Objective(s): This study sought to compare short term outcomes following endovascular therapy and open surgery for chronic mesenteric ischemia (CMI).

Methods: Using data from the American College of Surgeons National Surgical Quality Improvement Program (NSQIP), all patients undergoing endovascular therapy or surgical intervention for CMI between 2005 and 2015 were identified for analysis. Primary and secondary endpoints were 30-day mortality, post procedural complications, and length of stay respectively. Propensity score matching was utilized to match patient baseline characteristics and eliminate selection bias.

Results: Of the 618 patients with CMI during the study period, 112 (18.1%) underwent endovascular therapy and 506 patients (81.9%) underwent open surgery. Patients undergoing endovascular therapy were older (72 vs. 66 years, p<0.001) and more likely to have had a myocardial infarction in the preceding 30 days (2.7% vs. 0.8%, p<0.001). 1:1 propensity matching produced 198 patients (99 matched pairs. In the propensity matched cohort, endovascular therapy carried a lower mortality (1% vs. 11%, p= 0.002). Patients undergoing endovascular therapy also had a shorter hospital length of stay (5 days vs. 14.6 days, p<0.001), and lower incidence of blood transfusion (10.1% vs. 43.4%, p<0.001), pneumonia (2% vs. 12.1%, p= 0.008), and prolonged intubation (2% vs. 19.2%, p<0.001). At 30 days, no patients undergoing endovascular therapy experienced graft failure, compared to one patient (1%) in the open surgery cohort.

Conclusions: In this propensity matched analysis of patients with CMI, endovascular therapy was associated with a substantially lower mortality rate, shorter length of stay, and less frequent complications than open surgery. Endovascular therapy warrants consideration as first line treatment for chronic mesenteric ischemia, but further studies evaluating longitudinal outcomes and long-term graft patency are necessary.