Failure to Rescue: Physician Specialty and Mortality After Reoperation for Abdominal Aortic Aneurysm (AAA) Repair

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Objectives: Complications after AAA repair resulting in reoperation contribute to mortality, but have not been well-studied. Mortality after reoperation is termed failure to rescue, and may reflect differences in outcome directly related to management of the complication. This study describes the relationship between reoperation and mortality, and demonstrates the effect of physician specialty on reoperation rates and failure to rescue after AAA repair.

Methods: Data was extracted for 2616 patients who underwent intact AAA repair in 2005-2006 from a standard 5% random sample of all Medicare beneficiaries. Patient demographics, co-morbidities, type of repair and specialty of operating surgeon were collected. Primary outcomes were 30-day reoperation and 30-day mortality. Logistic regression analysis identified characteristics predicting reoperation.

Results: A total of 156 reoperations were required in 142 (4.2%) patients. Early mortality was far more likely after reoperation (22.5% vs.1.5%; p<.0001). Of patients requiring reoperation, those requiring two or more interventions had an even higher mortality (54% vs. 20%; p=.0007). Despite equivalent need for reoperation among specialties (vascular surgeons 5.2%, others 5.6%, p=.67), the mortality after reoperation was nearly half for vascular surgeons compared with other specialties (16.2% vs. 32.3%; p=.04). The most common reason for reoperation was arterial complications (35.8%; mortality 39.3%), which also accounted for the largest difference in mortality between vascular surgeons (30.7%) and other specialties (52.0%).

Conclusions: Postoperative complications requiring reoperation dramatically increase mortality after AAA repair. Lower mortality following reoperation in patients managed by vascular surgeons reflects the importance of specialty vascular care. Failure to rescue contributes to the difference in outcome given equivalent complication rates.