to the various forces exerted on the popliteal artery and neighboring beds during walking, exercise, and even sitting, endovascular therapy in this anatomy can be challenging and unpredictable. With this in mind, we have asked several experts to discuss device selection, provide a review of the literature, display therapeutic options through illustrative challenging cases, and consider when to select surgery over endovascular intervention.

John H. Rundback, MD, and Luis Rodriguez, Jr, MD, lead off our cover focus with a look at anatomical issues associated with the popliteal segment, which changes shape dramatically during normal bodily movement. They highlight endovascular treatment options, such as angioplasty, cryoplasty, stenting, atherectomy, and subintimal recanalization, and conclude with a review of published popliteal stenting results. Next, we have an explanation of the dynamic forces on the superficial femoral and popliteal arteries during knee flexion presented by Frederik H.W. Jonker, MS; Felix J.V. Schlösser, MD; Frans L. Moll, MD, PhD; and Bart E. Muhs, MD, PhD. Because stents placed in this segment experience a high fracture rate, the authors suggest stent design improvements, such as a spiral design, longer lengths, and axial flexibility.

Erin H. Murphy, MD, and Frank R. Arko, MD, provide a discussion of treatment options for popliteal and infrageniculate arteriosclerosis and present a case of limb salvage using a cutting balloon. The authors state that this strategy yields less vessel trauma and dissection, improved results in calcified vessels, and reduced need for adjunctive stenting, although more data are required to fully determine its advantages over other endovascular methods. Subhash Banerjee, MD;

Emmanouil S. Brilakis, MD, PhD; and Tony S. Das, MD, follow with a review of several challenging popliteal cases, showing that facility with a number of today's unique devices can help interventionists tailor a procedure to a patient's specific anatomical and unique disease-related needs.

Acknowledging the great strides that have been made in endovascular management of popliteal artery disease, Robert S. Dieter, MD, and coauthors bring our attention to indications for surgery. The authors state that cystic adventitial disease is best treated by surgical cyst excision. Additionally, cases of popliteal artery entrapment syndrome, severe atherosclerosis, and extrinsic compression warrant open surgery. Finally, 85% of peripheral aneurysms occur in the popliteal artery;

surgery is the best strategy when treating mycotic aneurysms and septic or tumor emboli.

In the second article of our two-part series covering the proceedings at the 2007 Cleveland Clinic Stent Summit, Alan R. Pelton, PhD, and Roy K. Greenberg, MD, summarize the presentations given at the summit regarding carotid stents and embolic protection devices. The authors outline potential carotid stent delivery complications and provide key embolic protection device performance characteristics.

Retrieval of a lost wire during central venous catheter replacement is the subject of a case report by Peter R. Bream, Jr, MD; Daithi S. Heffernan, MD, AFRCS; and Bassam Shukrallah, MD. The authors' approach to wire retrieval can be achieved in the interventional radiology suite or at the bedside using a C-arm for patients too ill to travel.

We conclude with an interview featuring O. William Brown, MD, JD, who discusses why medical malpractice law is important in every vascular surgery practice.

I hope you find this issue of *Endovascular Today* to be useful and interesting in your own practice. ■



Takao Ohki, MD, PhD, Chief Medical Editor