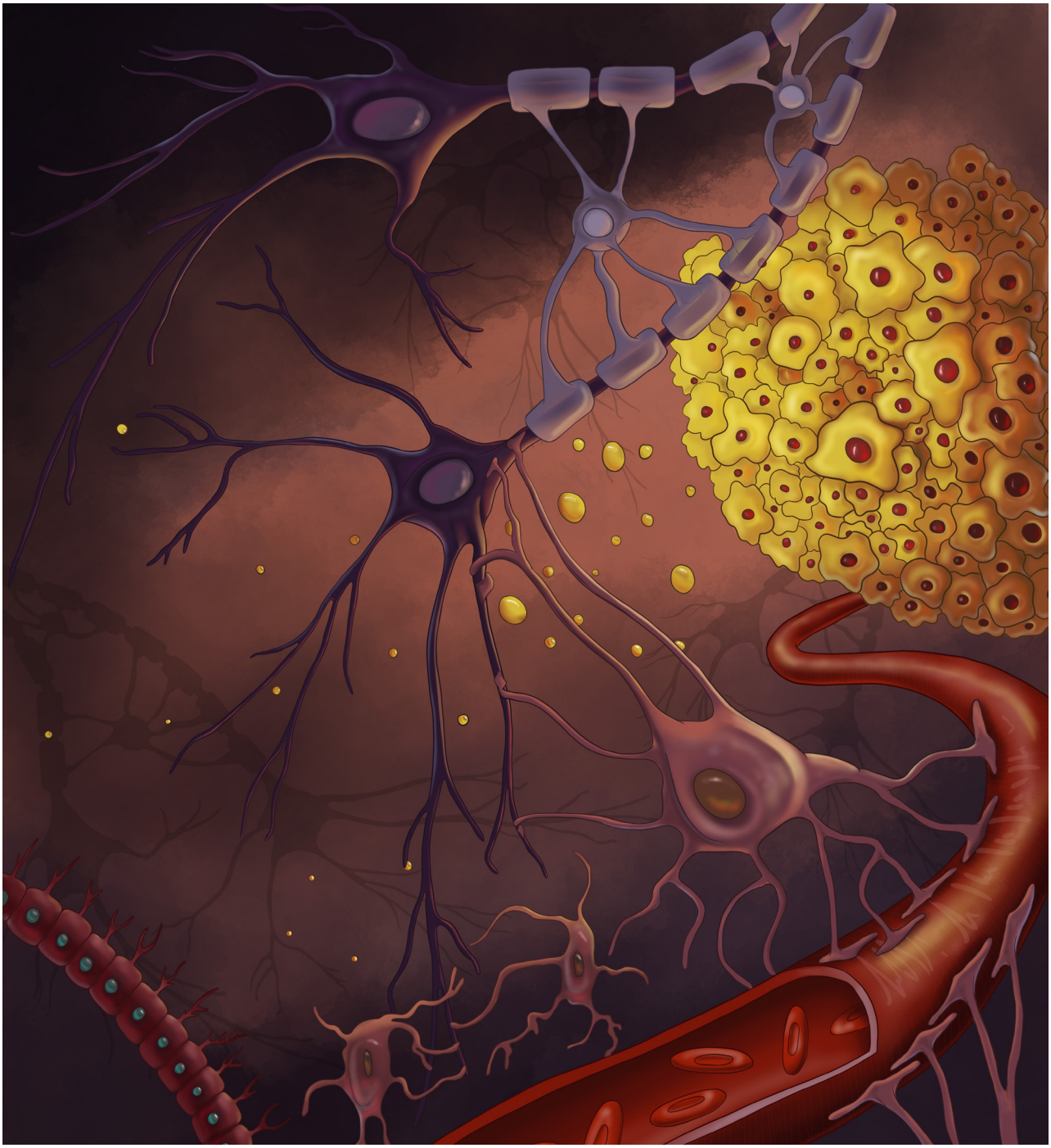
neuroscience outlook

news and research from the department of neurosurgery



AUGUSTA UNIVERSITY
MEDICAL COLLEGE OF GEORGIA
Neurosurgery

Volume 22 | issue 1
January - June 2025

From The Chair

Dear friend,
As we turn the page on another academic year, July brings a fresh wave of energy and excitement to our department. We've just said farewell to our outstanding Chief Resident, Lydia Kaoutzani and now we welcome the next generation of our new neurosurgical trainee, Luke Ledford. This cycle of mentorship and renewal is at the heart of our mission—and it's what makes July such a special time at MCG. We are also sad to say goodbye to our friend Michel Pare who has retired after decades of service, but we are excited to welcome Hyunwoo 'Sean" Do who specializes in endoscopic spine surgery.

Building on the momentum, we prepared for the 3rd Annual Marshall Allen Symposium. We welcome a renowned neurosurgeon, Dr. Michael McDermott (formerly at UCSF). With this Conference and other national and regional meetings, we are expanding opportunities for residents to engage in clinical research and scholarly activity.

As we welcome new faces and embrace new challenges, let us recall some more words from the Hippocratic Oath: "Gladly share such knowledge as is mine with those who are to follow." Here's to another year of learning, teaching, and growing together.

Fernando L. Vale, M.D.
Chair, Department of Neurosurgery
Marshall B. Allen, Jr., M.D. Distinguished Chair
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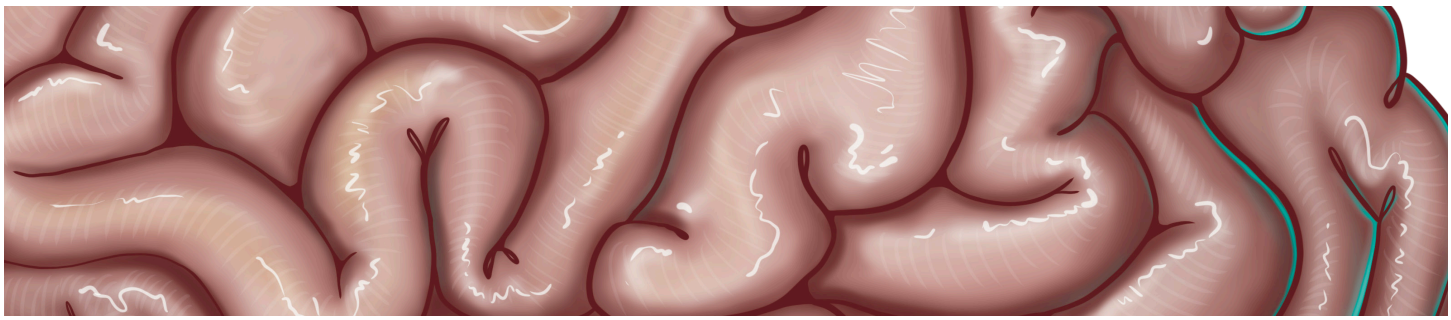

In This Issue

Neuroscience Outlook is produced annually by the Medical College of Georgia Department of Neurosurgery at Augusta University.

To submit news updates please contact sderthick@augusta.edu.

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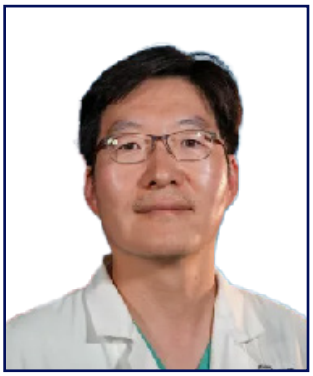
Department News

Welcome Aboard: Assistant Professor



Hyunwoo "Sean" Do, MD, has joined our department as an Assistant professor, specializing in Spine. Dr. Do completed medical school at Yeungnam University, Daegu, South Korea, followed by Neurological Surgery residency at Kangbuk Samsung Hospital, Samsung Medical Center, Sungkyunkwan University in Seoul, South Korea. He has since completed Multiple Spine Fellowships and General Neurosurgery Fellowship in the United States of America and was previously an attending Neurosurgeon at St. Louis VA Medical Center. He has clinical interest in spinal fusion surgery, minimal invasive spine surgery, spinal cord stimulator, and endoscopic spine surgery. He has research interest in spinal cord injury, dynamic stabilization and spinal cord stimulation.

We are excited to welcome Dr. Do to the team!

We are sad to say goodbye to Dr. Pare. He is now retired and is moving to Cape Cod and renovating a cottage with his wife. He will be spending time visiting his kids and grandkids in Atlanta. Congratulations on your retirement Dr. Pare!

Welcome Aboard: PGY-1

We are excited to welcome our new PGY-1 Neurosurgery Resident, **Luke Ledford, MD**! Luke Graduated from MCG with his MD in spring of 2025. Luke has chosen neurosurgery because "Neurosurgeons perform complex procedures on the nervous system - the organ system that provides us with the basic functions that are necessary for the human experience. Not only that, but neurosurgeons stand in the gap between life and death on a daily basis. I chose this field because I wanted to have the skills necessary to make life saving decisions and perform lifesaving procedures for patients while also ushering my patients and their families through some of life's most difficult and tragic times." A fun fact about Luke is that he worked at his grandparents' Christmas tree farm in rural North Georgia every fall/winter before he moved to Augusta.

We welcome him to the team and look forward to watching him develop during residency.

Farewell: Chief Resident

Lydia Kaoutzani, MD, has graduated from her neurosurgery residency this year. During her residency she enjoyed working and learning from everyone in the neurosurgery department. She will miss the great team spirit that exists amongst the residents. She finds Augusta a great place to train and to live in, she plans on staying with our department for the near future primarily working in cerebrovascular cases. We are looking forward to having her around!

Neurosurgery Accomplishments and Recognition

Congratulations to **Khoi Nguyen, MD** for being awarded the 2025 MCG Outstanding Young Alumnus award.

Congratulations to our Medical College of Georgia faculty in recognition of their excellence in teaching MCG medical students and residents. **Samuel D. Macomson, MD** and **Lydia Kaoutzani, MD** were honored with Medical College of Georgia's exemplary teaching awards AY2023/2024. Huge congratulations!

Resident Accomplishments and Recognition

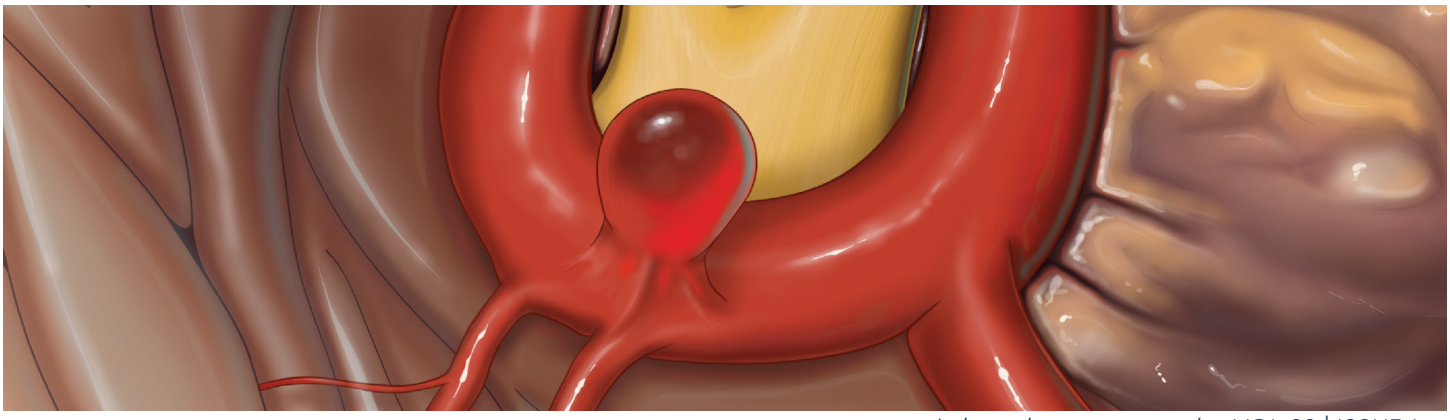
Christopher Carr, MD, MPH is currently a member of the Sigma Xi Scientific Research Honor Society and CNS Neurosurgery Publications Deputy Resident Fellow. He recently won the MCG Research Days Case Guest Competition.

Luca Debs, MD was awarded the Anil Nanda Award at the Southern Neurosurgical Society, for best paper. At the Georgia Neurosurgical Society conference, he was awarded best resident presentation.

Research Spotlight

Kumar Vaibhav, PhD contributed as a member for 2025 National Neurotrauma Society (NNS) WINTR-VISA fellowship review committee and NNS conference abstract review committee. He is actively contributing as 2025-2026 NNS TEAM Mentor for upbringing of young national and international mentees.

Molly Braun, PhD has recently published areview in Science titled Glymphatic Dysfunction in Alzheimer's Disease: A Critical Appraisal. Check it out here: DOI: 10.1126/science.adv8269



Department Events

UPCOMING: Third Annual Marshall B. Allen Symposium

We are excited to be hosting our **3rd Annual Marshall B. Allen Symposium on August 22nd, 2025.** We are welcoming **Michael McDermott, MD** as our keynote speaker for this year's Symposium. Michael McDermott, MD is a practicing neurosurgeon, the Chief Medical Executive and Irma & Kalman Bass Endowed Chair in Clinical Neuroscience at Baptist Health Miami Neuroscience Institute, as well as Chair of the Department of Neurosciences at Florida International University Herbert Wertheim College of Medicine. He has specialties in meningioma surgery, skull base surgery and radio surgery.

If you wish to attend, please RSVP to kplagenhoef@augusta.edu

UPCOMING: 2026 Residency Match Information

Our recently expanded 7-year residency program incorporates the latest neurosurgical techniques, technologies and innovations, and provides the opportunity to work on cases that are seldom seen in most residency programs around the United States. The program is highly competitive as we accept only one resident per year.

Key Dates:
September 3, 2025- Applications Open
September 24, 2205- Programs Begin Reviewing Applications
October 24, 2025- MCG NSGY Interview Day
November 14, 2025- MCG NSGY Interview Day
December 12, 2025- MCG NSGY Interview Day
January 9, 2026 -MCG NSGY Interview Day
March 20, 2026- Match Day

Best wishes as you consider the next step in your medical and surgical training.

Please contact Sarah-Tate Edmond, Residency Program Coordinator, saedmond@augusta.edu with any questions.

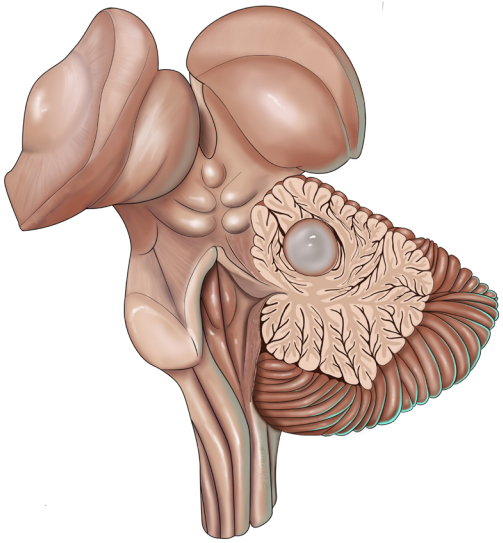
Medical Immersion and Apprenticeship Program

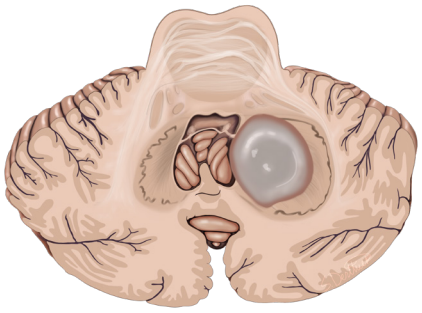
We are grateful to have hosted the Medical Immersion and Apprenticeship Program students this past July. A group of six students spent time with our department to learn more about Neurosurgery and other healthcare career pathways. They spent a week and a half shadowing our physicians, learning about various career pathways, and developing their own research topics. We had speakers from various professions including speech pathology, dermatology, radiology, and more. Thank you to Sarah-Tate Edmond, Billy Woodall, Ryan Vatan, and John Bacolores for planning and executing this experience, and making it a great success. We are excited to host more students in the years to come!

Clinical spotlight: Pediatric Brain Tumors
by Khoi Nguyen MD

Background: Pediatric brain tumors are the second most common malignancy in children. However, they are the most common cause of death among all pediatric cancers. In general, these tumors occur in the posterior fossa. The three most common brain tumors seen in the pediatric population are pilocytic astrocytoma, ependymoma, and medulloblastoma.

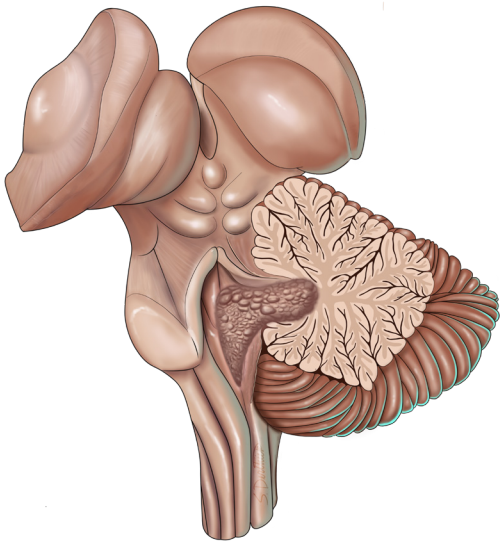
Pilocytic astrocytomas, also known as juvenile pilocytic astrocytoma (JPA) are the most common type of all brain tumors in children at around 20% of cases. These tumors originate from star shaped cells called astrocytes. Astrocytes and other similar cells form the tissue that surrounds and protects nerve cells found within the brain and spinal cord. Most symptoms are a result of increased pressure on the brain and include vision and balance problems, vomiting, headaches and nausea. JPAs are low grade gliomas, which are slow growing tumors that are primarily benign and treatable. These tumors are most commonly located in cerebellum and are typically composed of a large cyst with a mural nodule of tumor. JPAs are classified as WHO grade I.

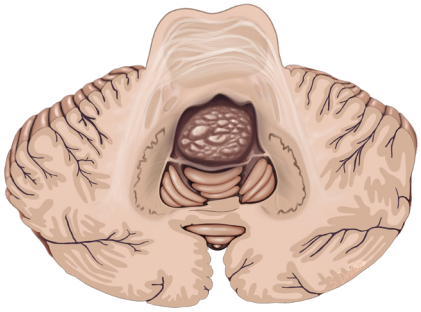




Treatment:
· Surgery is curative and often times the only treatment required. In some cases, chemotherapy or radiation therapy may be suggested.
· Resect cyst wall if +enhancement.

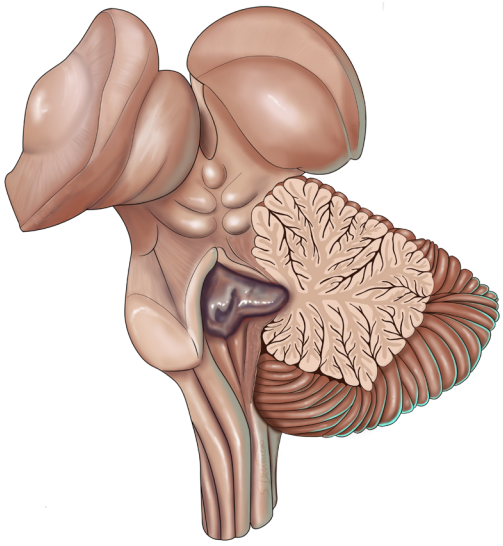
Ependymomas are the third most common pediatric brain tumor at around 10% of cases. These tumors originate from ependymal cells. Ependymal cells line the cavities of the brain and spinal cord and produce CSF. Both children and adults can be affected, in children they grow in the brain whereas in adults the tumors usually form in the spinal cord. In children, these tumors are most commonly located floor of 4th ventricle, but can extend through foramen of Magendie/ Luschka and tend to have a plastic or "toothpaste" looking appearance. Ependymomas are classified as WHO grade II.

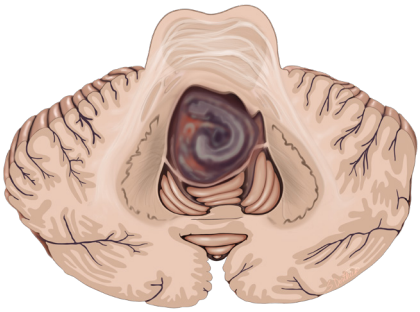




Treatment:
· The standard of care is maximal resection and adjuvant radiation therapy.

Medulloblastomas are the most common type of malignant brain tumor in children making up 20% of all brain tumors. These tumors are thought to arise from cerebellar stem cells and form in the medial part of the cerebellum called the vermis and extended to roof of the fourth ventricle. These types of tumors are aggressive and tend to grow quickly. The cancer can spread to other parts of the central nervous system through CSF circulation. WNT subtype is associated with Turcot syndrome while SHH subtype is associated with Gorlin and Li-Fraumeni syndromes. Medulloblastomas are classified as WHO grade IV.



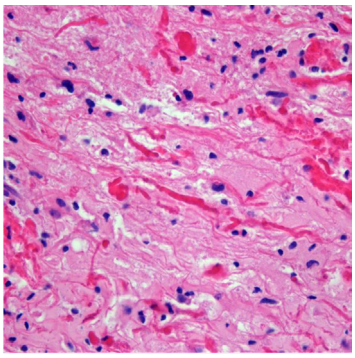


Treatment:

· Maximal surgical resection and chemotherapy and in most cases radiation therapy is required.

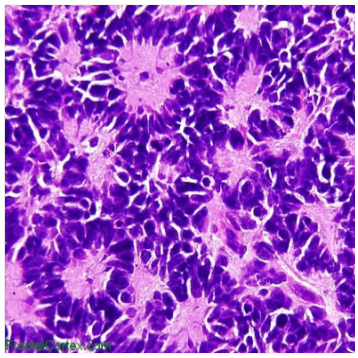
Histology

Pilocytic Astrocytoma



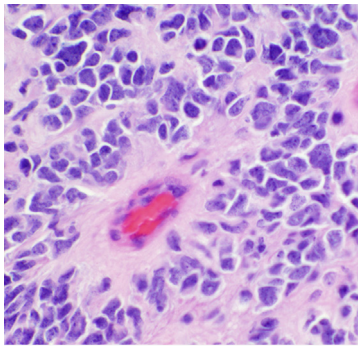
Histology:
biphasic pattern (piloid/spongy areas), Rosenthal fibers

Medulloblastoma



Histology:
dense small round blue cells, Homer-Wright rosettes

Ependymoma



Histology:
True ependymal rosettes pathognomonic, perivascular pseudorosettes more commonly seen

In the news: Wellstar MCG Health achieves medical first: Procedure offers hope for aneurysm patients

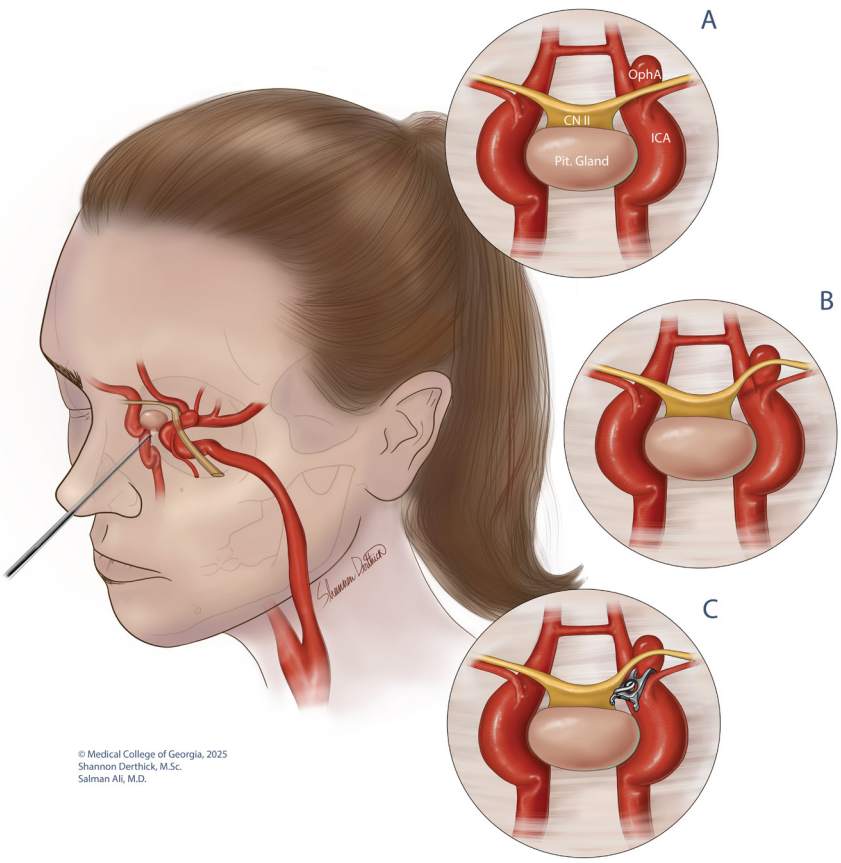
Published on April 22, 2025

Neurosurgeons at Wellstar MCG Health Medical Center achieved a new surgical approach to treat an aneurysm behind the eye. It's called endoscopic endonasal clipping of a superior ophthalmic aneurysm. The procedure for an aneurysm in this location is believed to be the first of its kind performed through the nose. This innovative technique offers a promising alternative for patients with complex aneurysms, particularly younger individuals.

Dr. M. Salman Ali, director of Skull Base, Pituitary and Surgical Neuro-oncology and assistant professor of Neurosurgery at Augusta University, led the team in a pioneering procedure performed at Wellstar MCG Health called endoscopic endonasal clipping of a superior ophthalmic aneurysm. Dr. M. Salman Ali, director of Skull Base, Pituitary and Surgical Neuro-oncology and assistant professor of Neurosurgery at Augusta University, led the team in this pioneering procedure performed at Wellstar MCG Health. An aneurysm, as Dr. Ali explains, is a "weak spot in a blood vessel in the brain," prone to rupture, which can be life-threatening. Located near the eye, the superior ophthalmic aneurysm is a rare and challenging condition.

"MCG Neurosurgery has been here for many years and we have a long tradition of teaching and research," said Dr. Fernando L. Vale, neurosurgeon and Department of Neurosurgery chair at Augusta University. "We bring teams together, use advanced technology and pay close attention to the complex details for the better outcome of our patients. Working as a team can create better science."

Traditionally, superior ophthalmic aneurysms were treated with open brain surgery and significant brain tissue manipulation. While endovascular techniques with the use of stents—tubes that support weak artery walls—are now more common, they carry a recurrence risk and require lifelong medication. This was a concern for Dr. Ali, whose patient was only 36 years old. Thus, he and his team proposed clipping the aneurysm through the nasal cavity instead. This minimally invasive technique offered a treatment with no incisions or brain tissue manipulation, a significantly lower recurrence rate and no need for long-term medication. "I thought it was the best thing for the patient," Dr. Ali emphasized, explaining his decision to pursue this approach.



The procedure required a multidisciplinary team including ENT surgeons, interventional vascular surgeons, neuro-anesthesiologists and neuromonitoring specialists—and a carefully executed surgical plan.

"This could not have been possible without this wonderful team," Dr. Ali said.

The patient, who found out about her aneurysm from routine imaging after a car accident, was discharged only two days after the surgery and is recovering well. Dr. Ali stressed the importance of offering patients options and empowering them to make informed decisions.

"This prioritizes the patient and surgical excellence," he continued. Dr. Ali hopes this procedure will become a treatment option for people with hard-to-reach aneurysms in the future, offering them a better quality of life.

This achievement not only benefits patients but also serves as a valuable learning experience for medical residents and fellows who were in the operating room that day.

"Seeing is believing," Dr. Ali said, highlighting the importance of academic medicine in advancing surgical techniques. "When students see someone else do it, why can't they do it? It's our duty to be better than the surgeons before us. The students now have more technology and better anatomical understanding—their outcomes will be even better than ours."

A Farewell from Dr. Pare:

After more than forty years in the orbit of neurological science, and these last five years here, I'm stepping back from a career that, if I'm honest, was probably held together more by inertia and good colleagues than by any grand design.

I didn't set out with a master plan. If anything, I was carried forward more by fascination than foresight. Whatever luck or timing helped along the way, it was curiosity that kept pulling me in again and again, toward this astonishing organ. The brain isn't just complex. It's beautiful. It's good. And it's, somehow, true. Even when we barely understand it, we feel its integrity, its silent logic behind every movement, memory, and thought.

I was never the fastest, or the flashiest, but I couldn't look away. And over time, that sustained attention, that awe, became a kind of vocation. Neurosurgery just happened to be the way I followed it. I've always thought of myself as more of a middle-round draft pick. Solid fundamentals, a bit scrappy, not flashy. The kind of player who doesn't wow you in tryouts, but somehow sticks around, shows up to practice, keeps moving, chases the puck into corners no one else wants. And if I stayed on the ice longer than expected, it wasn't because I racked up points, but because I loved the game too much to leave.

These last five years have been a different kind of education. We navigated COVID, a hospital acquisition, and an Epic EMR rollout that reminded many of us just how much we miss paper. The bureaucracy ballooned. Pre-auths multiplied. Coding became its own dialect. And yet somehow through all of it, we kept going. Because there was still something essential to do.

I want to thank my partners for their support, their tolerance, their teamwork, and for helping me through more than a few moments when I was either too stubborn, too tired, or just deeply confused by my own inbox. You kept the ship steady, even when I didn't.

To the staff- thank you for your steadiness, your professionalism, and for reminding me what grace under pressure actually looks like.

And to the residents- thank you for teaching me. For pushing back, thinking forward, and tolerating my metaphors.

I also want to thank my family. To my wife- who has endured me through all these years with a patience that I can only describe as heroic, thank you. To my three children, who each grew into remarkable people in their own right: you inspired me, challenged me, and reminded me what really matters. As I like to say, any good that came through them came from the good epigenetics in their mother's egg.

Now, I know there were times when my moods, my "bull-in-a-China-shop" way of moving through the day-might have stirred the pot. At times, I was blunt when I should've been listening, or forceful when a lighter touch would've done better. It wasn't about authority or ego, just a flawed urgency, and sometimes a failure to translate conviction into diplomacy. If I've learned anything, it's that clarity and kindness aren't opposites, and that diplomacy, like surgery, is a skill you're never done refining. To those who absorbed my rough edges with grace: thank you. You made me better, and I'm deeply grateful. I think of it all now as our version of the Ship of Theseus. We kept replacing parts, tools, workflows, and expectations but the core held. The ship stayed afloat because we believed in what it carried.

To the next generation: The future you're inheriting will be more complex-technologically, ethically, systemically. But don't confuse complexity with relativism. Just because it's hard doesn't mean nothing is true. It just means you have to ask better questions. Be more curious. More precise. More present. Spend time at the bedside. Examine your patients. Think slowly before you click quickly. And above all-show up. Every day. That's the heart of it. Be there. Be steady. And yes-bring your reflex hammer. You know why.

What I've learned is that the meaning doesn't arrive with fireworks. It shows up in repetition, in the daily acts of care, and in the grace of watching someone younger and steadier take the helm. Thank you for letting me sail this far. I leave not with conclusions, but with deep gratitude and yes, now I'll finally have time to dedicate myself more fully to the complexity of the double pendulum... of my golf swing.

Congratulations to Dr. Pare on his retirement. We were lucky to celebrate with a retirment party.

Thank you for all of your work teaching the next generation!

Resident corner

Luca went to Orlando with his family as well as brought his family to spring GNS in Sea Island where he won the GNS Best Resident Presentation Award. He completed his endovascular fellowship this past year with our department. In his personal time, he has traveled to visit family, and his mother visited Augusta from France.

Kenny has participated in multiple courses this year including the AO Spine NA Course, which focuses on Principles and Treatment of Spinal Disorders. In his personal time, he has been lifting and working out. Kenny also has been training his daughter in softball and pitching.

Matt raced a half ironman in Chattanooga, TN and is training for a few more races including the Augusta half ironman. He also completed The Kline Peripheral Nerve Dissection Course in Portland, OR.

Chris joined a softball league this year. This summer he spent vacation time in the Outer Banks with his family. Chris is the incoming CNS/Neurosurgery Publications Deputy Resident Fellow for 2025-26 and also accepted an Endovascular/Cerebrovascular Fellowship at the University at Buffalo in New York, beginning in 2028.

David spent a lot of time training for a marathon this year. He also participated in the Chicago Advanced Training in Open and Endoscopic Surgery Course. He has been to a few international trips to Scotland with his family as well as Australia and Norway with friends. Locally, he traveled to the Outer Banks.

Billy has helped to successfully organize a surgical observation and immersion program at the hospital for high school and college students. He went on a few motorcycle trips and visited Hilton Head with his family. In his free time, he has done lots of home improvement including installing a hot tub, fence and patio. He has also hosted a poker night and a Super Bowl party for the residents.

Mehul visited Paris, France and Turkey this year. While he was in Turkey, he visited the Gazi Yaşargil memorial and got a Gazi Yaşargil national stamp. He also attended many weddings and was the best man in one of them! In his free time, he has become an amateur fishing enthusiast, attended green jacket baseball games and has started to pick up golf!

Luke likes to be outdoors - whether that's hiking, kayaking, or playing some kind of sport. He enjoys trying new foods, playing video games, and spending time with his newly wed wife, Natalie, as well as family & friends!

Thank you to our donors!

We want to thank our 2025 donors for helping to enhance our program's didactic and clinical needs. We couldn't have our success without your generosity.

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Publications and presentations of 2025

Publications

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Neurosurgery Presentations

Vale FL: Vagus Nerve Stimulation: Present & Future. Keynote Speaker for the 1st Annual Brain & Spine Symposium. Advent Health. Tampa, FL. 2/1/20205.

Baker D, Poster: Preliminary analysis of CSF pigmentation and RBC count for successful EVD weaning in subarachnoid hemorrhage; accepted for the Neurocritical Care Society Meeting, Montreal, 2025

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