

From Right to Left Radial Access in Older Patients: Are We Witnessing the Next Procedural Shift?

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Short Editorial related to the article: *Left Versus Right Radial Access in Elderly Patients for Coronary Procedures: A Systematic Review and Meta-Analysis*

The steady rise in percutaneous coronary interventions performed in older patients reflects not only demographic trends but also the growing body of evidence supporting the effectiveness of invasive strategies in this population.¹ Three decades ago, the femoral approach was the undisputed standard. Early reports of transradial access in the early 1990s were met with skepticism, mainly due to concerns about procedural complexity and unfamiliarity with the required technical adjustments. Over time, radial access became the preferred approach. The transition from radial to femoral access offered elderly patients a clear reduction in bleeding and vascular complications.² Operators naturally shifted from right femoral to right radial access, remaining on the same side of the patient and often overlooking the more distant left side. As a result, right radial access (RRA) became the default. The choice between RRA and left radial access (LRA) is often driven by habit, operator ergonomics, equipment availability, and catheterization laboratory setup. Emerging evidence suggests this decision warrants closer consideration. In older patients, atherosclerotic and tortuous changes in the subclavian and brachiocephalic arteries are disproportionately more common on the right side. A left radial approach may reduce technical challenges, potentially shortening procedure time and lowering radiation exposure and contrast volume.^{3,4}

In this issue of the *International Journal of Cardiovascular Sciences*, Gonçalves et al. shed light on this important topic.⁵ In an elegant and technically well-performed systematic review and meta-analysis, including 1,094 patients from three randomized trials and one observational study, the authors provide compelling evidence to reconsider the choice of radial access in elderly patients. While numerous previous reviews have compared LRA and RRA, this study is unique in its exclusive focus on the elderly population. The analysis included studies involving patients aged ≥ 70 years undergoing diagnostic or therapeutic coronary

procedures, comparing RRA and LRA, and reporting at least one of three outcomes: fluoroscopy time, contrast volume, and procedural difficulty.

The LRA group demonstrated a significantly shorter fluoroscopy time and a notable reduction in contrast volume. Although perceived procedural difficulty did not differ significantly between groups, objective measures clearly favored LRA. These variables are particularly relevant in a population more susceptible to contrast nephropathy, radiation-related injury, and vascular complications. The consistent reduction in contrast volume with LRA is especially important, as renal function declines with age and chronic kidney disease affects up to half of octogenarians. Limited renal reserve increases the risk of contrast-induced acute kidney injury, which worsens clinical outcomes and raises healthcare costs. Even a seemingly modest 13 mL reduction in contrast volume with LRA becomes more meaningful in elderly patients and in cases where repeated interventions are likely.⁶ Additionally, the documented decrease in fluoroscopy time is significant, as it reduces radiation exposure for both patients and staff.⁷ More importantly, both contrast volume and fluoroscopy time serve as surrogates for a less traumatic procedure, reflecting reduced catheter manipulation and fewer catheter exchanges in this fragile population.

The clarity of these findings invites reflection on their broader implications for established clinical practices. Despite consistent evidence supporting the benefits of LRA in elderly patients, its limited adoption can be attributed to two primary obstacles. First, there is persistent operator unfamiliarity with the necessary technical adjustments. Interventionalists, trained predominantly in right radial or transfemoral access, often view LRA as an exception rather than a potential default. Limited exposure reinforces the perception of LRA as more complex, perpetuating procedural bias. Second, the distal radial approach, accessed via the anatomical snuffbox, has become a common variation of LRA and requires additional operator skills, further contributing to hesitancy in its routine use.⁸ Third, the limited availability of dedicated equipment poses a significant barrier. Items such as left arm support systems, sheath and guide extenders, longer sheaths and catheters, extended balloon platforms, and catheters designed for the longer anatomical course of LRA remain inconsistently available in most laboratories. This creates a self-perpetuating cycle: limited practice reinforces unfamiliarity; unfamiliarity reduces the willingness to adopt new approaches; reduced adoption suppresses

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demand; and the lack of demand hinders the systematic incorporation of specialized equipment—further restricting practice.

In the early 2000s, interventionalists embraced the challenge of transitioning from femoral to radial access. At that time, high-volume centers and highly skilled operators were the primary drivers of this shift. The

current meta-analysis strengthens the growing body of evidence suggesting that LRA is not merely a theoretical alternative, but a practical—and potentially preferable—option for elderly patients. Whether this marks the next major paradigm shift in access-site strategy will depend on our collective willingness to test, adopt, and refine the approach with the same openness that once fueled the success of radial access.

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