

## Invited Commentary

# Follow-up Surveillance After Endovascular Aneurysm Repair Less Is More?

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**In disease surveillance**, a tension exists between adequate detection of disease progression and the risk for overdiagnosis and unnecessary use of resources. The goal of imaging surveillance after endovascular aneurysm repair (EVAR) can be stated simply: early detection of asymptomatic problems to avoid potentially severe consequences (ie, post-EVAR aneurysm rupture). Existing guidelines for surveillance after EVAR<sup>1</sup> are based largely on expert opinion, and high-quality evidence to inform the ideal post-EVAR surveillance regimen does not exist.



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In a well-executed and provocative study, Garg and colleagues<sup>2</sup> explore this gap in our understanding of the ideal post-EVAR surveillance regimen. Using a retrospective evaluation of Medicare claims data, they evaluated post-EVAR adverse events based on whether or not patients received post-EVAR surveillance imaging that adheres to existing guidelines. As the authors have previously demonstrated,<sup>3</sup> approximately half of Medicare patients do not have post-EVAR surveillance that adheres to existing guidelines. In the present study, the authors demonstrate that patients with incomplete surveillance had lower rates of reintervention, all-cause mortality, and aneurysm-related events, including rupture. These findings appear to be at odds with the concept that rigorous follow-up improves long-term patient outcomes.

However, for a number of reasons, we believe that concluding from this work that less frequent surveillance will result in equivalent outcomes is inaccurate. First, complex aortic anatomy, particularly that requiring EVAR outside of the instructions for use of an endovascular device, is not captured in this study. Adverse anatomy has a clear association with continued aneurysm expansion after EVAR, which may reflect an increased risk for post-EVAR events.<sup>4</sup> This consideration is important in determining the frequency of follow-up imaging and may bias the study cohort in ways not accounted for in the analysis.

Second, event rates are driven by identification of problems on surveillance imaging and are unsurprisingly lower in the group with less imaging. This finding does not mean that patients with less imaging are doing better. Instead, it may mean that we are failing to identify problems with long-term negative consequences beyond the time horizon of this study.

Third, aneurysm rupture is often a sudden and fatal event with significant prehospital mortality. These patients do not have the cause of death captured in claims-based data. As a result, the reported incidence of aneurysm-related mortality after EVAR in this study (0.5%) may underestimate the true event rate, particularly for patients with incomplete follow-up. The resulting potential for reporting bias would preferentially underestimate the incidence of post-EVAR aneurysm rupture in these patients.

Despite its inherent methodologic limitations, this work raises important questions and establishes the groundwork for a more rigorous and patient-specific evaluation of the ideal post-EVAR surveillance regimen. In a health care environment focused on value, we can do better.

endovascular aneurysm repair among Medicare beneficiaries [published online July 8, 2015]. *JAMA Surg*. doi:10.1001/jamasurg.2015.1320.

## ARTICLE INFORMATION

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