The Society for Vascular Surgery now has a clinical practice guideline devoted solely to imaging following vascular surgery interventions.


Six sections cover carotid artery procedures, thoracic and abdominal aortic repairs, mesenteric and renal artery repairs, and lower extremity arterial revascularization. The recommendations emphasize vascular laboratory testing and vascular imaging for both open and endovascular interventions.

“It is essential that vascular laboratory testing be performed by qualified personnel using appropriate instrumentation, as demonstrated by individual credentialing and facility accreditation,” the guideline says.

“The overall aim is to provide the best outcome from the initial procedure,” said Dr. Zierler, who headed the guideline writing group. “All arterial procedures have modes of failure,” he said, and “to make the arterial intervention as durable as possible, we have to understand these modes, how to detect them, and when to re-intervene.”

The main focus was to determine what kind of imaging would be most appropriate and, importantly, how often it should be done. When possible, issues involving diagnostic criteria and thresholds for re-intervention were also addressed.

“Despite the writing group’s work, the guideline is not the final word,” he said. Unlike other SVS clinical practice guidelines, none of the recommendations could be based on high-quality evidence (i.e. Grade A). “Our group’s review of the available evidence clearly shows a need for more clinical research on testing methods, surveillance protocols, indications for re-intervention, and outcomes,” he said. For example, the first carotid recommendation is that: “Following CEA or CAS, we recommend surveillance with DUS (duplex ultrasound scanning) at baseline and every 6 months for 2 years and annually thereafter until stable … The first or baseline DUS should occur soon after the procedure, preferably within 3 months, with the goal to establish a post-treatment baseline. Considering the small risk of delayed restenosis or ISR, some interval of regular surveillance (e.g. every 2 years) should be maintained for the life of the patient.”

The strength of the recommendation is “strong” and the quality of the evidence “moderate” (1B recommendation).

“Evidence is somewhat scarce for many of the endovascular techniques because they change so quickly, unlike the more established open procedures,” Dr. Zierler noted. “Endovascular procedures are developing rapidly and devices are changing frequently. The life cycle of a certain device or intervention may be quite short.”
Whatever the quality of the current evidence, Dr. Zierler noted that vascular surgeons must create a follow-up plan for each patient that is most likely to provide the best possible outcome while minimizing costs and risks. “These guidelines should serve as a starting point for creating that plan,” he said.

“We decided early in the development of these guidelines that our overriding philosophy would be to err on the side of caution and image more frequently,” he said. “The negligible risk and relatively low cost of ultrasound make this approach feasible, and follow-up intervals can be extended if new evidence indicates that it is safe,” he said. “We want to be cautious until we know with certainty what the best practices really are.”

Dr. Zierler hopes that this guideline can be updated in about three to five years, highlighting changes in the recommendations that result from new and better clinical evidence.