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The Evolving Role of Cardiac Imaging in Care Delivery

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Not long ago, the evaluation of coronary artery disease was defined by cardiac angiography. The pathway from symptom to diagnosis typically began in the emergency department and led directly to the catheterization laboratory.

Today, cardiac imaging spans the full continuum of care. In asymptomatic patients, coronary artery calcium scoring identifies risk before symptoms develop, informing preventive strategies and medical management.

For symptomatic patients, imaging options have expanded from echocardiography and nuclear imaging to include coronary CTA (CCTA) and cardiac MR. These modalities provide detailed characterization of cardiovascular pathophysiology, often eliminating the need for invasive procedures.

In this issue, 2 review articles highlight advances in CT technology, including photon counting, and the emergence of artificial intelligence-guided coronary plaque analysis. These developments are helping to drive a broader transformation now underway in cardiac care.

Today, in some settings, select low-risk symptomatic patients in the emergency department are being triaged for coronary artery disease using CCTA. A normal study allows safe discharge without admission, reducing length of stay and avoiding unnecessary hospitalization.

The implications extend beyond the emergency department. Primary care patients with risk factors and equivocal symptoms may be referred as outpatients directly for CCTA rather than cardiology consultation. Imaging becomes the decision point, determining who requires further testing or intervention and who can be safely managed without escalation.

These care algorithms depend not only on advanced imaging capabilities, but on interpretation that is accurate, consistent, and clinically meaningful. We have the tools. Whether these care pathways succeed will rely on the availability of qualified cardiothoracic radiologists.

At a time when cardiac imaging is becoming more central to triage and care coordination, there is a growing mismatch between capability and workforce. Radiology faces a well-recognized physician shortage, and the number of radiologists with dedicated cardiothoracic expertise remains limited relative to the expanding demand for these services.

The stage is set for a change in the way cardiac care is delivered. Radiology must meet this moment by providing the expertise to match the technology and guide cardiac care delivery into the future.