Laparoscopic Hartmann's Procedure is a safe and effective alternative for emergent surgical management of complicated diverticulitis: A NSQIP-based, propensity score matched analysis study

Leo I. Amodu MD MPH[1], Hazim Hakmi MD[1], Amir H. Sohail MD MSc[1], Meredith Akerman MS[1], Toyooki Sonoda MD FACS[1], James C. Maurer MD FACS[1], David Halpern MD FACS[1]

1) **Department of Surgery, New York University Langone Hospital - Long Island, Mineola, NY 11501**
2) **Division of Health Services Research, Department of Foundations of Medicine, New York University Long Island School of Medicine, Mineola, NY 11501**

INTRODUCTION

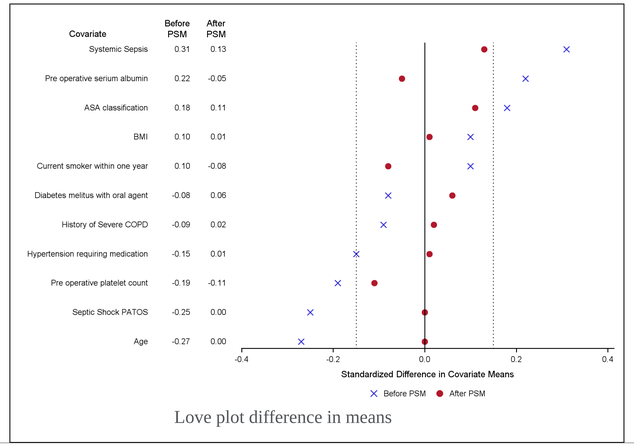
- As many as 25% of patients with acute diverticulitis will present with complicated disease
- The procedure of choice for emergent management of complicated diverticulitis has been the open Hartmann's procedure
- We analyzed the NSQIP database to compare outcomes in patients who underwent emergent laparoscopic to open Hartmann's procedure for complicated diverticulitis

METHOD

- Data analyzed using the ACS-NSQIP database
- We identified patients with complicated colonic diverticulitis using ICD-10 codes
- We compared patients who required either a laparoscopic or open Hartmann's procedure from 2015 – 2019
- Propensity score method (PSM) was utilized to match patients in each of the two surgical groups on several important covariates.

RESULTS

- Prior to PSM analysis, 4,570 patients had an open Hartmann's procedure, while 456 had laparoscopic Hartmann's procedure
- PSM analysis based on selected covariates yielded 374 open Hartmann's and 374 laparoscopic Hartmann's patients
- Laparoscopic Hartmann's patients had similar post-operative outcomes when compared to open
- Laparoscopic Hartmann's procedures were slightly longer compared to open, (Median; 129 vs. 116.5 minutes).



Love plot difference in means

RESULTS

Outcome	Open	Laparoscopic	Difference	P-Value
Mortality (%)	4.55	5.08	-3.65	0.8642
Superficial SSI (%)	5.35	2.41	5.8	0.0614
Deep incisional SSI (%)	1.07	0.00	1.07	0.1250
Organ space SSI (%)	9.89	14.2	-4.28	0.1093
Unplanned intubation (%)	3.74	3.48	0.27	1.000
30-day readmission (%)	9.63	11.76	2.41	0.4282
Wound disruption (%)	1.60	1.34	0.27	1.000
Median LOS (Days)	9	8	1	0.963
Median operative time (m)	116.5	129	12.5	<0.0001

CONCLUSIONS

Laparoscopic Hartmann's procedure is a safe and effective alternative to open Hartmann's procedure for emergent surgical management of complicated diverticulitis. More studies are needed to determine differences in long-term outcomes between these two procedures.