Transabdominal Open Abdominal Aortic Aneurysm Repair Associated with Higher Rates of Late Reintervention and Readmission Compared with Retroperitoneal Approach

### Journal of Vascular Surgery: Long-term considerations for open AAA repair technique

| Transabdominal Versus Retroperitoneal Repair of Abdominal Aortic Aneurysms (AAAs) |
|---------------------------------|---------------------------------|
| **AAA Related Reinterventions and Readmissions at 5 years** |
| **TRANSPERITONEAL REPAIR**      | **RETROPERITONEAL REPAIR**      |
| 914 patients                    | 368 patients                    |
| **42%**                         | **34%**                         |
| P<.01                           | Hazard Ratio: 1.5               |

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For those patients undergoing open surgical repair of AAA, the decision as to how to approach the aneurysm surgically is multifactorial. Familiarity with the approach, access to intra-abdominal organs and the right iliac system favors the transabdominal approach. Conversely, avoidance of a hostile abdomen, access to the visceral aorta and potential early return of bowel function favors the retroperitoneal approach.

“There is very limited data with regards to comparing these approaches long-term,” said first author Sarah Deery, M.D., MPH, of Massachusetts General Hospital. “Our aim in this study was to evaluate late mortality, readmissions and reinterventions, including aneurysm-related reinterventions, for both approaches, thus allowing surgeons and patients to consider these factors in their decision-making.”

A multicenter team led by Marc Schermerhorn, M.D., of Beth Israel Deaconess Medical Center in Boston, used prospectively collected data from the Vascular Quality Initiative (VQI) linked to Medicare data to compare the two approaches. VQI, a joint venture of M2S Inc. and the Society for Vascular Surgery, collects and analyzes data to improve the quality of vascular care.

Researchers evaluated 1,282 patients whose operation was performed between 2003 and 2015. The transabdominal approach was utilized in 914 patients (71 percent) versus the retroperitoneal approach in 368 patients (29 percent).

- Baseline characteristics between the two groups were similar except:
  - Transabdominal procedures had more concomitant iliac artery aneurysms (28 percent versus 17 percent).
  - Retroperitoneal procedures had higher rates of suprarenal clamping (61 percent versus 36 percent).
- Early 30-day mortality was equivalent for both approaches (4.7 percent for transabdominal, 3.8 percent for retroperitoneal).
- Other post-operative complications, such as bowel ischemia, renal complications, wound complications and reoperation occurred at similar rates.
- Long-term (five-year) outcomes included:
  - Survival was similar (62 percent for transabdominal, 61 percent for retroperitoneal).
  - Repair-related reintervention and readmission were significantly higher for transabdominal (42 percent versus 34 percent).
  - Abdominal wall reoperations were significantly higher for transabdominal (13 percent versus 6 percent).

“Even after adjustment for sex, age, symptom status, and anatomic differences, the transabdominal approach was associated with a 40 percent higher rate of late reintervention and readmission (hazard ratio, 1.4, 95 percent CI 1.1-1.7),” said Dr. Deery. “Given changes in open training across vascular surgery, some surgeons may have especially limited exposure to the retroperitoneal approach to AAA repair compared with the transabdominal approach. Ultimately, surgeons will likely achieve better outcomes using the approach they are most comfortable with which may mean performing a transabdominal repair.”

As noted, many factors go into choosing the right approach for open AAA repair. This important and large series provides new, long-term data that enhances a professional’s decision-making, authors said.

For more information the study can be accessed for free through Feb. 29 at vsweb.org/JVA-AAARepair.

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