Results: Of the 1684 patients with suspected VTE identified, 389 (23%) had VTE. The majority of the patients (87%) had a cancer type that is classified as low risk using Khorana cancer risk stratification. One thousand and sixty-nine (64%) patients had advanced-stage and 1112 had active cancer. Univariate analysis revealed that cancer type, stage, and status are all significant predictors of VTE. Cancer diagnosis within 1 year of the ED visit was significantly associated with the occurrence of VTE (odds ratio [OR] 1.83; 95% CI 1.46–2.32; $p < 0.001$). Similar results were observed in the multivariate analysis after adjusting for age, race, and sex. Patients with very-high-risk cancer type had higher chance of having VTE compared to the low-risk cancer group (OR 3.39; 95% CI 2.06–5.60; $p < 0.001$). Nevertheless, Khorana risk groups could not discriminate between high-risk and low-risk cancer types ($p = 0.126$). Advanced cancer stage and active cancer were also significantly associated with the occurrence of VTE (OR 1.56; 95% CI 1.02–2.45; $p = 0.046$ and OR 1.33; 95% CI 1.00–1.78; $p < 0.05$, respectively).

[Aiham Qdaisat, MD
Mona Kamal, MD, PHD
Aisha Al-Breiki, MD
Sai-Ching Jim Yeung, MD, PHD
Department of Emergency Medicine, The University of Texas MD Anderson Cancer Center, Houston, Texas]

Conclusions: Using data from cancer patients evaluated for suspicion of VTE, we have successfully identified cancer-related risk factors that can help in the prediction of VTE in cancer patients presenting to the ED. Expanding our study with a larger number of patients will help to validate these results and allow inclusion of more cancer-related factors, such as metastatic sites and treatment regimens in multivariate analysis. Modification of the risk grouping of cancer types can also be investigated because the Khorana risk grouping of cancer types failed to achieve good discrimination between low-risk and high-risk cancer groups.

☐ CANCER PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT: A RETROSPECTIVE COHORT STUDY

Background: Cancer pain has historically been very difficult to manage. Despite targeted initiatives by oncologists aimed at increasing the awareness of cancer pain, improving the documentation of pain, and improving pain medication regiments, some patients continue to have significant breakthrough symptoms and therefore seek additional care in the emergency department (ED). Unfortunately, the ED has classically struggled with providing appropriate pain management in the general population. Therefore, patients with cancer who are already at risk for inadequate analgesia may be at particular risk for poor pain management when they present to the ED.

Methods: We conducted a retrospective cohort study evaluating all adult patients with active cancer presenting to the ED with a pain-related chief complaint from June 1, 2012 to December 31, 2015. This was conducted at two academic EDs that were both associated with a National Comprehensive Cancer Center–designated cancer center. We recorded type of pain medications administered, time to analgesia (bed to medication), type of cancer, Eastern Cooperative Oncology Group (ECOG) performance status, pain scores, and location/type of pain. Our outcome variables included Δpain (final pain score minus initial pain score), final pain score, ED disposition, and return ED visit within 72 h. Descriptive statistics are reported and we utilized bivariate logistic regression to evaluate differences in time to analgesia.

Results: We enrolled 483 patients with active cancer who presented to our study EDs with a pain-related chief complaint. The cohort was 53.8% female, 60.3% non-Hispanic white, and had a median ECOG score of 1. These patients had solid tumors predominantly (87.3%), with the most common cancer being breast, followed by colon and liver. The median time to analgesia was 71.5 min, and i.v. hydromorphone 1 mg was the most common first analgesic (54.9%). Only 11% of patients who required additional analgesia received an escalated dose. Most (51.3%) patients in the cohort received only one dose of pain medication. Of the 483 patients enrolled, 233 (48.2%) received a primary pain-related ED diagnosis, the most common was abdominal pain (35.6%), followed by diffuse/non-specific pain (19.7%) and musculoskeletal (MSK) pain (17.2%). Patients with MSK pain had the highest final pain scores (mean 5.63) and the least improvement in pain (mean Δ –2.1), though patients with diffuse/non-specific pain were most likely to be admitted (58.7%). Patients who had a delay in analgesia (> 180 min) were more likely to be admitted vs. those who received analgesia in < 30 min ($p = 0.048$). Overall, 39.3% of patients were admitted, with 13% of the discharged patients requiring a second visit within 72 h (48.6% of which were admitted on this second visit).

[Christopher J. Coyne, MD, MPH
Vanessa Resley, BS
Ayesha Khan, BS
Rebecca Shatsky, MD
*Department of Emergency Medicine, University of California San Diego Health Systems, San Diego, California
†Department of Internal Medicine, Division of Hematology/Oncology, University of California San Diego Health Systems, San Diego, California]

Conclusions: The management of pain in patients with active cancer has classically been very difficult, and this appears to be true in the ED setting as well. Overall, we encountered significant delays in analgesia, as well as underdosing. MSK pain appeared to be particularly difficult to manage, while diffuse/non-specific pain led to the highest percentage of admissions. Those patients who encountered long delays in analgesia were significantly more likely to be admitted. We hope that these results will help target future interventions to improve the care of cancer pain in the ED.

☐ SPONTANEOUS AORTIC THROMBOSIS IN THE ONCOLOGIC POPULATION: A SINGLE-CENTER EXPERIENCE

Background: Spontaneous aortic thrombosis (SAT), defined as new-onset aortic mural thrombosis without underlying atherosclerosis or aneurysmal degeneration, is uncommon and multifactorial in patients with active oncologic diagnoses. Malignancy-related hypercoagulability and platinum-based chemotherapy have been linked to SAT, however, data are limited. Additionally, optimal management for these patients is unclear.

Methods: The records of patients with SAT at a single tertiary care institution from 2015 to 2018 were retrospectively reviewed. Patients without follow-up imaging were excluded.

Results: Records of 11 patients were identified, 6 (55%) of whom were male, with a mean age of 63 years (interquartile range 56–70). Seven (64%) patients reported a positive smoking history. Nine (82%) patients had been treated recently for a variety of solid organ cancers, and 2 (18%) were under care for hematologic malignancies. The majority (82%) of patients had received prior chemotherapy, in 6 (55%) it included platinum-based chemotherapy, while targeted immunotherapy was applied in 4 (36%) patients. There were 5 (45%) patients in the cohort that had received prior radiation therapy. The majority (82%) of patients had recent computed tomography imaging (median of 2.6 months prior), at which time there was no evidence of SAT. All patients were managed initially with therapeutic anticoagulation for a median duration of 2.8 months. SAT was an incidental finding in the majority of patients, with only 4 (36%) patients symptomatic at the time of diagnosis. Two patients who presented with acute limb ischemia were treated with endovascular aortic thrombectomy and open lower extremity thromboembolectomy, while the other two presented with scattered abdominal and limb microembolization and were therefore treated conservatively with anticoagulation. All four of these patients were noted to have resolution of their symptoms, and there was no recurrence at any time during follow-up. All 7 (64%) asymptomatic patients were treated with therapeutic anticoagulation, and were followed with serial imaging and clinical examinations. Follow-up imaging showed improvement or complete resolution of SAT in 6 (86%) of patients. None of the patients developed symptoms, and in the 4 patients who were noted to have complete resolution of SAT, the time to resolution was 1.5 months.

[Erin M. Corsini, MD
Lihua Lai
Jacqueline Lewis
Kyle G. Mitchell, MD
Ara A. Vaporciyan, MD
Tam T. Huynh, MD
George T. Pisimisis, MD
Department of Thoracic and Cardiovascular Surgery, University of Texas MD Anderson Cancer Center, Houston, Texas]

Conclusions: SAT is a challenging problem with multifactorial etiology in the oncologic patients. In most cases, prompt medical management can be safe and effective, without need for surgical intervention or long-term anticoagulation. Larger prospective series are needed to better understand the underlying mechanisms and potentially prevent SAT in cancer patients.

☐ PATIENT NAVIGATION FOR COMPLEX CARE PATIENTS IN THE EMERGENCY DEPARTMENT: A SURVEY OF ONCOLOGY PATIENT NAVIGATORS

Background: Emergency departments (EDs) care for patients with complex medical problems who require a coordinated care approach. Patient navigation services, which help assist patients with care coordination, have been widely implemented for patients with cancer in a variety of settings, but this approach has not been described in the ED. We sought to better understand the potential for ED-based patient navigation services from the perspective of individuals currently providing these services in other settings.

Methods: A survey was conducted of participants at a regional conference for patient navigation services of patients with cancer.

Results: Eighty-five completed surveys were returned, representing a response rate of 64%. Ninety-one percent of responses indicated that lay navigation services would be either very helpful or moderately helpful for ED patients with cancer. Coordination of care, the provision of emotional support, and education relevant to their medical conditions during the ED visit were identified as priorities for an ED-based lay navigation program. The lack of navigators with experience in the ED, the physical space constraints of the ED, and the time constraints associated with an ED visit were identified as the primary barriers to establishing a lay navigation program in the ED.

[Jason J. Bischof, MD
Jean B. Sellers, MSN, RN
Andrew W. Phillips, MD, MED
James J. Petrongelli, Jr.
Amy E. Stuckey, MSW
Timothy F. Platts-Mills, MD
*Department of Emergency Medicine, University of North Carolina School of Medicine, Chapel Hill, North Carolina
†Department of Emergency Medicine, The Ohio State University Wexner Medical Center, Columbus, Ohio
‡Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina
§Department of Care Management, University of North Carolina Hospitals, Chapel Hill, North Carolina]

Conclusions: These results identify the care priorities and barriers to be overcome during the development of an ED-based lay navigation program from the perspective of those currently providing patient navigator services.

☐ EDITORIAL ON THE CURRENT STATUS OF THE RESIDENCY EDUCATION ON ONCOLOGIC EMERGENCIES

Cancer is the second leading cause of death in the United States. Furthermore, it contributes to a significant number of emergency department (ED) visits, and patients with cancer are much more likely to bounce back to the ED than the general population. Cancer patients are often immunosuppressed and commonly have altered physiology that predisposes them to a variety of complex pathophysiologic conditions. In a renaissance era of novel cancer therapies (including checkpoint inhibitors and chimeric antigen receptor–modified T-cell [CAR-T] therapy), it is imperative that emergency physicians (EPs) are educated on the common complications from cancer and cancer therapies.

A recent abstract presented at the 2019 MD Anderson Oncologic Emergencies Conference by Rajha et al. demonstrated that there may be some significant gaps in the emergency medicine education of oncologic emergencies (1). Specifically, a questionnaire was sent to several emergency