Winter 2023

The Perspective

A quarterly newsletter published by the National Med-Peds Residents’ Association in collaboration with the Med-Peds Program Directors Association & the AAP Section on Med-Peds

What’s Inside

1 // 2022-2023 Executive Board
2 // President’s Welcome
3 // From the AAP
5 // Classifieds
7 // Webinars
8 // Spotlight On
9 // Med-Ed Corner
10 // Essays
22 // Cases
2022-2023 executive board

President
Maria Slow

President-Elect
Stephanie Lee

Past President
Sophia Urban

Treasurer
John Tepper

Secretary
Ashley Demory

PR Secretary
Meera Iyengar

Webmaster
Alexis Tchaconas

MPAC Liaison
Juhi Ramchandani

Dir Community Service/Outreach
Salima Sewani

Dir Recruitment/Med Students
Lawrence Rolle

Dir Health Policy/Advocacy
Nicole Damari

Dir Professional Advancement
Nathan VanderVeen

Dir DEI Subcommittee
Alana Nichols

Dir Elect DEI Subcommittee
Amara Davidson
Dear Med Peds Family,

We are finally nearing the end of winter, with the days becoming longer and warmer. Despite the new hope of spring, it is with a heavy heart that I would like to take a moment to reflect on yet another resident life lost to suicide. It is well known that suicide is the second leading cause of death residents here in the United States. We here at NMPRA want to see each and every one of our members thrive throughout training and in their careers. Please reach out to someone you trust at your institution that can point you to resources if you are struggling. The National suicide hotline phone number has changed recently and is now 988. We would also like to call attention to the Physician Support Line. This is a free resource for US physicians and medical students that is free, confidential, and anonymous. They are available Monday – Friday from 8:00 AM – 12:00 AM EST and can be reached at 1 (888) 409-0141 or by visiting www.physiciansupportline.com.

As a Board, we have been excited to share lots of new webinars with you this semester from advocacy to professional development to rank list planning for current Med Peds applicants. The project I am most excited about this semester is sending our very own Dr. Ashley Demory to the Annual Medical Education Conference (AMEC) in Hartford, CT to highlight our specialty on a national stage to the Student National Medical Association (SNMA).

It is with great anticipation that we look forward to seeing all the new faces that matched in Med Peds this year. I am continually amazed by the accomplishments of the incredible group of people that choose to pursue a career in Med Peds. Be on the look-out in the coming months for applications for our Board of Directors. This is a great way to give back to the Med Peds community on a national scale and make a lasting impact on the specialty. Applications will be sent via our list-serv. If you have any questions regarding specific positions, do not hesitate to reach out via email to the current board member.

Joyfully,
Maria Siow, MD
NMPRA President 2022-2023
president@medpeds.org
The Med-Peds community needs your help.

In December, the Section on Med-Peds sent out a comprehensive workforce survey. Please look in your email, junk or spam for an email from lbarone@aap.org via SurveyMonkey

Subject: Medicine Pediatrics Workforce Survey

We need every Med-Peds doctor regardless of your memberships to fill out the survey; even if you are subspecialized, retired, or no longer involved in MedPeds.

The results of the survey are vitally important to everyone.
-- It has been 10 years since the last Med-Peds Workforce was done; a lot has happened in 10 years!
-- It will show payors the various roles of Med-Peds in the care of children and adults.
-- It will help in legislative issues such as healthcare policy.
-- It will increase interest in pursuing Med-Peds and highlight available opportunities.

PLEASE fill out the survey! Help Med-Peds!

If you did not receive the survey or have questions, please contact Holly Ruch-Ross at hruchross@gmail.com.

And now some other Med-Peds news.

Shout out to Nate VanderVeen, Angela Noble, Andrea Lauffer, AAP SOHM, SHM NMPRA, and others for organizing the "Med/Peds Hospitalist: Do I need a PHM Fellowship?" webinar on February 6. Lots of great advice to help Med-Peds residents interested in Med-Peds hospital medicine navigate through whether or not to do a Pediatric Hospitalist Medicine fellowship.

Through NMPRA DEI, SOMP, and MPPDA, I hope all of you will attend the SNMA and LMSA panel session on April 6. Thank you NMPRA for all of your work in DEI.

ACP 2023 will be in sunny San Diego this year. The Section on Med-Peds Session will be highlighting an educational session on “Attention Deficit-Hyperactivity Disorder (ADHD) and Management”. This is a topic that we feel will appeal to a broad range of practitioners. This will be followed by a Med-Peds reception. The Section on Med-Peds and myself are so excited to be able to meet with everyone in San Diego and to chat about what you are doing. If you have not already done so, please register at https://annualmeeting.acponline.org. In the Fall during AAP National Conference October 20-24, 2023 in Washington DC, we will be doing something totally new and collaborating with the Section on Simulation!
Well-being remains a priority for the Section of Med-Peds. If you have not already done so, the tips for wellness and preventative care can be found on Med-Peds AAP collaborative site (Section on Medicine-Pediatrics (Med-Peds) Home (aap.org)). What domains do you do for your well being?

Finally, are you looking for a place to publish scholarly activity? Consider a submission to Cureus and the Med-Peds Academic Channel (www.Cureus.com). The submission process is free if you submit to the channel!

Hope to see you soon! As always, if you have any topics that you would like the SOMP to address, please feel free to reach out.

Jayne

Jayne Barr MD MPH FAAP FACP FHM
Chair, AAP Section on Med-Peds
Mark your calendars for:

**NMPRA Community Service and Spirit Week**

~Sunday April 16, 2023 - Saturday April 22, 2023~

May the program with the most spirit and most money raised win!

Stay tuned for the cause.

**Spirit Week Schedule:**

**MARVEL (Superhero) Monday**

Tie-dye Tuesday

**Wacky Sock Wednesday**

**Throwback Thursday**

**Fun (Patterns) Friday**
Introducing the new Med-Peds Academic Channel (MPAC)!!

- Forum created to promote scientific advancement and dissemination of knowledge in the field of Med-Peds

- Peer-reviewed publications on various topics unique to the practice of Med-Peds

- Open to submissions including original articles, review articles, case reports, technical reports, editorials, and posters!!

Check out more details on the website:

http://www.cureus.com/academicchannels

**Please submit under “academic channels” to submit to MPAC rather than to cureus.com**
NMPRA has been excited to host a variety of webinars the past few months. We are eager to hear your feedback! Please email communications@medpeds.org to let us know how we are doing and also if you have ideas for future webinars.

**NMPRA Presents:**

"Sparking the Fire in Adult Congenital Heart Disease"

**Date and Time:**
Feb 10, 2023 06:30 PM Eastern Time (US and Canada)

This series is still ongoing! Follow us on social media and join our listserv to stay up to date - you won't want to miss it!
The Perspectiv 

Spotlight on

Morehouse School of Medicine Med-Peds Interest Group
(Winner of outstanding medical school interest group at the 2022 NMPRA conference!)

The Internal Medicine-Pediatrics (Med-Peds) Interest Group at Morehouse School of Medicine was founded in 2022 by (pictured left to right) Tempeste Walker (MS3), Brittany Notice (MS2), Janele Tanghel (MS2), Nicholas Wilson (MS2), Janya Sims (MS2), Karimah Rokins (MS2), Idara Johnson (MS2), Jordan Howard (not pictured), and advisor Dr. Cinnamon Bradley (pictured bottom right).

With an emphasis on community engagement and professional advancement, the Med-Peds Interest Group at Morehouse has served its student body by promoting DEI panels in medicine, hosting career sessions with Med-Peds residents and physicians, and setting up mentoring opportunities for those interested in the specialty. Outside of campus, the Med-Peds Interest Group at MSM has worked with the Atlanta community to provide food donations to the Atlanta Food Drive, do restoration clean up of nearby trails in the West End of Atlanta, and volunteering at local health fairs to help inform others of the benefits of healthy living.

Whether it is career advancement through a research panel or a community service event in Atlanta, the MSM Med-Peds Interest Group prides itself on promoting the specialty while engaging with the community.
UMass Med-Peds has reinvigorated our quarterly journal club, after a hiatus due to the pandemic. We assign a representative from each class to organize a journal club each quarter—they are in charge of picking up a med-peds friendly article, and then inviting med-peds faculty to join us for dinner, drinks and a conversation about the article. We have collaborated with attendings from allergy/immunology, cardiology, and primary care to help facilitate robust and meaningful discussions. We have been lucky enough to have our core faculty host these events at their homes. Above all, it is a great opportunity to spend time with each other and faculty outside of the work environment!
Today, congenital heart disease is more prevalent in adults than children, a fact that has often been without adequate representation in the social, medical, and literary world for individuals with adult congenital heart disease (ACHD). In January of this year, two mental health professionals who both live with congenital heart conditions (CHC) \(^*\) sought to change that with their new book, *Healing Hearts and Minds: A Holistic Approach to Coping Well with Congenital Heart Disease* \(^*\)Note: CHC is a preferred term by the congenital heart community over CHD, or congenital heart disease, which is a shared abbreviation with coronary heart disease and can create documentation confusion). Together, and with the help of the larger ACHD medical and patient community, they have created a comprehensive, evidence-based resource of challenges, especially psychological, faced by individuals with CHC both to empower patients and to help guide their healthcare teams. This includes challenges general to those living with medically complex disease such as ableism, social isolation, depression, and body image issues, and those specific to ACHD patients such as the confusing overlapping symptomology of cardiac events and anxiety disorders and the unique uncertainty and grief that comes with being “pioneers” in the field. In addition to offering various coping strategies for patients to deal
with these challenges, the book calls on the healthcare team to provide patient-centered care through a psychologically safe lens.

From a medical student perspective, I found this book to be an invaluable opportunity to better understand the lived experiences of my past and future patients and with inherent relevance to Med-Peds. While I have learned as a student that it is important to elicit comprehensive patient stories to ensure proper and consistent medical care, this book serves as a reminder that these stories are also courageous gifts from our medically complex patients who are willing to retell their stories despite the emotional toll it may take to do so. It is a supporting justification that no patient history should be taken for granted.

In addition, this book in many ways foretells the evolving role of providers for ACHD and medically complex patients, many of whom would benefit from mental health services but are still unable to access this care. Thus, as Med-Peds we have an increasing call to action to provide more comprehensive care that addresses the psychosocial aspects of our patients’ health. The presence of compassion and empathy are large reasons I went into medicine, and it makes me proud to be applying to a field whose service to patients requires increased sensitivity.

However, after reading this book I continue to think about what is needed to create a psychologically safe environment for our patients. The book mentions that one of the main instances that can build physician trust amongst this medically complex patient population is when providers are willing to admit that they need to consult another colleague/specialist to better understand a patient’s care. This demonstrates emotional intelligence and security on the part of the physician, which is supported by parts of the book where the authors remind providers that empathetic practice comes from practicing our own self-care. Essentially, we must create psychologically safe environments for ourselves to provide this for our patients. We must create space to feel community, share our experiences, be validated, and process our emotions, not only for ourselves but also to ensure the best outcomes for our patients.

Luckily, psychological safety is something I often heard addressed during my Med-Peds interview trail and was often evident even within my interview experiences. Although I am biased, I truly do believe that Med-Peds is paving the path to increase psychological safety within resident training and is leading these efforts amongst residency specialties. Psychological safety is clearly becoming increasingly essential to various aspects of medical and resident education, from allowing trainees to more openly voice their individual needs to creating necessary changes to the healthcare system. This book is a testament to the importance of maintaining this forward momentum.

“Hospitals and our medical team are likely a significant and consistent part of our lives and hold unique meaning and purpose for us. We probably have mixed feelings about this because despite being associated with feeling unwell and perhaps pain and trauma, they also offer us hope, treatment, safety, and sanctuary. Our healthcare journey is lifelong; as such, every medical encounter matters” - Healing Hearts and Minds: A Holistic Approach to Coping Well with Congenital Heart Disease (2023)
The Management of Hypoplastic Left Heart Syndrome

I squinted in the darkness, against artificial lamplight, to read the textbook chapter’s title:

The Management of Hypoplastic Left Heart Syndrome

Trying to prepare for this morning’s case, I read the same paragraph. Again. And again.

Hypoplastic left heart syndrome is a congenital heart disease defined by an anatomic and functional inadequacy of the left side of the heart, with nonviability of the left ventricle to perform systemic perfusion. It is lethal if not treated. A strategy for survival currently is well established, with continuing improvement in outcomes over the past 30 years.

Armed with a pen and paper, I tried my hardest to scribble the complex congenital circuit from memory, only to re-read, and re-read, and re-read. As the early sun’s rays stained the carpet of my sublet bedroom, I threw the textbook in my bag, defeated. I had to go. Thirty minutes was not enough time to understand the management of hypoplastic left heart syndrome.

***

“Can you tell me what you understand about hypoplastic left hearts and single ventricle systems?” My blank stare said it all. The attending yawned.

“You’re not expected to know anything, don’t worry. It’s a hard topic, especially at 6 a.m. It’s when…”

He explained it. I still didn’t understand.

We were standing outside of the patient’s room in the ICU. As the attending finished the last few drops of his coffee, he motioned for me to step away from the room’s glass door.

“These children spend their lives in and out of the hospital.” He lowered his voice. “It’s a difficult life. These patients still need a heart transplant as adolescents. The journey leaves families frustrated, tired, and in debt. I’m not sure they understand the extent of it when they consent to this first surgery. The management of hypoplastic left hearts and single ventricle systems is conceptually hard for medical providers to understand. Now imagine what it’s like as a new parent with little medical background.”

Then, without prompting, he slid open the glass door and walked in, waving at me to follow, preparing to consent the patient for today’s Norwood procedure.

Mom was asleep on the couch. Dad was next to the sterile crib, drying wet eyes. The baby was hard to find.
Premature, she looked swallowed up by tubes, lines, and machines.

They had dreamed of parenthood. They had dreamed of joyful nights of breastfeeding, tummy time, and watching their daughter grow.

Instead, in this new reality, they found sleepless nights, feeding tubes, and the cries of machines keeping their daughter alive. They typed “management of hypoplastic left heart syndrome,” into Google. They prayed for clarity. They consented to every surgery and procedure. Dad was working three jobs. The debt, depression, and frustration had already set in, but those were small prices to pay.

Today, we wheeled their daughter away towards the ORs. They prayed that, tomorrow, they'd be wheeling her into her nursery.

***

The next day, just a few ICU doors down, I rounded on a teenager with a pediatric cardiologist. This patient had a failing Fontan, and was found ineligible for a heart transplant. Today’s priorities? A goals of care discussion with Palliative Care.

Mom was asleep on the couch. Dad was braiding his daughter’s hair. The teenager sat on the edge of the bed. She gripped the bed frame with one blue hand, her IV pole with the other.

The three of them hugged the attending, her doctor since birth. The light chatter and laughter of old friends quickly faded. The real conversation started.

Mom covered her face with her hands. How had years of fighting, medical debt, and raising a daughter in hospitals led to this? There had to be more that they could do.

The teenager sat on the edge of the hospital bed, expression stiff. She just nodded, understanding. Her parents took turns wiping away her silent tears.

This, to them, was parenthood.

***

My last patient with hypoplastic left heart syndrome was a 35-year-old man. He was dressed in jeans and a t-shirt. He was healthy.

“I’ve been feeling great, doc!” He told the adult congenital cardiologist in clinic. “People have a hard time believing me when I tell them I’ve had five heart surgeries, including a heart transplant.”

On his way out, he hugged the doctor, and said:

“Thanks for not giving up on me!”

***

Here’s what I understand about the management of hypoplastic left hearts:

It’s complicated.

I couldn’t find the chapter in the textbook on complex lived experiences
and the uncertainty of variable outcomes. These patients, in trying to do right by themselves and their families, carry a weight.

A hope.

I hope I will grow in my ability to support my patients in navigating this gray space. Then maybe - just maybe - I’ll understand how to manage hypoplastic left hearts and single ventricle systems.
Perspective for my Future Self

Dear Future Med/Peds Dr. Priya Nair,

I am writing to you from the depths of clinical rotations in our third year of medical school to share with you the type of resident I want you to be. Remember Kindness. I know the feeling of exhaustion is taking over and the sense of being overwhelmed doesn’t fade, but people around you are watching, eager to learn and grow from you. Students look up to you. You are the liaison between the physician and medical student. The voice for the students who don’t feel heard and the stepping stone of hope to keep the curiosity of learning alive without intimidation lurking. Remember the neurology resident who used kindness as the foundation of your relationship. The one who cultivated comfort in the mistakes. Despite the fear of having mom’s new cancer diagnosis dominate the MS1 neurology unit, her gentleness broke through the fear and apprehension. So remind yourself that people you surround are walking through a journey you know nothing about—patients & colleagues. Do not let exhaustion or burn-out dim the light of kindness that is needed around you.

You have the responsibility of being a teacher. Teach the patients how to live with their new diagnosis and understand treatments or what is going on within their body. But most importantly, you need to be a good teacher to those around you. Remember Dr. Q who guided your first practice oral presentation and cheered you on at the sidelines as you unexpectedly crushed it during rounds? Dr. B who taught you how to give your first vaccine? Dr. H who took the time to help you perfect IV lines? But you also remember the one that scolded you for perfecting suturing on the first surgical scrub in, the one who laughed at you for not reading their mind when they ask you a question, and the one who stripped any source of hope simply towards learning.

You remember the good and bad teachers, I know you do.
Be a good teacher.
The one who listens, relates, and teaches gently.
The one instills confidence in trial and error.

Above all, remember to feed the passion within your heart, and remind yourself why you are here in the first place. Again, Do. Not. Let. Exhaustion. Mask. Your. Love. For. What. You. Do. The innocence in those big moments of excitement, feeds who you are today. Like when you ate some cake after passing your first med school exam, or
when you went to your first Med-Peds intro meeting and realized this was the career you have dreamed of, or the joy you felt when mom finally came out of her cancer surgery while you were stuck at school. All of those moments brought you clarity and refreshed your soul. Reminded you that you still belong.

And then. There are the hard moments that built who you are today. The really hard moments. The ones where you painfully realized cancer doesn’t discriminate against little 6 year old girls. The moment you realize that you will be the pillar of hope and strength people hold on to in the difficult times they face.

The past 8 years, you have carried exhaustion from the heavy armor you have learned to put on every day to hide your self doubt. The fatigue from the endless replays of “dumb” moments on rounds and the sinking fear of saying something worse the day after. The weariness from constantly working towards others expectations, reaching new milestones, learning from mistakes, and trying to grow as fast as you can so you don’t remain in the same place you were yesterday. But you have met people who taught you when to rest so that armor isn’t so heavy. You have learned that those “dumb” moments were talked through and understood to help turn that fear into a deeper understanding of the topic. You have learned that accepting grace towards really high expectations is the best gift for yourself. And where you are now is exactly where you need to be. This is not a race, because if it was, you would have missed all those good and “bad” teachers that shaped you into who you are today.

Remember, who you are and what you choose to pour into others. Remember the good and the bad has shaped every piece of who you are. And don’t ever forget to remain kind.

Sincerely,
Third Year Medical Student Priya
The Perspective

Sanjana Ravi
Dell medical school, MS3

Thirteen

“13yoF with insulin-dependent diabetes presents to the hospital with non-acidotic ketosis after being unable to access insulin.”

Thirteen years old, barely a teenager
But you’re in the hospital
Ketones in your urine
Rampantly high blood sugars

I tell you about your diabetes
First the ketones should go down
Then we want to manage blood sugar levels
And over a few months, we’ll see your A1c decrease

But you’re thirteen
You should be making TikTok dances on your phone
Not worrying about these damn ketones
I make small talk about school

The kids at school don’t understand, you say
What diabetes is
Why you have to inject yourself every day
You tell me about the tough patches of skin from these shots

Then I notice, you’re alone in your room
No signs of a parent
You tell me they’re working, trying to make ends meet
That they have 3 other children with mouths to feed

Your mom has diabetes
Her mother had diabetes
You take insulin together as though it is moment to bond

Over a generational curse invisible to you
I head home that night
Crossing an ice cream place on the way
I see kids your age
Chowing down on a hot summer day

I wish you could have that life
Escape the bullies
Get rid of the shots
Enjoy life without diabetes

You’re only thirteen
But the world has already placed mountains in front of you
Poverty and racism refuse to set you free
But you’re only thirteen
April Butler, MD  
PGY3 University of California San Diego  

When the Words Fail

“But he’s going to make it, right?”
I sit under fluorescent lights at midnight.
A woman in a nightgown squeezing my left hand, tears streaming down her face
“No, he’s not,” I say as resolutely as possible, but with a shake in my voice.
My mind drifts back to his ICU room.
Canisters of blood lined up on the counter.
Hanging pressors.
Massive transfusion protocol activated.
I watched a man exsanguinate.
I don’t think I will ever get over that.
My mind switches back to the present.
It is like she doesn’t even hear me.
“But he’ll wake up when he hears my voice.”
“What if they can stop the bleed?”
I think back on all my training
And despite the desire to give her hope,
I stand firm.
“I’m sorry, he won’t survive this.”
But she is grasping at threads I’m not even giving her,
And in that moment I’m frustrated.
What can I say to make her understand?
I take her back to his room.
She puts a single blue nitrile glove on
And despite all the blood, all the people, all the chaos,
She holds his hand.
She lets him know she’s there.
I give her space
But I tell her again there is nothing more we can do.
I walk her through how we will turn off the ventilator and medications
And how we will quickly pass.
But it is like she doesn’t hear me.
She and him are the only people in the room
And I feel like an intruder on their final moment.
I beat myself up the rest of the night.
What could I have said to make her realize?
What could I have said to minimize his suffering?
The next morning at the end of my 28 hour shift, the attending grabs me.
My eyes swell with tears.
“I feel like I didn’t say the right thing, I feel like I didn’t do enough.”
I will never forget his response.
“If you had seen through my eyes
The way his partner held onto you as she walked into the room
The way you handed her that glove,
How tenderly she trusted you,
If you had seen that through my eyes,
You would know it was never about what you said.
It was always about being there.”
And now I know.
When the words fail—
Sometimes just being there
To hold a hand
To lend an ear
To pass a glove
Is enough.
The Avelinos Dance

The Avelinos dance is one of the best-known dances in Mantaro, Peru. The dance consists of approximately 10 men who are dressed in bits of clothing and torn hats. They are wearing masks made to mock the Chilean troops. These group of men are led by a leader through the town. In the background you hear wak’ rapuku. The dance commemorates the devotion the people of Peru had during the war of the Pacific. I remember seeing my grandfather dance the Avelinos dance, and not understanding what it meant to him. Dancing down the streets of his hometown, with so much pride leading the other men. It wasn’t until I went back in 2022, a few years after his passing that I started to understand why he took so much pride in the dance. My grandfather’s pride for dancing the Avelinos dance was rooted in his father’s efforts in being a medic in the war. My grandfather would pass down the stories his father had told him about the war to me. I remember being young and idolizing my great grandfather for how
heroic and selfless he was. It wasn’t until I went back to Peru as a first-year medical student that I finally understood what this meant to him. It symbolized the contributions his father had given to war and the lives he had saved. It symbolized the times he couldn’t see his father because he was hundreds of miles away. Now this dance symbolizes the sacrifices and the contributions I will make for my future patients and how I will follow in my great grandfather’s footsteps to become a doctor.
A Heart-Wrenching Case of Ischemic Stroke Secondary to Left Ventricular Thrombus Formation in MIS-C

Katherine Finley, DO¹, Brittany Casey, MD²
¹University of South Florida Morsani College of Medicine, Department of Internal Medicine-Pediatrics, Tampa, FL, USA ²Johns Hopkins All Children’s Hospital, Department of Pediatrics, St. Petersburg, FL, USA

Introduction
Left ventricular (LV) thrombus formation, most commonly seen in adults, occurs in the setting of severely reduced ejection fraction (EF). Since the beginning of the COVID-19 pandemic, thrombosis in previously healthy children has become more common, with incidence of clot formation up to 2.5% in children with COVID-19.¹ Venous thromboembolism is most common, with few reports of arterial thrombosis or intra-cardiac thrombus formation in children. While prothrombotic state most often occurs in multi-system inflammatory syndrome in children (MIS-C), thrombus formation also occurs in patients with Covid-19 but no diagnosis of MIS-C. Currently, there are few reported cases of ischemic stroke secondary to LV thromboembolism in MIS-C.

Case Description
A 4 year-old previously healthy female developed altered mental status, difficulty ambulating, and right facial droop 8 days after reportedly testing positive for COVID-19. Patient was somnolent on arrival to the emergency department, requiring intubation for airway protection. Respiratory viral panel was positive for SARS-CoV-2. Labs were otherwise significant for erythrocyte sedimentation rate of 37, C-reactive protein of 1.6, aspartate transaminase (AST) 106, alanine transaminase (ALT) 98, and D-dimer 6.48. MRA brain revealed total occlusion of the left internal carotid artery and MRI brain was consistent with left MCA stroke. 2D echo revealed 5 LV thrombi and mild-moderately reduced left ventricular systolic function, EF 47%. Additional labs revealed an elevated troponin of 0.246 and an elevated BNP of 2,619. Patient was started on milrinone and a heparin drip. Her LV function improved gradually with complete recovery and continued reduction in left ventricular thrombi size. Prothrombotic workup was significant for mildly elevated clotting factor VIII function, mildly elevated cardiolipin IgM, and mildly depressed protein C activity, all thought to reflect inflammatory state and clot-induced consumption. The patient was continued on anticoagulation with enoxaparin and treated with steroids for MIS-C. Post extubation, she was found to have expressive aphasia and right hemiplegia. She required intensive therapies in an inpatient rehabilitation facility and continues therapy as an outpatient. She recovered her speech, right-sided muscle strength, and ability to ambulate unassisted.

Discussion
LV thrombi are typically seen in severely depressed cardiac function, where EF is <30%. Although this patient’s function was significantly higher, it is suspected that she developed MIS-C leading to a hypercoagulable state that increased her risk for thrombosis and ultimately,
resulted in her stroke. Per the American College of Rheumatology clinical guidelines, MIS-C patients with an ejection fraction less than 35% should receive prophylactic low dose aspirin and therapeutic anticoagulation until ejection fraction recovers. MIS-C patients with documented thrombosis should receive low-dose aspirin and therapeutic anticoagulation for three months, pending resolution of thrombosis.\(^8\) Our patient had only a mildly reduced EF of 47%, yet still developed multiple LV thrombi. Fortunately, this patient’s LV thrombi were detected on transthoracic echocardiogram (TTE), thus allowing her to meet additional criteria for initiating anticoagulation in the presence of documented thrombosis. However, in many cases, LV thrombi are not detected on transthoracic echocardiogram, instead requiring more invasive and/or detailed imaging techniques such as transesophageal echocardiogram or cardiac MRI. If our patient’s LV thrombi had not been detected by TTE, she would not have met criteria for initiation on anticoagulation.

**Conclusion**

Hypercoagulability with thromboembolism, a phenomenon historically seen in primarily adults, has become more prevalent in children since the beginning of the Covid-19 pandemic. Although literature shows Covid-19 and MIS-C leading to prothrombotic states, there are few case reports of children with LV thrombus secondary to Covid-19. This phenomenon is rare and attributed to the prothrombic state associated with MIS-C. This case demonstrates that a mildly reduced EF or dilated cardiomyopathy may also be risk factors for LV thrombus formation in MIS-C and consideration to initiate prophylactic anticoagulation should be given in all patients.

**Take Home Points**

- Hypercoagulability with thromboembolism, a phenomenon historically seen in primarily adults, has become more prevalent in children since the beginning of the Covid-19 pandemic.
- Left ventricular thrombus formation typically occurs in cases of severely depressed cardiac function, where EF is <30%, but can also occur at higher ejection fractions in the case of an associated pro-thrombotic risk factor such as MIS-C.
- Per the current American College of Rheumatology guidelines, indications for initiating anticoagulation in patients with MIS-C include ejection fraction of less than 35% or documented thrombosis.
- This case demonstrates that even a mildly reduced ejection fraction or dilated cardiomyopathy may also be risk factors for LV thrombus formation in MIS-C and consideration to initiate prophylactic anticoagulation should be given in all patients.
Figure 1: MRA Brain and MRI Brain with and without Contrast

Top image: MRA brain with near occlusion of left carotid artery and loss of signal of the left internal carotid artery throughout its intracerebral course.

Bottom image: MRI brain with left middle cerebral artery territory infarct and focal mass effect on the basal ganglia structures with very slight rightward bowing/midline shift of the septum pellucidum.

Figure 2: 2D Echocardiogram Findings

2D echo demonstrating multiple LV apical thrombi, with the largest measuring 8.5 mm x 9.6 mm

References:
Embodyed Inequity: Glycogenic Hepatopathy Due to Uncontrolled Type 1 Diabetes

Sanjay Chainani, MD, David Fish, MD SFHM
UMass Chan Medical School, Department of Pediatrics and Internal Medicine

Introduction:
Social determinants of health powerfully shape the trajectory of patients with chronic illnesses. We present S.M., a 19 year old male well known to our pediatric service after being diagnosed at a young age with Type 1 Diabetes Mellitus (T1DM). S.M. had a history of emotional and physical trauma and bounced between multiple foster system placements as a child. As he became older, he took primary responsibility for his diabetes care and insulin administration. This was challenged by frequently skipped meals and inconsistent insulin use during a busy work schedule and he was often found on the pediatric wards or PICU for diabetic ketoacidosis (DKA) and titration of his insulin regimen.

Case Description:
A 19-year-old male with a history of trauma, depression, anxiety, foster system placement, tobacco use, and poorly controlled T1DM (A1C >14) with frequent admissions for DKA presented with presyncope and 2 weeks of severe epigastric and RUQ abdominal pain. Laboratory evaluation revealed hyperglycemia and DKA with elevated AST/ALT that increased to a peak of 3,591 and 1,245 U/L respectively. Total bilirubin and INR were normal. He denied medication or supplement changes, new sexual partners, or drug use. Acetaminophen level, viral testing (hepatitis A, B, C, EBV, HSV, CMV), rheumatologic studies (ANA, ASMA, LKM, IgG), and ceruloplasmin were unremarkable. RUQ ultrasound followed by MRCP showed significant hepatic enlargement to 24 cm without cholelithiasis, choledocholithiasis, or biliary duct dilation. He was discharged after improvement in his glycemic control, abdominal pain, and LFTs. Liver biopsy performed 3 months later showed sinusoidal congestion and perisinusoidal fibrosis with negative iron stain and no definitive glycogenated nuclei. Despite the absence of classic biopsy findings for Glycogenic Hepatopathy (GH), GH was thought to be the most likely diagnosis given otherwise negative testing and remission of symptoms with improved glycemic control.

Discussion:
GH is a rare complication of uncontrolled T1DM that presents with abdominal pain and elevated LFTs. This occurs due to excess hepatic glycogen accumulation from long standing hyperglycemia and is exacerbated by DKA treatment with high insulin doses, which stimulates glycogen formation and inhibits glycogenolysis. After ruling out alternative etiologies including viral, autoimmune, and drug-induced hepatitis, liver biopsy is the gold standard for diagnosis, showing enlarged hepatocytes with glycogen accumulation. Histologic changes often
resolve rapidly with improved glycemic control which may explain the lack of classic biopsy findings for this patient².

An analysis of this case through a developmental lens provides deeper context into the poorly controlled T1DM which predisposed S.M. to GH. Adverse childhood events (ACEs) are common, affecting 30% of children and 90% of adults in the U.S.³, and disproportionately impact children in the foster care system⁴. Evidence has linked traumatic events over the full developmental trajectory, from maternal bereavement in the prenatal period⁶ to stressful events in the immediate 2 years preceding diagnosis⁷, to incidence of T1DM⁵. Children with T1DM with greater than or equal to 3 ACEs also have a 0.64% higher A1C⁸ and ACE exposure has been associated with long term T1DM complications including cardiovascular disease⁹. The Biological Embedding of Childhood Adversity model theorizes that the relationship between ACEs and T1DM is pathophysiologically mediated by disruption of epigenetic signaling, central and autonomic nervous system development, the hypothalamic-pituitary-adrenal axis, and normal immune functioning¹⁰, all of which alter the psychosocial milieu for patients with T1DM.

Adolescence and emerging adulthood may be an especially vulnerable time for patients with T1DM. Only 17% of adolescents ages 13-17 meet recommendations for A1C < 7.0%¹¹. Changes in neurocognition, evolving caregiver relationships, increased healthcare responsibility, and financial/insurance barriers often pose threats to diabetes management and control during this time period¹².

**Conclusion:**

Despite advancements in diabetes care since the initial recognition of GH, socioeconomic and racial inequities in T1DM have only widened¹³-¹⁴. Certain groups remain vulnerable to poorly controlled T1DM and its complications. Physicians should be aware that a history of traumatic events is a risk factor for poorly controlled T1DM. When appropriate, screening for ACEs in patients with T1DM can identify patients at risk who may benefit from trauma-informed care¹⁵. Med/Peds physicians are uniquely poised to recognize these patients and provide support and tools to protect against severe complications.

**Take Home Points:**

1) GH is a rare condition which requires a high index of suspicion for diagnosis.
2) Emerging adulthood is a time of vulnerability for patients with T1DM where additional psychosocial support may be required.
3) Identifying additional social risk factors including history of ACE may allow physicians to provide trauma-informed care to patients with T1DM.
References


This newsletter is published as a collaborative effort between the following organizations: