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## Between the Aorta and Superior Mesenteric Artery: A Tale of Duodenal Compression

Alexandra Fiedler

*University of Nebraska Medical Center*

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## Between the Aorta and Superior Mesenteric Artery: A Tale of Duodenal Compression

Abstract

NA

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**Conclusion:** VDD is correlated to depression, with the vast majority of the evidence in sleep disorder, fatigue, and suicidal behaviors.

Screening VDD in patients' PHQ-9 positive for the above items may provide higher positive predictive value.

#### #44. Establishing the Problem: Identifying Barriers to Workflow Among Internal Medicine Resident Physicians Within the VA Medical Center

Joshua Warner<sup>1</sup>, Evan Symons<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

**Mentor:** Evan Symons

**Program:** Internal Medicine

**Type:** Original Research

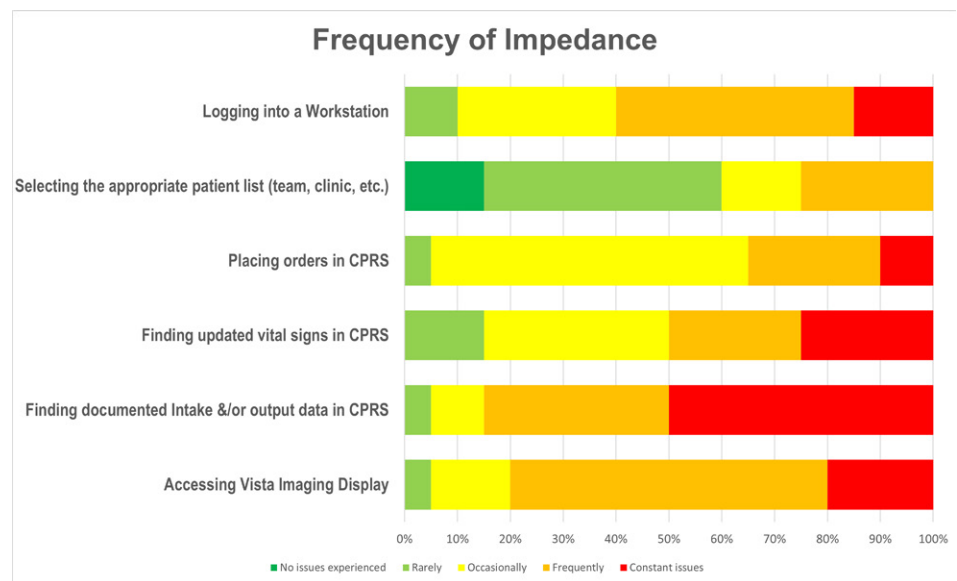
**Background:** Workflow inefficiencies, particularly those related to the electronic health record 'CPRS', have been a major focus in feedback from Internal Medicine (IM) resident physicians working at the Omaha Veterans' Affairs (VA) facility. We surveyed current IM resident physicians to elucidate which factors have been especially cumbersome to daily workflow at the Omaha VA facility.

**Methods:** We drafted a list of CPRS components and institutional variables, which were then formulated into a Likert-style questionnaire. Participants were asked to gauge how frequently they had difficulty using each item. Additionally, participants ranked their level of agreement with statements regarding daily tasks essential to medical practice. These questions were distributed to current IM residents using Microsoft Forms. A public link was used to preserve anonymity.

**Results:** A total of 21 responses were obtained (91 participants total, 23% response rate) which is comparable to established survey response rates. Locating intake and

output data is challenging for most respondents (50% responding 'constant issues'; 35% responding issues occur 'frequently'). Difficulty logging onto a workstation was experienced 'occasionally' or greater in 90% of survey participants. (**Figure 1**) By comparison, patient list selection, reviewing notes, and forwarding pagers cause less frequent impediments.

**Conclusion:** A majority of IM resident physicians experience disruptions to daily workflow by potentially modifiable factors at the Omaha VA facility. Interventions to mitigate these factors can be prioritized based on the percentage of residents affected and the relative event frequency.



**Figure 1.** Participant responses to the prompt: "Please estimate how often you have experienced difficulty when using each of the following items."

#### #45. Prosthetic Valve Endocarditis With *Cardiobacterium Hominis*: A Case Report

Kaci Griffin<sup>1</sup>, Timothy Jang<sup>2</sup>, Rees Adomako<sup>3</sup>, Jasmine Marcelin<sup>2</sup>, Jonathan H. Ryder<sup>2</sup>

<sup>1</sup>Department of Internal Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

<sup>2</sup>Department of Internal Medicine, Division of Infectious Diseases, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

<sup>3</sup>Department of Internal Medicine, Division of Cardiovascular Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

**Mentor:** Jonathan H. Ryder

**Program:** Internal Medicine

**Type:** Case Report

**Background:** *Cardiobacterium hominis* (*C. hominis*) is an uncommon cause of infective endocarditis and often presents sub-acutely with fevers, cardiac murmurs, or embolic phenomena. We present a rare case of *C. hominis* infective prosthetic valve endocarditis that presented with new onset atrial flutter and systemic emboli.

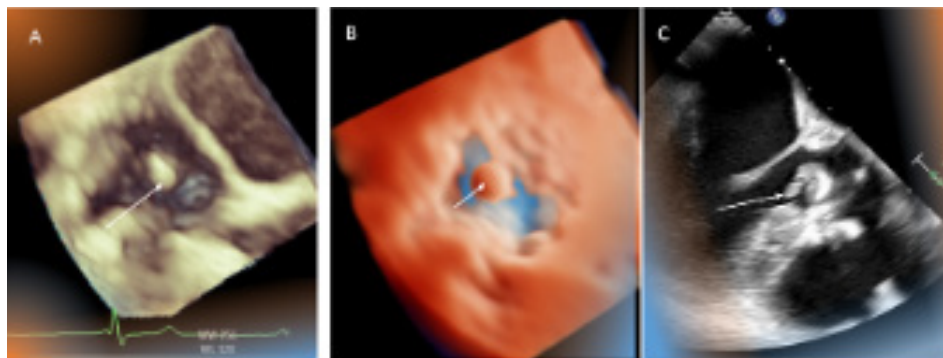
**Case:** A 38-year-old male presented to the emergency department with palpitations, shortness of breath, and chest tightness and was found to be in atrial flutter. He underwent a transesophageal echocardiogram guided cardioversion and was incidentally found to have a one-centimeter echodensity on the ventricular side of his prosthetic aortic valve (**Figure 1**). He had a prior history of native valve endocarditis secondary to methicillin-susceptible *Staphylococcus aureus* related to injection drug use necessitating aortic and tricuspid valve replacements. He had refrained from injection drug use since prior to his

last episode of endocarditis. He did not have any common signs or symptoms associated with endocarditis, such as fevers, chills, or new murmurs. Blood cultures eventually grew *C. hominis*, and he was successfully treated with 7 weeks of ceftriaxone prior to a re-do sternotomy with mechanical aortic and bioprosthetic tricuspid valve replacements.

**Conclusion:** *Cardiobacterium hominis* is a rare but important to recognize cause of infective endocarditis with an indolent presentation that often leads to delayed diagnoses. Clinicians should have a high index

of suspicion for endocarditis in patients with prosthetic valves and systemic or cardiac-related symptoms.

**Figure 1.** Transesophageal echocardiogram. **A)** 3D volume rendered view from the left ventricular outflow tract shows 1cm vegetation (white arrow) attached to the ventricular side of the bioprosthetic aortic valve leaflet. **B)** True view rendering from the same perspective redemonstrates the vegetation (white arrow) highlighting depth perspective. **C)** Off axis mid-esophageal 3 chamber view clearly shows the vegetation (white arrow) after avoiding acoustic shadowing artifact.



## #46. Report Study – A Comparison of Self-Reported Alcohol Intake Compared to Phosphatidylethanol Value as a Predictor for Return to Alcohol Use

**Kevin Brittan**<sup>1</sup>, Kyle Scholten<sup>1</sup>, Luis Zuniga<sup>1</sup>, Kaeli Samson<sup>2</sup>, Patrick Twohig<sup>3</sup>, Thoetchai Bee Peeraphatdit<sup>4</sup>, Marco Olivera-Martinez<sup>4</sup>

<sup>1</sup>Department of Internal Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

<sup>2</sup>Department of Biostatistics, College of Public Health, University of Nebraska Medical Center, Omaha, NE, USA

<sup>3</sup>Department of Gastroenterology & Hepatology, College of Medicine, University of Rochester, Rochester, NY, USA

<sup>4</sup>Department of Internal Medicine, Division of Gastroenterology & Hepatology, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

**Mentor:** Marco Olivera-Martinez

**Program:** Internal Medicine

**Type:** Original Research

**Background:** Serum phosphatidylethanol (PEth) is a biomarker utilized to evaluate alcohol ingestion over a two to four-week period. Discrepancies between self-reported alcohol intake and PEth values have yet to be evaluated in risk for return to alcohol use. This study aims to assess the predictive value of self-reported alcohol intake versus PEth value in predicting a return to alcohol use.

**Methods:** Inclusion criteria included ICD codes for the diagnosis of chronic liver disease, at least one positive PEth (greater than 10 ng/mL), and two total PEth tests. Patient-reported drinks per week were categorized as light (fewer than 2), moderate (2-14), or heavy (more than 14). PEth data was

**Table 1.** Return to Alcohol Use of Self-Reported Alcohol Use vs PEth.

Self-Reported Alcohol Use	PEth			
	Light (%)	Moderate (%)	Heavy (%)	Total (%)
<b>Light</b>	5/15 (33.3)	28/51 (54.9)	31/35 (88.6)	64/101 (63.4)
<b>Moderate</b>	0/4 (0.0)	8/15 (53.3)	14/16 (87.5)	22/35 (62.9)
<b>Heavy</b>	1/1 (100)	4/11 (36.4)	11/22 (50.0)	16/34 (47.1)
<b>Total</b>	6/20 (30.0)	40/77 (51.9)	56/73 (76.7)	102/170 (60.0)

N = Return to Alcohol Use/No Return to Alcohol Use, (Percent of Return to Alcohol Use)

categorized as light ( $\leq 20$  ng/mL), moderate (21-200 ng/mL), or heavy ( $> 200$  ng/mL). Patients were categorized as underreporters if the self-report value was less than the associated first PEth or accurate / overreporter if the self-report value was equal to or higher than their first PEth value.

**Results:** There were 60.0% of patients underreporting alcohol intake, 30.6% were equivalent with PEth values, and 9.4% over-reporting alcohol intake compared to PEth values. Underreporting was associated with

higher rates of return to alcohol use (71.6% vs 42.7%,  $p=0.0002$ ). The odds ratio of return to alcohol use with underreporting alcohol intake was 3.39, 95% CI (1.78, 6.45;  $p=0.0002$ ) (**Table 1**).

**Conclusion:** This study is the first to evaluate return to alcohol use based on self-reported alcohol use versus PEth values. We found a significant association between underreporting and return to alcohol use, with an increased incidence and odds ratio for return to alcohol use.

## #47. Outcome of Organ Procurement and Transplantation Network Policy Allowing for Waiting Time Modification for Candidates Affected by Race-Inclusive eGFR Calculations

**Debra Wekesa**<sup>1</sup>, Scott Westphal<sup>1</sup>, Clifford Miles<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

**Mentors:** Scott Westphal, Clifford Miles

**Program:** Internal Medicine

**Type:** Original Research

**Background:** Black patients have a high burden of kidney disease yet experience lower rates of waitlisting and kidney transplantation. In 2023, the OPTN implemented a policy whereby registered black transplant candidates could receive waiting time adjustment

if a prior race-inclusive eGFR calculation yielded values such that “non-African American” eGFR was  $\leq 20$  ml/min, but the “African American” modified eGFR was  $> 20$  ml/min.

**Methods:** Our transplant program identified potential candidates, and through internal EMR review, and communication with patients, nephrologists, and PCPs, eligible candidates were identified. The impact of this policy change was assessed after one month.

**Results:** Thirty-seven adult patients on our waitlist had self-identified as Black/African American. Nineteen (51.4%) patients with historic race-inclusive GFR estimates were found that allowed for waiting time modification. In these patients, a mean of  $753 \pm 788$  and median of 407 (327, 901) additional days of waiting time was added. The maximum time added for a single patient was 3,323 days (9.1 years). Four of the nineteen (21%) candidates received a deceased donor kidney

transplant within 1 month of waiting time modification.

**Conclusion:** Greater than 50% of patients were eligible for waiting time addition, with an average of >2 years of waiting time added per eligible candidate. Importantly, this modification yielded near immediate impact, with

>20% of patients receiving a transplant within the first month of the modification. While the number of black patients on our waiting list is small relative to many centers, this early assessment of the policy impact demonstrates the potential of its intended effects.

## #51. Needs Assessment of Internal Medicine Learners in Hospital Medicine Competencies

**Matt Kretschmar**<sup>1</sup>, Kyle Scholton<sup>1</sup>, Trek Langenhan<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

**Mentor:** Trek Langenhan

**Program:** Internal Medicine

**Type:** Original Research

**Background:** Hospital medicine (HM) is evolving to satisfy health system needs that have been historically underemphasized in Internal Medicine (IM) residency training (inpatient safety, quality, and efficiency). The evolution of the hospitalist's responsibilities has potentially led to under-prepared IM graduates. Data assessing IM learner confidence/desire for more instruction in these evolving HM competencies is limited. This study aims to gather this data.

**Methods:** Residents (PGY-1-PGY-4) in the

UNMC IM residency programs (Traditional, Primary Care, and Medicine-Pediatrics) were surveyed from 4/13/23-7/15/23. Residents were asked if they desired more training in the following HM competency domains: procedures, Point-of-care ultrasound (POCUS), clinical skills, palliative care, transitions of care, patient-level competencies, and healthcare system level competencies. Within these 7 HM competencies, residents were asked to identify their confidence level in related sub-competencies. Forty-four specific sub-competencies were evaluated.

**Results:** Confidence levels for UNMC IM trainees were lowest in procedures (31%), POCUS (36%), and healthcare system level competencies (44%). Confidence levels were

highest in transitions of care (81%), patient-level competencies (76%), and clinical skills (72%). Desire for more teaching was highest for POCUS (80.5%), procedures (64%), and healthcare system level competencies (60%).

**Conclusion:** UNMC IM residents lack confidence in procedural skills, POCUS, and healthcare system level competencies. A desire for more training in these areas reflects this lack of confidence. UNMC IM residents have a high level of confidence in transitions of care, patient-level competencies, and clinical skills. Overall, our data suggests UNMC's residency program's HM curriculum is strong but may benefit from modification to address areas where residents lack confidence.

## #52. Between the Aorta and Superior Mesenteric Artery: A Tale of Duodenal Compression

**Alexandra Fiedler**<sup>1</sup>, Osmaan Shokoor<sup>2</sup>, Luis Zuniga<sup>1</sup>, Peter Mannon<sup>3</sup>

<sup>1</sup>Department of Internal Medicine, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

<sup>2</sup>College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

<sup>3</sup>Department of Internal Medicine, Division of Gastroenterology & Hepatology, College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA

**Mentor:** Peter Mannon

**Program:** Internal Medicine

**Type:** Case Report

**Background:** The superior mesenteric artery (SMA), normally embedded in adipose and lymphatic tissue, arises anteriorly from the aorta, and extends caudally at an acute angle (aortomesenteric angle, normally 38-65°). SMA syndrome, an uncommon and potentially life-threatening condition, can occur when the supporting fat pad diminishes letting the SMA compress the 3rd portion of the duodenum (D3) as it passes between the aorta and SMA. We present a severe case of SMA syndrome that questions whether weight loss was the cause or effect of the syndrome.

**Case:** A 69-year-old man presented with several weeks of worsening epigastric abdominal pain, nausea, and vomiting. Months prior, he started experiencing these symptoms

intermittently and they had progressively intensified. He associated certain foods as triggers for these symptoms. Despite a deliberate and gradual fifty-pound weight loss through two decades of lifestyle modifications, he abruptly and unintentionally lost ten pounds one month before presenting. Computed tomography demonstrated a 10° aortomesenteric angle and D3 narrowing with proximal dilation (**Figure 1**). Nasogastric decompression removed over a liter of gastric contents. Esophagogastroduodenoscopy revealed severe esophagitis, gastric erosions and ulcerations, and luminal narrowing of the distal duodenum consistent with extrinsic compression.

**Conclusion:** The diagnosis of SMA syndrome relies on clinical symptoms and supporting radiologic findings, with the most sensitive finding being an aortomesenteric angle  $\leq 25^\circ$ , which was present in this case. It was difficult to ascribe the indolent symptoms in the months prior as causing his weight loss or if the weight loss was a result of early



**Figure 1.** Features suggestive of superior mesenteric artery (SMA) syndrome including evidence of gastric and duodenal obstruction, aortomesenteric angle of  $\leq 25^\circ$ , and aortomesenteric distance of  $< 8-10$  mm as shown above.

SMA syndrome and its attendant feeding difficulties.