

Surgical Outcomes of Distal Pancreatectomy in Elderly Patients

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Background

One of the most salient characteristics of an aging population is the consequent impact on surgical burden. Previous studies have demonstrated that those above the age of 80 undergoing pancreaticoduodenectomy had greater mortality and morbidity.

Objective

Our aim was to better characterize the impact of age on post-operative outcomes associated with distal pancreatectomy

Variable	<75yo (N=2649)	>75yo (N=393)	Total (N=3042)	p-value
Total, n	2649	393	3042	
Female, n (%)	1464 (55.3)	222 (56.5)	1686 (55.4)	0.655
DP w/o PJ, n (%)	2233 (84.3)	335 (85.2)	2568 (84.4)	0.646
DP w/ PJ, n (%)	106 (4.0)	8 (2.0)	114 (3.7)	0.051
Lap DP, n (%)	265 (10.0)	37 (9.4)	302 (9.9)	0.710
Near-total DP, n (%)	45 (1.7)	13 (3.3)	58 (1.9)	0.031

Table 1. Patient Characteristics; DP = Distal Pancreatectomy, PJ = Pancreaticojejunostomy

Methods

- Using the ACS-NSQIP database (2017), patients who underwent a distal pancreatectomy were identified and then divided into two groups
 - Group A: Less than 75 years old
 - Group B: 75 years old or greater
- Patient characteristics and outcomes were compared between these two groups.
- Primary Outcome: 30-day Mortality
- Secondary Outcomes: Serious morbidity, overall morbidity, length of stay, operative time

Variable	<75yo (N=2649)	>75yo (N=393)	Total (N=3042)	p-value
ASA I-II, n (%)	855 (32.3)	56 (14.2)	911 (30)	<0.001
ASA III-V, n (%)	1788 (67.6)	336 (85.7)	2124 (70)	<0.001
BMI, mean (SD)	29.2 (6.7)	27.4 (5.6)	29 (6.6)	<0.001
Diabetes Mellitus, n (%)	656 (24.8)	118 (30.0)	774 (25.4)	0.03
Current smoker, n (%)	512 (19.3)	19 (4.8)	531 (17.4)	<0.001
Ventilator Dependent, n (%)	5 (0.2)	1 (0.3)	6 (.19)	0.564
Hx of Severe COPD, n (%)	110 (4.2)	23 (5.9)	133 (4.4)	0.144
CHF w/in 30d, n (%)	13 (0.5)	7 (1.8)	20 (.65)	0.01
Ascites, n (%)	11 (0.4)	1 (0.3)	12 (.39)	0.528
>10% Weight Loss, n (%)	163 (6.2)	21 (5.3)	184 (6.0)	0.65
HTN, n (%)	1270 (47.9)	285 (72.5)	1555 (51.1)	<0.001
Dialysis, n (%)	15 (0.6)	1 (0.3)	16 (.52)	0.368
Disseminated CA, n (%)	207 (7.8)	35 (8.9)	242 (7.9)	0.484
Steroid Use, n (%)	91 (3.4)	21 (5.3)	112 (3.68)	0.083
Bleeding Disorders, n (%)	83 (3.1)	21 (5.3)	104 (3.41)	0.036

Table 2: Patient Risk Factors Stratified by Patient Age Above or Below 75 years old

Discussion

- Previous studies have reported that the morbidity and mortality of pancreaticoduodenectomy in patients >80 years is double that of younger patient and is not associated with benefit over current outcomes with chemotherapy alone. Therefore, pancreatic resections in the elderly population must be considered very carefully due to the poorer outcomes.
- We found no significant difference in either serious morbidity or overall morbidity in patients undergoing distal pancreatectomy. This is not consistent with large studies of elderly patients undergoing major pancreatic operations that also evaluated the impact of age on perioperative outcomes.
- As in other studies, there were no significant differences in perioperative pneumonia, UTI, sepsis, PE/DVT or CVA/Stroke, incidence, suggesting that pancreatic resection can be performed in elderly patients with similar perioperative outcomes as non-elderly patients.

- We found that age had no statistically significant difference on length of stay, but the 30-day readmission rate was higher in patients less than 75 years of age.

Perioperative Outcomes	<75yo (N=2649)	>75yo (N=393)	p-value
Mortality, n (%)	10 (0.4)	2 (0.5)	0.773
Serious Morbidity, n (%)	661 (25.0)	94 (23.9)	0.707
Overall Morbidity, n (%)	778 (29.4)	113 (28.8)	0.859
Length of Stay, days (SD)	7.1 (6.36)	7.3 (4.93)	0.553
Operative Time, min (SD)	238 (114)	221 (103)	0.011
30-day readmission rate, n (%)	460 (17.4)	48 (12.2)	0.011
Organ Space SSI, n (%)	320 (12.1)	26 (6.6)	0.001
Post-operative MI, n (%)	23 (0.9)	9 (2.3)	0.017
Acute Renal Failure, n (%)	7 (0.3)	4 (1.0)	0.043

Table 3: Patient Outcomes Stratified by Patient Age Above or Below 75 years old

Conclusion

Those undergoing distal pancreatectomy experienced similar overall morbidity and mortality outcomes regardless of age. However, those older than 75 years of age tended to have more cardiovascular risk factors, which may have contributed to their higher rates of post-operative acute renal failure and MI.

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