

ЛІКАРСЬКИЙ ВІСНИК



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Шановні друзі,

Мені припадає надзвичайна честь представити черговий випуск *ЛВ*, в якому міститься глибина збірного наукового знання нашого членства.

др. Лев Волянський описує результати роботи у зв'язку з розсіяним склерозом (РС). РС це автоімунне захворювання нейронної системи. Причина невідома, клінічний образ різноманітний, прогноз прогресивний, а успіх лікування не надійний. Діагноз складний, послуговується засобом МРТ. Др. Волянський описує його роботу користуванням новим засобом МРТ (так званий DIR), котрий точніше виявляє патологічні зміни в РС. Є сподівання, що цей винахід доведе до поліпшеного лікування РС.

др. Андрій Логінський описує вироблення і проведення мобільної клініки в Україні. Важливість цієї роботи полягає на покращення якості і доступу до лікування для українського населення. Цьому подвигу стоїть на перешкоді поточна війна з Росією. Покладаємо надію на вже доказану рішучість і відвагу наших братів в Україні.

др-и. Сузен Крофорд і Марія Грицеляк описують про лікування ентеровірусних недуг у дітей. Хоч відомо що ентеровірус спричинює гастроентерит, є менше відомо що він також може бути причиною менінгіту як також і захворюванню руки, ноги, і рота (hand foot mouth disease). Розпізнавання варіантів ентеровіруса є необхідним для правильного лікування.

30-го липня, 2024 відбувся Науковий Симозіум з трансляцією ZOOM, організованим під проводом УЛТПА відділу Мічиган. Голова **др. Іванна Муравицька** провела сипозіум, на якому виступили 10 доповідачів. Їх доповіді були високого наукового рівня, передані здібними молодими науковцями. Вони будучність України і нашого Лікарського Товариства.

25 го квітня, 2025 відбувся в Нью Йорку XLVII Наукова Конференція, рівно з відзначенням 75-ої річниці УЛТПА. Лікарі і стоматологи по різних спеціалізаціях, відчитали лекції. На кінець, студенти та резиденти представили короткі наукові абстракти.

Бажаємо продовжувати цю важливу роботу УЛТПА. До того заохочуємо наших друзів здавати необхідний потік рукописів для поміщення в журналі Лікарський Вісник.

Щира Вам подяка за підтримку і співпраю.

З пошаною,

Андрій Мельник

A Pilot Study to Describe the Use of Double Inversion Recovery (DIR) for Assessing Thoracic Spinal Cord Lesions in Patients with Multiple Sclerosis

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ABSTRACT:

BACKGROUND: Inversion Recovery is an MRI pulse sequence that inverts longitudinal magnetization by 180 degrees as a first step in the process of capturing signal. Double Inversion Recovery (DIR) is an advanced MRI pulse sequence that inverts the magnetization by 180 degrees twice. In Brain MRI, DIR leverages dual inversion times to suppress signals originating from the cerebrospinal fluid (CSF) and from white matter, thereby enhancing lesion detection in cortical, juxtacortical regions. DIR is also useful for cervical spinal cord imaging in multiple sclerosis (MS), but its role for detecting thoracic spinal cord lesions in MS patients is essentially unexplored.

METHODS: We report a pilot study of imaging with DIR and T2 weighted MRI of the thoracic spinal cord. This was a retrospective analysis of anonymized MRI scans performed with a 3.0T MRI scanner. 29 patients were selected and two were excluded due to imaging degradation. A blinded crossover reading protocol was used to assess accuracy of lesion detection, followed by a “ground truth” evaluation incorporating all available sequences: Sagittal STIR & T2, sagittal & axial T1 & DIR, as well as axial T2*. Sensitivities, F1 scores, and classification performance between DIR and T2 MRI were calculated using appropriate statistical methods.

RESULTS: Sensitivity (DIR = 66.2%, T2 = 30.8%) was compared using a two-proportion z-test ($z = 4.49$ with $p < 0.00001$). The F1 score was 0.723 for DIR and 0.414 for T2 ($p < 0.01$, estimated by bootstrap resampling of paired predictions), reflecting DIR’s superior balance between lesion detection sensitivity

and precision. The F1 score, defined as the harmonic mean of precision (positive predictive value) and recall (sensitivity), provides a unified measure of a model's ability to detect true lesions while minimizing false positives. A higher F1 score therefore reflects a more optimal balance between precision and recall. Bootstrapping involves repeatedly sampling with replacement from the dataset to estimate the variability of a metric and generate an empirical p -value, allowing robust comparison of non-parametric measures such as the F1 score. Because true negatives were rare, specificity values were unstable and not considered clinically meaningful for this analysis.

Volumetric DIR's ability to suppress CSF artifacts and enable multiplanar reformation was particularly advantageous for confirming subtle hyperintensities. However, its lower signal-to-noise ratio is a limitation.

Key words: Multiple Sclerosis, Double Inversion Recovery, Spinal Cord

INTRODUCTION:

Multiple sclerosis (MS) is neurodegenerative disorder characterized by:

- Onset in young adulthood
- Multifactorial etiology with strong autoimmune component
- Characteristic lesions seen on MRI
- Multiple areas of inflammation and demyelination involving the brain and spinal cord.
- Variable degrees and combinations of weakness, pain, sensory deficits, visual impairment
- Relapsing symptoms dependent on distribution of lesions

Detection of MS associated lesions in the CNS is important for diagnosis, management, and progress monitoring.

MRI is the conventional imaging method used for evaluation and monitoring of MS. MRI makes use of a sequence of radiofrequency pulses to bring out one or another tissue type, the most typical pulse sequence being known as spin-echo MRI.

Inversion recovery (IR) is a category of pulse sequences that starts the sequence with 180-degree radiofrequency pulse that can be chosen in a way to suppress the signal of tissues with a specific T1 time (a magnetic property).

More recently, an MRI pulse sequence known as Double Inversion Recovery (DIR) has shown promise for imaging of MS. DIR that makes use of two Times of Inversion (TI's) [1]. In Neuroradiology, DIR is adjusted to suppress signal from white matter (along lines of Fast Inversion Recovery for Myelin Suppression: FIRMS) [2] and from the CSF (along the lines of Fluid Attenuation Inversion Recovery: FLAIR) [3]. Cortical and juxtacortical lesions are particularly well seen using DIR and FLAIR [4, 5]. For spinal cord imaging, the Inversion Recovery sequence known as short tau/short TI Inversion Recovery (STIR) has been most valuable, [6] thought to be due to a synergistic effect of

inverse T1-weighting and proton density weighting. The value of DIR for imaging of the cervical cord in MS has been established [7, 8], but not for the thoracic cord.

In this pilot study, we compare DIR with T2 weighted spin echo MRI imaging for detection of thoracic spinal cord lesions in MS.

METHODS:

The IRB approved exemption for this anonymized retrospective analysis. All patient scans were obtained using 3.0T “Architect” MRI Unit GE Medical Systems (Milwaukee, Wisconsin). DIR was obtained with TR 5500 milliseconds (ms), TE 90 ms, TI-1 2447-2454 ms, TI-2 529 ms. For volumetric DIR, the slice thickness was ~1 mm in sagittal and axial planes.

All our patients had MRI scans for the time interval from January 1, 2022 to January 1, 2024 for suspected or confirmed multiple sclerosis (MS). Picture Archive and Communications System (PACS) lists were reviewed for Thoracic Spine MRI scans. These included DIR volumetric imaging (3-dimensional Fourier Transform, a mathematical operation for determining signal). 31 subjects were identified and two were excluded due to artifactual image degradation. The remaining 29 subjects were included for analysis. All cases had Personal Health Information (PHI) deleted and were randomized.

Blinded Readings: The Intellispace ® Picture Archive and Communication System (PACS, Philips, Amsterdam) was used to review images, using a cross-over design.

On the first day of reading, 15 subjects had DIR sagittal scans and 14 had T2 weighted (T2) sagittal MRI scans interpreted by counting of lesions and determination of their levels. After a three-week washout period, subjects who previously had DIR sagittal scans reviewed, now had their respective T2MRI sagittal scans reviewed. Conversely, subjects who previously had T2 sagittal scans reviewed, now had DIR sagittal scans reviewed.

After an additional four-week washout period, a third reading was conducted to establish the “ground truth” by using all sequences including STIR sagittal, T1 weighted, axial gradient echo T2* weighted images, and axial T2 images. All readings were performed by a single reader. An allowance was made for level determination in the form of a “one-half level discrepancy,” (e.g. If a test sequence identified a lesion at T6, but the ground truth identified it at T6-7, the test sequence was considered accurate, since the goal was to identify the lesions, rather than the level of the lesion.

RESULTS:

Statistics: The Python 3.11.4 software (Python Software Foundation, Beaverton, USA) was utilized to evaluate the performances of DIR and T2.

The **Chi-square test** (Table 1) the classification metrics of DIR compared to T2MRI, indicating that the diagnostic performance of DIR differs substantially compared to T2MRI ($\chi^2=19.70$, $p<0.0002$, 3 degrees of freedom).

Table 1		
Confusion-Matrix Data for DIR and T2-Weighted MRI		
Classification Outcome	DIR	T2
True Positives (TP)	51	24
False Positives (FP)	13	14
True Negatives (TN)	4	3
False Negatives (FN)	26	54
Values represent lesion-level counts used for Chi-square comparison of classification performance between DIR and T2-weighted MRI sequences.		

The **Z-test for proportions** was used to measure the sensitivity of DIR and T2MRI for detecting lesions (Table 1). The sensitivity of DIR was 66.2%, significantly greater compared to 30.8% for T2MRI ($z=4.42$, $p<0.00001$) (Fig. 1).



Figure 1.
Double Inversion Recovery (1a) and STIR (1b), demonstrate multiple spinal cord lesions (straight arrows) which are not evident on T2 (curved arrows in 1c)

The F1 score, defined as the harmonic mean of precision (positive predictive value) and recall (sensitivity), quantifies a model’s balance between correctly identifying true lesions and minimizing false detections.

The F1 scores for DIR and T2-weighted MRI were 0.723 and 0.414, respectively. To evaluate the statistical significance of this difference, we used a bootstrap resampling method with 10,000 iterations. An iteration is defined as one complete repetition of the bootstrap procedure (i.e., one resample and recomputation of both F1 scores for DIR and T2 respectively)

In each iteration, paired observations were randomly resampled *with replacement* from the dataset, and the F1 scores were recalculated for both imaging modalities. The resulting distribution of mean differences was used to estimate the 95% confidence interval (0.211 – 0.416) and corresponding *p*-value ($p < 0.01$). Because the confidence interval excluded zero, this indicated a statistically significant advantage for DIR, demonstrating DIR's superior balance between true positive detection and minimization of false positives. Because true negatives were rare, specificity values were unstable and not considered clinically meaningful for this analysis.

DISCUSSION:

Brain MRI has been the conventional method for many years for diagnosis and monitoring of MS. In fact, in the early years of MRI, it was its superb performance in cases of MS that unequivocally established the need for MRI.

Due to technical factors, spinal cord imaging in MS by MRI is more challenging than brain MRI. This is particularly true for thoracic spinal cord imaging, where the larger anatomy of the thorax and cardiac motion artifacts diminish the ability to distinguish lesions from artifacts.

A practical approach for confirming that the relatively small hyperintensities seen on a STIR scan represent true lesions rather than artifacts, is to confirm their presence on another series (another plane or another pulse sequence). Volumetric DIR offers this feature, and is a promising supplement for confirming lesions seen on sagittal STIR (Figure 1). DIR had over twice the sensitivity of T2 without the disadvantage of false positives. CSF suppression by DIR is valuable for detecting superficial lesions as well as suppression of flow artifacts. Because of its volumetric nature, the multiplanar reformation capability of volumetric DIR allows for interrogation of subtle hyperintensities seen on axial images.

Limitations of DIR in our study included: (1) small sample size, (2) lack of contrast to noise ratio measurements (3) use of a single-reader technique, which is less controlled for bias and (4) low signal to noise ratio (S/N) resulting from the volumetric technique and double inversion, which nullifies signals from CSF and white matter. Our previous experience with DIR is that a higher field strength (3.0 T vs. 1.5 T) is particularly important in maintaining adequate signal, since S/N is proportional to field strength. Future research is needed to investigate the possibility of other means of signal amplification.

CONCLUSION:

This pilot study is the first description of volumetric DIR for thoracic spinal cord imaging in MS. Our results showed DIR to be superior to T2, and could potentially replace T2 in this clinical setting to better assess burden of disease. We conclude that volumetric DIR is a valuable sequence to supplement STIR for assessing thoracic spinal cord MS lesions.

Acknowledgements:

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DISCLOSURES AND DECLARATIONS:

No disclosures to report.

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Історія мобільної медичної клініки - Відділ Мічіган

Андрій Логінський, DO

Поки світ все ще перебував у шоці від повномасштабного вторгнення Росії в Україну, 2022 року, безсумнівно, став особливим часом для народження та зростання низових організацій та спільних ініціатив по всій Україні як мобільні медичні амбулаторії для людей, які втратили доступ до закладів охорони здоров'я в охоплених війною регіонах. Проект деяких данських членів Rotary Club Lviv International (RCLI), створили Mobile-Clinics як виробничий підрозділ у країні, високоякісні, самодостатні та легко транспортабельні мобільні клініки. Завдяки внеску «Лікарі без кордонів» та Міністерства охорони здоров'я України (МОЗ), а також підтримки з боку більшої спільноти Ротарі, за кілька місяців почали рятувати людей. Під час моєї першої волонтерської поїздки в Україну мені пощастило, що мене запросили на зустріч RCLI, де був представлений цей проект, і ще до завершення зустрічі я знав, що хочу приєднатися до цього клубу і зібрати гроші для одного з цих підрозділів, з УЛТПА (UMANA) як ідеальним партнером.

Повернувшись до Сполучених Штатів Америки, я був підбадьорений ентузіастичною підтримкою Мічиганського відділу УЛТПА цього проекту. Маючи високу мету збору коштів у розмірі 50 тисяч доларів, ми знали, що це буде нелегко, але, використовуючи низку методів і налаштувань, ми взялися за роботу. По-перше, було створено GoFundMe, який можна поширювати в соціальних мережах і супроводжувати додаткові акції зі збору коштів, такі як «Пробіг 1,000 миль у 100 забігах на підтримку України». Такі заходи, як «Фестиваль соняшника» в Мічигані, Український фестиваль у Торонто чи «День Праці» (Labor Day) на Союзовці, були хорошими можливостями для збору коштів з великими натовпами мотивованих людей, які раді зробити свій внесок у такий благородний проект. Навіть не пов'язані між собою американські медичні спільноти в Піттсбурзі та Аугаста прагнули надати підтримку, почувши розмови про моє перебування за кордоном. Студент-медик Даніел Савицький виступив з ініціативою зв'язатися з українськими клубами в таких університетах, як Ohio State та Purdue, які потім організували акції на території кампусу, щоб допомогти зібрати кошти. Фундація UMANA відіграла вирішальну роль у використанні потенціалу організації на національному рівні, навіть після того, як стільки людей вже зробили і дали так багато. За кілька місяців наша мета була досягнута.

За допомогою Федеральної кредитної спілки «Українська Самопоміч Мічіган» переслали зібрані фонди. RCLI взяла на себе всі турботи про виготовлення, оснащення та доставку агрегату. Я повернувся в Україну в травні 2025 -го року, щоб побачити пристрій особисто, і був надзвичайно вражений його якістю, увагою до деталей і функціональністю. Виглядає це як одиниця на мільйон доларів; за винятком того, але його обладнали та побудували повністю в Україні за \$50 тис. На своїй 3-й великій ітерації блоки

тепер включають вуличні дощовики, генератори EcoFlow, сонячні панелі, хірургічні лампи та систему очищення води зворотним осмосом, а також майстерно оснащені для розміщення цілого ряду можливостей від первинної та стоматологічної допомоги та нескладні хірургії. Наразі підрозділ знаходиться у Запорізькій області та провадений місцевими лікарями на підставі Меморандуму про взаєморозуміння з МОЗ. Перевірка підрозділів та їх використання, який я контролюю, здійснюється за допомогою анкет та безпосереднього зв'язку з регіональним чиновником охорони здоров'я, відповідальним за відділення. Кожні три місяці вони оцінюються за сферами, які потребують вдосконалення, і якщо їх потрібно адаптувати таким чином, щоб краще відповідати місцевим потребам. Початкові відгуки були лише позитивними. Дивовижно, на що здатна група свідомих та мотивованих людей, і цей підрозділ є чудовим, відчутним прикладом тих зусиль, які зараз стабільно рятують життя в Україні. Моя глибока вдячність тим, хто долучився.

др. А. Логінський



др. Логінський і мобільна клініка



Pediatric Primary Care Office Experience with Enteroviral Infections, Summer 2025

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Introduction:

Pediatricians in temperate regions know that summer and early fall are enterovirus infection seasons. A member of the Picornavirus family, enteroviruses are responsible for the largest number of viral infections after rhinovirus infections in all age groups. The most common subtypes of enterovirus are coxsackie virus and echovirus, with poliovirus being less common due to vaccination. Although sometimes asymptomatic, enteroviruses can cause a variety of symptoms and illnesses. Clinical syndromes range from mild to severe and include hand, foot and mouth disease (HFMD), herpangina, viral meningitis, myopericarditis and acute flaccid paralysis among others.^{1,2}

Epidemiology:

Tropical climates experience year-round illnesses due to enterovirus whereas temperate climates see an increase in illnesses in the summer and early fall. World travel may increase year-round reports of enteroviral infections in all geographic locations.

Enteroviral infections largely affect infants and children but can affect every age group. Adults are more protected from illnesses due to previous exposures and immunity.

Transmission of enteroviruses occurs through both direct and indirect oral contact with virus shed from the upper respiratory tract (saliva, tears and respiratory droplets), fluid from blisters or feces. The incubation period is approximately three to five days. Viral shedding from asymptomatic or infected individuals can last for weeks with maximum communicability in the first two weeks of infection. Various serotypes of enteroviruses rise and fall in incidence both over seasons and years. Illnesses are likely to rise and fall due to levels of population immunity.

Hand, foot and mouth disease (HFMD) is the most recognized enteroviral infection. There are limited statistics on the incidence of HFMD because it is not a reportable disease, but the CDC estimates that there are 10-15 million cases annually in the U.S. Most affected children are managed with analgesics and fluids, but occasionally children are hospitalized due to dehydration³

Enterovirus can also cause meningitis. Viral meningitis occurs most frequently in infants under 1 year of age and enterovirus is responsible for about 90% of these cases in infants. Group B coxsackie viruses and echovirus are the subtypes responsible for most cases. Among older children and adults, enterovirus is still responsible for approximately 50% of all cases of viral meningi-

tis. Older children and adults' immunity from previous exposures and infections may be protective. It is estimated that there are over 36,000 hospitalizations for enteroviral meningitis annually in the U.S. and the number of cases is likely higher because some may not seek care and symptoms resolve without treatment.² The state of Illinois reported an average of 600 cases of enteroviral meningitis annually over the past 3 years.⁴

Clinical Manifestations and Diagnosis:

The most common presentations of an enterovirus infection to a pediatric office are hand, foot and mouth disease and herpangina. HFMD can cause fever, painful mouth sores, and a vesiculopapular rash predominantly on the hands and feet. Treatment is limited to supportive care with analgesics and fluids.⁵



Enterovirus meningitis clinical findings can vary by age and immune status. The classic symptoms of meningitis include headache, fever, stiff neck and vomiting. Infants and children younger than 5 years of age may present with fever, lethargy, irritability and lack of meningeal signs. Neonates present with symptoms similar to bacterial sepsis. There are no reliable clinical indicators to differentiate bacterial meningitis from viral meningitis and therefore lumbar puncture (LP) is necessary for an accurate diagnosis and treatment. LPs are contraindicated in patients with focal neurologic deficits, papilledema or seizures.

Viral meningitis characteristically has an increase in CSF mononuclear pleocytosis, although initially there may be a neutrophilic predominance. This is especially true in infants.⁷

Enteroviral meningitis typically has a benign course. Treatment for most patients is supportive care, including hydration, electrolyte repletion and pain management. Neonates and immuno-compromised patients are at risk for complications like sepsis, meningoencephalitis, cardiomyopathy and acute flaccid paralysis. Because of the difficulty in differentiating viral from bacterial meningitis, empiric antibiotic therapy is usually indicated until cerebrospinal fluid cultures are negative. Choice of antibiotic administered depends on the

age of the patient. Polymerase Chain Reaction (PCR) has been extremely helpful in the diagnosis of viral meningitis and is superior to viral culture.⁶

Clinical Experience:

In a six-week period this summer, Park Ridge Pediatrics had 5 infants and children diagnosed with enteroviral meningitis, prompting us to look at our overall experience with enteroviral infections. We have diagnosed 54 children with HFMD in the office in this six-week period. That number is far less than the number of children actually affected by HFMD because many were given advice over the phone or did not seek care due to parental experience with the illness. In 45 years of experience, we have never seen this many children in our practice diagnosed with viral meningitis in a single summer. PCR testing identified enterovirus in all five of these children.

The age range of our patients was 1 week of age to 11 years of age. GK and EK are siblings who presented within days of each other and EK was diagnosed with HFMD prior to presenting with symptoms of meningitis. Their younger sibling was symptomatic first but not tested for meningitis. MM was in a summer day camp. The 2-month old's siblings and parents had flu-like symptoms with fever and headache, but family members were not tested. The parents and siblings of the 1-week-old were also symptomatic with fever and headache near the time of delivery but also were not tested. Our 5 patients were discharged home within 48 hours, either after identification of enterovirus on PCR testing or after CSF fluid cultures were negative. None of the patients required continuation of antibiotics and none of the patients developed any complications.

Key takeaways:

- Classic symptoms are age-dependent
- All patients were exposed to sick relatives or were in a childcare setting
- Transmission is through direct or indirect contact with respiratory droplets, saliva, tears and feces and the virus can be shed for weeks
- CSF pleocytosis decreases with age
- Antibiotics are discontinued after 36-48 hours if CSF cultures are negative and if available, PCR is positive for enterovirus
- Neonates and infants are at higher risk for complications
- Specific serotypes of enterovirus can surge as herd immunity wanes; our experience this summer suggests a surge in the specific enterovirus serotype responsible for viral meningitis

Table 1.					
	GK 11 y/o F	EK 7 y/o F	MM 5 y/o	FM 2 mth old F	JS 1 week old M
Symptoms	fever, chills, headache, neck pain and rigidity	fever, headache, neck pain, photophobia, HFM	fever, headache, nuchal rigidity CT - sinusitis	fever, lethargy	fever
Temp on admission	99.5	99.5	101.5	99.0	100.6
Rapid Respiratory Panel PCR	Not detected	Rhinovirus/enterovirus detected	Rhinovirus/enterovirus detected	Not detected	Not detected
CSF appearance	clear	clear	clear	clear	xanthochromic
CSF protein	46	114	43	68	102
CSF glucose	52	61	68	47	48
CSF WBC	160	32	592	951	1,899
CSF RBC	12	6	0	0	5
CSF Differential:	84% segs 14% lymphocytes 2% monocytes	48% segs 10% lymphocytes 42% monocytes	67% segs 22% monocytes	49% segs 20% lymphocytes 31% monocytes	89% segs 6% lymphocytes 5 monocytes
Gram stain	neg	neg		neg	neg
PCR CSF	enterovirus	enterovirus	enterovirus	enterovirus	enterovirus
CRP	8.7	12.1	<5.0		
Procalcitonin		0.24	0.58	0.13	
CSF Culture	neg	neg	neg	neg	neg
Serum glucose	99	109	108	103	99
Treatment	Ceftriaxone, Vancomycin	Ceftriaxone, Vancomycin Acyclovir	Ceftriaxone, Vancomycin	Ceftriaxone Vancomycin Acyclovir	Ampicillin, Cefotaxime Acyclovir

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The UMANA Michigan Chapter, under the direction of President Dr. Ivanna Muravytsyy hosted a virtual research symposium, encouraging members to share their medical research projects. The symposium was held by ZOOM July 30th, 2024 with presentations by nine speakers covering all specialties. Their abstracts follow for your review. If you wish to contact any of the presenters, please email umana@umana.org.



Participants and speakers at the symposium

Identifying Barriers to Gender Equality in Surgery in Ukraine: A Survey-Based Analysis

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Introduction: Female physicians are underrepresented in surgical specialties and leadership roles. We explored the situation in Ukraine, aiming to identify the obstacles that prevent women's advancement in surgery.

Methods: A self-administered survey was conducted among female attending surgeons and surgical residents representing various surgical specialties across Ukraine. We created the questionnaire by systematically generating and reducing items. We utilized social media for distribution. Results are reported as proportions.

Results: 340 women surgeons responded, including 218 attending surgeons (64%) and 122 residents (36%). 18% of respondents were the only female surgeons at the hospital, and 34% were single women in surgical programs across their institutions. 49% of surgeons reported the absence of female leaders. Key challenges in pursuing surgery included discouragement by colleagues (80%), lack of support at the university (54%), and a male preference in residency selection (41%). Operational autonomy was limited, with 52% of attending surgeons predominantly assisting and only 39% operating independently, at or above the levels of their male colleagues. Gender bias affected 68% of surgeons whose patients doubted their competence, and 54% facing dismissive language. Sexual objectification was reported by 55% from colleagues and by 30% from patients. 59% postponed childbirth due to work, and 47% of those who became mothers reported limitations on career growth due to their motherhood status.

Conclusion: This study uncovers the lack of support and gendered workplace dynamics contributing to female underrepresentation in Ukrainian surgery. Forming support networks and developing policies for gender diversity in the workplace and leadership positions are essential.

Implementation of Nationwide Psychosocial Support Programs in Ukraine to Address Pediatric Mental Trauma Amid the Ukraine-Russia Crisis:

A Literature Review

Bodnar, Natalie; Ripecky, A.

An estimated 3.5 million Ukrainian children are anticipated to develop post-traumatic stress disorder (PTSD) and posttraumatic stress symptoms (PTSS) of anxiety, depression, and grief in the aftermath of the Ukraine-Russia War. Focused research evaluating the extent of this mental health crisis demonstrates that group and individual trauma-focused cognitive behavioral therapy (TF-CBT) with caregiver participation is first-line for treating pediatric PTSS.

Psychosocial support (PSS) programs, as well as training seminars for Ukrainian school teachers have therefore been developed for pre-school and young children affected by military trauma. Culturally relevant resilience measures specific to adolescent populations in these war-torn regions suggest the efficacy of resilience measures driving the development of personalized, needs-specific therapies for children. As such, proposals for school-based training curricula involve training Ukrainian therapists to provide safe spaces for strengthening pediatric resilience in the context of an ongoing war.

The psychosocial and mental health consequences of the Ukraine-Russia War ultimately demonstrate that existing PSS programs must be expanded to adopt a multidisciplinary approach in addressing the socioeconomic, family, and military trauma affecting Ukrainian children. This review synthesizes existing research on nationwide PSS programs, as well as other school-based initiatives in Ukraine, with the intent to condense the literature and inform future efforts to develop population-focused mental health training programs for conflict-affected children suffering war-time trauma.

Keywords: *post-traumatic stress disorder, anxiety disorders, major depressive disorder, posttraumatic stress symptoms, trauma-focused cognitive behavioral therapy, psychosocial support, war trauma, resilience measures*

Overcoming Obstacles: The State of Reconstructive Surgery During the War in Ukraine

Ali Dzhemiliev MD, Svitlana Bielichenko, Marta Antoniv, Anna Malovanna, Maksym Danylyshyn, Lesya Strilka, Nataliia Komashko, Darya Kizub, Amanda J. Reich, Nelya Melnitchouk

Background:

The Russian invasion has significantly increased civilian and military trauma, high lighting the urgent need for reconstructive surgery in Ukraine—a field still in development. This study assesses the challenges reconstructive surgeons encounter and suggests solutions to enhance patient care.

Methods:

Semi-structured interviews were conducted with Ukrainian surgeons specializing in reconstructive procedures. Interview questions were refined by Ukrainian surgeons and a qualitative expert after a literature review. Sampling continued until data saturation was achieved. The interviews were recorded and transcribed. Rapid qualitative analysis was conducted. Three researchers independently coded the data and identified common themes. Interviews were conducted in Ukrainian and translated into English.

Results:

Thirteen physicians, including plastic and reconstructive, burn, ENT, and maxillofacial surgeons, were interviewed. Five themes developed: challenges faced in performing reconstructive surgeries, adaptations to wartime conditions, enhanced international collaboration, unstructured training programs, and disorganized patient logistics.

Surgeons reported an increase in mine-explosive injuries and management difficulties due to the complexity of the wounds and antibiotic resistance. They noted shortages of medical equipment, surgical instruments, antibiotics, blood products, and personnel. Despite constant bombing, they adapted by using base-ments for care and improved international collaboration through missions and networks. Significant issues included the lack of structured training in reconstructive surgery and issues with patient evacuation. Suggestions for improvement included the establishment of standardized training, adherence to guidelines, and improving evacuation logistics.

Conclusion:

This study reveals urgent needs in Ukraine's reconstructive surgery, emphasizing the importance of structured training, international collaboration, and streamlined patient logistics for enhanced care amidst conflict.

Table 1.

Theme	Subtheme	Representative quote
Challenges to performing reconstructive procedures	Lack of equipment and supplies	"Microvascular anastomoses ideally require a microscope, yet we manage using surgical loupes." - Burn Surgeon 3 "Our hospital equipment, outdated since Soviet times, desperately needs upgrading. We need needle holders that grip, forceps that hold, and scissors that cut effectively." - Reconstructive Surgeon 2
	The complexity of wartime injury	"Military trauma and blast injuries significantly hinder wound healing, due to complexity of injury and antibiotic resistance." - Reconstructive Surgeon 3
	Patient overload	"Before the war, mine-explosive injuries were rare, but now we see a significant influx of these patients." - Burn Surgeon 1
Adaptations to surgical care during wartime	Creating safe basements	"During air raids and missile shelling, we gather the children and move to the basement. We set up ORs and beds there, so that if something bad happens, we can function autonomously in the basement." - Burn Surgeon 1
	Teamwork	"The war necessitated teamwork among orthopedic, general, burn, and reconstructive surgeons due to the unique combination of injuries requiring comprehensive care." - Burn Surgeon 1
International collaboration	Medical missions	"The missions are highly effective - I've incorporated numerous reconstructive techniques into my practice post-missions. However, their success varies by location and greatly depends on the engagement and ability of Ukrainian personnel to adopt this knowledge and integrate modern technologies within their facilities." - Reconstructive Surgeon 1
	International consultations	"I know a lot of foreign surgeons who are open to communication. In any unclear case, I consult with them via phone or WhatsApp"- Reconstructive Surgeon 2
Lack of knowledge and structured training		"Reconstructive surgery is a relatively young field in Ukraine, with limited access to training centers for specialized learning, such as microvascular surgery, making it difficult to engage with experts or travel abroad for education." - Maxillofacial Surgeon 1
Unorganized logistics and patient evacuation		"Improper tourniquet use and delayed evacuation often lead to amputations, significantly increasing our patient load. The medical evacuation process is inefficient, with some patients quickly treated and discharged, while others endure prolonged, sometimes unnecessary, surgical interventions due to a lack of an orthoplastic approach nationally." - Reconstructive Surgeon 2

Improving Accessibility to Research For Medical Students: A Student-Led Initiative

*Olga Gomenioug, Kayvon Yazdanbakhsh, Kayla Nenninger, Devin Asher,
Elizabeth Hsu, Molly Mehta*

Abstract:

Medical students' involvement in research is crucial for their professional development, yet obstacles often hinder their access to meaningful opportunities. Recognizing this challenge, a dynamic committee comprising six second-year medical students and four faculty advisors took action. Together, they spearheaded the creation of a cutting-edge Microsoft database, meticulously compiling contact details, areas of expertise, productivity metrics, and ongoing projects of research faculty open to mentoring medical students. This innovative, automated platform serves as a bridge, seamlessly connecting faculty in need of research assistance with eager medical students seeking hands-on experience. Leveraging the power of Microsoft applications, this database is tailored to the specific needs and aspirations of medical students, empowering them to select mentors aligned with their professional objectives and skill levels. Recognizing the value of peer guidance, the committee also crafted compelling student researcher profiles, illuminating the pathways of success and offering invaluable advice to incoming students. Peer mentorship sessions, led by seasoned upperclassmen, became vibrant hubs of knowledge exchange, imparting essential research skills and insider insights into navigating the competitive landscape of residency applications.

With the hope of continuous improvement, the committee embraced feedback loops, utilizing surveys to capture the nuanced perspectives of medical students on research accessibility. This initiative isn't just about creating opportunities; it's about nurturing a culture of scholarly engagement. By empowering students to pursue research endeavors aligned with their career aspirations, the committee aims to foster an environment where every student can thrive and contribute meaningfully to the advancement of knowledge in their field.

The role of Psoas Major and Adductor Magnus Muscles in a Multidisciplinary Approach to Treating Post Traumatic Conditions

Taras Kochno MD

Physical Medicine and Rehabilitation

The psoas major muscle has a biomechanical and postural function during both moving and static states. The psoas major is also involved in the metabolic function used in the clinical assessment of some diseases, as well as mood and stress disorders. The psoas major muscle's clinical somatic presentation is low back pain. The adductor magnus refers pain to the genitals and perianal region. Low back pain, anxiety and mood disorders have been studied and shown to have a close clinical correlation with somatic manifestations of post-traumatic stress syndromes, specifically related to harsh physical abuse in military prisoners and victims of forceful unwanted sexual trauma. Studies have found that the psoas major is one of the main factors in the complex neural network of human psycho-somatic experience and their reactive stress response. Similarly, the adductor magnus and its referred pain pattern and trigger point allow myofascial therapists to release the fascial tension related to such physical traumatic experiences. Clinical studies suggest that the psoas muscle and the adductor magnus muscle had increased myofascial tension related in the traumatic incidence and understanding this relationship may assist the clinician in developing a multidisciplinary treatment for this complex condition. Thus, the psoas and adductor muscle release manually in combination with a multidisciplinary approach may promote a more effective treatment of this post traumatic condition.

Learning Objectives:

- Review of the spinal-muscular anatomy and its role in neuro integration and psychological impact.
- Clinical evaluation of a strained psoas major and adductor magnus muscle.
- Specific isolated manual release techniques to optimize restoration of full functional range of motion of these muscles.

Journal Articles:

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Tuft cells are required for a rhinovirus-induced asthma phenotype in immature mice

*Yiran Li 1, Mingyuan Han 1, Shilpi Singh 1, Haley A Breckenridge 1, Jordan E Kreger 1, Claudia C Stroupe 1, **Daniel A Sawicky 1**, Shihyang Kuo 1, Adam M Goldsmith 1, Fang Ke 2, Anukul T Shenoy 2 3, J Kelley Bentley 1, Ichiro Matsumoto 4, Marc B Hershenov 1 5*

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PMID: 38061015 PMCID: [PMC10906234](#) DOI: [10.1172/jci.insight.166136](#)

2024 Jan 23;9(2):e166136. doi: [10.1172/jci.insight.166136](#).

Abstract

Infection of immature mice with rhinovirus (RV) induces an asthma-like phenotype consisting of type 2 inflammation, mucous metaplasia, eosinophilic inflammation, and airway hyperresponsiveness that is dependent on IL-25 and type 2 innate lymphoid cells (ILC2s). Doublecortin-like kinase 1-positive (DCLK1+) tuft cells are a major source of IL-25. We sought to determine the requirement of tuft cells for the RV-induced asthma phenotype in wild-type mice and mice deficient in Pou2f3, a transcription factor required for tuft cell development. C57BL/6J mice infected with RV-A1B on day 6 of life and RV-A2 on day 13 of life showed increased DCLK1+ tuft cells in the large airways. Compared with wild-type mice, RV-infected Pou2f3^{-/-} mice showed reductions in IL-25 mRNA and protein expression, ILC2 expansion, type 2 cytokine expression, mucous metaplasia, lung eosinophils, and airway methacholine responsiveness. We conclude that airway tuft cells are required for the asthma phenotype observed in immature mice undergoing repeated RV infections. Furthermore, RV-induced tuft cell development provides a mechanism by which early-life viral infections could potentiate type 2 inflammatory responses to future infections.

Keywords: *Asthma; Innate immunity; Mouse models; Pulmonology.*

Early Challenges in Implementation of Automated Cranial Rebuild Free-ware for Generation of Patient-Specific Cranial Implant Using Additive Manufacturing: A Pilot Project in Review

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Introduction:

Traumatic Brain Injury (TBI) is a significant global health concern, particularly in low- and middle-income countries (LMICs) where access to medical resources is limited. Decompressive hemicraniectomy (DHC) is a common procedure to alleviate elevated intracranial pressure (ICP) following TBI, but the cost of subsequent cranioplasty can be prohibitive. There have been previous attempts to utilize computer-based software combined with 3-D printing to generate patient specific cranial implants (PSCIs), however, the complexity of the software necessitates extensive training and time spent on designing PSCIs which poses a notable barrier.

Methods:

We describe challenges encountered during the beta-testing phase of CranialRebuild 1.0, an automated software used for the creation of (PSCIs) sourced from patient CT images. Two pilot clinical teams in the Philippines and Ukraine tested the software, providing feedback on its functionality and challenges encountered. Feedback was analyzed by CranialRebuild engineers and integrated into the updated CranialRebuild 2.0 software to improve functionality.

Results:

The most noteworthy challenges the clinical sites encountered were inability to process patient DICOM files with inconsistent array sizes, software misidentification of surgical staples as bone, the need to visualize the implant fitted onto the site of DHC in virtual modeling before printing, and requirement of outlet holes on the implant.

Conclusions:

Challenges and improvement suggestions identified throughout the beta-testing phase will shape the development of CranialRebuild 2.0 to enhance functionality and usability. Further research is needed to validate the software's efficacy in a clinical setting and assess its cost-effectiveness.

Assessment of Peripartum Paracetamol Exposure on Fetal Development

*Roksolana Sudyk, Kamal Safah, MS2, John Garber, MS2, Omayma Alshaarawy, Ph.D., Cristian Meghea, Ph.D.
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Background:

Paracetamol (APAP) is utilized in pregnancy for its analgesic properties, endorsed by regulatory agencies for fever and pain management. This study aims to provide a comprehensive evaluation of APAP's impact on fetal development, considering epidemiological, experimental, and clinical perspectives.

Methods:

A systematic review of literature was conducted, synthesizing findings from studies encompassing APAP use patterns, endocrine-disrupting potential, neurodevelopmental effects, and urogenital/reproductive outcomes. Epidemiological studies investigated associations with ADHD, ASD, language delays, decreased IQ, cerebral palsy, oppositional-defiant disorder, executive function, and conduct disorders.

Results:

APAP usage in pregnancy is widespread, with an estimated 65% utilization among pregnant women in the USA. Experimental evidence reveals APAP as an endocrine disruptor, crossing the blood-brain barrier and affecting hormonal dynamics. Animal studies demonstrate fetal exposure impacts on urogenital and reproductive systems, while epidemiological studies associate prenatal APAP exposure with neurodevelopmental disorders, particularly during the second and third trimesters. Experimental studies underscore timing and duration as critical factors.

Conclusion:

This comprehensive assessment highlights potential risks associated with APAP use during pregnancy, necessitating a nuanced approach in clinical decision-making. Findings emphasize the need for further research to elucidate specific windows of vulnerability and refining regulatory guidelines to ensure optimal maternal and fetal health.

Advancing Dermatologic Care for Ukraine via Teledermatology: updates

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Background: In June 2022, a nonprofit teledermatology program (TDP) was launched at Borealis Dermatology, Long Island, NY, offering complimentary dermatological consultations to Ukrainians and Ukrainian refugees lacking adequate access to dermatological services. This updated investigation seeks to identify the prevailing skin conditions among the displaced and vulnerable Ukrainian population amidst the ongoing armed conflict.

Methods: We retrospectively reviewed records of 35 patients, including 9 new cases.

Results: Among the 35 patients, 27 were adults and 8 were children, including 2 infants. Eighteen of these patients remained in Ukraine, 5 sought refuge in Denmark, 2 in Spain, 2 in Bulgaria, and 1 in Sweden. The most common diagnoses included rosacea (6 cases), seborrheic dermatitis (4 cases), acne (4 cases), and psoriasis (3 cases). Almost half of the primary diagnoses involved acute flare-ups of existing skin conditions rather than the emergence of new conditions. Interestingly, there was a singular instance of Lyme disease observed in a Ukrainian soldier. Additional diagnoses encompassed retained foreign bodies, multiple atrophic, fibrotic, and burn scars, intertrigo, nail fungus, scabies, bullous pemphigoid, multiple infantile hemangiomas, vitiligo, steroid dermatitis, panniculitis, livedo reticularis with keratosis pilaris, and angioedema. Eight out of 35 patients presented with multiple diagnoses.

Conclusion: This research illuminates the common dermatologic diseases encountered in times of armed conflict, underscoring the usefulness of TDPs for dermatologists. These professionals can offer guidance that local primary care providers can put into practice. Despite the study's small sample size, the continuous development of TDPs shows promise in bridging the gap in care for patients lacking access to specialist services.

“MICRO-INVADERS, PROBLEM CREATORS”

Abstracts

XLVII Scientific Convention April 25, 2025

**At the 75th Anniversary Celebration of the
Ukrainian Medical Association of North America
New York, New York**

Abstracts are listed in alphabetical order by PRESENTER’S NAME
If you wish to contact any of the presenters, please email umana@umana.org



Participants at the UMANA XLVII Scientific Conference



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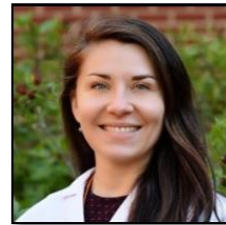
***“The Good, the Bad and the Yucky:
Exploring Your Mouth’s Microbial Zoo”***

As a general dentist I encounter microbes and their effects on oral health on a daily basis. Together we will explore some of the more common infections and conditions that I treat in my practice.

Additionally, we will review what the current understanding is of the oral flora on systemic diseases and the potential for joint and valvular infections.



Maria Geba MD
Former Infectious Diseases & International
Health Fellow
University of Virginia



“Tuberculosis—New Threats from an Age Old Disease”

Tuberculosis (TB), caused by the bacteria *Mycobacterium tuberculosis*, has been thriving in and among humans for centuries. Today, it is the deadliest infectious disease on the planet with approximately 1.2 million dying of the disease each year (estimated by the WHO). It is also estimated that one quarter of the world’s population are infected with the bacteria, though they are predominantly asymptomatic. In this lecture, we will review the epidemiology and pathophysiology of the disease, clinical manifestations, diagnostic approaches in resource limited and resource rich settings, treatment regimens, and the threat of emerging multidrug resistant strains especially in Eastern Europe. We will review the WHO’s End TB Strategy and delve deeper into several approaches that have been implemented to improve the diagnosis and treatment of this disease and to address the growing concern for multidrug resistant strains. These strategies include early detection and isolation, directly observed therapy, treatment of latent TB, approaches to increasing access to diagnostics and therapeutics, improving diagnostic options especially for children, and researching efficacy of shorter treatment regimens.



Stephanie Hanchuk MD

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***“Recurrent Urinary Tract Infection Prevention—
Current Management and Future Directions”***

Recurrent urinary tract infections (rUTIs) represent a significant clinical challenge, affecting a large proportion of the population, particularly women. These infections not only lead to frequent medical consultations and antibiotic use, but also increase the risk of developing antibiotic resistance, complicating treatment regimens. This talk will address the current management strategies and associated data for preventing rUTIs including behavioral changes and pharmacological interventions. Additionally, emerging therapies, such as the use of immunomodulators, vaccines, and bacteriophage therapy, will be discussed as promising future directions. Finally, the importance of personalized medicine in tailoring prevention strategies to individual patient profiles will be highlighted, along with the need for ongoing research into novel approaches to combat rUTIs in the context of rising antibiotic resistance. The goal is to provide insights into optimizing current practices and promising new innovations in rUTI prevention.



Irena Karanetz MD

Plastic Surgery
Evolve Plastic Surgery
Queens Village, NY



***“Surgical Site Infections in Breast reconstruction:
How to Prevent and Treat”***

Background: Infection leading to implant explanation remains a major complication in implant-based breast reconstruction. In the absence of patient-specific cultures, broad-spectrum antibiotics are commonly used. This study analyzes microbiological data from explanted implants to guide evidence-based antibiotic selection.

Methods: A retrospective review of 902 consecutive immediate implant-based

breast reconstructions (2007–2011) was conducted. Cases requiring explantation or interventional radiology drainage identified, and data on patient demographics, implant type, microbiology, and outcomes were reviewed.

Results: Among 43 cases requiring explantation or drainage (4.76%), 88.4% involved textured tissue expanders. Infection was the primary cause in 26 cases (60.5%), while 11 cases (25.6%) involved both infection and flap necrosis. Reconstruction was salvaged in 51.2% of cases, with 57.1% of these using implants. Microbiological data were available for 30 cases, revealing *Staphylococcus epidermidis* as the most common isolate (33%), followed by methicillin-sensitive *Staphylococcus aureus* (17%) and *Serratia marcescens* (17%). Notably, 40% of organisms were resistant to cefazolin, whereas 86% were sensitive to gentamicin, 80% to Levaquin, and 63% to ciprofloxacin.

Conclusions: Based on these findings, oral fluoroquinolones should be the first-line treatment for early cellulitis. If unresponsive, intravenous imipenem or a combination of gentamicin and vancomycin is recommended. These results provide a microbiology-driven approach to improving antibiotic selection and preventing reconstructive failure in implant-based breast reconstruction.



Nazary Nebeluk MD PhD
Infectious Disease Fellow
University of Maryland
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***“Small Pathogens after Big Disasters:
Infectious Diseases Complicating Relief Efforts”***

Natural disasters such as floods, hurricanes, and wildfires are becoming an unfortunately common reality of the 21st century. Exacerbated by climate change rare “century events” – meant to happen once every hundred years – are now happening every decade or more often. Their physical devastation wreaks havoc on communities causing widespread devastation to homes, roads and clinics. Recovery, when possible, can take years and involve significant resources. Restoring structures and reliable services, such as sanitation, electricity and roads as well as regaining a sense of psychological security are the major challenges faced by communities and nations. Complicating these efforts can be infectious diseases that affect community members and volunteers arriving to help. This talk will focus on infectious diseases that are able to gain footholds

after natural disasters due to disruptions to infrastructure, uncommon pathogens that are associated with specific kinds of disasters as well as cases where aid relief efforts contributed to infectious disease outbreaks. Knowing this information can help healthcare workers effectively respond to disasters and triage post-disaster care, plan responses to ensure maximal beneficial impact after disasters in nearby communities and plan ahead for specific disasters within their own communities.



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“Knowing Where the Bugs Are”

In 1735, one of America’s founding fathers, Benjamin Franklin, declared “an ounce of prevention is worth a pound of cure.” Since the beginning of the 19th century, the world has survived a multitude of pandemics including seven cholera pandemics, three plague pandemics, the Russian, Spanish, Hong Kong and Asian flu pandemics, HIV/ AIDS, SARS, Swine flu, MERS, Zika and COVID. Knowing where bugs hide, whether in software, nature, or real-world systems, provides that “ounce of prevention” by offering several benefits such as improved prevention, decreased fatalities, improved security, cost savings and enhanced knowledge and skills. The National Bio surveillance Integration Center (NBIC), a part of the Department of Homeland Security’s Office of Health Affairs integrates, analyzes, and distributes key information about health and disease events to help ensure the nation’s responses are well-informed, save lives, and minimize economic impact. This presentation will review the history of worldwide pandemics and their relationship to vaccine development, introduce the resources of the NBIC and examine some emerging threats.





Daniel G. Swistel MD

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***“Micro-Invaders and Heart Disease —
A Rapidly Evolving Relationship”***

Infections of the Heart and surrounding cardiac structures have been recognized for many decades. Though the most commonly recognized agent for years has been either a streptococcal and staphylococcal bacterial infection attacking heart valves, there has been increased recognition of a variety of viral, parasitic and fungal agents leading to myocarditis and perimyocarditis. These infections, in turn, often lead to a variety of dysfunctional conditions and heart failure. Furthermore, over the last two decades, there have been more new and novel cardiac implants that can often lead to infectious complications, and this will invariably increase in the future. Infections involving implants represent a completely new opportunity for different infectious agents not previously recognized. In the past, viral and parasitic infections were often considered untreatable, leading to often failed supportive care.

Through advances in genomics and proteomics, progress has been made in understanding the pathobiology of these and many other infections that lead to cardiac dysfunction and failure. This has also led to an expanding role in therapeutic options and additional mechanical alternatives.

In an era of rapidly evolving viral pathogens and the ease of global dissemination, a better understanding of the pathobiology and higher index of suspicion in diagnosis is necessary. This review describes the current understanding of endocarditis, perimyocarditis, cardiac device infections and the possible role of infections in coronary artery disease. The controversy surrounding neglected tropical diseases and the role of SARS-CoV-2 will be discussed.





Leo Wolansky MD

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”Catch the Bug’ — Infections in Neuroradiology”

Quick and accurate neuroradiologic diagnosis in cases of infectious disease are often opportunities for complete cures. Conversely, infections of the spine, orbit, meninges, and brain, must be diagnosed promptly or the consequences can be devastating.

Infections (or infestations) by viruses, bacteria, fungi, and parasites will be discussed. Imaging features of abscesses on CT and specific MRI pulse sequences will be described.



YOUNG INVESTIGATORS PROGRAM

For the second time at UMANA scientific conferences, 6 UMANA students and residents presented short abstracts on topics of special interest to them. We hope to establish a continuing forum for young physicians to share their educational and research experiences with members of UMANA, as well as meet with their colleagues in an informal setting to exchange ideas.

We welcome our students and residents and encourage their continued participation as future physicians, dentists and productive members of UMANA.

Thank you for your efforts.



Jonathan Holuka DO
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“Breast Pseudoaneurysm”

Case Points

- A breast pseudoaneurysm is a rare and potentially serious complication after breast biopsy.
- A stepwise heightened level of care must be institutionalized to effectively treat breast pseudoaneurysms when conservative methods fail especially in comorbid patients.
- Interventional radiology can play a crucial role in the management of breast pseudoaneurysm utilizing a wide modality of interventions to choose from including image guided direct thrombin injection and endovascular embolization



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***“Use of Telemedicine to Establish a Diagnosis of
Hemicrania Continua”***

Telemedicine has become an essential tool in neurology, providing effective remote consultations for conditions such as stroke and headache disorders. Research supports its efficacy in diagnosing and managing non-acute headaches, making it a valuable alternative to in-person visits. The ongoing conflict in Ukraine has disrupted access to neurological care, highlighting the importance of telemedicine services such as those provided by TeleHelp Ukraine, a non-profit offering free medical consultations. This case report illustrates how telemedicine facilitated the diagnosis of hemicrania continua in a patient lacking access to in-person neurology care.



Dariya Ovcharuk MD

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PGY-1 Resident



***“A Rare Case of Severe Mitral Valve Prolapse Complicated by
Staphylococcus epidermidis Native Valve Endocarditis,
Requiring Minithoracotomy for Mitral Valve Replacement”***

A 34-year-old male with a history of mitral regurgitation presented with recurrent palpitations and progressive shortness of breath. Echocardiography revealed severe mitral valve prolapse, significant regurgitation, and vegetation on the mitral valve. Blood cultures identified *Staphylococcus epidermidis*, leading to a diagnosis of native valve endocarditis. Following dental clearance and appropriate antibiotic therapy, the patient underwent successful mitral valve replacement via minithoracotomy. This case underscores the importance of regular cardiac follow-up and highlights the rare occurrence of *S. epidermidis* endocarditis in native valves, which is more commonly associated with prosthetic valve infections due to its biofilm-forming ability.



Iryna Vasyliv

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***“Optimizing the Ann Arbor Staging Process for Hodgkin Lymphoma
In Children: A comparative Study of Traditional and Computer-Aided
Methodologies”***

Background: Accurate diagnosis of Hodgkin lymphoma in children is crucial for assigning appropriate therapies. A growing disparity between the volume of imaging studies and the availability of radiologists poses a significant challenge to achieving timely and accurate diagnoses.

Objective: To determine if a novel computer-aided staging tool can improve time-efficiency and consistency of Ann Arbor staging.



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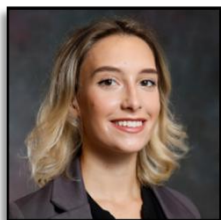


***“Leveraging Artificial Intelligence in the Diagnosis of
Personality Disorder”***

Personality disorders affect approximately 9% of adults, yet their diagnosis remains heavily reliant on subjective clinical judgment.¹ Clinicians assess personality disorders by evaluating patterns in emotions, behaviors, and interpersonal functioning, often through interviews and observations, which can be inconsistent and prone to bias. Advances in natural language processing (NLP) and machine learning (ML) offer novel approaches to objective psychiatric assessment. This study investigates whether transcriptions of patient-therapist interviews, combined with clinical assessment scores, can be used to develop a ML model capable of assisting in personality disorder diagnosis.

Reference

1. Lenzen Weger MF, Lane MC, Loranger AW, Kessler RC. DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biol Psychiatry*. 2007 Sep 15;62(6):553-64. PMID: 17217923.



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***“The Corticosteroid Controversy: Can Surgeons Reduce Hospital Stay
For Odontogenic Infection Patients?”***

Effective management of odontogenic infections is critical in oral and maxillofacial surgery. Length of stay is a measure used in literature to evaluate appropriate outcomes of surgical and medical management. While studies have explored factors such as infection severity and comorbidities affecting length of stay, there is limited data on the impact of post-surgical corticosteroids on recovery time. This may be due to the longstanding controversy that the use post-surgical corticosteroids for odontogenic infections may worsen outcomes due to immunosuppression.

As surgeons rely on evidence to make clinical decisions, this study aimed to assess the relationship between corticosteroid administration and hospital length of stay, hypothesizing that post-surgical corticosteroids would lead to shorter stays. We also evaluated the impact of variables that cannot be controlled by the surgeon such as gender, age, ASA status, and pre-existing conditions on length of stay in our patient population.