

Dr. Allan Levi Receives 'Top Paper of the Year' Award at Congress of Neurological Surgeons

Neurosurgeons with the University of Miami Miller School of Medicine had a major presence at the Congress of Neurological Surgeons that took place October 19-23 in San Francisco.



Dr. Allan D. Levi with his award.

Among the conference highlights, Allan D. Levi, M.D., Ph.D., professor and chair of the Department of Neurological Surgery, chief of neurosurgery at UM/Jackson Memorial Hospital, and the Robert M. Buck Distinguished Chair in Neurological Surgery, was awarded the prestigious meeting's Top Paper of the Year as well as the Spine Section Paper of the Year.

Dr. Levi delivered a keynote lecture on the groundbreaking study, which found significant difference in long-term (10-year) outcomes between two frequently performed treatment procedures. Patients who underwent fusion of the cervical spine had a significantly higher rate of disc problems at other levels requiring follow-up surgery than patients who had received an artificial cervical disc, according to the study.

"Our research indicated that artificial cervical discs maintained spinal mobility and reduced the risk of degeneration of adjacent discs over a 10-year period," said Dr. Levi, who was the senior author of the award-winning comparative spinal procedure study, "Symptomatic Adjacent Level Disease Requiring Surgery: Analysis of 10-Year Results From a Prospective, Randomized, Clinical Trial Comparing Cervical Disc Arthroplasty to Anterior Cervical Fusion," published in the journal *Neurosurgery* in February 2018. The study "challenged dogma, created a paradigm shift, and/or encouraged surgeons to rethink approaches to patient care, big data, and trial results," according to CNS.

A landmark paper

The paper, written by Dr. Levi and researchers from North Carolina, New York and Maine, found that fewer patients with the Bryan and Prestige (Medtronic) artificial cervical discs

developed symptomatic adjacent level disease requiring surgery, compared with patients treated by anterior cervical discectomy and fusion (ACDF).

While ACDF has long been regarded as a “relatively safe, versatile, and effective” treatment for cervical disease with high rates of success, Dr. Levi said one “overarching concern” has been the development of disc degeneration, thought to be the product of increased segmental motion, pressures, and strain.

The 10-year study found that the artificial cervical discs on average maintain an excellent motion profile at 10 years, that annual adjacent level disease rates requiring surgery after cervical fusion are lower than prior assumptions (1.58 %), and that a reduction in adjacent level surgery rates is realized after seven years of follow-up when combining two large studies. Dr. Levi said, “We believe the artificial discs may restore favorable kinetics to the cervical spine, thereby reducing the pressure on adjacent discs.”

Faculty and Resident Participants

Dr. Levi was among more than a dozen Miller School neurosurgery faculty, fellows and residents who presented their work at the CNS annual meeting and played a major role in other high-profile activities.



Miller School neurosurgery faculty and residents at the meeting.

Michael Wang, M.D., chief of neurosurgery at UHealth Tower, discussed “Navigation and Robotics: Fad or Future?” in a scientific session. “I discussed our hospital’s two leading-edge robot platforms,” said Dr. Wang, who also presented on “Pushing the Envelope of Spine Surgery,” and “My Worst Spinal Complication: Lessons Learned.”

Dr. Wang launched the official podcast of the American Association of Neurological Surgeons (AANS) at the meeting. “Now anyone can listen and share in the highs and lows of being a neurosurgeon,” he said. “Our guests include world-renowned neurosurgical leaders, scientists, inventors, and clinicians. Have a listen for free on Apple Podcast or Spotify.”

Miller School sixth-year neurosurgery resident Iahn Cajigas, M.D., Ph.D., received the CNS Stereotactic and Functional Neurosurgery Resident Award for his abstract, “A Fully Implantable Brain Machine Interface for Volitional Hand Grasp Restoration in Cervical Quadriplegia.”

“We implanted an experimental recording device in the brain of a 22-year-old patient who had a spinal cord injury five years

ago,” said Dr. Cajigas. “When he thinks about moving his hand, we were able to trigger electrical stimulation of the hand muscle nerves so that he could pick up objects, such as a spoon, and feed himself.”



Dr. Michael Wang, left, conducts an interview for his podcast.

Although the brain interface is now limited to a laboratory setting, Dr. Cajigas hopes to continue the work to someday give patients a higher quality of life at home. “We are the first to do this in the U.S., and the prospects are very exciting,” he added.

Other Miller School faculty presenting at CNS included:

- Jacques Morcos, M.D., professor and co-chair of the Department of Neurosurgery, and AANS board member: “Brain Tumor Update: Benign Brain Tumors,” “Acoustic Neuromas: Current Management Strategies,” and “Challenging Skull Based Tumors: Operative Techniques and Case-based Discussions.”
- Ricardo J. Komotar, M.D., director of the Brain Tumor Initiative, director of surgical neuro-oncology, and

director of the neuro-oncology fellowship program in the Department of Neurological Surgery: “Treatment Strategies for Single vs. Multiple Metastases,” “Guidelines on Management on Brain Metastases,” and “Guidelines for the Surgical Management of Glioblastoma.”

- Robert M. Starke, M.D., M.Sc., professor of neurological surgery and radiology, co-director of Endovascular Neurosurgery at UM/Jackson Memorial Hospital, and director of neurovascular research: “A Comprehensive and Evidence-based Guidelines Review for the Treatment of Intracranial Aneurysms.”
- Eric C. Peterson, M.D., associate professor of neurological surgery and director of endovascular neurosurgery at UHealth Tower: “Acute Stroke Care: Guidelines Review and Future Directions.”
- Carolina Benjamin, M.D., did not attend the conference, but had four of her studies presented: “The Use of Virtual Reality Platforms Combined with Diffusion Tensor Imaging in the Preoperative Planning and Intraoperative Navigation of Deep Seated Cavernomas,” “Earlier Radiosurgery Leads to Better Pain Relief and Less Medication Usage for Trigeminal Neuralgia Patients: An International, Multi-center Study,” “Simultaneous Treatment of Petroclival Meningiomas and the Trigeminal Nerve with Gamma Knife Radiosurgery for Tumor-Related Trigeminal Neuralgia,” and “Role of Stereotactic Radiosurgery in the Care of Patients with ≥ 25 Cumulative Brain Metastases.”

