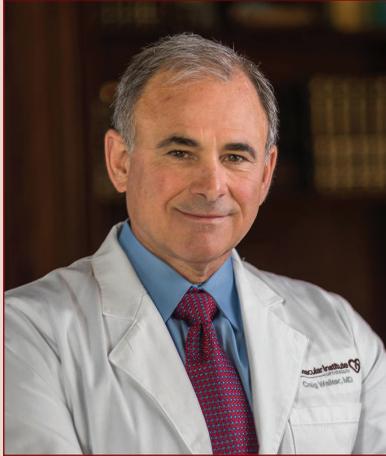


# The Increasing Use of Transradial Approach for Peripheral Interventions



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**The development of specialized long and low-profile sheaths, wires, balloons, crossing catheters, and stents, as well as one atherectomy tool (the CSI orbital atherectomy device) has allowed interventionists to treat distal peripheral arterial lesions via radial approach.**

radial artery access is preferred by patients, who don't have to remain in bed and can actually get up to use the bathroom during recovery periods.

Until recently, peripheral vascular interventional sheaths, wires, and tools were simply inadequate for distal peripheral vascular interventional procedures secondary to reach. The development of specialized long and low-profile sheaths, wires, balloons, crossing catheters, and stents, as well as one atherectomy tool (the CSI orbital atherectomy device) has allowed interventionists to treat distal peripheral arterial lesions via radial approach. Notably absent at this time from the radial device

Hello and welcome to the June 2021 edition of *Vascular Disease Management*. I have chosen to comment on Dr. Imraan Ansaarie and colleagues' article, "A Retrospective Cohort Study to Evaluate the Efficacy and Safety of Minimal Arterial Access Lower-Extremity Intervention Via Peripheral Orbital Atherectomy." In this article, the authors evaluate the clinical success of orbital atherectomy in treating peripheral arterial lesions via a transradial approach, discuss the rationale for utilizing radial approach, and assess the acute complications associated with the procedure.

I have decided to comment on this article as transradial access — which has become a mainstay in cardiac diagnostic and interventional procedures — is gaining traction in the treatment of peripheral arterial disease. This site of access is being utilized far more commonly now and the rate of growth has been rapid as devices are being developed that allow interventionists to reach even distal peripheral arterial lesions. I have found this article particularly interesting as more than 40% of the patients treated in this single center were Rutherford 4-5 classification and clinical success was achieved in all cases, with 85% of cases completed via the radial access site alone and the remainder requiring an alternate access site for completion of the procedure. The authors explain the technique in great detail, including initial evaluation to determine which patients are candidates as well as a thorough step-by-step description of the procedure. The authors then compare complications and fluoroscopy time with the historical controls utilizing femoral arterial access at the same institution. The authors concluded that the fluoroscopy time was similar in femoral and radial access at their institution, but access-site complications were fewer and the patient was able to ambulate much earlier in the radial access cohort.

Radial artery access has been studied extensively in coronary artery disease, where it has been proven to lessen access-site complications, allow earlier ambulation, and reduce bleeding complications as compared with femoral approach in appropriate patients. Patients with anatomical abnormalities (such as radial loops or tiny arteries) or pathology (such as diffusely diseased arteries, severe obstructive disease within the subclavian, axillary, brachial, or radial artery) are not ideal candidates for radial approach. In addition to these anatomical issues, radial artery spasm can be problematic and in rare cases can result in complications, particularly if a sheath is advanced or retracted against great resistance. Extensive studies in coronary procedures have shown that

portfolios is an entire complement of special wires, drug-eluting stents and drug-coated balloons, focal force balloons, covered stents, other atherectomy devices, and alternative stents that have increased radial force, which have been shown to be effective in highly calcified lesions and in mobile parts of the superficial femoral artery and popliteal arteries. Interventionists needing to utilize the devices that presently are not available in lengths sufficient to reach via radial approach must utilize a secondary access site, which at present is problematic. In addition, the small size of radial arteries limits the French size of the sheath that can be utilized, which can be a concern in regard to delivery of devices.

I am convinced that industry will respond to the increasing utilization of radial approach and develop the other needed devices, allowing the completion of procedures via radial access alone. In the interim, I hear many interventionists state that we don't need radial access as we can accomplish all of the same goals utilizing pedal access. While I have been an early user and remain a strong advocate in utilizing pedal access in treating patients with critical peripheral arterial disease, I feel that we must all realize that occasionally the utilization of pedal vessels as an access site can result in subsequent obstruction of these vessels and that this may have long-term negative prognostic effect. "In peripheral arterial disease we are not accessing the radial artery because the upper extremity is diseased but we only access pedal arteries because the lower extremity is diseased." Long-term follow-up of patients where radial artery access has been utilized has demonstrated that subsequent radial artery occlusion is not infrequent, but is usually — although not always — asymptomatic. Would this be the case if the arm vasculature was abnormal and closure had resulted in ischemia?

Radial artery access to treat peripheral vascular disorders is gaining traction among peripheral interventionists. It is relatively new and will need continued innovation if it is to reach its full potential.

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