

Editor's note:

“Surgical Palliative Care Column” features articles relating to incorporating the precepts and techniques of palliative care into surgical clinical practice, education, research, and advocacy. Serving as chairs to the column, Dr. Geoffrey P. Dunn (University of Pittsburgh Hamot Medical Center, USA) and Dr. Anne C. Mosenthal (Rutgers New Jersey Medical School, USA) gather surgeons interested in the field of palliative care to make the column more informative and educated. Original articles, timely review articles, perspectives, editorials and commentaries on recently published trials and studies, etc. are welcomed in the column.

Surgical Palliative Care Column (Original Article)

Utilization of palliative care consultation service by surgical services

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Background: Palliative medicine was recognized as a unique medical specialty in 2006. Since that time, the number of hospital-based palliative care services has increased dramatically. It is unclear how palliative care consultation services (PCCS) are utilized by surgical services. The purpose of this study was to examine utilization of PCCS by surgical services compared to medical services at the University of New Mexico.

Methods: A database of palliative care consultations performed at University of New Mexico Hospital between 2009 and 2013 was queried to identify consultations requested by surgical *vs.* medical services. Demographic, clinical, and outcome variables were compared.

Results: A total of 521 consultations were analyzed: 441 (85%) consultations from medical and 80 (15%) consultations from surgical services. Surgical patients were older than medical patients and more likely to be in an intensive care unit (ICU) at the time of consultation. There was no difference between referring services in indication for palliative care consultation or time from hospital admission to consultation. Surgical patients were more likely to die in the hospital compared to medical patients. Among patients discharged from the hospital alive, there was no difference between the groups in discharge disposition. More patients in both groups had a change from full code to do-not-resuscitate (DNR) status following palliative care consultation.

Conclusions: Referrals for palliative care consultations are much less common from surgical than medical services. Characteristics of surgical patients suggest that palliative care consultations are reserved for older patients, critically ill patients, and those more likely to be at end-of-life. Our findings suggest the possible need for increased palliative care consultations among less critically ill patients and/or those with an improved prospect of recovery.

Keywords: Palliative care; surgical service; utilization

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Introduction

Palliative medicine is specialized medical care for patients with serious and advanced illness. The primary aim of palliative care is to improve the quality of life of both patients and their families through the appropriate relief of symptoms and the stress that serious illness entails (1). Palliative care is commonly equated with end-of-life care; however, palliative care is appropriate for patients at any stage of serious illness and can be provided along with curative-intent treatment. Defined in this way, palliative care is appropriate for many patients with surgical disease.

Although the American College of Surgeons has worked to improve knowledge and integration of palliative care among surgeons since 1998 (2), there remain significant knowledge gaps and lack of referral to palliative care by surgeons (3,4). Bradley *et al.* sought to increase palliative care consultations in a surgical intensive care unit (ICU) through the use of triggers to prompt palliative care consultation (5). They found that palliative care consultations were rare, both before and after the institution of triggers for consultations. A recent study of trauma surgeons found that approximately half of those surveyed felt that palliative care was underutilized (4). It is unclear if this finding is true among the broader range of surgical services.

A preliminary review of our palliative care consultation database revealed that consultations from surgical services comprise only 15% of the total consultations received by our multidisciplinary palliative medicine team. The goal of the current study was to examine the characteristics of surgical patients who received palliative care consultations and compare them to medical patients who received palliative care consultations during the same period of time. Based upon the results of the current study, we hoped to identify potential barriers to consultation and opportunities to improve utilization of palliative care consultation services (PCCS) among surgical services.

Materials and methods

The Palliative Medicine Division at the University of New Mexico was created in 2009 and consists of an interdisciplinary team of physicians board-certified in Hospice & Palliative Medicine as well as nurse practitioners, a social worker, a chaplain, and Arts-in-Medicine providers. A prospectively maintained database of patients who received inpatient PCCS from 2009-2013 was queried.

Stratified random sampling methodology was utilized to derive the study population (6). This methodology involves dividing the overall study population (all patients referred for palliative care consultation) into two strata: those referred from surgical services or from medical services. Once it was determined that 15% of all referrals came from surgical services between 2009 and 2013, the final study population was chosen at random to ensure that the final population was proportional to the size of these two strata. After removal of duplicates and randomization of cases, a total of 521 charts were included for review. The study was approved by the University of New Mexico Institutional Review Board.

The following data were collected on all subjects: general demographic variables, date of hospital admission, date of palliative care consultation, referring service (medical *vs.* surgical), hospital location of patient at the time of palliative care consultation, reason for palliative care consultation, number of days under palliative consultation, do-not-resuscitate (DNR) status before and after palliative care consultation, date of hospital discharge, and disposition of patient upon hospital discharge. Patients were stratified according to referring service.

Descriptive statistics was used to calculate frequencies, percentages and means of study variables. Continuous variables were analyzed with independent sample *t*-test. Categorical variables were analyzed with Fischer's exact test or chi-square test, as appropriate. To evaluate the influence of palliative care consultation on code status, McNemar's test for paired data was used. All P values recorded were for two-tailed tests, P value ≤ 0.05 was considered statistically significant. Data analysis was performed with SPSS™ Version 21.0 (IMB Corp., Armonk, NY, USA).

Results

Demographic characteristics

A total of 521 patients referred for PCCS were analyzed: 441 patients referred by medical services, 80 patients referred by surgical services.

Demographic characteristics of medical *vs.* surgical patients are summarized in *Table 1*. Medical patients tended to be younger compared to patients referred from surgical services. Although the majority of patients referred to PCCS were located outside of an ICU (73%), patients referred from surgical services were more likely to be in an ICU at the time of consultation compared to patients

Table 1 Characteristics of patients referred for palliative care consultation

Characteristics	Medical service, n=441 [%]	Surgical service, n=80 [%]	P value
Age (median years)	61	66.5	0.05
Male	243 [55]	38 [47.5]	0.22
Location			<0.001
Ward	341 [77]	41 [51]	
Intensive care unit (ICU)	100 [23]	39 [49]	
Referring surgical service			
Neurosurgery		36 [45]	
Trauma		17 [21]	
General surgery		7 [9]	
Other		20 [25]	

Table 2 Characteristics of palliative care consultations

Characteristics	Medical service, n [%]	Surgical service, n [%]	P value
Indication for consultation			0.44
Goals of care	342 [78]	57 [71]	
Symptom management	87 [20]	20 [25]	
Prognosis	3 [0.7]	0	
Family support	9 [2]	3 [4]	
Length of hospital stay prior to consultation (days, median)	5	5	0.99
Duration between consultation and hospital discharge (days, median)	4	3	0.68
Duration of palliative care consultation (days, median)	3	2	0.02

referred from medical services. Almost half of all patients referred by a surgical service were referred from the neurosurgery service.

Characteristics of palliative care consultations

Characteristics of PCCS by referring service are shown in *Table 2*. More than 70% of referrals from both medical and surgical services were to establish goals of patient

Table 3 Patient disposition

Disposition	Medical service, n [%]	Surgical service, n [%]	P value
Discharge status			0.002
Alive	351 [79]	50 [62.5]	
Deceased	94 [21]	30 [37.5]	
Discharge location			0.11
Home	111 [25]	14 [17.5]	
Home with hospice	121 [27]	20 [25]	
Skilled nursing facility	89 [20]	12 [15]	
Nursing home with hospice	15 [3]	3 [4]	
Transferred to other facility	7 [2]	1 [1]	
Other	4 [1]	0	

care. Patients from both services were referred to PCCS after a median of 5 days of in-hospital stay. There was no difference between the two groups in time from PCCS to hospital discharge. Patients referred by medical services were followed by the PCCS longer than patients referred by surgical services.

Patient disposition

Table 3 summarizes patient outcome following PCCS. There was no difference between the groups in terms of patient disposition following hospital discharge. However, a larger proportion of patients referred to PCCS by surgical services died in-hospital compared to patients referred by medical services. There was no difference between the two groups in the percentage who were discharged with hospice services (medical: 31%, surgical: 29%).

Impact of palliative care consultation on code status

The impact of PCCS on code status among patients referred by medical versus surgical services is shown in *Table 4*. Forty-four percent of all patients had a DNR order in place before PCCS. The percentage of patients with DNR orders prior to PCCS did not vary between referring services ($P=0.19$). After PCCS, the percentage of patients with DNR orders increased significantly in both referring services.

Table 4 Impact of palliative care consultation on code status

Referring service	Before consultation, n [%]		After consultation, n [%]		P value
	DNR	Full code	DNR	Full code	
	Medical service	191 [43]	250 [57]	311 [70]	
Surgical service	41 [51]	39 [49]	58 [72]	22 [28]	0.02

DNR, do-not-resuscitate.

Discussion

Palliative care is medical care focused on improving the quality of life in patients with serious and advanced illness. Since its recognition as a defined medical subspecialty in 2006, palliative medicine has seen a rapid expansion of palliative care services available to a wide variety of patients (7). The increased integration of palliative care services has not been seen across all medical disciplines, however. Despite the American College of Surgeons Statement of Principles Guiding Care at the End-of-Life originally published in 1998 and later revised to support the provision of palliative care services to a broader range of surgical patients, surgical patients often do not receive palliative care services (2,8). The disparity in utilization of PCCS between medical and surgical services was identified in our own institution; surgical services constitute only 15% of all referrals to the PCCS. The current study sought to compare utilization of PCCS among surgical *vs.* medical services.

Compared to patients referred by medical services, patients referred from surgical services tended to be older and more likely to be in an ICU. The fact that surgical patients were older may reflect a bias on the part of surgeons to consult palliative care for patients with a perceived reduced chance for recovery and/or increased perceived risk for dying. This hypothesis is supported by the fact that surgical patients referred for PCCS were more likely to be in an ICU at the time of consultation and, therefore, more critically ill than those referred by medical services. Over half of surgical patients had a DNR order in place at the time of PCCS compared to 43% of patients from medical services. Furthermore, surgical patients had a higher in-hospital mortality (37.5%) compared to medical patients (21%) ($P=0.002$). Taken together, these results suggest a (mis)perception that palliative care is reserved for

patients at end-of-life.

Two recent studies provide insight as to why surgeons may delay or defer palliative care consultation for their patients. In a study of nine trauma and neurosurgeons, Tilden *et al.* sought to identify attitudes and practices regarding palliative care consultation in their population of patients with sudden and advanced illness (9). They found that surgeons were less likely to consult palliative medicine when they believed the patient would die early in their hospital course or if the patient would likely survive. Conversely, surgeons were more likely to consult palliative medicine when they believed the patient would eventually die from their injury or if they would progress to a chronic condition and were not showing signs of progress. A survey of 358 trauma surgeons found that the single greatest perceived benefit of palliative care consultation was assistance with end-of-life issues, again highlighting the misperception that palliative care is primarily reserved for patients at end-of-life. In the same study, nearly one-third of surgeons did not consult palliative medicine due to concern that it would indicate that the surgeon was “giving up” on the patient (4). Both of these studies reflect the “cure culture” that dominates in surgery; the tendency to initiate palliation only after all curative options have been exhausted. The drive toward cure and continuation of aggressive interventions may also be spurred on by the increasing focus on surgical 30-day mortality statistics which may encourage some surgeons to pursue quantity over quality of life and other more appropriate surgical quality metrics (10). In the ICU, in particular, there exists an apparent dichotomy between the interventions designed to support life and pain associated with these interventions (11).

An alternative explanation for the increased rate of PCCS for surgical patients in the ICU compared to consults from the medical service may be a reflection of several recent studies specifically focused on the benefits of palliative care consultation for ICU patients. The most notable of these efforts has been the Improving Palliative Care in the ICU (IPAL-ICU) Project (12). Although not yet validated in a surgical ICU population, use of triggers for palliative care consultation has been advocated (13). One retrospective study using ten previously identified potential triggers for palliative care consultation in a surgical ICU revealed that only 5% of patients met the criteria for consultation based upon the triggers and did not significantly change the number of palliative care consultations (5). Additionally, use of these triggers for consultation did not alter the time from trigger to consultation or the rate of consultation for

surgical ICU patients dying in the hospital. In contrast, a more recent study by Sihra *et al.* found that institution of a screening protocol for patients who may benefit from PCCS resulted in an increase in palliative care consults of 113% in the medical ICU and increase of 51% in consults from the surgical ICU during an eight month screening period (14).

The tendency for surgeons to reserve palliative care consultations for their most critically ill and those with a perceived low likelihood of survival highlights the need for increased education in surgical palliative care. In 2009, Dunn provided a comprehensive overview of the core competencies of surgical palliative care (15). Unfortunately, despite increasing awareness and availability of palliative care services, a recent study by Amini *et al.* of surgical oncology and hepatobiliary fellows found that fellows' training in palliative care was poor compared to the training they received in other aspects of their fellowship (16). A study of surgical residents in Japan revealed that a significant proportion of surgical trainees lacked the knowledge or ability to manage common symptoms such as management of cancerous pain, respiratory symptoms, or digestive tract symptoms (17). Efforts are currently underway to establish a palliative care curriculum for surgical trainees which will be a critical step toward remediating these educational deficiencies.

In the current study, patients (or their surrogates) were more likely to change their code status from full code to DNR following PCCS. Recent literature has shown that palliative care significantly impacts patients' decision to elect DNR status (18). After reviewing palliative care consultations over a 5-year period, Bell and colleagues found that palliative care consultation was strongly associated with code status change. Patients who received a palliative care consultation to establish goals of care had a 3-fold increase in changing their code status to DNR. A study of older patients with end-stage cancer or advanced medical illness found that those who felt that end-of-life issues were relevant to them were 5.5 times more likely to want to discuss resuscitation with their physician (19). These results are consistent with those in the current study that indicate that palliative care consultation has a significant impact on clarifying patients' wishes regarding cardiopulmonary resuscitation.

There are several limitations to the current study. The study is based upon on a randomized sample implying that results may not completely reflect what may be observed the population as a whole. Furthermore, while the results of the current study may apply to our particular institution, we

cannot be certain that our findings can be generalizable to other hospital practices where different models of treatment and referral may exist.

Our results indicate that there appears to be an opportunity to increase PCCS among surgical patients, specifically among younger patients and those outside of an ICU setting. The current pattern of referral suggests a potential misconception that PCCS is primarily useful for those with critical illness and/or at end-of-life as evidenced by the significant percentage of surgical patients who died prior to discharge and already had a DNR order in place at the time of PCCS. Although triggers for palliative care consultation have not consistently been shown to increase palliative care consultations among surgical patients in an ICU, triggers or some other means of screening surgical patients outside of the ICU for palliative care needs may identify opportunities to improve symptom management and relieve the burden of serious illness among surgical patients. Whether the presence a surgeon with palliative care expertise leads to an increase in overall, or earlier, referral for PCCS among surgical services is the focus of a current investigation.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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