Abstract Body:

**Objective(s):** FEVAR has emerged as an alternative to open repair for treatment of complex abdominal aortic aneurysms (cAAA), but direct comparisons between the two repair types are limited.

**Methods:** We studied all repairs of non-ruptured cAAA in the VQI between 2012-2017 (pararenal or juxtarenal aneurysms for FEVAR, and a clamp above at least one renal artery for open repairs). Only FEVAR (off-the-shelf or custom-manufactured) or physician-modified endografts (PMEG) were included. As a secondary analysis we considered PMEG separately. As an additional secondary analysis, we calculated propensity scores for the likelihood of undergoing open repair versus FEVAR, and used them to construct inverse probability weights.
Results: There were 3,355 cAAA repairs: 2,123 open (63%); 1,097 FEVAR (33%); and 135 PMEG (4%), with a median follow-up of 1.8 years. Patients undergoing FEVAR were more often older, male, with larger aneurysms, and had higher rates of comorbidities including chronic obstructive pulmonary disease, coronary artery disease, chronic kidney disease, and congestive heart failure. Operative time (255mins±101 vs 233mins±104, P<.001) and estimated blood loss (1898cc±1877 vs 403cc±529) were significantly higher during open repair, as was postoperative length of stay (7 days vs 3, P<.001). The adjusted perioperative mortality for open and FEVAR was 4.7% and 3.0%, respectively (P=.02). Adjusted rates of postoperative renal dysfunction were higher after open repair (acute kidney injury: 25% vs. 15%, P <.001; new renal replacement therapy: 4.3% vs. 2.7%, P<.001). There was no difference in long-term mortality based on repair type (open repair: compared to FEVAR: HR 1.1 [0.8-1.4], P=.63). There were no differences in the rates of perioperative or long-term outcomes between PMEG and standard FEVAR when considered separately. Propensity-weighted analysis confirmed the results of the primary analysis, with higher perioperative mortality but similar long-term mortality following open repair (Figure).

Conclusions: In patients undergoing cAAA repair, open repair was associated with higher rates of adjusted perioperative mortality and renal dysfunction but no difference in long-term survival. PMEG were associated with similar perioperative results as FEVAR, but further study is needed to establish their long-term durability.

Author Disclosure Block: