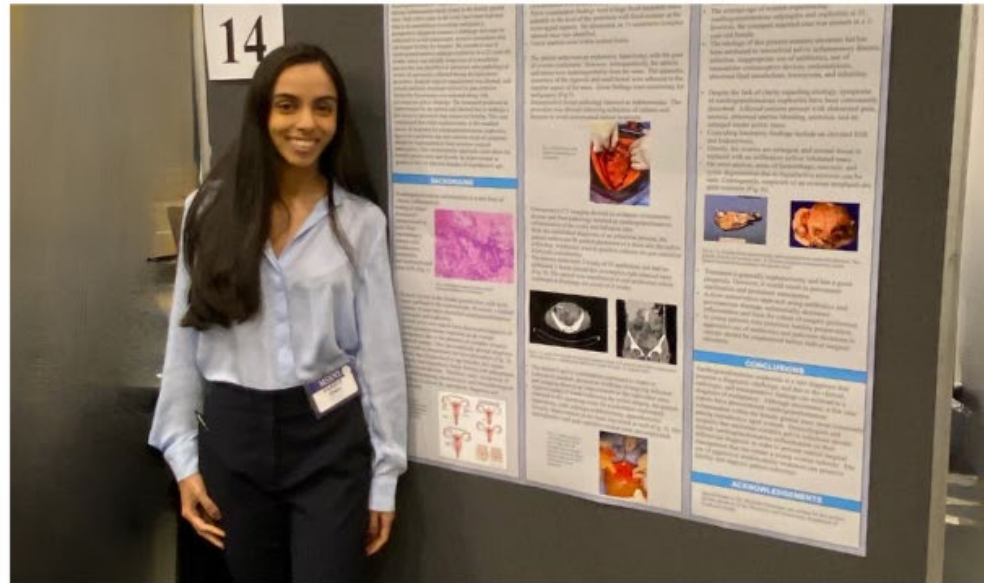


ABSTRACT BOOK

RESIDENT, FELLOW, AND MEDICAL STUDENT POSTER SYMPOSIUM



MSSNY HOUSE OF DELEGATES
UNIONDALE, NEW YORK



**MSSNY Resident, Fellow and Medical Student Poster Symposium
April 12, 2024
Long Island Marriott, Uniondale, New York**

JUDGES
(As of date of printing)

Niraj Acharya, MD
Sana Bloch, MD
Sherman Dunn, DO
Jonah Green, MD
Nina Huberman, MD
Hemant Kalia, MD
Alan Kaell, MD
Sandhya Malhotra, MD

Leah McCormack, MD
Lawrence Melniker, MD
Adolph B. Meyer, MD
Anthony Sgarlato, MD
Matsuko Takeshige, MD
Takeko Takeshige, DO
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ABSTRACT REVIEWERS

V. Ravi S. Akula, MD
Alok Gandhi, DO
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Takeko Takeshige, MD
Peter Wyer, MD

**17th Annual MSSNY Resident/Fellow and Medical Student
Poster Symposium
FRIDAY, APRIL 12, 2024**

Submission Guidelines

MSSNY Medical Student and Resident/Fellow members are invited to submit abstracts that will be considered for poster presentation.

Please note that medical student membership requires enrollment in a LCME or COCA accredited school. However, non-LCME/COCA students doing rotations in New York hospitals may participate without membership.

Date: Friday, April 12, 2024

Time: 12:00 Noon – 3:00 pm

Location: Long Island Marriott, 101 James Doolittle Blvd, Uniondale, NY

The Poster Symposium takes place during the MSSNY House of Delegates Meeting¹

1. Submission Rules

- a) **You must be a MSSNY member in good standing to participate** (see non-LCME/COCA student exception above). Co-authors are not required to be MSSNY members.
- b) **Non-member first authors must apply for MSSNY membership.** Medical student membership is free. First time resident/fellow membership is free. If you are a former MSSNY resident member, you will have to rejoin and pay your current dues. Residents and students may join online at www.mssny.org. **PLEASE NOTE YOU MUST JOIN MSSNY AND CREATE AN ACCOUNT BEFORE YOU WILL BE ABLE TO PAY YOUR ENTRY FEE.**
- c) A \$75 **non-refundable** symposium entry fee will be charged upon **SUBMISSION OF YOUR ABSTRACT**. This fee supports the symposium. Please click this link to submit payment: [Event Details \(mssny.org\)](http://www.mssny.org)
- d) **Check with your Program Director to determine if they will reimburse this fee.**
- e) **Deadline for abstract submission is 4 pm on Friday, January 12, 2024.**
- f) We only guarantee scoring of the first 100 resident/fellow abstracts and the first 40 student abstracts received. Abstracts must be scored to be considered for poster presentation.
- g) The top 50 resident/fellow and top 20 medical student scores will be invited to present posters in April.
- h) Each applicant may submit only one abstract.
- i) Those submitting abstracts for consideration must be first authors of the research.
- j) All submissions must be original works of individuals actively engaged in residency or fellowship training or enrolled in medical school.
- k) Posters previously entered in a MSSNY symposium cannot be resubmitted.
- l) Entries may have been published in abstract form elsewhere but may not be taken from previously published papers. (Authors should also be aware that acceptance at this meeting may preclude an abstract's candidacy for submission elsewhere. It is the author's responsibility to check on this.)

¹ The House of Delegates is an annual meeting during which MSSNY officers, councilors, trustees and designated delegates from county medical societies and recognized specialty societies formulate MSSNY policy and elect officers. Accepted symposium participants who wish to are invited to attend all meeting activities. A Daily Guide will be posted on the MSSNY website www.mssny.org as the meeting approaches.

- m) Authors of entries accepted for the symposium must be able to attend the meeting and be present to discuss their submissions.
- n) All entrants will be notified via e-mail regarding acceptance or rejection of their abstracts as soon as all abstracts have been scored. **MAKE SURE TO PROVIDE A PREFERRED EMAIL ADDRESS THAT YOU LOOK AT! We will use only one email address per participant.**
- o) Questions? Email Kathy Rohrer at krohrer@mssny.org or call 516-488-6100 x 396.

2. Abstract Categories

- a) **Resident/Fellows** may submit entries in one of two categories:
 - 1) **Clinical Medicine** includes basic science, quality improvement, health policy, clinical research, and medical education. **Entries in this category are highly encouraged.**
 - 2) **Clinical Vignettes** involve the presentation of one or more patient encounters that illuminate unique observations of a known disease or describe a novel disease process; use of a new procedure, treatment, or medication; medical mysteries; patient, family, and physician relationships; ethical issues. These are expected to include clinical patient information such as history, physical exam, and clinical data, as well as an analysis of how such observations might contribute to existing medical or scientific knowledge.
- b) **Medical students** may submit abstracts of their scientific research (biochemistry/cell biology, cancer biology, clinical outcomes and healthcare improvement, immunology/infectious disease/inflammation, neurobiology/neuroscience, public health and epidemiology, radiology/imaging, surgery/biomedical engineering); clinical vignettes; or projects based in the social sciences and humanities, including alternative methodologies.

3. Abstract Criteria – PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY

- a) Submit abstracts as email attachments in MS WORD, 10-point Arial font, to krohrer@mssny.org. **Deadline is Friday, January 12, 2024, at 4 pm.**
- b) The following information must appear at the top of the abstract:
 - 1. Category (Clinical Medicine or Vignette)
 - 2. The specialty under which it falls (e.g., Cardiology, Nephrology, Hematology, etc.)
 - 3. Title
 - 4. Authors' names
 - 5. Institution affiliations
 - 6. As appropriate:
 - i. Medical students: entrant's medical school and graduation year
 - ii. Residents/Fellows: PG year, expected date of completion of training, and specialty
 - iii. For everyone: address and email. **MAKE SURE TO PROVIDE A PREFERRED EMAIL ADDRESS THAT YOU LOOK AT! We will use only one email address per participant.**
- c) Once an abstract is submitted, it cannot be modified (i.e., an updated version will not be accepted later, even before the submission deadline). **Please thoroughly proofread your abstract before submitting it.**
- d) Maximum length for **research** abstract is **250 words**. The maximum length for a **vignette** abstract is **400 words**. Title, authors, and institution affiliations are not included in word count. Do not include captions from photos or graphs in abstract text.
- e) The body of the abstract should include, if applicable, background, methods, results and conclusions. Clinical medicine submissions should include clinical relevance.
- f) Define all abbreviations in the abstract that are exclusive to your institution and not commonly used (to the best of your judgment)
- g) Graphs, figures, and photos should not be included in the submitted abstract, but should be incorporated into the poster for presentation at the meeting.
- h) Authors may submit only one entry to the 2024 symposium.
- i) Abstracts are scored on five criteria, each worth 0 to 5 points, for a maximum score of 25 points. The five criteria are:

1. **Importance:** innovation, relevance, creativity, new or cutting-edge information, originality of approach/intervention, significance, or interest to the audience.
 2. A) Methodology: appropriateness of conceptual basis and design for the identified purpose of the study, appropriateness of data collection techniques, development stage (level of data collection completeness);
OR B) Lessons Learned: appropriateness of conceptual basis and design for the activity, extent to which the lessons learned merit the conclusions.
 3. **Clarity:** development and communication of ideas and findings.
 4. **Conclusion consistent with data and/or observations.** Potential pitfalls of methodology or interpretation addressed. Potential significance of experiments placed in proper perspective.
 5. Abstract is in required form and organized, well written, concise, and readable.
- j) MSSNY RFS members may review abstracts submitted by medical students. Reviewing students' abstracts do not disqualify residents/fellows from submitting their own abstracts.
- k) Authors will be contacted via e-mail regarding **acceptance or denial** as soon as the abstract committee has made its selections.

4. Poster Presentation

- a) Poster display boards will be provided.
- b) Posters must fit within a board area that is approximately 6 feet wide by 5 feet high. (Posters can be smaller, but not larger.) A poster size that works well is 4 feet (48 inches) wide by 3 feet (36 inches) high.
- c) Push pins will be provided.
- d) Posters should include title, authors, institution affiliations, and a detailed description of methods and results. Graphs, tables, and photos are welcome on posters.
- e) Poster text should be in 16-point font or larger.
- f) No word count is assigned to poster text, but please limit narrative.
- g) Posters will be displayed on boards in a gallery area, where entrants must be present to discuss their submissions.
- h) Judges will visit and examine each presentation between 12:00 pm and approximately 3:00 pm. Authors must be available for questions during this time.
- i) Between approximately 3:00 and 3:30 pm, participants are invited to circulate and visit each other's posters. You may also do so if you arrive early.
- j) All participation costs are the responsibility of the entrants. If you leave your poster behind, MSSNY cannot guarantee its return.

5. Judging and Awards

- a) Bring an 8 ½" x 11" copy of your poster and hand it in at the registration table – this will be a great aid to the judges as they conduct their final deliberations. **PLEASE WRITE YOUR LAST NAME IN THE UPPER RIGHT CORNER OF THIS COPY.**
- b) A panel of poster competition judges will be selected by MSSNY prior to the meeting.
 1. Each judge will assess approximately eight to ten posters.
 2. Each contestant will be visited by at least one, but probably two or more judges.
 3. Judges will be wearing a ribbon on their nametag marked "JUDGE."
 4. Judges will be assigned posters as they arrive at the symposium. They do not all come at once, so the actual start time for each individual's judging will vary. We respectfully request your patience.
 5. Final judging will be done after the symposium. We regret that due to the exigencies of the meeting of which the symposium is a part, we cannot guarantee final results until later in the day or evening. Final results will be emailed to all participants as soon as possible.
- c) Authors must be available for questions during the judging and are encouraged to prepare a 5–10-minute oral overview of their posters for the judges as they walk around.
- d) Posters will be judged within their category and will be given a final grade, as follows:

CRITERIA: 5 criteria, each worth up to 5 points. Highest score = 50

- 1. ORIGINALITY:** How original is the concept presented in the poster? **OR**, how original is the new approach to an old problem?
 - 2. SIGNIFICANCE:** How significant are the poster's conclusions in increasing understanding of a disease process, or in improving the diagnosis or treatment of a disease state, or in disease prevention or health promotion?
 - 3. PRESENTATION:** How logical are the ideas presented in the poster? How interesting is the manner of presentation? Was there appropriate use of visual aids and graphics?
 - 4. METHODS:** How suitable is the research design for the stated objectives, and how appropriate are any statistical techniques applied? **For case vignettes**, are sound scientific principles used in analysis/interpretation/discussion?
 - 5. INTERVIEW:** How knowledgeable and conversant is the presenting author with the research presented in the poster?
- e) **Residents/Fellows:** There will be up to three awards for each category: First Place, Second Place and Honorable Mention
- f) **Students:** There will be up to three awards in the student category: First Place, Second Place and Honorable Mention. The judges reserve the right, depending on submissions, to divide student posters into vignettes and clinical research, and award prizes accordingly.
- g) Winners will receive an award certificate. We hope to be able to give First and Second Place winners a monetary award. All poster contestants will receive a certificate of participation.

Please be aware that by attending MSSNY's Poster Symposium and/or MSSNY's House of Delegates meeting, you consent to your name and/or your likeness being used without compensation in all media, and you release MSSNY, its successors, assigns and licensees from any liability of any nature.

SUBMISSIONS

Medical Students

Poster #	FirstName	Last Name	School	Title	E-Mail	Page
1.	Roma	Tarar	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Failed Specificity of Digoxin Toxicity	romatarar@yahoo.com	12
2.	Molly	Bekbolatov	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Simulating Pediatric Seizure Impact on Brain Dynamics	mbekbola@nyit.edu	12
3.	Asnat	Yuabov	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2025	Assessing Medical Student's Attitudes Towards Interpersonal, Team, and Written/Oral Communication in Simulation Training	ayuabov@nyit.edu	13
4.	Sydney	Wolin	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2025	Pseudoulnar Palsy with Concurrent Wrist Drop: Case Report	swolin@nyit.edu	13
5.	Julia	Rinaldi	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Comprehensive Management of Total Hysterectomy in a Patient with Ehlers-Danlos Syndrome Vascular Subtype: A Case Report	jrinal02@nyit.edu	14
6.	Tara	Shirazi	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Exploring Positive Psychological Outcomes Following Cardiac Arrest Survival	tkeshava@nyit.edu	14
7.	Zachary	Chanmin	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Stepping Up to Informed Consent: Navigating Foot and Ankle Orthopaedics	zchanmin@nyit.edu	15
8.	Vani	Gupta	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	A Comparison of Body Mass Index and Psychiatric Gruds in Ehlers Danlos Syndrome (EDS) and Hypermobility Spectrum Disorder (HSD) Patients	Vgupta07@nyit.edu	15
9.	Riddhi	Modi	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Nanoscale Organization of Calcium Channels is Disrupted in Heart Failure	rmodi07@nyit.edu	16
10.	Ariel	Shaddaie	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Cannabidiol (CBD) as a Promising Anti-Cancer Drug	ashaddai@nyit.edu	16
11.	Yehuda	Azerrad	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2025	Correlating Factors for Discharge to Rehabilitation Following Hospitalization of COVID-19 Patients	yazerrad@nyit.edu	17
12.	Benjamin	Hershfeld	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2025	Anterior Cervical Discectomy and Fusion Causing Vocal Cord Paralysis: Case Report	bhershfe@nyit.edu	17
13.	Saba	Iqbal	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Addressing the High SUID/SIDS Rate Among US Indigenous Peoples, American Indians, and Alaska Natives Due to Unsafe Infant Sleep Practices	siqbal10@nyit.edu	18
14.	Kaylee	Bressler	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Association of Substance Use with Trauma Outcomes During and After the COVID-19 Pandemic at NYC Level II Trauma Center	kbressle@nyit.edu	18

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15.	Elan	Adhami	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2025	Delayed Diagnosis of Acute Inflammatory Demyelinating Polyneuropathy Variant of Guillain-Barre Syndrome Due to Possible Anchoring Bias	eadhami@nyit.edu	19
16.	Shani	Kahan	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2026	Individual Differentiation by Surface Metrology of Fingerprints at Multiple Scales	shani13k@gmail.com	19
17.	Kyle	Gillani	New York Institute of Technology College of Osteopathic Medicine, DO Candidate 2024	Legislative Impact on Newborns: Connecting the Dots Between Public Health Policies and Neonatal Abstinence Syndrome in the State of New York	kyle.gillani@outlook.com	20
18.	Rushil	Kumbhani	Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, MD Candidate 2026	Selective Laser Trabeculoplasty Outcomes in Phakic and Pseudophakic Patients: A Meta-Analysis	rkumbhani1@pride.hofstra.edu	20
19.	Puru	Sadh	Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, MD Candidate 2026	From Disclosure to Understanding: An Examination of Informed Consent in Upper Extremity	sadhpu4@gmail.com	21
20.	Bianca	Chandler	Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, MD Candidate 2027	To Lift or Not	bchandler2@northwell.edu	21
21.	Sarah	Stephen	Renaissance School of Medicine, Stony Brook University, MD Candidate 2025	Training Medical Students on In-Person and Telephone Interpretation Prior to Starting Clinical Rotations: Effects on Confidence and Competency	rebecca.stephen@stonybrookmedicine.edu	22
22.	Erica	Breyman	Renaissance School of Medicine, Stony Brook University, MD Candidate 2026	Sex-Based Differences in Circulating Superoxide Dismutase 3 (SOD3) Following Acute Ischemic Stroke	erica.breyman@stonybrookmedicine.edu	22
23.	Alaba	Danagogo	Renaissance School of Medicine, Stony Brook University, MD Candidate 2025	Writing Away Racism Project (WARP) – Using Creative Writing Workshops to Promote Anti-Racism in Medical Education	alaba.danagogo@stonybrookmedicine.edu	23
24.	Lana	Shteynman	Renaissance School of Medicine, Stony Brook University, MD Candidate 2026	Impact of Bedside Mobility Assessment Tool on Hospitalized Geriatric Patient Mobilization	lane.shteynman@stonybrookmedicine.edu	23
25.	Anna	Krauss	Touro College of Osteopathic Medicine, MD Candidate 2025	Exploring the Evolution of the Mind-Body Connection as First-Year Osteopathic Medical Students Learn About Common Osteopathic Dysfunctions	akrauss3@student.touro.edu	24
26.	Zain	Malik	Touro College of Osteopathic Medicine, MD Candidate 2025	Migration of an Intrauterine Contraceptive Device in an Ovary: A Case Report	zmalik3@student.touro.edu	24
27.	Adeline	Bray	Touro College of Osteopathic Medicine, MD Candidate 2025	Investigating mtDNA Copy Number in Prostate Cancer Samples	abray@student.touro.edu	25
28.	Alisha	Daroch	CUNY School of Medicine, MD Candidate 2026	Unraveling the Diagnostic Challenges of Mirror Syndrome: A Case Report of an Idiopathic Presentation	alishadaroch@gmail.com	25
29.	Halley	Yung	CUNY School of Medicine, MD Candidate 2026	Predicting Surgical Case Time: Using Machine Learning to Optimize Operating Room (OR) Scheduling	Hyung000@citymail.cuny.edu	26
30.	Alexandra	Jellinger	New York Medical College, MD Candidate 2026	Chronic Activation of a Negative Engram Induces Behavioral and Cellular Changes	ajelling@student.nymc.edu	26

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31.	Sarah	Balboul	New York Medical College, MD Candidate 2025	Cutaneous Lesions Mimicking Hypopigmented Mycosis Fungoides After Starting Ixekizumab for Psoriasis	sbalboul@student.nymc.edu	27
32.	David	Zuckerman	New York Medical College, MD Candidate 2025	Do CT Scans Following EVD Placement Meaningfully Change Clinical Care?	Dzuckem3@student.nymc.edu	27
33.	Cyrus	Luczkow	New York Medical College, MD Candidate 2026	Modified 11-Factor Index as a Predictor of Nonunion Fractures in the Upper Extremity	cluczkow@student.nymc.edu	28
34.	Joshua	Kang	New York Medical College, MD Candidate 2025	Demographics of Pediatric Exercise Equipment Related Injuries	Jkang11@student.nymc.edu	28
35.	Jeremy	Appelbaum	New York Medical College, MD Candidate 2026	Topographic Findings in the Eyes of Children Treated with Collagen Cross-Linking (CXL) for Keratoconus (KCN)	Jeremyappelbaum1@gmail.com	29
36.	Abe	Choe	University of Rochester School of Medicine and Dentistry, MD Candidate 2025	Deceptive Appearances: Dedifferentiated Liposarcoma Presenting as a Retroperitoneal Abscess	Abe_choe@urmc.rochester.edu	29
37.	Gaby	Cordero	University at Buffalo Jacobs School of Medicine and Biomedical Sciences, MD Candidate 2024	Barriers to Longitudinal Community Service in Medical Education	gabycord@buffalo.edu	30
38.	Harjot	Uppal	Albany Medical College, MD Candidate 2024	Analyzing the Point of Service for Orthopedic Procedures from Hospital Outpatient Departments to Ambulatory Surgery Centers	uppalh@amc.edu	30
39.	Sarah	Papa	SUNY Upstate Medical University, MD Candidate 2025	Classifications for Radiographic Evaluation of Lytic Bone Lesions Have Poor Inter- and Intra-observer Agreement	papas@upstate.edu	31

Residents/Fellows - Clinical Medicine

NO.	FirstName	LastName	Des	Title	E-Mail	Program	Page
40.	Andrej	Sodoma	DO	Outcomes of Pressure Ulcer Injuries Classified By Race, a 10-Year Nationwide Analysis	asodoma@northwell.edu	PGY-1 South Shore University Hospital, General Medicine	31
41.	Muhammad	Naseeb	MBBS	Socioeconomic Trends in Palliative Care, a 6-Year Study	mnaseeb@northwell.edu	PGY-1 South Shore University Hospital, Palliative Care	32
42.	Nimisha	Mathur	MBBS	Elevated Blood Pressure and Complete Blood Count Components in Children and Adolescents in Two Urban Multiethnic Community Hospitals	mathurnimisha1@gmail.com	Flushing Hospital Medical Center	32
43.	Leidi	Pedraza Gonzalez	MD	Association Between Metabolic Dysfunction-Associated Steatotic	pleidymailan@gmail.com	Flushing Hospital Medical Center	33
44.	William	Kelly	MD	The Feasibility and Implementation of a Community Service Program in a General Surgery Training Program	whkelly@buffalo.edu	PGY-2 Erie County Medical Center, General Surgery	33
45.	Jessica	Chung	MD	Epidemiology and Clinical Outcomes of <i>Staphylococcus lugdunensis</i> bacteremia	jchung@maimonidesmed.org	PGY-5 Maimonides Medical Center, Infectious Diseases	34
46.	Muhammad	Haseeb	MD	Efficacy of Selinexor in Acute Myeloid Leukemia: A Systematic Review and Meta-Analysis	muhammad.haseeb@arnothealth.org	PGY-Fellow, Arnot Ogden Medical Center	34

Residents/Fellows - Vignettes

	FirstName	LastName	Des	Vignette Spec	Title	E-Mail	Program	Page
47.	Ryan	Soares	MD	Rheumatology/Infectious Disease/Nephrology	Systemic Mycoplasmosis Causing Necrotizing Vasculities and C3 Glomerulonephritis	ryansoares12@gmail.com	PGY-1 SUNY Upstate Medical University, Internal Medicine	35
48.	Dina	Rahman	DO	Cardiology	Chest Pain: From Wellens' or Pneumomediastinum?	drahman1@northwell.edu	PGY-1 South Shore University Hospital-Northwell, Internal Medicine	35
49.	Basil	Baby	MD	Pulmonology/Oncology	Not All GGOs are Infectious	bbaby3@northwell.edu	PGY-1 South Shore University Hospital-Northwell, Pulmonology/Oncology	36
50.	Claudiane	Mouafo	MD	Cardiology	Cardiac Intimal Sarcoma	claudiane.mouafozoom@arnothealth.org	PGY-1 Transitional Year, Arnot Ogden Medical Center	36
51.	Saira	Iqbal	MBBS	Infectious Diseases	An Uncandid Case of Candida Glabrata Prostatic Abscess	sairiqbal@maimonidesmed.org	PGY-2 Maimonides Medical Center, Infectious Diseases	37

POSTER # 1

Failed Specificity of Digoxin Toxicity

Authors: Roma Tarar BS, New York Institute of Technology College of Osteopathic Medicine, Old Westbury, NY. William R. Bachman MD, Albany Medical College, Albany, NY.

Information: Roma Tarar, 2nd year Medical Student at New York Institute of Technology College of Osteopathic Medicine, Old Westbury, NY; Graduation Year: 2026; Preferred email address: romatarar@yahoo.com

INTRODUCTION: Digitalis, with a narrow therapeutic index, that can precipitate toxicity in patients presenting with symptoms including gastrointestinal disturbances, visual changes, and cardiac arrhythmias. We describe a patient that was found to have serum levels of digoxin in the toxic range despite never having taken the medication or concomitant supplements.

CASE PRESENTATION: A 75-year-old male with history of chronic atrial fibrillation, hypertension and cirrhosis was transferred to our facility presenting with chest pressure and syncope. On exam, the patient had no signs of congestive heart failure. Rhythm was irregularly irregular. Outpatient medications included apixaban, torsemide, rifaximin, and super B complex multivitamin. Chest radiograph showed cardiomegaly but no pulmonary edema. ECG showed atrial fibrillation with heart rate of 123, and lateral ST and T wave depressions suggestive of ischemia or digoxin effect. Diagnostic testing included creatinine of 1.9 mg/dL and potassium at 3.0 mmol/L. High sensitivity troponin I trended from 0.06 to 3.96 ng/mL (0.0-0.5) over the initial 7 hours. Based on ECG ST changes, a serum digoxin level was ordered and found to be 3.4 ng/mL. Patient was treated with heparin and 20 mEq KCl. Digoxin level 17 hours later was 0.3 ng/mL. Thorough investigation ruled out the possibility of the patient ever taken digoxin. Discussion with the lab director regarding the assay proved the unlikelihood of assay error.

DISCUSSION: The purpose of this report is to explore potential explanations for toxic serum digoxin levels in the absence of drug therapy. Drugs including spironolactone and enzalutamide have been studied for elevating serum digoxin levels but none of these interactions were found in this patient. Endogenous "anti-mouse" antibodies have been found to cause elevated serum digoxin levels yet fail to explain toxic serum levels in digoxin naïve patients. Digoxin-like immunoreactive factors (DLIF) has been associated with toxicity in the absence of digoxin therapy but has not been found to elevate levels to the extent of that in our patient. Thorough investigation to determine if the patient ingested digoxin by any means was negative and repeat digoxin level greater than zero diminished the postulation that he was accidentally credited with another patient's result. DLIF interference has potential in explaining the presentation in our patient however further research would prove fruitful for similar cases arising in the future. This case serves to remind clinicians of the need for careful review of patient history in the setting of unexplained lab results.

POSTER # 2

Simulating Pediatric Seizure Impact on Brain Dynamics

Molly Bekbolatova, OMS-II¹, Jonathan Mayer, OMS-II¹, Rejath Jose, OMS-III¹, Faiz Syed, OMS-IV¹, Gregory Kurgansky, DO¹, Paramvir Singh, DO¹, Rachel Pao², Honey Zaw², Timothy Devine³, Rosalyn Chan-Akeley, MD⁴, and Milan Toma, PhD¹

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2. NewYork-Presbyterian Queens Hospital, Queens, NY 11355, dxy9002@nyp.org, ssq9006@nyp.org
3. The Ferrara Center for Patient Safety and Clinical Simulation, New York Institute of Technology, College of Osteopathic Medicine, Department of Osteopathic Manipulative Medicine, Old Westbury, NY 11568, tdevine@nyit.edu
4. Pfizer, 235 E 42nd St, NY 10017, rosalyn.chan@aya.yale.edu

Pediatric seizures pose a huge threat to human brain development and may cause irreversible injury if not prevented. Computational methods of studying fluid dynamics through simulation-based models serve a vital role in evaluating the fluid-structure interaction of the brain in relation to seizure activity. To investigate the effects of pediatric seizures on brain dynamics, we utilized validated simulations that employed an advanced version of Smoothed Particle Hydrodynamics and high-order Finite Element Method. Our primary aim was to gain a better understanding of how seizure episodes affect the behavior of cerebrospinal fluid and exert stress on different regions within the brain, ultimately influencing its overall health. Our findings revealed that simulated seizures led to significant levels of stress, contact pressure, and shear stress primarily in the posterior regions of the gyri as well as in the brainstem. In addition, our study revealed notable backward displacement of the brain compared to the skull. While cerebrospinal fluid does offer some protection, it has limitations when faced with multiple rapid traumatic events like seizures. This highlights the need for further research on enhancing protective mechanisms in high-impact situations such as seizures. The knowledge gained from our findings is anticipated to contribute to advancements in diagnostic observations, therapeutic interventions, and personalized treatment strategies in neurology and neurosurgery.

POSTER # 3

Assessing Medical Student's Attitudes Towards Interpersonal, Team, and Written/Oral Communication in Simulation Training

Authors: Asnat Yuabov (OMS-III); Paula Ryo, DO
New York Institute of Technology College of Osteopathic Medicine, Old Westbury, New York
NYIT College of Osteopathic Medicine, 2025
ayuabov@nyit.edu

BACKGROUND: Simulation education plays a crucial role in healthcare training, focusing on honing clinical skills such as effective communication and procedural skills and aligning with the fundamental principle of the Hippocratic oath to "do no harm" by minimizing medical errors. While various studies have demonstrated the effectiveness of simulation in teaching and evaluating healthcare students and professionals with diverse skills, there remains a gap in understanding students' attitudes toward simulation training.

METHODS: To address this gap, a survey titled "Assessing Medical Students Attitudes Towards Interpersonal, Team, and Written/Oral Communication in Simulation Training" was distributed to students across two locations: Old Westbury, NY, and Jonesboro, AK. The research aimed to gauge the Class of 2025's perspectives on using simulation to enhance interpersonal, team, and communication skills and provide valuable feedback to NYITCOM faculty for refining medical simulation training.

RESULTS: Survey results revealed that participants found standardized patients (91.9%) and high-fidelity mannequins (75.7%) effective in reinforcing interpersonal and team communication skills. Notably, 78.4% of students felt prepared to undertake clinical tasks such as writing SOAP notes and presenting patients to attending physicians.

CONCLUSIONS: This study underscores the ongoing necessity for further exploration in simulation education, particularly in understanding students' attitudes. While emphasizing the critical role of simulation in refining clinical communication skills and reducing patient errors, the study recommends that other institutions employing simulation education conduct similar surveys. Despite the challenges and limitations inherent in survey research, the findings offer valuable insights for improvement.

POSTER # 4

Pseudoulnar Palsy with Concurrent Wrist Drop: Case Report

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BACKGROUND: Pseudoulnar palsy, characterized by the selective weakness of the 4th and 5th digits, is a condition known to originate from central or peripheral causes. Among the central etiologies, infarction in the medial aspect of an area of the precentral gyrus, often referred to as the "hand knob," has been established as a rare cause of pseudoulnar palsy. Classical presentations of this condition typically manifest exclusively as deficits in the ulnar innervated phalanges. The literature has yet to describe a stroke of the medial aspect of the precentral gyrus's "hand knob" resulting in a combination of pseudoulnar nerve palsy with concurrent wrist drop.

CASE PRESENTATION: We present the case of a 78-year-old female with a past medical history of hypertension and hyperlipidemia, who awoke one morning with sudden right wrist weakness and an inability to mobilize her 4th and 5th digits. Clinical examination demonstrated limited range of motion of her wrist, with 4/5 strength in flexion and extension. Her 4th and 5th digits were held in slight flexion at the proximal interphalangeal joints and were limited to 3/5 strength in flexion and extension. Imaging revealed a focus of diffusion restriction within the left frontal lobe, compatible with an acute infarction of the medial precentral gyrus on MRI. The patient was subsequently treated with enoxaparin, aspirin, and dexamethasone showing gradual improvement in strength. The patient was advised to follow up with her outpatient neurologist. The patient's past medical history, clinical examination, and imaging findings suggested the unparalleled manifestation of pseudoulnar nerve palsy and concurrent wrist drop due to infarction of the medial aspect of the precentral gyrus's "hand knob".

CONCLUSION: The etiology of pseudoulnar palsy can be attributed to either a central or peripheral cause. This presentation of right pseudoulnar palsy with concurrent wrist drop demonstrates a unique infarction pattern of motor deficits. These findings highlight the necessity of recognizing such atypical presentations in individuals with vascular risk factors. This case adds to the growing body of evidence on central neurological presentations and underscores the significance of considering diverse etiologies for peripheral-like deficits. Additionally, it accentuates the imperative role of early diagnosis and intervention in mitigating potential long-term functional consequences in such cases.

Comprehensive Management of Total Hysterectomy in a Patient with Ehlers-Danlos Syndrome Vascular Subtype: A Case Report

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BACKGROUND: Ehlers-Danlos syndrome (EDS) is a group of rare genetic connective tissue disorders characterized by a variety of symptoms, including but not limited to joint hypermobility, skin fragility, and blood vessel abnormalities. Vascular Ehlers-Danlos Syndrome (v-EDS) is unique due to its characteristic ability to cause arterial aneurysms, dissection, and rupture of the bowel and gravid uterus. Surgery with EDS patients can be met with challenges due to fragility, bleeding, and spontaneous perforations from almost all organ systems that have been associated with EDS patients. Thorough consideration of pre-operative factors and potential complications by the entire medical team is essential to ensure safe outcomes during surgical procedures. A total hysterectomy is a common gynecological procedure that involves the removal of the uterus, including the cervix. Through documentation of this case, we aim to contribute to the knowledge base regarding the pre-surgical clearance process, perioperative management strategies, postoperative management, and potential challenges specific to v-EDS patients.

CASE DESCRIPTION: A patient presented to the NYIT Academic Health Care Center with pathogenic COL3A1 gene: c.2384 G>A;p.(G795D) Vascular Ehlers Danlos. This patient was experiencing difficulty with bowel movements. Prior imaging revealed a cervical lesion, which raised concern for malignancy. Under the guidance of her endocrine surgery team, she was scheduled to undergo laparoscopic hysterectomy, bilateral salpingo-oophorectomy, and appendectomy. Extensive preoperative clearance was obtained from rheumatology, gastroenterology, cardiology, neurology, and Ehlers-Danlos specialists. This patient's medical history included but was not limited to v-EDS, positive ANA, osteoporosis, fibromuscular dysplasia, anticardiolipin antibodies, and small bowel obstruction. Family history included a daughter with v-EDS. A number of post-operative complications were considered, such as DVT, PE, pneumothorax, and bleeding risk. Extra precautions including dorsal lithotomy positioning, handling of hypermobile joints, and monitoring for splenic aneurysms were undertaken. Post-operation, the patient is recovering well with improvement in abdominal pain. Pathological findings included leiomyomas, atrophic endometrium, and appendiceal changes.

CONCLUSIONS: This case allows us to highlight the importance of a multidisciplinary approach to managing a rare disease. All aspects of patient care are relevant and important in ensuring safe outcomes. Successful management of this patient's surgical procedure highlights the significance of collaboration among medical specialists when dealing with rare diseases. Further research and sharing of such cases will help contribute to the knowledge base of the health field and allow for optimal care in future patients.

Exploring Positive Psychological Outcomes Following Cardiac Arrest Survival

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INTRODUCTION: Cardiac arrest (CA), with ~500,000 US yearly cases, has 10% survival with 30-50% incidence of negative psychological outcomes, anxiety, depression and post-traumatic stress disorder. However, 10-20% report positive psychological outcomes with a transcendent experience - highlighted by a purposeful review of life - known as recalled experience of death (RED). We tested the hypothesis that the occurrence of RED during CA is associated with greater positive longer term personality traits among survivors.

METHODS: CA survivors were enrolled into a cross sectional study through local hospitals or support groups. RED was determined using a score ≥ 7 on Near-Death Experience (NDE) scale. They also completed validated questionnaires to measure empathy, compassion, happiness, gratitude, posttraumatic growth, benefit finding, forgiveness and social desirability. Statistics were carried out using multiple regression.

RESULTS: We recruited 102 CA survivors, of these 65% were male. Overall, 30 (29%) scored ≥ 7 on the NDE scale. The Posttraumatic Growth Inventory (median 36 [IQR=28,40]) and the Benefit Finding Scale (median 65 [IQR=55,69]) were statistically higher in CA survivors with RED than those without RED. Other positive traits tested were not statistically different between the two groups.

CONCLUSION: RED during CA may independently enhance positive psychological outcomes, including posttraumatic growth and benefit finding in survivors. Studies are required to further examine psychological outcomes among CA survivors.

Stepping Up to Informed Consent: Navigating Foot and Ankle Orthopaedics

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BACKGROUND: Orthopaedic foot and ankle (F&A) surgeons must prioritize obtaining proper informed consent (IC) to ensure patient autonomy and facilitate shared decision-making. However, barriers in F&A orthopaedic surgery impede the acquisition of adequate consent, leading to adverse patient outcomes and legal consequences. This abstract explores the current state of IC in F&A orthopaedics, identifies barriers, and proposes improvements to prioritize patient autonomy.

METHODS: A comprehensive literature review was conducted using the PubMed database to explore the landscape of IC practices in the context of F&A surgery. The search strategy utilized a combination of Medical Subject Headings (MeSH) terms and free-text keywords, including "informed consent," "foot surgery," "ankle surgery," and "patient communication."

RESULTS: The current IC process lacks patient engagement and recall due to low health literacy, complex PEMs, brief physician-patient visits, and language barriers. Improvements can be made by using clear language, standardized PEMs, and multimedia resources. Extending physician-patient visit times to at least 15 minutes can allow for effective communication. Addressing language barriers with translation assistance ensures equal access to quality IC, especially for minority populations.

CONCLUSION/CLINICAL RELEVANCE: To optimize the IC process within F&A orthopaedic surgery, simplified language, use of standardized PEMs, extended patient visits for IC discussions, and incorporation of translative services are required. The implementation of these solutions is necessary for patient autonomy to be maintained and to minimize legal risk faced by physicians. Potential pitfalls include limited literature and practicality in executing all solutions.

A Comparison of Body Mass Index and Psychiatric Drugs in Ehlers Danlos Syndrome (EDS) and Hypermobility Spectrum Disorder (HSD) Patients

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BACKGROUND: Ehlers Danlos Syndrome (EDS) and hypermobility spectrum disorder (HSD) are connective tissue diseases characterized by joint hypermobility and musculoskeletal pain. Studies have found that EDS patients have more comorbidities than those with HSD. As a result, we hypothesize that EDS patients have a higher BMI correlated to their inactivity and pain, and as a result, utilize more psychoactive medications than those with HSD. Therefore, the purpose of this study was to test the hypothesis that EDS patients have higher BMIs and take more psychoactive medications than those with HSD.

METHODS: EDS and HSD patients seen at the Long Island Heart Rhythm Center between January 2019 and June 2023 with a BMI were included. Psychoactive medications were categorized using the NIH National Library of Medicine. The number of psychoactive drugs taken was quantified for each patient. BMI was compared as a continuous variable between the two groups. Analysis was performed using a factorial ANOVA. To compare the utilization of psychoactive drugs between individuals with EDS and HSD, an unpaired student t-test was employed. Data was reported as mean \pm standard deviation with a significant p value < 0.05 .

RESULTS: 114 patients were identified: 80 patients with EDS (77 females/3 males): age 34.0 ± 12.0 years and 34 patients with HSD (29 females/5 males): age 40.3 ± 13.3 years. A factorial ANOVA was performed on the influence of two independent variables (hypermobile subtype and number of psychoactive drugs utilized) on BMI. The analysis indicated no statistically significant difference in BMIs were observed between the two groups ($F(5, 102)=1.56, p=0.18$); though more psychoactive medications were used in the EDS group (mean=1.75) and the HSD group (mean=1.09), $p=0.03$.

CONCLUSIONS: This study found no significant difference in BMI and the number of psychoactive drugs utilized between EDS and HSD patients. The study allows clinicians to better understand the interplay between psychoactive medications and BMI in hypermobile patients. Although no difference in BMI was observed, there was a greater usage of psychoactive medications in the EDS group. Limitations of the study include its retrospective design and limited sample size. Future studies, investigating the incidence of psychiatric diagnoses including pain syndromes and a more direct correlation to BMI, may shed light on differences that exist between EDS and HSD patients.

Nanoscale Organization of Calcium Channels is Disrupted in Heart Failure

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After Myocardial Infarction (MI), the heart adapts by tissue remodeling including ultra-structural changes in the EC-coupling ion channels, Ryanodine (RyR) and L-type calcium channels (LTCC). We hypothesized that Junctophilin-2 (JPH), a protein that juxtaposes RyR and LTCC channels, is reduced in heart failure (HF) leading to impaired EC-coupling. We used single molecule localization microscopy (STORM) to image clustering of the calcium channels in MI-induced HF. MI was produced in adult female Sprague-Dawley rats by permanent ligation of the LAD coronary artery, while Sham animals underwent surgery without ligation. HF was confirmed at 4 mo. post-surgery by echocardiography. Left ventricular myocytes were isolated enzymatically and plated into 8-well chamber slides. Cardiomyocytes (CM) were fixed, permeabilized and stained with fluorescent-tagged primary antibodies: RyR-Dylight550, JPH-CF647 and (LTCC) CaV1.2-Dylight488. STORM images were analyzed using clustering algorithm to determine RyR cluster size and number, nearest neighbor distances between clusters, and co-localizations of JPH and LTCC. Spontaneous Ca²⁺ leakage from the SR was imaged in live cardiomyocytes using a Ca²⁺-indicator dye, and Ca²⁺ sparks were captured by laser confocal microscopy. The transverse-tubule (TT) structures were stained with a membrane dye, and confocal images were analyzed for TT integrity. MI-induced heart failure (EF<35%) showed CM with increased number, amplitude and duration of Ca²⁺ sparks implicating ion leakage through RyR channels. Cellular ultrastructure showed T-tubule disruption. STORM images showed reduced RyR clusters with altered co-localization of LTCC and JPH channels in failing hearts. Therapeutics targeting EC-coupling proteins may provide benefit for the patient living with heart failure.

Cannabidiol (CBD) as a Promising Anti-Cancer Drug

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ABSTRACT

Cannabidiol's (CBD) potential as a promising anti-cancer drug is attributed to its low toxicity levels and ability to inhibit the growth of certain cancers in mouse tumor models. The endocannabinoid receptors, CB1 and CB2, play a crucial role in regulating cellular calcium homeostasis in the cytoplasmic and endoplasmic reticulum (ER) membranes. CBD affects these receptors. The ER is a key regulator in the maintenance of properly folded proteins. During prolonged ER stress, such as during the overaccumulation of misfolded proteins, the unfolded protein response (UPR) pathway is activated targeting the cells for apoptosis. CBD can lead to ER stress and the subsequent activation of the UPR pathway. Our lab's multi-cancer study via crystal violet assay demonstrated that A375 (melanoma cell line) exhibited the greatest sensitivity to CBD with a concentration of about 5µM (micromolar) inhibiting 50% of the cells compared to the other cancer cell lines tested. Furthermore, no significant change in normal skin fibroblasts growth was seen when exposed to CBD. RNA-sequencing done by our lab on A375 cells treated with 5µM CBD showed upregulation of key mediators in the UPR pathway such as CHOP and HSPA5 and an important marker for apoptosis, PARP in the cells. In our study, we used Western blotting to investigate the effects of CBD on melanoma and normal skin fibroblast cells to confirm the respective gene expressions. We are continuing to investigate the effects of CBD on other cell lines and are studying the activation of the UPR pathway in A375 cells.

Correlating Factors for Discharge to Rehabilitation following Hospitalization of COVID-19 Patients

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BACKGROUND: This study explores correlating factors for post-acute discharge to rehabilitation facilities in patients hospitalized with COVID-19.

METHODS: This is a retrospective analysis on 2771 COVID-19 patients admitted to a hospital system between July 1, 2022, and July 1, 2023. Hospital discharge outcomes were separated into home (2420) versus rehabilitation (351). Multiple variables were analyzed including hospital length of stay (LOS), patient age, clinical biomarkers (peak BUN, first ALT/AST, first procalcitonin, first lactate), and the use of critical care interventions (mechanical ventilation, vasopressors) during hospitalization. Logistical regression identified significant correlating factors for discharge to rehabilitation. Independent t-tests were used to compare values between patients discharged to rehabilitation versus patients discharged home.

RESULTS: Increased hospital LOS significantly correlated with discharge to rehabilitation, with each additional day increasing the odds ratio (OR) by 7.03% (OR 1.0703; 95% CI: 1.05608 to 1.0846). Patient age was also significant, with each year of age increasing the OR by 2.48% (OR 1.0248; 95% CI: 1.01632 to 1.0333). Higher peak BUN ($p < 0.001$), first AST ($p < 0.032$), and first procalcitonin ($p < 0.001$) were found to be significant biomarkers. The use of mechanical ventilators and vasopressors were significantly correlated with rehabilitation (χ^2 values of 19.8 and 16.3, respectively, $p < .001$ for both).

CONCLUSIONS: This retrospective analysis found that hospital LOS, patient age, certain clinical biomarkers, and critical care interventions significantly correlated with discharge to rehabilitation versus discharge home after inpatient treatment for COVID-19. Optimizing care pathways using multifactorial parameters is crucial for recovery and reducing long-term COVID-19 impact.

Anterior Cervical Discectomy and Fusion Causing Vocal Cord Paralysis: Case Report

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BACKGROUND: Anterior cervical discectomy and fusion (ACDF) is a common surgical procedure for cervical radiculopathy or myelopathy, but not without complications. Recurrent laryngeal nerve palsy (RLNP) is a reported postoperative issue associated with ACDF, often presenting as hoarseness immediately after surgery or, in rare cases, as delayed-onset paralysis. RLNP is attributed more to direct mechanical manipulation during surgery than patient characteristics. This case report presents a unique instance of delayed RLNP potentially related to inflammation caused by the endotracheal tube (ET) rather than intraoperative instrumentation.

CASE PRESENTATION: A 51-year-old male with a history of spinal stenosis and herniated cervical discs presented with left upper extremity (LUE) paresthesia and pain. Conservative treatments failed, leading to severe neurological deficits requiring emergent ACDF. On postoperative day (POD) 1, the patient complained of pharyngeal discomfort, difficulty swallowing, and difficulty speaking. He was subsequently diagnosed with oro-pharyngo-cervical esophageal dysphagia and left vocal cord paralysis on POD 6. This case suggests RLNP may result from inflammation due to the ET and intraoperative instrumentation.

CONCLUSION: This case emphasizes the complexities of RLNP in ACDF and highlights potential causes beyond intraoperative factors. Since our patient had the ability to speak immediately after surgical intervention, we suspect this is a rare case of delayed RLNP secondary to inflammation of tissue caused by the ET rather than intraoperative instrumentation. Preventing RLNP following ACDF is of paramount importance for surgeons. Careful tissue dissection, minimization of tissue traction, and adequate exposure of the surgical site are all essential elements in preventing nerve injury. Proper patient positioning and ET management, including cuff pressure monitoring, help reduce the risk of nerve compression or stretching. Vigilant postoperative monitoring and early intervention, such as vocal cord function assessments, are crucial. The discussion emphasizes the importance of clear communication with patients about potential risks and complications, rehabilitation, and voice therapy for optimal postoperative care in ACDF procedures.

Health Policy: Addressing the High SUID/SIDS Rate among US Indigenous Peoples, American Indians, and Alaska Natives Due to Unsafe Infant Sleep Practices.

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BACKGROUND: According to the CDC, accidental bed suffocation and strangulation accounted for 27% of 2020 infant deaths. Since the 1990s, the National Institute of Child Health and Human Development's "Safe to Sleep" campaign has promoted safe sleep to reduce Sudden Infant Death Syndrome (SIDS). Despite this and other programs, SIDS mortality rates have continued to rise, with non-Hispanic American Indian/Alaska Native (AI/AN) groups experiencing higher rates of unsafe sleep. There are currently resolutions but no bills in the U.S. Congress providing support.

METHODS: This scoping health policy review is based on a systematic analysis of articles from PubMed, various foundations, the U.S. Congress, and other resources from May to August 2023, vetted by the principal investigators.

RESULTS: Data shows that AI/AN infants have had disproportionately high SIDS rates for decades, and no relevant legislation addresses the discrepancy. SIDS risk factors include bed-sharing, prone sleep, and the use of blankets. Only three SIDS risk-reduction interventions have been tested so far in AI/AN communities. The lack of comprehensive safe sleep education and the inability to emotionally connect with information were cited in studies. The American Academy of Pediatrics (AAP) recommends safe sleep for children, but most parents do not follow them due to different cultural or social beliefs.

RECOMMENDATIONS: Health policy mechanisms that provide resources for campaigns that highlight research gaps and underutilized partnerships, answer questions, and emphasize that every infant at risk should be used to dispel misinformation, especially online.

Association of Substance Use with Trauma Outcomes During and After the COVID-19 Pandemic at NYC Level II Trauma Center

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BACKGROUND: Studies have demonstrated that the COVID-19 pandemic caused increased stress associated with higher substance abuse and mental health crises that disproportionately affected minority populations. A NYC level II trauma center registry was used to determine if there was an association between substance use, patient demographics, and injury severity measures during the pandemic.

METHODS: A retrospective review of 3,172 patients was conducted using a level II trauma center registry. Cohorts included PreCOVID(2019), COVID(2020), 1yr-PostCOVID(2021), and 2yr-PostCOVID(2022). Demographics and injury severity measures were analyzed using SPSS v27 with $p < 0.05$ indicating significance.

RESULTS: Substance use significantly increased from PreCOVID to COVID, stayed elevated 1yr-PostCOVID [259(37) vs364(46) vs402(46), $p < 0.05$] and returned to PreCOVID levels 2yrs-PostCOVID. In Black Hispanics, substance use during COVID increased compared to PreCOVID [36(5) vs70(9), $p < 0.05$] and returned to PreCOVID levels by 1yr-PostCOVID. In Black non-Hispanics substance use increased, not significantly, during COVID compared to PreCOVID, and then significantly increased in 1yr-PostCOVID [118(17) vs226(26), $p < 0.05$] and returned to PreCOVID levels 2yrs-PostCOVID. Positive substance uses related penetrating trauma increased during COVID [62(9) vs104(13), $p < 0.05$], stayed increased 1yr-PostCOVID, and then returned to PreCOVID levels by 2yrs-PostCOVID. Positive substance use related to ISS, NISS, and GCS showed refuting evidence.

CONCLUSIONS: Results indicated the pandemic led to an increase in substance use related trauma admissions during and one year after the pandemic that predominantly affected minority populations. This is consistent with the many other disparities minority populations faced during the pandemic.

Delayed Diagnosis of Acute Inflammatory Demyelinating Polyneuropathy Variant of Guillain-Barre Syndrome Due to Possible Anchoring Bias

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BACKGROUND: Due to the broad differential associated with muscle weakness, the diagnosis of conditions such as Acute Inflammatory Demyelinating Polyneuropathy (AIDP) variant of Guillain-Barré Syndrome (GBS) can present a significant challenge in clinical practice. This case underscores the importance of overcoming anchoring bias, where initial evidence might misleadingly direct the diagnostic process.

CASE PRESENTATION: We present a case of a 63-year-old female patient with progressive muscle weakness over the past 5 days. Her past medical history is significant for multiple comorbidities, including hyperlipidemia managed with rosuvastatin, with dosage recently increased from 20mg to 40mg over the last 1-2 months.

Upon presentation, the patient explained that initially, she felt that her neck could not support her head. This progressed to bilateral (b/l) upper extremity weakness with arm pain, and finally b/l lower extremity weakness. Physical examination revealed b/l proximal muscle weakness in all extremities. Motor testing showed b/l deltoid and bicep strength at 3/5 with hand grip strength at 5/5, and b/l hip and knee flexors at 2/5, with ankle strength at 5/5 in both plantar and dorsiflexion. All deep tendon reflexes (DTRs) were areflexic except for a 1+ left bicep reflex. Sensation remained intact throughout.

Initial labs showed elevated inflammatory markers (ESR, CRP), LFTs, and bilirubin. Serum creatine kinase, LDH, and aldolase levels were also increased. Neurology and rheumatology were consulted, and both attributed the weakness to a suspected statin-induced myopathy.

The patient was admitted to the hospital and statin therapy was withheld. By hospital day 4, there was some improvement in upper extremity strength but no improvement in proximal lower extremity strength or return of DTRs. Prednisone therapy with 100mg daily was initiated. After little improvement by day 6 of therapy, statin-induced myositis was considered unlikely on day 10 of hospital admission.

A CSF was performed but deemed inconclusive due to a traumatic tap. Treatment with IVIG was initiated for a possible AIDP. After 5 days of IVIG 0.4g/kg, there was significant improvement in strength across all extremities and return of all DTRs.

A final diagnosis of AIDP variant of GBS was made, and the appropriate treatment plan was formulated.

CONCLUSION: This case exemplifies the critical importance of maintaining a broad differential diagnosis and avoiding anchoring bias to ensure accurate and timely identification of complex conditions like Acute Inflammatory Demyelinating Polyneuropathy variant of Guillain-Barre Syndrome.

Individual Differentiation by Surface Metrology of Fingerprints at Multiple Scales

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Fingerprints are patterns of ridges and sulci formed by dermis structural characteristics. Disruptions to these can change fingerprint structure. Such changes are harder to measure with standard fingerprints that rely on maintaining ridge and sulcus integrity. Therefore, three-dimensional fingerprint structure data is valuable.

Two existing technologies, the S Neox optical profilometer and the Gelsight Mobile2 were used to scan left hand fingerprints of four individual body donors from the NYITCOM Anatomy Lab. These fingerprints were molded, and epoxy casts were made. Casts were then scanned with the S Neox at 3.49 x 2.6 mm area, and with the Gelsight Mobile2 at 18.5 x 15 mm area. To compare outcomes at comparable sizes, the data from the larger area scanned by Gelsight (= Gelsight BIG area) was cropped to the same dimensions of the S Neox data (= Gelsight SMALL area).

A one-way ANOVA of the samples scanned with the Gelsight BIG area, SMALL area, and the S Neox found no significant differences in variables when scale-sensitive fractal analysis (SSFA) parameters were grouped by finger number. However, when grouped by individual, significant differences were found in SSFA parameters when scanned with the S Neox, the SMALL Gelsight area and the BIG Gelsight area.

Ultimately, it appears that all three methods employed here, whether the BIG area for Gelsight, the much smaller area of the S Neox, or the Gelsight area cropped to the size of the S Neox area, none found differences between fingers, but all found differences between individuals

Legislative Impact on Newborns: Connecting the Dots Between Public Health Policies and Neonatal Abstinence Syndrome in the State of New York

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The US has seen a substantial increase in the incidence of neonatal abstinence syndrome (NAS)—a constellation of withdrawal symptoms presenting in newborns. NAS is associated with lifelong increases in morbidity, mortality, intellectual and developmental delays, chronic metabolic syndromes, and reliance on public assistance. This study quantified the relationship between various public health metrics and the incidence of neonatal abstinence syndrome (NAS) with the goal of identifying key areas for future public investment. Data from state and federal databases were analyzed for trends, then SPSS was used to identify correlations and interactions between opioid prescription rate (OpRx), participation in state-funded substance use treatment programs (SUDTx), percentage of population living in poverty (%Pov), and percentage of population who are uninsured (%Un). There was a significant effect each variable on the incidence of NAS, the overall model produced a mean squared error of 0.989 indicating a strong fit. Subsequent independent analysis of the %Un was performed revealing a correlation coefficient of 0.09, indicating a strong effect of decreasing uninsured rate and decreased incidence of NAS. The results of the study demonstrate that increased scrutiny of opioid prescription habits and increased funding for public assistance programs profoundly reduce the incidence of NAS. Current annual direct costs to Medicaid and other programs for infant care associated with NAS near \$1 billion, not inclusive of the lifelong sequelae or decreased economic participation. Reducing the incidence of NAS can greatly reduce the burden on the newborn, the family, and on the local, state, and federal communities.

Selective Laser Trabeculoplasty Outcomes in Phakic and Pseudophakic Patients: A Meta-Analysis

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BACKGROUND: Selective laser trabeculoplasty (SLT) reduces intraocular pressure (IOP) in patients with open-angle glaucoma (OAG) and ocular hypertension (OHT). Previous literature has reported conflicting evidence on pseudophakia's potential impact on the efficacy of SLT. The purpose of our study was to perform a meta-analysis to compare the efficacy of SLT in phakic and pseudophakic eyes.

METHODS: Scopus, Embase, PubMed, and gray literature were searched for studies comparing SLT outcomes in phakic and pseudophakic patients with OAG or OHT. Mean change in IOP was compared using a standardized mean-difference (SMD) meta-analysis (Revman 5.4.1). Begg's funnel plots and Egger's test were used to assess publication bias.

RESULTS: Eleven studies with 1058 eyes (323 pseudophakic and 735 phakic) were identified. There was no statistically significant difference in observed efficacy of SLT between pseudophakic and phakic eyes (SMD = -0.10; 95% CI = -0.24, 0.03; p=0.14). There was no publication bias or heterogeneity (I² 0%; p=0.66) detected. Subgroup analysis of studies stratified by length of follow-up in months (6; 12; 24 or greater) revealed no significant difference in SLT efficacy at the different time points (p=0.86; p=0.59; p=0.16, respectively).

CONCLUSION: Our pooled and subgroup analysis revealed no significant difference in SLT response between the two populations. Our results support SLT as a viable treatment option for patients with OAG or OHT regardless of pseudophakic status.

From Disclosure to Understanding: An Examination of Informed Consent in Upper Extremity Surgery

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INTRODUCTION: Informed consent (IC) is a collaborative process that identifies risks, benefits, and treatment alternatives to procedures. Sub-par IC quality leads to an infringement of patient autonomy and decreased satisfaction in orthopaedic surgery. Highlighting this issue, poor IC is at the center of 13% of upper extremity (UE) malpractice cases.

METHODS: A comprehensive literature review, utilizing the PubMed database, explored current IC practices in UE surgery. The search strategy employed a combination of Medical Subject Headings and free-text keywords such as "informed consent," "shoulder surgery," "elbow surgery," and "patient autonomy."

RESULTS: 99.9% of civilian workers have jobs necessitating the gross manipulation of their hands. With experts anticipating a 333.3% increase in UE surgery in younger adults, inadequate IC consequences are inevitable. Yet, orthopaedic literature lacks sufficient quantitative analyses of the impact of IC regarding UE procedure outcomes. Even so, available studies highlight low patient recollection of procedure risks, post-surgery, underscoring the need for improved IC. UE-specific IC processes notably involve variable patient demographics, implying a spectrum of patient expectations. This calls for universal solutions with room for trust and understanding. Teach-back methods, simple language, visual aids, and interpreter services bolster IC quality, specifically for low-health literacy populations. Additionally, tailored lectures and standardized patient encounters better equip residents to deliver higher-quality IC.

CONCLUSION: Enhancing IC processes, especially in dynamic fields such as UE, is critical to preserving patient autonomy and improving patient outcomes. Universal solutions entail systemic shifts in the approach to IC, prioritizing patient engagement and understanding.

To Lift or Not

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BACKGROUND: Weight lifting has multiple benefits. We present a postmenopausal female with multiple medical problems managed by weightlifting with improvement on bone density, BP, and pap smears.

CASE: 63-year-old postmenopausal female (at age 48) with history of low BMI of 19, osteoporosis, hypertension, and abnormal pap smear ASCUS/HGSIL+ HPV (Atypical Squamous cells, cannot exclude High Grade Squamous Intraepithelial Lesion) diagnosed 2018. Patient has been on losartan 25 mg and calcium 1000 mg with vitamin D 1000 IU since 2019.

In 2018, DEXA noted the lowest T Score of -2.7. Patient was offered bisphosphonate but declined. Instead, the patient chose to take calcium with vitamin D and initiated weightlifting daily for 45 minutes with a personal trainer. Subsequent DEXA noted for the lowest T of -2.6 in 2020 and -1.9 in 2021. In addition, both BP and pap smears regressed to normal.

DISCUSSION: Osteoporosis is characterized by decreases in bone mineral density (BMD) and increased risk of atraumatic fracture. The risk of developing osteoporosis in women over age 50 is 50% with another 40% meeting criteria for osteopenia. Postmenopausal women are at increased risk due to decreased serum estradiol, which appears to contribute to bone health through inhibition of bone resorption and promotion of bone formation.

Several medications have been developed for the treatment of osteoporosis many of which have severe adverse effects. Less emphasis, however, has been put on the benefit of exercise on BMD. Bone is a labile tissue with mechanosensitive osteocytes who respond to bone matrix strain and fluid flow by increasing bone formation: resorption ratio. Results in some randomized control trials (RCTs) attempting to elucidate the effect of exercise on BMD have shown a significant increase in BMD of the femoral neck and lumbar spine and total hip after high-intensity resistance training over an extended period of time.

In addition to this primary outcome, resistance training has also been shown to decrease both systolic and diastolic blood pressures RCTs in patients with prehypertension or hypertension. Our patient demonstrated similar positive outcomes in response to weight lifting with improved office BPs. Finally, the patient saw resolution of cervical abnormality which could be a third benefit from improved immune function provided by weight lifting. Immunosenescence is a major contributor to infection susceptibility within the aging population. A recent RCT has implicated weight lifting in the reduction of native senescent T cells, which has been proposed to create space for proliferation of naïve T cells in order to boost immune function. In the era of 2024, management of medical issues with life style medicine has a crucial role as compared to traditional tools of medication alone. Thus, to *lift or not lift* makes a difference!

Training Medical Students on In-Person and Telephone Interpretation Prior to Starting Clinical Rotations: Effects on Confidence and Competency

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Nearly 1/10 US inhabitants have limited English proficiency. They often rely on bilingual family or staff untrained in medical interpreting to access healthcare. However, professional interpreter use (PIU) results in better healthcare outcomes. Training students to use interpreters may increase interpreter usage competency and favorable patient outcomes. Little research exists on training methods for PIU for medical students, especially on phone interpreters. Phone interpretation is vital for speakers of uncommon languages and hospitals with few in-person interpreters. This ongoing interventional study to teach PIU is composed of a group of 30 preclinical medical student volunteers at Stony Brook University's Renaissance School of Medicine. Recruitment began in August 2023, with a projected study end in March 2024. Participants completed a pre-intervention survey, interactive PIU module (training slides, interactive questions, and two videos on in-person and telephone interpreter use), and an immediate post-intervention survey. The pre-intervention survey quantified perception of interpreters and PIU proficiency. The post-intervention survey assessed the module's success at teaching PIU. A repeat post-intervention survey after six months will assess retention during clinical rotations. Statistical analyses performed included the non-parametric Wilcoxon Signed Rank Test (eg. confidence with skills), Chi-Square tests (e.g. prior interpreter use), and paired t-tests to quantify data and perform overall group analyses. We found statistical significance for increased comfort, perceived PIU proficiency, and competency score post-intervention. These preliminary results demonstrate the potential for our module to improve PIU early in medical education. By improving PIU skills, our module may ultimately improve patient outcomes.

Sex-Based Differences in Circulating Superoxide Dismutase 3 (SOD3) Following Acute Ischemic Stroke

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Background: Acute stroke induces inflammatory changes within the lung that play a role in cerebral reperfusion injury. The extracellular superoxide dismutase 3 (SOD3) can counteract inflammatory changes and may serve as a potential biomarker of acute stroke. Here, we examine the sex-based differences in circulating SOD3 levels in patients with acute ischemic stroke (AIS) and non-ischemic control patients.

Methods: *Inclusion criteria:* Individuals (≥ 18 years) presenting to Stony Brook Hospital with AIS and not treated with tPA or thrombectomy. Controls included individuals with MRI-negative TIA or other diagnoses. *Exclusion criteria:* history of seizure at presentation, stroke or ICH, malignancy, autoimmune disease, infection, recent trauma or minor surgery (< 30 days), and major surgery within 90 days. *Analyses:* Blood samples from 145 patients were analyzed by automated capillary Western (Jess, Bio-technie, Minneapolis, MN) for total hSOD3 (Bio-Techne AF3420, goat, 1:10), including 47 male stroke (MS), 35 female stroke (FS), 26 male control (MC), and 37 female control (FC) samples.

Results: A one-way ANOVA with Tukey's HSD revealed statistically significant differences between MS vs. FS (0.93 ± 0.48 vs. 1.36 ± 0.56 , $P=0.0039$), MS vs. MC (0.93 ± 0.48 vs. 1.30 ± 0.66 , $P=0.0375$), and MS vs. FC ($P=0.0036$) samples. No statistically significant differences were found between FS vs. MC, MC vs. FC, and FS vs. FC samples.

Conclusion: These results support a determinative effect of sex on stroke-induced changes in circulating SOD3 levels, which may hold clinical importance in the design and application of future neuroprotective therapies.

Writing Away Racism Project (WARP) – Using Creative Writing Workshops to Promote Anti-Racism in Medical Education

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Medical institutions currently use a “cultural competency” approach and rational classroom discussion to educate learners on racism, but these methods are ineffective. It is necessary to teach anti-racism directly.

Writing Away Racism Project (WARP) is an intervention where creative writing workshops expose medical students, residents and faculty to the skills needed to be anti-racist. Literature and creative works are used as a third object– a reflective trigger that provides learners with a safe and controlled way to discuss sensitive and divisive topics.

Participants attend a series of 7 workshops designed using an existing framework on how to be anti-racist. Facilitators are trained to lead small groups to close-read literature, radically listen to each other and write from different perspectives following directed creative writing exercises. Participants fill out surveys prior to, immediately after and 3 months after the workshops. WARP workshops are currently in the developmental stages with 2 out of 7 workshops launched so far.

Results from the first workshops show that participants appreciate its unique, fun and thought-provoking nature, and enjoy connecting profoundly to other’s perspectives in a memorable way. 19 out of 20 participants strongly agreed that the main objective of the workshop – recognizing the individuality and shared humanity of people – was met.

Through WARP, participants discover that the key to unlearning a cultural norm like racism lies in consistent critical reflection – beginning by taking a deep dive into other people’s different realities and exploring the feelings and emotions that arise.

Impact of the Bedside Mobility Assessment Tool on Hospitalized Geriatric Patient Mobilization

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Prolonged bedrest in hospitalized patients of advanced age contributes to complications including musculoskeletal deconditioning, pressure ulcers, and infection, culminating in cognitive decline and increased length of stay. Bolstering mobilization of patients may prevent adverse outcomes of hospitalization. This study aims to determine whether utilization of the Bedside Mobility Assessment Tool (BMAT) to assess patient mobility affects mobilization frequency of geriatric patients by medical personnel.

The BMAT scale was used to monitor mobility of patients over 65 on the Medicine floor. Movement contraindication criteria (cardiorespiratory, neurological status) were considered. Nurses assigned patients a BMAT score daily from 1 to 4; 1 represented immobility and 4 independent mobility. Distance walked and movement were logged. Difference in mobilization frequency was quantified between groups who were and were not scored.

Distribution of BMAT scores was stable over 3 months, indicating reliability and consistent BMAT interpretation. Between 62% and 100% of patients were mobilized daily. 58.8% of scored patients were mobilized; 40.7% of unscored patients were mobilized. Chi-square test ($\chi^2(1) = 5.83$, $p < 0.0158$, $\phi = 0.14$) determined a significant association between mobilization and receiving a BMAT score, with odds of mobilization increased by 2.08 times for those receiving scores.

Patients who received a BMAT score were more likely to be mobilized. Implementation of mobility assessment may increase patient mobilization, minimizing bedrest complications. Studies should identify barriers of care to regular scoring and mobilization, such as time constraints of personnel. Mobility assessment promotes monitoring which may contribute to decreased falls and safe hospital stays.

Exploring the Evolution of the Mind-Body Connection as First-Year Osteopathic Medical Students Learn About Common Osteopathic Dysfunctions.

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As first-year osteopathic medical students learn about common osteopathic dysfunctions, they seem to become aware of dysfunctions in their own bodies. This prospective observational study aims to determine whether increased awareness of somatic dysfunctions among osteopathic students exists, and if so, if it is due to increased bodily awareness, or due to "medical school syndrome," where students become preoccupied with studied pathologies.

Participants included eight first-year osteopathic medical students (study group) and five Masters students (control group). Data was collected at three points during the fall semester: first-year orientation, representing baseline knowledge, and around each OMM exam, representing knowledge acquisition about the thoracic spine and the ribs/lumbar spine.

At each session, participants completed a survey reporting pain and underwent an osteopathic evaluation by student researchers to identify dysfunctions. Data analysis involved "matching" participant reports to researcher findings to explore whether 1) reports increased as participants learned about dysfunctions in studied anatomical regions and 2) whether reported dysfunctions were confirmed via osteopathic evaluation.

Results in this pilot study show that with increasing osteopathic knowledge for the thoracic region, first-year student participants identified real thoracic somatic dysfunctions more accurately than baseline and compared to the control group. In all anatomical regions participants did not falsely report dysfunctions, ruling out medical school syndrome.

Study limitations included small group sizes, prior anatomical knowledge from anatomy courses, and potential researcher error in diagnosing dysfunctions. This data not only supports the advantages of hands-on learning, but also highlights previously unstudied benefits, such as increased proprioception.

Migration of an Intrauterine Contraceptive Device in an Ovary: A Case Report

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INTRODUCTION: Intrauterine devices (IUDs) are commonly used methods of contraception. One uncommon complication is uterine perforation either at the time of insertion or subsequently, which rarely results in perforation through adjacent pelvic organs. This case describes an instance of a Copper IUD becoming embedded in an ovary.

BACKGROUND: A 36 year old female G2P1102, with no significant past medical history, presents to the office with right sided pelvic pain. A Paragard IUD was initially placed following a cesarean section and she has been in pain since. The IUD was visualized in the right ovary via transvaginal ultrasound.

RESULTS: Risks, benefits, treatment options, and outcomes of laparoscopic removal were discussed with the patient. During the procedure, the strings of the IUD were visualized protruding from the ovary. The IUD was removed from inside the ovary by a grasper pulling on the strings. A minimal amount of bleeding was seen from the ovary and cauterized with excellent hemostasis. The function of the ovary is important to female health and reproduction. Postoperative symptom improvement can focus on patient comfort and reduction of pain, with hemostasis being another critical aspect.

CONCLUSIONS: A small number of cases found IUDs embedded in the ovary. This may impact ovarian function. Preserving the blood supply of the ovary is crucial. Some cases of IUD migration to extrauterine sites may be asymptomatic or may present with symptoms including pelvic pain, dyspareunia, or abnormal uterine bleeding. If an IUD is found outside the uterus, it may not function as contraception.

Investigating mtDNA Copy Number in Prostate Cancer Samples

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CONTEXT/BACKGROUND: Mitochondrial DNA (mtDNA) is shown to be increased in several cancerous tissues. It is suggested that when DNA is damaged, mtDNA increases. Moore et. al (2017) used peripheral blood leukocytes to demonstrate that increased mtDNA copy number was associated with non-aggressive prostate cancer (PCa) and a higher Prostate Specific Antigen level, but not associated with aggressive PCa. The current study utilized human PCa tissue to examine mtDNA copy number changes in comparison with normal prostate tissue.

METHODS: Ten human paraffin-embedded prostate samples from biopsy curls were obtained from Precision for Medicine, Norton, Massachusetts. Thermo Scientific GeneJET FFPE DNA Purification kit was used to isolate DNA. Nuclear and mtDNA were amplified via PCR using the Absolute Human Mitochondrial DNA Copy Number Quantification qPCR assay kit. From this data mtDNA copy number was calculated. MtDNA from cancerous and normal prostate samples were then statistically compared.

RESULTS: Results showed mtDNA copy number was significantly increased in cancerous prostate tissue compared to the normal tissue. mtDNA copy number from the cancerous samples was 61% higher compared to the normal tissue.

CONCLUSION: This study confirms that mtDNA copy number increases in PCa samples. mtDNA copy number could serve as a marker for PCa screening and targets for therapeutic measurements. This study contributes to the understanding of TFAM and Twinkle genes as they pertain to changes in mtDNA copy number in PCa. Future research includes examining the mtDNA copy number as it impacts varying grades of PCa.

Unraveling the Diagnostic Challenges of Mirror Syndrome: A Case Report on an Idiopathic Presentation

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Mirror syndrome is a rare phenomenon characterized by the simultaneous occurrence of fetal hydrops (fetal edema), maternal edema, and placentomegaly. Since its first classification in 1956, only 113 cases have been reported in the literature as of 2016. Despite extensive research, the definitive cause remains elusive. Previous studies have highlighted factors like rhesus isoimmunization, viral infections, placental tumors, and fetal malformations as potential triggers. Tailored treatments have been devised based on identified causes, but for cases lacking a specific etiology, immediate delivery is often the recourse to alleviate symptoms. The diagnostic challenge lies in differentiating mirror syndrome from preeclampsia, a condition marked by maternal hypertension and proteinuria, accompanied by significant maternal edema. Misdiagnosis could be fatal, given that preeclampsia, particularly in its early stages, generally requires a less intensive treatment. Furthermore, mirror syndrome carries a higher risk for intrauterine fetal demise, emphasizing the critical need for heightened awareness and early detection. Establishing ultrasound as a standardized guideline for patients exhibiting significant edema can facilitate the early identification of mirror syndrome. The presence of fetal hydrops and placentomegaly, which are rarely observed in preeclampsia, may be indicative. The timely recognition of these clinical manifestations enables the appropriate interventions, potentially averting a premature birth. In this report, we present a case of mirror syndrome in a 26-year-old female with progressive peripheral edema and fetal hydrops. Imaging confirmed the diagnosis and workup revealed no discernable cause, prompting immediate delivery. Such early detection and intervention resolved the symptoms for both the mother and neonate.

Predicting Surgical Case Time: Using Machine Learning to Optimize Operating Room (OR) Scheduling

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Operating rooms (ORs) constitute a significant portion of hospital revenue and expenses, ranging from \$22 to \$133 per minute. Cost reduction strategies, such as reducing 7 minutes per case over 250 cases, can yield up to \$100,000 in savings. Current surgical case time prediction at NYU Langone Health primarily involves EPIC-generated estimates, in addition to surgeon inputs and scheduling team forecasts. Our study aims to develop and leverage an operation-specific machine learning model to more accurately predict surgical case times. Robotic-assisted hysterectomies and myomectomies were selected because of their average case time, high surgical throughput, and poor baseline predictions. The machine learning model was constructed from operation-specific patient and surgical characteristics anticipated to influence case time. Retrospective data determined the relative importance of these characteristics on case time, and model predictions were retrospectively and prospectively validated. The primary outcome was the difference in model predictions compared to baseline predictions, quantified by 15-minute time blocks. The model successfully predicted case times for both hysterectomies and myomectomies, outperforming the institutional standard. We found that the hysterectomy and myomectomy models reduced 15-minute time blocks by 7% and 24% compared to baseline, respectively. Our operation-specific machine learning model offers a state-of-the-art means to predict surgical case times for robotic-assisted hysterectomies and myomectomies. Optimizing OR scheduling using machine learning holds broader implications for improving patient satisfaction, reducing costs, and increasing surgical throughput, aligning with the pursuit of value-based care in surgical departments. We are currently expanding our model to include other surgical operations.

Chronic Activation of a Negative Engram Induces Behavioral and Cellular Changes

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BACKGROUND: Negative memories engage a brain and body-wide stress response that can alter cognition and behavior in humans. Prolonged stress responses induce maladaptive cellular, circuit, and systems-level changes that can lead to pathological brain states and corresponding disorders in which mood and memory are affected. Given the ventral hippocampus (vHPC) is heavily impacted by stressors, we sought to test the hypothesis that repeated activation of cells processing aversive memories in the vHPC of mice would lead to cellular and behavioral abnormalities that may provide insight into rumination's negative impact on human health.

METHODS: To test for the sufficiency of negative engrams in driving behavioral and histological changes, we tagged a negative engram in young (3 month) and old (11 month) mice. After undergoing 3 months of chronic engram stimulation, the mice underwent a battery of behavioral tests to measure anxiety, spatial working memory, fear, and generalization-related behaviors.

RESULTS: Negative engram activation increased anxiety behaviors in both age groups, reduced spatial working memory in older mice, impaired fear extinction in younger mice, and heightened fear generalization in both age groups. Immunohistochemistry revealed changes in the morphology and number of microglia and astrocytes, alongside decreased GABAergic fluorescence in the hippocampus.

CONCLUSIONS: Together, our findings suggest that repeated activation of aversive memories induces enduring cellular and behavioral abnormalities that may provide insight into rumination's negative impact on human health. This provides a novel framework in which memory itself may affect, and lead to, maladaptive brain states.

Cutaneous Lesions Mimicking Hypopigmented Mycosis Fungoides After Starting Ixekizumab for Psoriasis

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BACKGROUND: Mycosis fungoides (MF) is the most common type of cutaneous T-cell lymphoma (CTCL). There are many variants of MF that can mimic common dermatoses, such as psoriasis. Both CTCL and psoriasis have immunopathologic overlap involving T-cells, but they vary with respect to management. Several biologics have been developed for psoriasis targeting cytokines, including interleukin-17 (IL-17). Biologics have increased the therapeutic possibilities for psoriasis; however, the effect of biologics in MF is poorly understood. Here, we report a case of the development of hypopigmented cutaneous lesions suspicious for hypopigmented mycosis fungoides (HMF) after recently starting the IL-17 monoclonal antibody ixekizumab.

METHODS: A 31-year-old female with a history of plaque psoriasis presented with expanding asymptomatic hypopigmented patches on the bilateral dorsal forearms 20 weeks into starting ixekizumab. Examination revealed Fitzpatrick skin type II, and 2.5-cm-diameter and 1-cm-diameter hypopigmented patches on the left and right dorsal forearms, respectively. A punch biopsy of the left dorsal forearm was conducted for further evaluation. Ixekizumab was discontinued, calcipotriene-betamethasone ointment was started as needed to manage psoriasis, and ruxolitinib cream twice daily was started for possible vitiligo while awaiting punch biopsy results.

RESULTS: Punch biopsy revealed epidermotropism of atypical lymphocytes on histology and an abnormal CD4:CD8 ratio of 1:8 on immunohistochemical staining. High-throughput sequencing for the evaluation of T-cell receptor (TCR) clonality revealed one dominant TCR-gamma sequence. The patient was subsequently diagnosed with hypopigmented CTCL-like lymphomatoid reaction. Since the cessation of ixekizumab, cutaneous manifestations have remained stable.

CONCLUSIONS: HMF is a rare variant of MF, which consists of hypopigmented patches mainly distributed on the trunk, limbs, and buttocks. Unlike classical MF, which typically presents in the fifth to sixth decades of life, HMF most commonly affects children with high Fitzpatrick skin phototypes. While HMF shows a good response to current treatments, its diagnosis may be difficult to make due to its indolent nature and resemblance to other common conditions with similar presentations. Psoriatic patients have a greater risk of developing lymphoma, though the role psoriasis plays in the development of MF is unclear, whether through chronic immune stimulation or immunomodulating medications used for treatment. Similar cases of the development of classical and erythrodermic MF after starting the IL-17 monoclonal antibody secukinumab have been reported. This case highlights the need for further understanding of the pathogenesis of psoriasis and MF, and the role biologics may play in the development of MF.

Do CT Scans Following EVD Placement Meaningfully Change Clinical Care?

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BACKGROUND: External ventricular drains (EVDs) play a crucial role in alleviating elevated intracranial pressure in patients with acute neurological deficits. Despite routine post-placement CT scans at our institution to assess accuracy and potential hemorrhage, the clinical benefits of this practice remain uncertain.

METHODS: This retrospective study, conducted at Westchester Medical Center, a level I trauma center, analyzed data from 103 adult patients undergoing 109 EVD placements and 106 CT scans between January 1st, 2021, and December 31st, 2022. Accuracy of EVD placement was assessed using the Kakarla et al. grading system (Grades I-III), where Grade I indicates the most accurate placement.

RESULTS: The mean patient age was 54.1 ± 17.1 years (age range, 18-86 years), with intraventricular hemorrhage (36.9%) and subarachnoid hemorrhage (30.0%) as the primary indications for EVD placement. The average EVD duration was 11.6 ± 10.0 days. Among 109 EVD placements, 101 EVDs (92.7%) achieved Grade I accuracy, 1 EVD tip (0.9%) was Grade II, 4 EVD tips (3.7%) were Grade III, and 3 EVD tips (2.8%) lacked a Grade due to the absence of follow-up CT scans. Only 3 drains were revised, all of which were Grade III, non-functional placements.

CLINICAL RELEVANCE/CONCLUSIONS: Emergency freehand placement of an EVD may lead to inaccuracies, necessitating CT scans for non-functional drains. However, routine CT scans did not change patient management when EVDs were functional, even with suboptimal placement. The institution-specific nature of this issue underscores the importance of future multicenter studies for generalizability.

Modified 11-Factor Frailty Index as a Predictor of Nonunion Fractures in the Upper Extremity

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BACKGROUND: Nonunion occurs in 5-10% of all fractures and is a serious orthopedic complication that impacts patient quality of life and healthcare costs.¹ Many risk factors are well-established, including smoking, open fracture, diabetes, and infection.² However, there lacks a quantitative method to measure the impact of risk factors on patient outcomes. This study investigates how effectively the modified 11-factor frailty index (mF-11), along with age and race, predicts nonunion fractures in the humerus, radius, and ulna.

METHODS: The NIS database was queried for patients presenting from 2015-2019 with open and closed humerus, radius, and ulna fractures. Patients were stratified into those presenting with nonunion fracture or fracture with routine healing and assigned a frailty score using the mF-11. Binary logistic regression was used to determine if frailty was an independent risk factor for presenting with nonunion fracture.

RESULTS: Of the 95,090 patients presenting with fractures, 14,280 presented with nonunion. Patients were more likely to present with a nonunion if they were less frail, less than 65 ($p < 0.001$), female ($p < 0.001$), or Hispanic.

CONCLUSION: The mF-11 has a negative correlation with the incidence of nonunion fractures. This indicates that of the factors included in the index, some may possibly be protective against the development of nonunion fractures. Frail patients may better adhere to postoperative treatment regimens or have more frequent follow up following initial fracture. This may negate the adverse effects of comorbidities, underscoring the importance of patient compliance.

Demographics of Pediatric Exercise Equipment Related Injuries

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OBJECTIVES: Children ages 4 to 18 are a high injury risk group due to increased physical activity with rapid physical development. There is a lack of safe exercise equipment knowledge. Identifying risk factors and types of injury can improve how children explore exercise without hurting themselves.

METHODS: 24,696 exercise equipment related injuries, among children ages 4 to 18, in the NEISS (National Electronic Injury Surveillance System) database were analyzed over a 10-year period between January 2013 and December 2022.

RESULTS: Most of the exercise equipment related injuries were noted at 15 years old (11.59%) with mean age 12.89 years. Males (58.37%) and the Caucasian race (39.51%) were more susceptible to injury. Most common injuries were strains and sprains (27.77%) followed by fracture (12.32%) and contusion (11.65 %). Predominant injuries were in the upper trunk (10.52 %), ankle (10.47 %), and lower trunk (9.16 %). The most common exercise equipment related injury was from weightlifting (28.13 %) followed by floors or flooring material (2.45%). Most injuries were sustained at an unidentified location (33.56%) followed by school (26.60%). 96.00% of participants were discharged home.

CONCLUSIONS: Male children that weightlift in high school are at greater risk of upper trunk strains and sprains possibly due to incorrect exercise protocol and form. Possible pitfalls of the study include nonspecific injuries in database.

CLINICAL RELEVANCE: Adequate on-site supervision, including at school, while performing exercises incorporating gym equipment could minimize injuries among school-going children.

Topographic Findings in the Eyes of Children Treated with Collagen Cross-Linking (CXL) for Keratoconus (KCN)

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BACKGROUND: Pediatric KCN is believed to progress more rapidly to cornea transplant surgery (CTS) than adults. This study evaluated children with KCN to identify possible topographic indicators for CXL in order to halt or lessen the progression of KCN.

METHODS: A retrospective study was conducted on 27 KCN patients, ages 12-18, that were diagnosed based on slit-lamp findings, loss of vision, and corneal topography. Of the 54 total eyes, 33 eyes were diagnosed with KCN and treated with CXL, 17 eyes were untreated, and 4 were too severe for CXL and required CTS. Eyes were compared on anterior and posterior mean keratometry (AKm, PKm) and thinnest pachymetry (TTP). Additionally, treated eyes were also compared pre- and post-CXL for patients who completed a 12-month follow-up. Lastly, changes to logMAR visual acuity were also assessed in treated eyes.

RESULTS: At initial presentation, the difference between cross-linked and untreated eyes for AKm was 3.59D (P=0.028), PKm was -0.637D (P=0.024), and TTP was -41.46 μ m (P=0.022). Only 14 treated eyes, from 13 patients, were included in the post-CXL comparison as the remaining were lost to follow-up or have not completed a 12-month post-op visit. This comparison demonstrated a 1.61D decrease in AKm (1.61D, P=0.015). There was a mild improvement in logMAR visual acuity (0.06) in cross-linked eyes between the first and last visit. Lastly, none of the cross-linked eyes progressed to CTS.

CONCLUSION AND CLINICAL RELEVANCE: Children with KCN often present with more advanced disease and are at a greater risk of progression than adults. Earlier treatment with CXL may halt or slow progression of KCN. Our results indicate that pediatric KCN patients presenting with steeper AKm and PKm, as well as thinner corneas, should be considered for CXL.

Deceptive Appearances: Dedifferentiated Liposarcoma Presenting as a Retroperitoneal Abscess

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INTRODUCTION: Liposarcoma encompasses various histological subtypes, each distinct in clinical behavior and prognosis. The most common subtype, well-differentiated liposarcoma, can progress to dedifferentiated liposarcoma (DL), a notably more aggressive variant. DL often presents diagnostic challenges due to vague presentations, and nonspecific appearances on imaging susceptible to misidentification. We highlight these challenges through a case of an elderly male initially thought to have a psoas abscess but ultimately diagnosed with DL.

CLINICAL VIGNETTE: An 82-year-old male presented with progressive right hip and leg pain after a fall. Initial labs and x-ray/CT imaging led to a presumptive diagnosis of psoas abscess. Despite antibiotics and multiple drainage attempts by interventional radiology, clinical improvements were minimal, and the fluid collection persisted on repeat imaging. Suspicion for malignancy led to a core needle biopsy and peripheral blood smear, however, both were suggestive of an acute, reactive inflammatory process with no evidence of malignancy.

During a 4-week hospitalization, the patient experienced worsening leukocytosis (peak 72.2x10⁹/L), progressive non-oliguric renal dysfunction with creatinine of 1.70 (0.72 on admission), worsening HFrEF with EF of 28%, and new-onset atrial fibrillation with rapid ventricular response that proved difficult to rate control. He eventually underwent surgical debridement with large amounts of necrotic tissue removed and biopsy sent for repeat pathology. Given notable improvements including WBC 21.2x10⁹/L, creatinine 1.58, rate controlled atrial fibrillation, and interval decrease in size on repeat imaging, repeat debridement and washout was performed. Post-operatively, the patient decompensated with concern for hemorrhagic shock. Unfortunately, only after this second procedure and 9 days after the initial surgery did the biopsy result, confirming the diagnosis of high-grade DL. Further aggressive intervention was precluded by the patient's condition; he was transitioned to comfort care then passed away shortly thereafter.

DISCUSSION/CLINICAL RELEVANCE: Although liposarcoma is the most common primary retroperitoneal neoplasm, sarcomas overall are rare tumors with significant diagnostic challenges. CT imaging is often non-specific, and even with MRI, diagnosis often necessitates diagnostic pathology with integration of morphologic, molecular, and immunohistochemical characteristics. Moreover, cases of DL have been associated with marked neutrophil-predominant leukemoid reactions and production of Granulocyte Colony Stimulating Factor (G-CSF), predisposing to misdiagnosis of infection. This case highlights these diagnostic challenges and the need for vigilance particularly when response to treatment is varied, and calls for continued DL research and awareness to improve diagnostic accuracy and treatment outcomes.

Barriers to Longitudinal Community Service in Medical Education

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INTRODUCTION: Addressing the pervasive power imbalance between physicians and patients is crucial for improving healthcare outcomes. While medical education has increasingly incorporated health advocacy, practical implementation remains challenging due to time and resource constraints. Community service provides an opportunity to put theory into practice, but its implementation and impact remain poorly documented.

METHODS: We explored the impact of a longitudinal mentoring program bridging medical students, general surgery residents, and schoolchildren in the public school system. Contrasting traditional episodic community engagement, our approach emphasized sustained weekly interactions throughout 8-months of the academic year, fostering consistency and trust. Medical students volunteered an hour weekly based on interest and availability, while residents had a protected weekly hour during their educational day for voluntary participation. Feasibility and participation barriers were assessed using attendance sheets and surveys.

RESULTS: Surgical residents demonstrated higher initial interest (77%; 40/52) than preclinical medical students (15%; 56/372). No clinical medical students participated. Preliminary findings revealed medical students exhibited higher sustained commitment with 88% attendance vs. 41% of residents in the first month. Both groups experienced gradual attendance decline over three months. Survey responses identified scheduling conflicts as the primary participation barrier for both groups followed by assignment completion/exams, time/day of mentoring sessions, and distance to the mentoring site.

DISCUSSION: This study provides insight into the challenges of integrating longitudinal community engagement into medical training. It establishes a foundation for refining curriculum structures, encouraging long-term commitment, and fostering connections between healthcare professionals and the communities they serve.

Analyzing the Point of Service for Orthopedic Procedures from Hospital Outpatient Departments to Ambulatory Surgery Centers

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BACKGROUND: Ambulatory surgery centers (ASCs) may offer a cost-effective alternative to hospital-based outpatient procedures, emphasizing a patient-centered experience in a streamlined environment. With a growing emphasis on cost-effective healthcare solutions, the shift towards ASCs for orthopedic procedures has become a focal point in healthcare management. The present study investigates the economic viability of performing seven orthopedic procedures in ASCs instead of hospital outpatient departments (HOPDs). The procedures evaluated are shoulder arthroscopy with subacromial decompression and distal clavicle resection, knee arthroscopy with anterior cruciate ligament repair, open reduction and internal fixation (ORIF) of bimalleolar ankle fracture, ORIF of distal radius fracture, knee arthroscopy with medial and lateral meniscectomy, total knee arthroplasty, and one level lumbar laminectomy.

METHODS: Cost-related factors between ASCs and HOPDs are compared for seven orthopedic procedures. Overhead costs, patient stay duration, and complication rates were evaluated to assess the economic implications of each setting.

RESULTS: ASCs are associated with lower overhead costs, reduced patient length of stay, and diminished complication rates compared to HOPDs. The findings indicate significant cost savings associated with performing seven orthopedic procedures in ASCs.

CONCLUSION: The economic advantages of performing orthopedic procedures in ASCs are substantial. The cost-efficiency, streamlined processes, and improved patient outcomes observed in ASCs underscore the potential for a transformative shift in the delivery of orthopedic care.

CLINICAL RELEVANCE:

By recognizing the economic benefits of ASCs for orthopedic surgeries, healthcare systems can strategize to improve accessibility, reduce costs, and ultimately elevate the quality of care provided to orthopedic patients.

Classifications for Radiographic Evaluation of Lytic Bone Lesions have Poor Inter- and Intra-observer Agreement

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BACKGROUND: Lytic bone lesions are encountered within all orthopedic specialties, and methods of describing them are essential. We studied interobserver reliability and intra-observer reproducibility of three classification systems of radiographic lytic lesions: the Lodwick classification, a modified Lodwick classification, and the Enneking classification.

METHODS: Forty-eight sets of radiographs of lytic osseous lesions were selected. Lesions were classified according to the Lodwick, modified Lodwick, and Enneking classification twice by each participant (one third-year medical student, eighteen residents, one orthopedic oncologist), with at least two-weeks between sessions. Interobserver reliability and intra-observer reproducibility were calculated using both Fleiss' kappa and Krippendorff's alpha. Linear regression was used to determine training level effect on reproducibility.

RESULTS: Inter-observer reliability was poor, with agreement of 39% ($\kappa=0.23$), 39% ($\kappa=0.25$), and 53% ($\kappa=0.28$) for the Lodwick, modified Lodwick, and Enneking classifications, respectively. When treated as ordinal data, agreement did not improve ($\alpha=0.54, 0.48, 0.45$, respectively). Intra-observer reproducibility lacked strong agreement ($\kappa=0.42-0.45$). Training level did not affect reproducibility ($R^2 < 0.2$, $p>0.05$ for all classifications). Intra-observer reproducibility showed Krippendorff's alpha for the Lodwick ($\alpha=0.72$), modified Lodwick ($\alpha=0.69$), and functional classification ($\alpha=0.63$). Self-agreement ranged from 39-78%.

CONCLUSIONS: Our data demonstrate that three common classifications for radiographic osseous lytic lesions are not reliable nor reproducible. Consistency varied depending on individual lesion characteristics. These classifications may be useful for certain lesions but cannot be applied across lesion types. The lack of association between orthopedic experience and intra-observer reproducibility supports the notion that the descriptions themselves are poorly applied to some lesions.

Outcomes of Pressure Ulcer Injuries Classified By Race, a 10 year Nationwide Analysis

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ABSTRACT

Pressure ulcer injuries (PIs) are ischemic changes to the skin from long-term pressure on bony prominences. This study aimed to investigate the prevalence of PIs and the effects they have on minority groups in the hospital setting in the United States. The National Inpatient Sample (NIS) from 2011-2020 was used to identify adults hospitalized in the US who received a diagnosis of PI. International Classification of Diseases, Ninth Revision (ICD-9) and Tenth Revision (ICD-10) codes were used to select patients. An equal number of random records, stratified by year and without a diagnosis of PI, were selected to serve as controls. Records were analyzed for baseline characteristics using a chi-square test. Adjusted ORs of developing a pressure ulcer were calculated using multivariate logistic regression. A weighted total of 5,993,667 PI admissions and 5,993,667 non-PI admissions. Men were more likely than women to develop PIs (Adjusted OR 1.88, CI 0.88-0.89). Compared to Whites, Blacks (1.49, 1.47-1.51) are at higher risk, while Asians are at lower risk (0.94, 0.92-0.97), Hispanics are at equal risk compared to Whites (0.99, 0.97-1.01). Compared to patients with private insurance, those with Medicare or Medicaid are at higher risk (1.94, 1.92-1.97). White PI patients had a lower risk of death compared to Blacks (1.09, 1.07-1.11), Hispanics (1.16, 1.12-1.19), and Asians (1.56, 1.50-1.63). A racial discrepancy in pressure ulcer prevalence was shown in racial minorities, particularly Blacks. It is essential to address this difference in diagnosis to improve outcomes among racial minorities.

Socioeconomic Trends in Palliative Care, a 6-year Study

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ABSTRACT

The use of palliative care (PC) is on the rise in the USA, with clear benefits to patients, families, hospitals, and insurance companies. Nevertheless, disparities persist in the accessibility of end-of-life care. Our study investigates trends in palliative care utilization, focusing on socioeconomic characteristics. The National Inpatient Sample (NIS) from 2015-2020 was used to identify adults hospitalized in the United States. International Classification of Diseases, Tenth Revision (ICD-10) was used for PC encounters, code Z51.5. An equal number of random records, stratified by year and without this code, were selected to serve as controls. Records were analyzed for baseline characteristics using a chi-square test. Adjusted ORs of receiving palliative care were calculated using multivariate logistic regression. Men were more likely to receive PC consults (OR 1.07, CI 1.06-1.08). Medicare/Medicaid holders' PC access was limited compared to private insurance holders (0.89, 0.86-0.93). Racial minorities, particularly Hispanics (0.9, 0.86-0.95) and Blacks (0.83, 0.77-0.88), were less likely to engage in PC. Compared to Urban teaching hospitals, rural hospitals had a decreased rate of palliative care utilization (0.53, 0.49-0.57). Smaller hospitals had significantly fewer PC referrals than large hospitals (0.80, 0.76-0.85). A lower socioeconomic status was associated with a reduced propensity to utilize palliative care services compared to an upper socioeconomic status (0.91, 0.87-0.96). Our analysis shows that socioeconomic factors strongly influence palliative care access. This highlights important inequities that require measures to improve equitable palliative care access across demographic groups.

Elevated Blood Pressure and Complete Blood Count Components in Children and Adolescents in Two Urban Multiethnic Community Hospitals

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BACKGROUND: Hypertension is blood pressure (BP) at or above the 95th percentile for age, gender and height over time. Normal BP is <120/80 mmHg. There are no studies on complete blood count (CBC) components in hypertensive children and adolescents aged 2-18 years.

OBJECTIVE: To explore associations of hypertensive children aged 2-18 years and CBC components.

METHODS: Case control review of children aged 2-18 years seen between January 1, 2015 to December 31, 2019 with elevated BP (cases) and normotensive (controls) age and gender matched. Children with medical conditions known to affect BP and CBC were excluded. Data extracted from EHR include demographics (age, gender, race), complete blood count components (WBC, monocytes, eosinophils, MCV, RDW, platelets). Data were analyzed using SAS, percentages, chi-square and logistic regression, $p < 0.05$ was significant.

RESULTS: Total of 42 cases with elevated BP and 42 controls were reviewed. The total sample consisted of male in half (51%), most in reported Black (43%) followed by non-Hispanic White (9%) with mean age of 13.8 ± 4.1 years. Logistic regression analyses controlling for demographics differences in the likelihood of abnormal WBC (OR=0.77, CI=0.19-3.12) ($p=0.72$), monocytes (OR=2.05, CI=0.18-23.51) ($p=0.55$), MCV (OR=0.31, CI=0.03-3.18) ($p=0.29$) and RDW (OR=0.23, CI=0.02-2.17) ($p=0.15$) were not significant. No patient had abnormal eosinophil and platelets to permit analysis. Findings were consistent across unadjusted and adjusted analyses.

CONCLUSION: There was no association between elevated BP and components in CBC. Healthcare providers should continue to identify elevated BP, eliminate risk factors, prevent and counsel on therapeutic lifestyle changes.

Association Between Metabolic Dysfunction-Associated Steatotic Disease and Dyslipidemia in Children Aged 9-11 Years in an Urban Multiethnic Community Hospital

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BACKGROUND: Metabolic dysfunction-associated steatotic liver disease (MASLD) or abnormal liver enzymes is the most common liver disorder worldwide. Dyslipidemia refers to one or more abnormal levels of components of lipid profile. There are limited data associating MASLD and dyslipidemia in multiethnic children.

DESIGN/METHODS: A retrospective study of patients aged 9-11 years between January 1, 2018 and December 31, 2022 with MASLD. Data extracted from EHR included demographics, liver enzymes, body mass index (BMI) and lipid profile. BMI between 85th-<95th percentile is overweight and \geq 95th percentile is obese. Data were analyzed using percentages and chi-square, $p < 0.05$ was significant.

RESULTS: Of 210 charts identified, 42 (20%) had both liver enzymes and lipid profile on file. Most were Hispanic (80%), males (64%) and without any differences in age distribution in years, $p = 0.75$. All but two (95%) in our sample had elevated ALT (95%) with about three-quarters also having dyslipidemia (73%), $p = 0.004$. Those with elevated AST alone were fewer (86%) and had dyslipidemia in almost two-thirds (62%), $p = 0.008$. All patients except for one had elevated ALT and AST (98%) and over two-thirds also had dyslipidemia (69%), $p = 0.008$. Among patients with dyslipidemia and abnormal liver enzymes, hypercholesterolemia was seen in a fifth (21%), hypertriglyceridemia in more than a half (62%), low HDL-cholesterol in two-fifths (40%), and elevated LDL-cholesterol in over a tenth (15%). Obesity was observed in 79% and being overweight in 19%, both were significantly associated with dyslipidemia, $p = 0.03$.

CONCLUSIONS: MASLD was significantly associated with dyslipidemia. Dyslipidemia was also associated with higher BMI.

THE FEASIBILITY AND IMPLEMENTATION OF A COMMUNITY SERVICE PROGRAM IN A GENERAL SURGERY TRAINING PROGRAM

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INTRODUCTION: Racial and socioeconomic disparities persist in the United States contributing to a lack of trust in the healthcare system, impacting health outcomes within marginalized communities. Rebuilding trust requires physicians to acquire the knowledge, understanding, and interpersonal skills necessary to provide equitable patient care, integral components of Accreditation Council for Graduate Medical Education (ACGME) competencies. Incorporating these skills into surgical residency training programs poses challenges due to their complexity and the time commitment required from trainees.

METHODS: We implemented a 6-week pilot program integrating an optional community service mentorship hour with public school children into the academic morning of general surgery residents. We collected attendance and distributed a conclusion survey to assess mentor retention rates, participation barriers, and overall feasibility of incorporating such programs into residents' schedules.

RESULTS: 73% of eligible residents participated; 16% attended all sessions. Residents reported positive impacts on their understanding of the local community, education, and confidence in providing equitable care. Importantly, there was no reported decrease in completed surgical cases attributable to participation. Lower PGY levels exhibited the best attendance rates. The most frequently cited participation barrier was work-related absences followed by vacation, sick leave, appointments, and other personal commitments.

DISCUSSION: This initial evaluation demonstrates the feasibility of longitudinal community engagement for surgery residents. Factors influencing participation including site distance, faculty support, and apprehension about missing program-deemed beneficial activities warrant further investigation. Our goal is to develop a comprehensive plan addressing these factors to enhance resident participation—and retention—in community initiatives to achieve equitable patient care.

Epidemiology and Clinical Outcomes of *Staphylococcus Lugdunensis* Bacteremia

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BACKGROUND: *Staphylococcus lugdunensis* (SL), a coagulase-negative staphylococcus (CoNS), usually a skin commensal, has demonstrated similar virulence to *Staphylococcus aureus*. We aim to study community-acquired SL bloodstream infections' (CA-SLBSI) clinical characteristics and outcomes.

METHODS: This retrospective cohort study evaluated hospitalized adults with CA-SLBSI at an urban tertiary care center from January 1, 2017 to December 31, 2022. CA-SLBSI was defined as at least one positive blood culture with SL within 72 hours of admission. Patients previously hospitalized within 30 days, on chemotherapy, or transferred from another facility were excluded.

RESULTS: The study included 33 CA-SLBSI cases, with 10 from 2017 to 2019 and 23 from 2020 to 2022.

88% of patients were age \geq 60 years. Sixty percent met sepsis criteria, 60.6% scored >2 on the Charlson Comorbidity Index and 33% had ≥ 4 Pitt Bacteremia score upon presentation. 24.5% of SLBSI originated from infective endocarditis (IE), pneumonia, and skin and soft tissue infections. Although 75% had no identifiable source, 60.7% met possible Duke Criteria for IE. 30% were admitted to ICU. 90.9% were treated with appropriate antibiotics, and 15.2% died.

CONCLUSION: SL is a CoNS recognized as an emerging pathogen, with more than double the CA-SLBSI cases in the last three years of our study. The increased mortality rates are associated with the elderly with multiple comorbidities. Our study showed a 15.2% in-hospital mortality rate, similar to the reported mortality from MSSA bacteremia in high-income countries.

CLINICAL RELEVANCE: Clinicians must be aware of the high pathogenicity of SLBSI and implement comprehensive strategies to prevent morbidity and mortality.

Efficacy of Selinexor in Acute Myeloid Leukemia: A Systematic Review and Meta-analysis

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BACKGROUND: Our study aims to evaluate the efficacy and safety of selinexor, a nuclear exportin-1 inhibitor, as a target for treating acute myeloid leukemia (AML). Selinexor has shown favorable results alone or in combination with standard chemotherapy regimens for both newly diagnosed (ND) and relapsed/refractory (R/R) AML patients.

METHODS: We searched PubMed, EMBASE, and ClinicalTrial.gov for studies on selinexor as a treatment for acute myeloid leukemia (AML). We identified 11 relevant studies with a pooled overall response rate (ORR) extracted using RevMan v.5.4.

RESULTS: In a study of 460 patients, Selinexor was given either as a monotherapy to 232 patients or as part of combination regimens to 204 patients. Out of these, 121 patients had ND AML while 315 patients had R/R AML. The estimated pooled ORR of selinexor in all patients was 0.45. The pooled ORR for selinexor in patients with ND AML was 0.51 compared to 0.43 in R/R AML patients. Selinexor as monotherapy had an estimated pooled ORR of 0.26, while combination regimens had a yielded pooled ORR of 0.57. Pancytopenia was the main hematological adverse event, while hyponatremia and hypophosphatemia were the main non-hematological adverse events.

CONCLUSION: Studies have shown that selinexor, when used in combination with standard chemotherapy regimens, has demonstrated promising results for acute myeloid leukemia (AML) patients. This finding could serve as a benchmark for future studies on the efficacy of selinexor in treating AML.

Systemic Mycoplasmosis Causing Necrotizing Vasculitis and C3 Glomerulonephritis

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INTRODUCTION: Mycoplasma has demonstrated a variety of extrapulmonary manifestations with autoimmune elements, which can appear at any time during/after infection or even in the absence of pneumonia. We describe a rare case of mycoplasma-induced digital necrosis and C3 infection-related glomerulonephritis (C3 IRGN), as a result of systemic complement activation from acquired anti-Factor H antibody (aFH) and elevated C4 nephritic factor (C4Nef).

CASE PRESENTATION: A 42 year-old male with a history of inflammatory bowel disease, presented with a two week history of bilateral digital discoloration, hand swelling and burning pain. He had a recent episode of sinusitis four weeks ago which self-resolved. Physical examination of the upper extremities showed bilateral pan-digital tip necrosis, with some proximal extension. Laboratory investigations were reflective of a systemic inflammatory response (leukocytosis [11.7], ESR 61, CRP 50.4) and AKI (creatinine 1.35) of unknown etiology. Echocardiogram was negative for endocarditis. Immunological workup revealed a positive ANA [1:160; speckled], dsDNA, very low C3 [31; reference 90-180 mg/dl], elevated C4Nef, aFH and a rare pANCA/anti-proteinase 3 combination. Treatment with pulse IV steroids, hydroxychloroquine and nicardipine (for presumed secondary Raynaud's phenomenon) provided only minimal relief. On day two, he developed hematuria and proteinuria of 70 mg/g. A renal biopsy was done, and resulted as diffuse exudative GN with abundant mesangial and capillary deposits that stain for C3. Electron microscopy was suggestive of a C3 deposition glomerulopathy (likely dense deposit disease) versus IRGN. Further testing revealed elevated mycoplasma IgG and IgM, which clinched the diagnosis, and he received a course of doxycycline. He also received two sessions of therapeutic plasmapheresis with the addition of mycophenolate. As the digital necrotic margins began to stabilize, and symptoms began to improve, he was discharged on an oral steroid taper, warfarin, and a plan to start eculizumab if C3 remained low.

DISCUSSION: Renal manifestations from mycoplasma are likely a downstream product of cytokine storm and reticuloendothelial system activation, leading to complement fixing and deposition of opsonized immune complexes in the glomeruli. Due to the unique/atypical presentation, a known background of IBD, lab evidence favoring a pure connective tissue disease (systemic lupus erythematosus) and/or APS, establishing a definitive diagnosis was a dilemma. C3 IRGN shares many similarities with C3 glomerulopathy and differentiation of the two is important as treatments vary. Additionally, acute onset digital necrosis secondary to mycoplasma-triggered vasculitis has not been reported in literature to our knowledge, with just one report of the cutaneous vasculitis/nephritis combination. Further surveillance with infective titres in such cases could prove to be beneficial in management.

Chest Pain: from Wellens' or Pneumomediastinum?

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INTRODUCTION: Wellens' syndrome is a critical clinical condition characterized by distinctive chest pain and specific electrocardiogram (EKG) patterns. These findings indicate critical stenosis of left anterior descending (LAD) artery and is also called LAD coronary T-wave syndrome.

Serum cardiac markers are usually normal or slightly elevated.

A clinical entity in which Wellens' EKG pattern is present but without LAD stenosis has been defined as pseudo-Wellens' syndrome.

Pseudo-Wellens' syndrome can occur in various scenarios, including myocardial bridge, external coronary artery compression, substance-induced coronary spasm (e.g., cocaine, marijuana), pulmonary embolism, and sepsis.

CASE PRESENTATION: A 19-year-old male, an active cocaine and marijuana user, presented to the emergency department (ED) with severe vomiting and chest pain. A Computerized Tomography (CT) scan revealed a pneumomediastinum. However, his EKG showed early repolarization changes that could possibly be Wellens' changes and high-sensitive troponins were negative. A Coronary CT scan indicated normal coronary arteries.

The patient's symptoms resolved quickly, and he was diagnosed with non-cardiac chest pain due to pneumomediastinum and Pseudo-Wellens' syndrome, likely cocaine induced.

He was discharged without any complications.

DISCUSSION: Wellens' syndrome is an important diagnostic consideration in patients with chest pain and specific EKG patterns, as these indicate LAD artery stenosis.

Pseudo-Wellens' syndrome, a rare mimic of Wellens' syndrome, necessitates careful evaluation, as coronary artery disease (CAD) can present similarly. Serial monitoring with EKGs and high-sensitive troponin levels is essential.

Early cardiac catheterization is advisable for confirming or ruling out LAD pathology.

Due to the life-threatening nature of Wellens' syndrome, extreme caution is advised before confirming a Pseudo-Wellens' diagnosis, and cardiac stress testing should be avoided as it might trigger myocardial infarction or arrhythmia.

CLINICAL RELEVANCE: EKG changes in Wellens' syndrome which can occur even in the absence of chest pain, requires urgent attention like a STEMI.

This underscores the importance of serial EKG monitoring and troponin level checks.

Coronary CT angiography, with high sensitivity and specificity, is preferred over stress testing to avoid unnecessary catheterization procedures.

Not all GGOs are Infectious

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INTRODUCTION Pembrolizumab, known as Keytruda, is increasingly utilized in cancer treatments, known for its tolerability but linked to unique side effects like immune-related pneumonitis.

This report addresses the challenges in diagnosing and treating Pembrolizumab-induced pneumonitis, especially in patients with multifaceted cancer histories.

Notably, the incidence of pneumonitis is relatively low in Keytruda monotherapy but significantly increases when combined with radiation therapy, posing life-threatening complications.

CASE PRESENTATION 69-year-old female with a history of ductal breast carcinoma and pancreatic neck adenocarcinoma presented with acute respiratory distress and hypoxia.

She was on Pembrolizumab post-chemotherapy and had recently completed radiation therapy.

CT scans revealed pneumonitis; comprehensive infectious and autoimmune tests were negative.

Initial treatment included broad-spectrum antibiotics and high-dose steroids, followed by a transition to Cellcept, and eventually to Infliximab due to condition worsening.

Complications included spontaneous pneumomediastinum and subcutaneous emphysema.

The patient eventually stabilized, requiring only low-dose oxygen for ambulation.

DISCUSSION Checkpoint Inhibitor Pneumonitis (CIP) typically manifests later than other immune-related adverse events (irAEs), averaging 2.8 months post-treatment initiation.

Patients receiving radiation therapy alongside PD-1 inhibitors have an increased risk of interstitial lung disease (ILD), with ground-glass opacities often seen on imaging.

No direct correlation between immunotherapy and radiation therapy timing was found.

Mycophenolate mofetil (Cellcept), an inhibitor of purine synthesis predominantly used by B and T cells, is typically employed in preventing organ transplant rejection and treating autoimmune diseases.

Infliximab, a TNF-alpha inhibitor, modulates systemic inflammatory responses and is frequently used in various auto-immune conditions.

CONCLUSION Immune-mediated pneumonitis should be a key consideration in differential diagnosis for patients with respiratory symptoms post-oncology treatment.

Emphasizes the importance of including ICI-induced pneumonitis in differential diagnoses, along with infectious causes.

Cardiac Intimal Sarcoma

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BACKGROUND

Primary cardiac tumors are infrequently encountered, with a higher prevalence of secondary tumors. Among primary cardiac tumors, myxomas are benign and more commonly observed, while angiosarcomas constitute the most frequently encountered malignant tumors. Intimal sarcomas, the least prevalent among primary cardiac tumors, are seldom reported. This case report details the unique instance of a patient diagnosed with intimal sarcoma with distant metastases, manifesting complications such as new insert atrial fibrillation and heart failure as initial symptoms.

CASE SUMMARY

71-year-old male, with a history of hypertension, non-sustained ventricular tachycardia status post-AICD placement on sotalolol 120 BID, and basal cell carcinoma on the forehead (successfully removed), presented with subacute Dyspnea on minimal exertion, orthopnea, paroxysmal nocturnal dyspnea. Initial investigations, including EKG, CXR, CTA and Echocardiography, revealed new onset AFIB, cardiomegaly and atrial masses suggestive of thrombi. Subsequent PET scan indicated malignancy with metastases to the spine. The patient opted for palliative resection, which was incomplete with positive margins. Tumor biopsy revealed intimal sarcoma which is sensitive to Capmatinib. In this case, the prognosis remains grim.

DISCUSSION

This case reports an aggressive presentation of intimal sarcoma initially misinterpreted as cardiac thrombi. Unfortunately, the patient was already in the advanced stage of the disease, already having metastasized at the initial medical encounter. We posit that an earlier diagnosis, coupled with the tumor's responsiveness to chemotherapy, could have significantly improved the prognosis.

An Uncandid Case of *Candida glabrata* Prostatic Abscess

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BACKGROUND: Prostatic abscess is a rare urological disease, accounting for about 0.5% of all prostatic diseases. It usually occurs as a complication of acute bacterial prostatitis or urinary tract infection. Fungal prostatic abscesses are even more infrequently encountered. They are generally associated with patients who are elderly, have uncontrolled insulin-dependent diabetes mellitus (DM), post-urological procedures, or severely immunocompromised status. We highlight a case of complicated *Candida glabrata* prostatic abscess (CGPA) in a young patient with uncontrolled DM.

CASE REPORT: A 50-year-old man presented with fever and two weeks of lower back pain. There were no other associated symptoms including urinary discomfort or perineal pain. He was otherwise healthy except for DM diagnosed six years ago. There was no history of surgery or urological procedures. Upon presentation, he was febrile to 102⁰ F with tachycardia. His BMI was 45.9. Initial work-up revealed leukocytosis, poor glycemic control, and positive blood cultures for *Streptococcus agalactiae* and *Candida glabrata*. Intravenous (IV) vancomycin, ceftriaxone and high-dose micafungin were started. Transesophageal echocardiogram did not reveal a vegetation. CT scan of abdomen and pelvis with IV contrast (CT-APIV) showed normal prostate size and a cyst (3.4 by 3.3 cm) in the lower aspect of the prostate. It was initially interpreted as a congenital cyst by urology due to normal urological and rectal examinations.

However, repeat CT-APIV performed on hospital day six revealed a complex prostate cyst increased in size with extension into the corpus spongiosum. Transurethral drainage was attempted, but ultimately Interventional Radiology successfully drained 40 mL of purulence. The abscess fluid culture grew *Candida glabrata*, which confirmed the diagnosis of a fungal prostatic abscess. The repeat CT-APIV after two weeks of IV antifungal therapy showed increased size of the prostate abscess from 6.2 by 2.3 cm to 8.7 by 3.1 cm. He underwent reattempted transurethral drainage and de-roofing of the prostate abscess for source control. IV fluconazole was added to micafungin due to a concern for inadequate prostate penetration of micafungin. After clinical improvement, he was discharged on hospital day 22 on IV micafungin and oral fluconazole with outpatient follow-up.

CONCLUSION: The diagnosis of fungal prostatic abscesses requires a high index of suspicion as it is a rare entity that can be misdiagnosed due to nonspecific presenting symptoms. Adequate source control and concurrent antifungal agents are crucial, as there is limited data on antifungal penetration in prostate tissue and increased fluconazole resistance in *C. glabrata* isolates.