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Authors

Barrera-Alvarez, Aaron

Kwong, Mimmie

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Missed Opportunities For Use Of Advanced Care Planning And Palliative Care In Open Aortic Surgery

Aaron Barrera-Alvarez BS ¹, Mimmie Kwong MD, MAS ²

UC Davis School of Medicine¹, UC Davis Health Medical Center Division of Vascular & Endovascular Surgery ²

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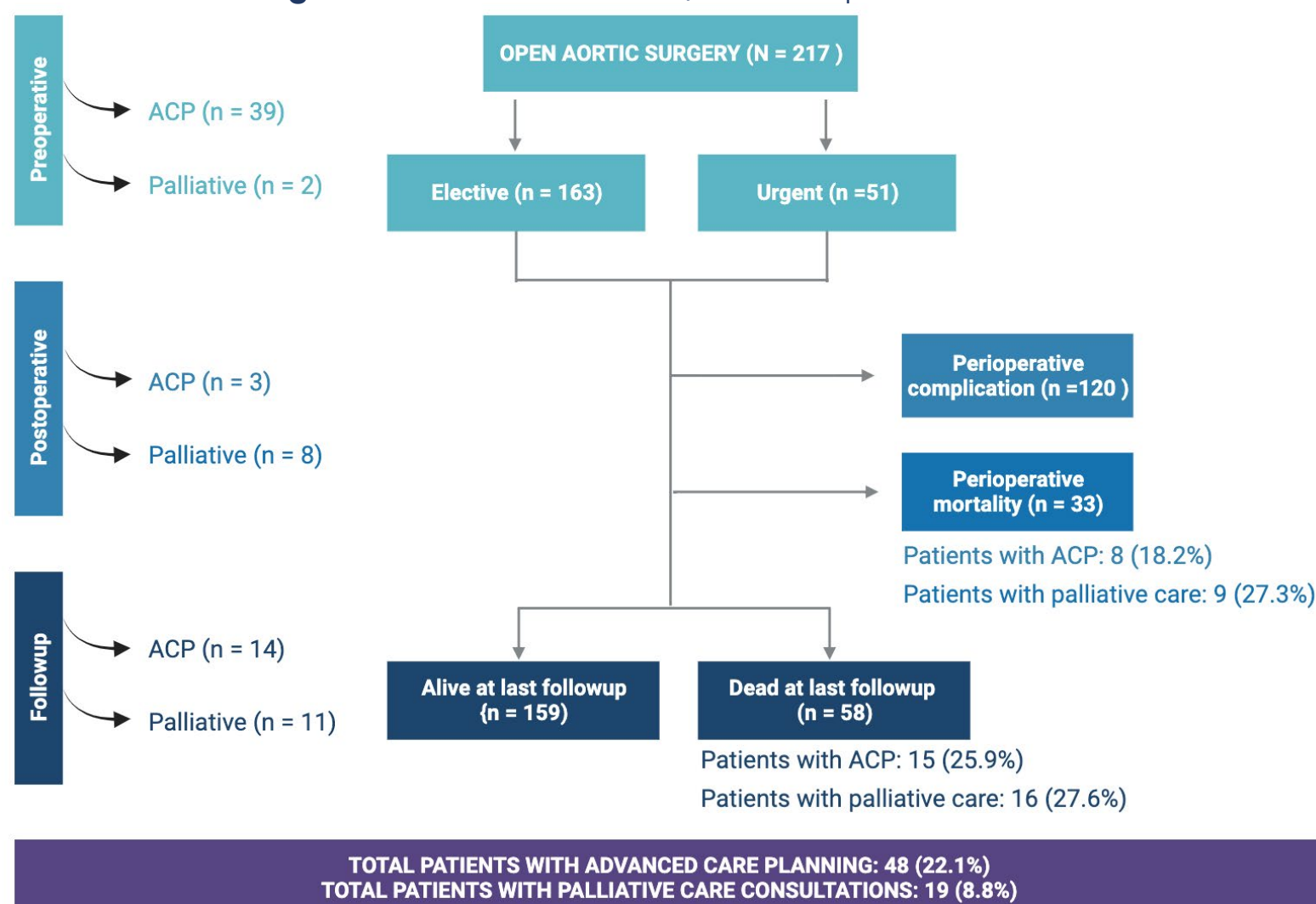
Introduction

Major vascular surgery, including open aortic procedures, is associated with having a 30-day mortality rate greater than 6% and a perioperative complication rate greater than 50%. Published literature suggests that patients undergoing high-risk procedures benefit from having a care plan in place to not only maximize quality of life but also to ensure medical interventions align with care goals. Currently, there is a paucity of published data on the prevalence of goals of care conversations, advance care planning documentation, and palliative care evaluations in patients undergoing high-risk vascular operations.

Methods and Materials

A retrospective chart review of all patients who underwent open aortic surgery at a tertiary care academic medical center from July 2014 to March 2023 was performed. Patient demographics, comorbidities, type and timing of advanced care planning (ACP), palliative care evaluations, and clinical outcomes during the perioperative period were recorded. For patients who died during the study period, the cause and location of death, as well as the use of palliative care prior to death were noted. Patients who received ACP or palliative care were compared with those who did not.

Figure 1. Distribution of ACP/PC for all patients in cohort.



Results

The cohort consisted of 217 patients who underwent major open aortic surgery. The mean age was 63 years (SD 12.2) and the majority (73.7%) of patients were male. Sixty-five percent of the patients were White, 8.8% were Black, 6.5% Hispanic, 8.8% Asian/Pacific Islander, 0.5% Native American, and 10.1% reported other races. At the time of their index hospitalization, 16.3% (n=35) had an ACP document on file. Most of these patients (62.9%) had durable power of attorney (DPOA) documents, while a smaller percentage had provider notes (40%), physician orders for life-sustaining treatment (POLST) (20%), or DNR/DNI (2.9%). Six percent (n=13) of patients had a palliative evaluation prior to their operation. During the study period, 26.7% (n=58) died at a mean of 161 days. Of these, 26.6% (n=16) received a palliative care evaluation prior to or during their terminal hospitalization.

Table 1. Demographic factors, comorbidities, and details of index hospitalization for all patients that underwent open aortic surgery

Patient Factors	Cohort (n=217)
Gender	
Male	160 (73.7%)
Female	57 (26.3%)
Age (years) (mean +/- SD)	63 (+/- 12.2)
Race	
White	142 (65.4%)
Black	19 (8.8%)
Hispanic	14 (6.5%)
Asian/Pacific Islander	19 (8.8%)
Native American	1 (0.5%)
Other	22 (10.1%)
English Speaking	201 (92.6%)
Emergent Status	51 (23.5%)
Thoracoabdominal aortic aneurysm	67 (30.9%)
Comorbidities	
CAD	69 (31.8%)
DM	35 (16.1%)
COPD	57 (26.3%)
CHF	26 (12.0%)
CKD	50 (23.0%)
ESRD	6 (2.8%)
PAD	48 (22.1%)
Hematologic Malignancy	0 (0.0%)
Solid Organ Malignancy	28 (12.9%)
Prior Amputation	5 (2.3%)

Patients who had ACP documents or who received palliative care consultations were older (p=0.016), more likely to be on Medicare or Medicaid (p=0.026), have a solid organ malignancy (p=0.042), and more likely to have end-stage renal disease (p=0.030). The median interval between surgery and receiving palliative care was 20 (IQR 3-71) days. The median interval between palliative care and death was 5 (IQR 1.5-13.5) days.

Table 2. Comparison of patients with ACP documents and/or palliative care consultations versus patient that did not.

Variable	ACP/PC	No ACP/PC	P Value
30-day Complications			
Mortality	29 (58.0%)	91 (56.5%)	0.854
MI	13 (25.0%)	20 (12.1%)	0.024
TIA / CVA	3 (5.8%)	5 (3.0%)	0.401
Pneumonia	4 (7.7%)	8 (4.9%)	0.487
DVT	3 (5.8%)	14 (8.5%)	0.768
Skin/Soft Tissue Infection	3 (5.8%)	9 (5.5%)	1.000
UTI	2 (3.9%)	10 (6.1%)	0.735
Tracheostomy	2 (3.9%)	17 (10.4%)	0.417
PEG	0 (0.0%)	5 (3.05%)	0.594
Spinal Cord Ischemia	1 (1.9%)	8 (4.9%)	0.690
Arrhythmia	3 (5.8%)	15 (9.1%)	0.573
Unplanned Return to OR	19 (36.5%)	42 (25.5%)	0.121
Unplanned Hospital Readmission	8 (15.4%)	20 (12.1%)	0.540
Unplanned ED Visit	8 (15.4%)	22 (13.3%)	0.432
LOS (days) (mean +/- SD)	14.5 (+/- 13.9)	12.9 (+/- 12.7)	0.462
Discharge to Home	27 (51.9%)	101 (61.2%)	0.235
Deceased at Study Completion	23 (44.2%)	35 (21.2%)	0.001
Location of Death			0.019
Home	3 (13.0%)	2 (5.7%)	
Hospital	13 (56.5%)	24 (68.6%)	
SNF	1 (4.4%)	0 (0.0%)	
Hospice	5 (21.7%)	1 (2.9%)	
Unknown	1 (4.4%)	8 (22.9%)	
Hospital Service at Time of Death			0.033
ICU	10 (76.9%)	13 (54.2%)	
IM / FM Inpatient	1 (7.7%)	2 (8.3%)	
Surgery	0 (0.0%)	7 (29.2%)	
ED	2 (15.4%)	0 (0.0%)	
Other	0 (0.0%)	2 (8.3%)	

Conclusion

Open aortic surgery is associated with a high risk of mortality and significant morbidity. Despite a myriad of benefits with regards to patient and caregiver benefits with the use of palliative care and advanced care planning, there is significant underutilization of these resources in patients undergoing open aortic surgery in this single-center study. In this cohort, patients with ACP typically have these documents in place prior to their surgery. Similarly, palliative care consultations tend to occur after surgery or during the follow-up period, much closer to the time of death than to the time of surgery, suggesting that PC is being misused as end-of-life or hospice care.

Future Direction

Compared with our colleagues in oncology, where palliative care and advanced care planning are already well integrated into their practice flow, and in cardiology and nephrology, where efforts to increase PC and ACP use are underway, the use of ACP and PC in the field of vascular surgery remains underdeveloped. Additional study is needed to determine the best method to integrate ACP and PC into a multidisciplinary, preoperative evaluation in vascular patients being considered for major operations such as open aortic surgery.

References



Contact

Aaron Barrera-Alvarez
Email: abarreraa@ucdavis.edu