Endovascular Repair of Ruptured Abdominal Aortic Aneurysm is Superior to Open Repair: Propensity-Matched Analysis from the Vascular Quality Initiative

CHICAGO, Ill., August 24, 2020 – A large retrospective review of prospectively collected data from the Vascular Quality Initiative (VQI) reported in the August 2020 edition of the Journal of Vascular Surgery, suggested a more aggressive endovascular approach is warranted for patients presenting with ruptured abdominal aortic aneurysm (rAAA). Researchers noted the jury is still out as to the most appropriate treatment for rAAA.

“The literature remains mixed on whether EVAR (endovascular aortic aneurysm repair) provides a survival benefit over OSR (open surgical repair) of rAAA,” said principle author Mahmoud Malas, MD, MHS, University of California, San Diego. “Observational studies have suggested that EVAR may be associated with lower 30-day mortality, but many of these studies have inherent flaws introducing selection bias.”

“Conversely, the three randomized controlled trials studying this subject have failed to demonstrate a survival benefit of one approach over the other,” Malas continued.

A multi-centered research team led by Malas used a propensity-matched analysis of VQI data to assess contemporary, real-world treatment of rAAA. A total of 4,929 repairs performed between 2003 and 2018 were included in the review in 2,749 rEVAR patients and 2,180 rOSR patients. Characteristics of the patient set included having a mean age of 73 (+/-10 years); 22 percent female, AAA size of 71mm EVAR versus 77mm OSR (P<.001); and hypotension of 32 percent EVAR versus 41 percent OSR (P<.001).

The team propensity-matched 724 patients from each group. In this cohort, they observed differences in:

- 30-day mortality: 18 percent rEVAR versus 32 percent rOSR, P<.001
- Major morbidity: 35 percent rEVAR versus 68 percent rOSR, P<.001

Predictors for 30-day mortality included:
- OSR (odds ratio 2.03)
- Age >60 years (odds ratio 2.23)
- Female (odds ratio 1.39)
- Obesity (odds ratio 1.41)
- Hypotension (odds ratio 2.04)

“This is one of the largest studies examining the effect of operative approach on outcomes in patients presenting with rAAA. Clear short-term and mid-term survival benefits of rEVAR over rOSR were demonstrated,” Dr. Malas continued. “For institutions that elect to offer rAAA repair, the morbidity and mortality benefits presented highlight the importance of dedicating resources to providing endovascular treatment options. Although delays can occur in obtaining axial imaging, more than half of rAAA patients have anatomy suitable for rEVAR.”

Patients with ruptured AAA continue to present a significant challenge to vascular surgeons. Mounting data included within this large study, suggests that endovascular therapy applied to anatomically suitable patients appears to be the procedure of choice in terms of reducing early morbidity and mortality.

For more information on the retrospective review visit: http://b.link/JVS-EVAR.

**Article Date:** Monday, August 24, 2020  
**Article Type:** Press Release