

Surgical Outcomes of Hartman Procedure in the Elderly Population

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INTRODUCTION:

Hartmann's Procedure (HP) is one of the most common emergency procedures in colorectal surgery, and an essential component of damage control surgery, to control contamination in patients with fecal peritoneal contamination secondary to left colon pathology. We hypothesize that elderly patients have worse 30-day outcomes compared to younger patients.

METHODS AND PROCEDURES:

Using the ACS-NSQIP database (2017), patients who underwent Hartmann's procedure were identified and divided into two groups, Group A (<70 years old) and Group B (≥70 years old). The outcomes of interest included 30-day mortality, serious morbidity, overall morbidity, readmission rates, operative time (minutes) and total hospital length of stay (LOS, days). Pearson's chi-squared, and Fisher's exact tests were used to test group differences of categorical variables and presented as numbers (percentages). Continuous variables were tested with the Student t-test and presented as means (standard deviation; SD), with statistical significance set at a value of p<0.05.

Preoperative Comorbidities	Younger (%)	Elderly (%)
Smoking Status	31.1	10.2
Direct admission from nursing home	1.8	6.2
Discharge destination to skilled care, rehab, and acute care facility	17	45
Diabetes Mellitus	12.7	19.1
Dyspnea	5.3	10.1
Impaired functional status	4.9	13.5
Chronic Obstructive Pulmonary Disorder	7.6	13.1
Congestive Heart Failure	1.4	3.2
Hypertension	40.7	70.6
Bleeding disorders	7.5	14.8
ASA (IV, V) class	19.4	36.5

Table 1: Patient Characteristics. ASA: American Society of Anesthesiologists. All listed factors were found to be significant at p<0.001

RESULTS:

Of the 4,245 total patients identified in both groups, 2225 (52.4%) were female. A total of 2,514 patients (59.1%) were in group A. Overall, both groups had similar demographic characteristics. However, Group A had higher smoking status (31.1% vs. 10.2%, p<0.001). Group B had higher rates of the following: direct admission from nursing home (6.2% vs. 1.8%, p<0.001), dyspnea (10.1% vs. 5.3%, p<0.001), impaired functional status (13.5% vs. 4.9%, p<0.001), COPD (13.1% vs. 7.6%, p<0.001), CHF (3.2% vs. 1.4%, p<0.001), HTN (70.6% vs. 40.7%, p<0.001), and bleeding disorders (14.8% vs. 7.5%, p<0.001), and ASA (IV, V) class compared to group A (36.5% vs. 19.4%, p<0.001).

RESULTS CONT: Emergency surgery was performed equally in both groups (56.8% vs. 56.0%, p=0.632). Group B has increased mean (SD) hospital LOS, 13.1 (13.45) vs 12.0 (12.4) days, p=0.009, decreased mean (SD) total operative time, [144.43 (78) vs. 158.26 (87) minutes, p<0.001]. No difference in mean (SD) days from hospital admission to operation [2.23 (4.9) vs. 2.37(4.2) days, p=0.309]. discharge destination to skilled care, rehab, and acute care facility (45% vs. 17%, p<0.001), Group B has higher serious morbidity (55% vs. 48%, p = 0.001), overall morbidity (61% vs. 53.8%, p<0.001), higher 30-day mortality (10.6% vs 4.2%, p<0.001), respectively.

Inpatient Outcomes	Younger (%)	Elderly (%)	p
Hospital LOS (mean days (SD))	13.1 (13.45)	12.0 (12.4)	0.009
Total operative time (mean minutes (SD))	144.43 (78)	158.26 (87)	<0.001
Hospital admission to operation (mean days (SD))	2.23 (4.9)	2.37 (4.2)	0.309
Discharge to non-home destinations (%)	45	17	<0.001

Table 2: Inpatient Outcomes

CONCLUSION: Elderly patients (older than 70-years) who underwent a Hartmann's procedure experienced more risk factors and increased 30-day morbidity, and mortality outcomes. Postoperatively, approximately half of them were discharged to a non-home destination (rehab, skilled nursing facility and acute care facility).