

# Why Access Matters: The Case for Going Radial

Reducing complications, expanding options, and improving outcomes—the core benefits of a transradial approach for peripheral vascular intervention.

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**T**ransfemoral access (TFA) has historically been the default approach for peripheral vascular intervention (PVI). Although familiar and widely practiced, TFA is associated with a meaningful burden of access site complications, including retroperitoneal bleeding, hematoma, pseudoaneurysm, arteriovenous fistula, and arterial thrombosis.<sup>1,2</sup> These complications are not trivial; they contribute to increased morbidity, prolonged hospitalization, and higher resource utilization. Importantly, patients with peripheral artery disease (PAD)—the very

population undergoing PVI—are disproportionately affected, experiencing a 2.5-fold higher risk of surgical intervention when TFA complications occur.<sup>3</sup>

Efforts to mitigate TFA risk have yielded only modest gains. Even with routine ultrasound guidance, access site complication rates after TFA remain clinically significant. In one contemporary analysis, the access site complication rate was 3.5%, and notably, 10% of these patients required surgical repair.<sup>4</sup> These findings underscore that technical refinements alone may not fully address the intrinsic risks of TFA, particularly in complex PAD patients.

**TABLE 1. COMPARISON OF RADIAL VERSUS FEMORAL ACCESS FOR PVI**

	Radial Access	Femoral Access
<b>Complication rates</b>	Lower rates of major bleeding and vascular complications: 2.1% <sup>8</sup>	Higher rates of complications, more common in patients with PAD, and associated with a 2.5-fold increased risk of surgical intervention <sup>6</sup> ; even with ultrasound guidance, one study reported a high transfemoral access site complication rate at 3.5%, with 10% requiring surgery <sup>4</sup>
<b>Patient recovery</b>	Faster recovery	Longer recovery time
<b>Comfort level</b>	Generally more comfortable for patients	May cause more discomfort
<b>Technical challenges</b>	Requires specific skills and training	More established technique
<b>Success rates</b>	Comparable success rates, with one study reporting 98.5% <sup>8</sup>	Comparable success rates (82%-100% reported)
<b>Patient selection</b>	Suitable for most patients	Contraindicated or inappropriate in patients with previous femoral surgery, a prosthetic endograft, tortuous iliac arteries, or morbid obesity
<b>Length of stay/discharge</b>	Reduced length of stay; same-day discharge in 96.5% <sup>8</sup>	Same-day discharge rates of 80% to 92% <sup>10</sup>
<b>Bilateral lower extremity interventions</b>	Enables interventions on bilateral lower extremity lesions without additional access site or second procedure	Often not feasible; may be inappropriate or contraindicated
<b>Anticoagulated patients</b>	Feasible in fully anticoagulated patients without significant added bleeding risk	Not feasible; may be inappropriate or contraindicated

Abbreviations: PAD, peripheral artery disease; PVI, peripheral vascular intervention.

Beyond complication rates, TFA is frequently inappropriate or contraindicated. Patients with prior femoral surgery, prosthetic endografts, severe iliac tortuosity, or morbid obesity may face technical challenges or unacceptable risk with TFA. Additionally, transfemoral PVI does not readily permit treatment of bilateral lower extremity disease without obtaining a second access site or staging procedures, increasing cumulative risk and patient inconvenience.<sup>5,6</sup> TFA is also problematic in fully anticoagulated patients, where the bleeding risk is substantially amplified.<sup>7</sup>

In contrast, transradial access (TRA) has emerged as a compelling alternative for PVI (Table 1),<sup>4,6,8-10</sup> mirroring the paradigm shift already established in coronary intervention. Accumulating evidence demonstrates that TRA is associated with significantly lower rates of major bleeding and vascular complications, reported as low as 2.1% in contemporary series.<sup>8</sup> Procedural success rates with TRA are high and comparable to femoral approaches, reaching 98.5% in experienced centers.<sup>8</sup> These data challenge the notion that TRA is merely an adjunct or niche technique.

From a patient-centered perspective, the advantages of TRA are substantial. TRA allows for faster ambulation, greater comfort, and reduced postprocedural immobility. These benefits translate directly into operational efficiencies, including shorter length of stay and high rates of same-day discharge—reported at 96.5% in radial PVI cohorts compared with 80% to 92% for femoral approaches.<sup>8,10</sup> Moreover, TRA enables treatment of bilateral lower extremity lesions through a single access site, avoiding additional punctures or repeat procedures.<sup>5,6</sup> This capability is particularly valuable in patients with multilevel or bilateral disease.

TRA also expands treatment eligibility. Patients who are fully anticoagulated can safely undergo PVI via TRA

without the same magnitude of bleeding risk observed with TFA.<sup>7</sup> Although radial interventions require dedicated training, familiarity with longer devices, and thoughtful procedural planning, these technical considerations are increasingly addressed through growing operator experience and device innovation.

Ultimately, radial-to-peripheral intervention represents more than a technical trend—it reflects a patient-centered evolution in vascular therapy. By reducing access-related complications, improving comfort, enabling outpatient care, and expanding treatment options for complex and high-risk patients, TRA is redefining the standard approach to PAD intervention. As evidence continues to mature, access choice should be viewed not as a matter of convenience but as a critical determinant of patient outcomes. ■

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