



*UW Health Department of Orthopedics and Rehabilitation and Department of Anesthesiology presents*

## **UW Multidisciplinary Pain and Physical Medicine and Rehabilitation Research Day**

Friday, May 13, 2022

Medical Foundation Centennial Building, Room 1220

School of Medicine and Public Health – Madison, WI

### **Keynote Speaker:**

#### **Sean Smith, MD**

Director, Cancer Rehabilitation Program

Assistant Professor, Physical Medicine & Rehabilitation

Michigan Medicine: University of Michigan

## **Program**

### **7:30 Breakfast**

Beverages and an assortment of breakfast sandwich bagels, pastries and sweets will be available outside of room 1220 in the lobby. Coffee, juice and water will also be available.

### **8:00 Opening Remarks**

Nalini Sehgal, MD, Professor

Chief, Division of Rehabilitation Medicine

Program Director, Pain Medicine Fellowship

Vice Chair, Department of Orthopedics and Rehabilitation Medicine

School of Medicine and Public Health, University of Wisconsin-Madison

### **8:05 Building a multicenter research program on a shoe string budget: lessons learned from cancer rehab**

Sean Smith, MD

Director, Cancer Rehabilitation Program

Assistant Professor, Physical Medicine & Rehabilitation

Michigan Medicine: University of Michigan

### **9:00 Intrathecal Catheter Tip Granuloma Formation with Ultra Low-Dose and Low-Concentration Morphine Infusion: A Case Report and Review of Literature**

Michael Gui

UW School of Medicine and Public Health

Department of Orthopedics and Rehabilitation

Intrathecal drug delivery system (IDDS) or pain pump is an accepted treatment modality for chronic intractable cancer and non-cancer pain. The rationale for intrathecal (IT) administration of analgesics is it significantly reduces opioid dose and has relatively few adverse effects in patients with chronic pain. An uncommon but serious complication of this treatment is formation of catheter tip granulomas (CTG). We report a patient who developed CTG at ultra low dose and concentration of morphine, suggesting that granuloma formation is an inherent complication of IDDS and there is no safe dose or concentration of IT drugs. We discuss diagnosis, management, and outcome of a patient with CTG formation and provide a focused review of CTG.

9:15 **Does Lumbar Medial Branch Block Correlate with Radiofrequency Ablation Success? A Prospective Study**

Jake Kraemer, MD

Pain Medicine Fellow, PGY-5 | UW Health

The facet joints are a common pain generator of chronic low back pain. Medial branch blocks (MBB) are an intervention which uses local anesthetic to block the nerves innervating the facet joint. Typically one to two sets of MBBs are performed before targeting the same nerves with radiofrequency ablation (RFA). At UW-Madison, a first "diagnostic" MBB is performed using lidocaine and if the patient experiences a significant positive analgesic response, the block is repeated at the same sites using bupivacaine as a "confirmatory" measure prior to RFA. There is disagreement regarding the specific usage of diagnostic procedures including the degree of pain relief needed, number of MBBs, and volume of local anesthetic used prior to proceeding to RFA. Retrospective studies have found no correlation between results of MBBs and pain relief after RFAs, though these studies had limitations. This prospective study seeks to address previous study limitations by using a larger sample size (100 patients), and longer term follow-up (1 year). This study will prospectively investigate whether the degree of pain relief after MBB predicts response to RFA including degree of pain relief, duration of pain relief, and functional improvement.

9:30 **The Effect of Corticosteroid Injection on the Development of Post Radiofrequency Ablation Neuritis**

Kellen Hilton, MD

PM&R Resident, PGY-4 | UW Health

Radiofrequency ablation (RFA) procedures are commonly performed to alleviate pain through the utilization of heat to ablate nerves and reduce the transmission of pain signals to the central nervous system. Neuritis is thought to be a relatively common side effect of RFA with incidence reported to be anywhere from 0.7% per lesion to greater than 50% per procedure depending on the body site where RFA is performed. Many providers utilize local corticosteroid injection following RFA procedure with the goal of reducing or preventing the development of neuritis. There is no standardized practice and very limited data on the effect of corticosteroids on the incidence of post-RFA neuritis. This is a cohort study looking at the incidence of neuritis amongst patients undergoing RFA procedures with and without the administration of corticosteroid injection. Our study will provide evidence on the role of steroid injection in post RFA neuritis and help to foster a standardized practice among physicians performing these procedures.

10:00 **Break**

10:15 **The effects of osteopathic manual therapy on hemiplegic shoulder pain and upper extremity function in stroke patients during acute rehabilitation: a pilot study**

Ashley Mohan, DO

PM&R Resident, PGY-4 | UW Health

Hemiplegic shoulder pain (HSP) is one of the most common complications after a stroke, yet current treatments are often only mildly effective. One treatment modality that has not been well studied in stroke patients is osteopathic manual therapy (OMT). The objective of our pilot study is to assess the feasibility and safety of performing osteopathic manual therapy in stroke patients with hemiplegic shoulder pain during acute rehabilitation. We will be assessing pain level via numeric rating scale (NRS) before and after each treatment and upper extremity function via the Wolf Motor Function Test (WMFT) upon admission and discharge from acute rehab.

10:30 **Lumbar Spine ROM/Strength after RFA**

Chris Lynch, DO

PM&R Resident, PGY-4 | UW Health

This project looks at lumbar spine kinematics and strength prior and post radiofrequency ablation for lower back pain. RFA targets the medial branches of the dorsal ramus which innervate lumbar intrinsic muscles (multifidus) which help in stabilization of the lumbar spine. This is important as it is an area that has not been looked at yet in the literature, and there is some thoughts that multifidus atrophy contributes to chronic lower back pain. This project is IRB approved and under way collecting data at this time.

10:45 **Spinal Cord Stimulator for Failed Back Surgery Syndrome and Complex Regional Pain Syndrome: A Case Report**

Jon Liang, DO

PM&R Resident, PGY-3 | UW Health

Spinal cord stimulator (SCS) implants are used in several refractory pain syndromes. However, it is unknown how one stimulator can be used to treat several of these conditions in succession. In this case, we demonstrated a simple, cost-effective, and safe practice where an SCS was used to treat two conditions in succession. Here we describe how a single spinal cord stimulator was successfully used to treat both FBSS and CRPS in succession.

**Multi-institutional Journal Club as a Component of Diversity, Equity, and Inclusion Curricula in Residency Programs**

Topics of diversity, equity, and inclusion (DEI) are an integral component of post-graduate medical education. However, it is currently unclear the extent to which physical medicine and rehabilitation (PM&R) residency programs have incorporated a DEI curriculum into their training programs. Here, a novel, multi-institutional DEI journal club is described, which can be an important component of DEI curriculum, as it provides non-local perspectives and insights into specific issues and allows for a simple way to introduce DEI training in programs currently without such training.

11:00 **Use of Peripheral Nerve Stimulation in the Treatment of Intractable Sural and Posterior Tibial Neuralgia**

Michael Finnern, MD

PM&R Resident, PGY-2 | UW Health

Neuropathic pain is common following surgical fixation of open ankle fractures; the treatment for this neuralgia includes pharmacotherapy, additional surgeries, nerve blocks, and radio frequency ablations. Peripheral nerve stimulation (PNS) may be an option to those with pain refractory to these other methods. This report's objective is to assess the effect of PNS on sural and posterior tibial neuralgia. This case involves a 61-year-old male who presented with a history of left foot and ankle pain following an open ankle fracture sustained six years prior in a motorcycle accident. He underwent a successful PNS trial and, three months later, had placement of permanent leads and receiver at the sural and posterior tibial nerves. At seven-month follow up, the patient reported the pain had improved from a 6-8/10 on the visual analog scale (VAS) prior to implantation to a 2/10. This report illustrates the successful implantation of a peripheral nerve stimulator for prolonged effective relief of intractable sural and posterior tibial neuralgia.

11:15 **Lunch**

Beverages and an assortment of boxed lunches with sandwich or salads will be available outside of room 1220 in the lobby. Room 6114 is reserved for attendees to eat lunch, otherwise attendees are welcome to use common spaces throughout the building.

12:00 **Evaluating the rates of COVID-19 vaccine uptake in adult patients with neurological or musculoskeletal medical conditions**

Alyssa Warden, DO

PM&R Resident, PGY-3 | UW Health

During the COVID-19 pandemic, it is crucial for physiatrists who care for patients with neurological and musculoskeletal medical conditions to recognize COVID-19 vaccination disparities within these populations. This was a retrospective, single-center study from an outpatient rehabilitation clinic evaluating the rates of COVID-19 vaccine uptake in adult patients with neurological or musculoskeletal medical conditions, with the primary outcome being completion of a COVID-19 primary vaccine series. Overall, 83.3% of patients (n = 1134) completed a COVID-19 vaccination series. Those who were younger or identified as non-white had increased odds of not having completed a COVID-19 vaccination series (mean [SD] 46.7 [14.7] vs 54.3 [15.8]; OR (95% CI): 1.03 [1.02-1.04], p<0.001), (1.88 [1.16-3.01], p = 0.010). Those residing in urban disadvantaged, rural advantaged or rural disadvantaged areas had significantly higher odds of being not fully immunized compared to those living in an urban advantaged area (Urban disadvantaged: OR 2.78, [(1.42-5.46)], p<0.001; Rural advantaged: OR 1.91 [1.18-3.10], p=0.009; Rural disadvantaged: OR 3.91 [1.88-8.13], p<0.001). Overall, there was a high rate of COVID-19 vaccine uptake among patients seen in this rehabilitation clinic, though racial, ethnic and geographic disparities did exist that should prompt further studies.

12:15 **Using Botox as a non-surgical alternative for treatment of functional popliteal artery entrapment syndrome**

Vince Yaccarino, MD  
PM&R Resident, PGY-3 | UW Health

Functional popliteal artery entrapment syndrome (FPAES) is an often under-recognized and diagnosed cause of exertional leg pain, usually seen in young athletes and particularly females. The etiology is due to an over-crowding of the popliteal fossa, compressing the neurovascular bundle. Typically there is a lateralized medial head of the gastrocnemius, leading to compression of the popliteal artery between it, and either the lateral condyle, lateral head of the gastrocnemius or the plantaris muscle. Our proposed study aims to use botox as a potential non-surgical treatment for FPAES. Patients who have confirmed FPAES via ABI with exercise, dopplar studies +/- functional MRI will be given botox injections into both the medial head of the gastrocnemius and plantaris muscle. The diagnostic studies will then be repeated to assess for improvement of the arterial entrapment and the patients will fill out a survey on their subjective improvement. The patients will be followed up at 2, 4 and 6 months following the injections.

12:30 **Progressive weakness and weight loss in a young patient newly diagnosed with lupus: a case report**

Michele Luu, MD  
PM&R Resident, PGY-2 | UW Health

This is a case report of sudden progressive weakness and weight loss in a young patient newly diagnosed with Lupus. He was found to have both Guillain Barre Syndrome and a Necrotizing Immune Myopathy thought to be triggered by the altered immune environment in Lupus and was treated with Hydroxychloroquine, steroids, IVIG, and plasmapheresis. He had significant recovery of strength while at acute inpatient rehabilitation and has progressed to his pre-morbid baseline after several months of outpatient therapy.

12:45 **Evaluation of Care Partner Needs and Preferences During Care Transitions**

Kaitlyn Vanias, MD  
PM&R Resident, PGY-2 | UW Health

Care partners play a critical role in caring for an increasingly complex, aging population. Following discharge from the hospital or a post-acute care setting is often a time of increased medical complexity and caregiver demands. Although these transitions provide opportunities for caregiver education and integration, care partners' preferences, skills and needs are often not formally assessed. Tools such as the "Care Partner Assessment Tool (CHAT)" are being explored to identify caregiver needs and skills prior to discharge from the acute care setting. Pilot studies of the CHAT indicate that care partners have varying needs depending on relationship to the patient but commonly include the desire for training in mobility assistance and medical devices. Further investigation into care partner needs for post-acute care selection and discharge is warranted to improve patient outcomes and care partner satisfaction.

1:00 **Closing Remarks**

Nalini Sehgal, MD



## Keynote Speaker

Dr. Sean Smith is the Medical Director of the University of Michigan Rogel Cancer Center's Cancer Rehabilitation program, with a clinical emphasis on restoring function and reducing symptom burden in patients with a history of cancer. He serves on the editorial board of the Archives of Rehabilitation Research and Clinical Translation, and previously the Journal of Clinical Oncology, and Supportive Care in Cancer. He currently leads the ASCO Education Committee for Symptoms and Survivorship and co-chairs the AAPM&R's Cancer Rehabilitation BOLD initiative. His research emphasis is the assessment of function in cancer patients.

## Judges

Michelle Poliak-Tunis, MD  
Assistant Professor (CHS)  
Program Director, Physical Medicine and Rehabilitation  
Residency  
Department of Orthopedics and Rehabilitation Medicine

Walton Schalick III, MD, PhD  
Adjunct Clinical Professor  
Department of Orthopedics and Rehabilitation Medicine

Allison Glinka Przybysz, MD, MPH  
Assistant Professor (CHS)  
Department of Orthopedics and Rehabilitation Medicine

Nathan Rudin, MD  
Professor (CHS)  
Department of Orthopedics and Rehabilitation Medicine

## 2021 Award Recipients

First Prize for Basic Science Research: Yeng Fransoua Her, MD, PhD

First Prize for Clinical Science Research: Jon Liang, DO

Honorable Mention for Clinical Science Research: Alyssa Warden, DO

Honorable Mention for Clinical Science Research: Ashley Mohan, DO