Battling Brain Tumors

At The Gerald J. Glasser Brain Tumor Center, a joint effort of Atlantic Neuroscience Institute and Carol G. Simon Cancer Center results in state-of-the-art care and renewed hope for those facing benign and cancerous tumors of the brain, skull base, spine, and spinal cord.
At Overlook Medical Center’s Gerald J. Glasser Brain Tumor Center, we are witnesses every day to how cancer shifts the delicate balance of life. Seemingly in an instant, a cancer diagnosis transforms someone from person to patient. When that diagnosis is a brain tumor, it often carries with it additional levels of concern. So, too, does a brain tumor require additional layers of care. At The Gerald J. Glasser Brain Tumor Center, all of the resources of Atlantic Neuroscience Institute and Carol G. Simon Cancer Center converge to provide state-of-the-art care—and ease minds, comfort families, and keep hope alive.

The Gerald J. Glasser Brain Tumor Center features a multidisciplinary panel of experts who specialize in neurosurgery, skull base surgery, otolaryngology, radiation oncology, neuro-oncology, medical oncology, neuro-radiology, neurology, neuropathology, and social work. Together, they review each patient’s medical history and create individualized treatment plans to address benign and cancerous tumors of the brain, skull base, spine, and spinal cord. “A brain tumor diagnosis is a traumatic event,” acknowledges neuro-oncologist Kurt Jaeckle, MD, the new Co–Medical Director of The Gerald J. Glasser Brain Tumor Center. Jaeckle joined Overlook this fall after 16 years at the world-renowned Mayo Clinic in Jacksonville, Florida, and seven years at MD Anderson Cancer Center before that. “There is a stigma attached to the diagnosis: How will it change a person? What will it take from a person? We understand that, and we’re always working to give patients the chance to stay one step ahead of their disease.”

Jaeckle admits that isn’t easy. “Brain tumors are considered very smart tumors. They have their own escape mechanism; they aren’t dedicated to a single driving mechanism like some tumors are.” Put more simply: Imagine a house with only one door; it’s easy to prevent someone from leaving. “The brain is more like a house with a lot of exits and tunnels,” he says. “You may be able to stop someone from leaving one way, but they will find another way. It’s the same thing with many of these brain tumors.”

And so, patients who turn to Overlook Medical Center for the diagnosis and treatment of a brain tumor should gain some measure of reassurance knowing they are supported with an unparalleled depth and breadth of resources through the collaboration of Atlantic Neuroscience Institute and Carol G. Simon Cancer Center. “Atlantic Health System has many areas of excellence, and our Brain Tumor Center is one of them,” says Nurse Coordinator and Patient Navigator Pat Eagan, RN. “We have incredible depth here. We are able to offer novel but effective therapies—everything from surgery to CyberKnife® radiosurgery to clinical trials. We are able to give our patients high-quality care without necessitating a trip across the Hudson River.”

Adds Yaron Moshel, MD, PhD, Co-Director of The Gerald J. Glasser Brain Tumor Center, “No one has a coordinated team like we do. Each individual person here is awesome, but as a team, we achieve something truly wonderful.”
Cutting-edge diagnosis and treatment

Diagnosing and treating brain tumors requires talent, technology, and artistry in equal measure.

An accurate and timely diagnosis of brain tumors is critical to improving outcomes. That begins with an MRI (magnetic resonance imaging) of the brain, with diffusion imaging that helps identify the cellular structure of a brain tumor, plus perfusion imaging that provides data on the blood flow to the tumor.

As with many other kinds of tumors, the front line of treatment for brain tumors is surgery, and it is the surgeon’s goal to remove the tumor in its entirety whenever possible—but doing so in this most delicate and nuanced part of the body is extremely difficult. At Overlook Medical Center, a cooperative effort between the radiology and neuroscience departments has ushered in a new era of image-directed neurosurgery, says Neil Horner, MD, Chief of Neuroradiology for the Department of Radiology at Overlook Medical Center, and Chief of Neuroradiology for Atlantic Health System and Atlantic Neuroscience Institute. “With the old system, a patient would have an MRI or CT, and the neurosurgeon would take those images, put them up in the operating room, and he or she would refer back to them throughout surgery,” explains Horner. “But with our new technology, the process is totally different—we have real-time imaging.”

This is achieved through a probe that produces 3-D images, telling the surgeon where he is in the brain and where he is in relation to the brain tumor, taking into account not only the anatomy of the brain but also the physiology, or functionality. “Areas of greatest functionality alert the neurosurgeon to critical areas of the brain, like language and the visual cortex and hand motion,” says Horner, “so we are able to put real-time data into real-time images.”

In addition, diffusion tensor imaging allows surgeons to visualize the white matter of the brain, to see how neuro impulses are being transmitted. “The fact that the neurosurgeon is able to see in real time not just the location of the brain tumor but also areas of functionality and white-matter tracks moves us into another level of dealing with brain tumors,” says Horner.

Adds Moshel, “The brain is the anatomic organ that represents a person’s consciousness. For malignant brain tumors, the goal is to achieve complete removal of the tumor. During surgery, it is almost an art form to distinguish what is normal brain tissue and what is tumor tissue. There is no margin for error. Now, there are more technologies and more techniques that allow us to reach tumors in deeper and more eloquent parts of the brain. In the past we had to guess about how a patient’s brain should be—but not everyone has a ‘textbook’ brain and each person’s brain is different. For example, if you’re bilingual or ambidextrous, your circuits are arranged differently. Now, with intraoperative functional brain mapping, we can tailor surgery to each patient. We are able to do less invasive surgeries through smaller openings. This lets us perform surgery more safely.”

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Sophisticated pathology

Central to diagnosis and treatment is pathology. Pathologists work behind the scenes, between the surgeon and the oncologist. Although the patient never sees the pathologist, it’s the pathologist who makes the diagnosis by observing the tumor microscopically.

In the United States, only about 1,000 people are Board-certified in neuro-pathology; Overlook’s John Paul Bouffard, MD, is one of them. In every instance of a brain tumor, his involvement is threefold. “In the case of brain tumors, when surgeons are operating, they already have some idea of what they are dealing with because of the imaging studies,” says Bouffard. “Then, while the patient is still on the operating table, they send the tumor to me and I do an intraoperative consult and make a recommendation based on what I’m seeing microscopically. We have very good tumor surgeons who understand all phases of care. They understand neuroradiology. They understand pathology, so we can discuss each case in a productive way that guides their surgical decisions.”

In addition to the intraoperative consultation, the tissue is also processed overnight to produce a full histology and a complete set of slides. The third step involves sending the tumor offsite for a molecular genetic profile. Through molecular testing and tumor classification, doctors can predict the expected response to therapy. This plays a critical role in tailoring the ultimate course of treatment for each patient. Says Moshel, “Five years ago we were treating a tumor subtype. Now we’re treating your tumor subtype.”

Bouffard predicts that this three-tiered approach to pathology will become the standard of care in the next three to five years. “It is a distinguishing quality at Overlook Medical Center that we are doing this now,” he says. “One hundred percent of our brain tumor patients receive this as part of their standard workup. It’s a clear minority of places that do this routinely—usually only large academic centers, but we do it too.”

Having a dedicated neuro-pathologist as part of The Gerald J. Glasser Brain Tumor Center—something no other hospital in the area has—is an advantage that makes a significant difference in treating each patient. Consider this: A pathologist may see 100 breast tumors in a month but only three brain tumors a year. When that pathologist has to deal with a brain tumor, he or she is dealing with something comparatively unfamiliar. A neuropathologist, on the other hand, is acutely trained in every aspect and subtlety of brain tumors.

“Everybody should realize that there are professionals who work behind the scenes who are very much involved in their care,” says Bouffard. “Even though we never see the patient—we just see their tumors and slides—they are our patients too and we want the very best for them. We’re part of everything that happens.”

In 2004, Overlook became the first hospital in the northeast—in fact, one of the first in the world—to acquire CyberKnife®, a revolutionary radiosurgical device that empowers physicians to destroy cancerous and non-cancerous tumors using precisely targeted doses of radiation. What sets Overlook apart from CyberKnife® programs at other hospitals is the unparalleled experience gleaned from treating more than 1,600 patients to date—more than 1,000 of them brain tumor patients. In fact, Overlook Medical Center has the largest CyberKnife® program in the tristate area for the treatment of brain tumors.

CyberKnife® combines image guidance and robotics to deliver high doses of radiation with pinpoint accuracy. Image-guided cameras locate the exact position of a tumor inside the body. Then, using a robotic arm that directs the CyberKnife® radiation source, surgeons direct multiple highly focused beams of radiation onto a tumor or lesion from many targeting positions and angles to deliver a cumulative dose of radiation large enough to control cancer cells. The radiation beam is shaped to match the exact shape of the tumor, thereby delivering the radiation where it is needed most and sparing surrounding healthy tissue. “Brain tumors are different from tumors elsewhere in the body,” says Louis Schwartz, MD, Chair of Radiation Oncology and Co-Director of the CyberKnife Center at Overlook Medical Center. “When a surgeon removes a tumor in the breast, for example, he or she also removes some healthy tissue outside of the tumor in the hopes of getting a clean margin. But with brain tumors, the surgeon wants to remove only the affected tissue because every bit of brain is so important.” CyberKnife® is then used to treat the cavity that is left behind when a tumor is removed. This can decrease the likelihood of recurrence or arrest the growth of tumors, which is often the goal of treatment; CyberKnife® also may be used in instances when a tumor is deemed inoperable with traditional surgery, or in the event of recurrence.

CyberKnife® is a collaborative effort between the neuroradiology and neurosurgery departments. Brian Beyerl, MD, is Co-Director, with Schwartz, of the CyberKnife Center at Overlook Medical Center. “As a neurosurgeon,” he says, “my expertise is in anatomy. I tell the machine where to hit with radiation and where
not to hit. Then the radiation oncologist is in charge of the delivery to fabricate the treatment plan.”

The length and duration of CyberKnife® treatment depends on the type of tumor, as well as its size and location within the brain. At Overlook, CyberKnife® is currently being used for the treatment of malignant and benign intracranial and extracranial tumors and lesions, as well as acoustic neuromas, schwannomas, meningiomas, pituitary adenomas, and arteriovenous malformations (AVM). Diane McQueen, Business Director of the CyberKnife Center at Overlook Medical Center, coordinates CyberKnife® treatment from beginning to end for each patient. “The patients who come here want to be seen yesterday,” she says, underscoring the importance and urgency of timely care. It is McQueen who deals with insurance companies to determine coverage, schedules the scans that inform treatment plans, and schedules each treatment session. “Other places may make the patient do all of their own footwork, but I do all of that,” says McQueen. “Our philosophy is that the patients are dealing with enough.

I make sure all they have to do is show up; we take care of the rest.”

Adds Schwartz, “Any facility can have CyberKnife®, but patients should seek out a facility that best knows how to use it, and the amount of radiation that is safe to deliver, and how to protect surrounding tissue for the benefit of the entire patient. It is important that scans are read by a neuroradiologist. Sometimes a radiologist who is not as experienced with the brain may read something as progression of disease when it is actually something else. At Overlook Medical Center, we not only have neuroradiologists read every scan, but also a neurosurgeon, a neuro-oncologist, and a radiation oncologist. Each case is also reviewed by a neuro tumor board. Other places don’t have the volume to warrant that, but we do. Why go to a place that is just starting with CyberKnife® when you can come to the place that has been doing it since 2004 and has amassed the most experience in our area?”
Clinical trials

As a member of the National Cancer Institute (NCI) Cooperative Group System, The Gerald J. Glasser Brain Tumor Center is able to provide patients with access to the latest cutting-edge treatments. Jaeckle reports that AHS also was recently accepted into the Alliance for Clinical Trials in Oncology. “These are the novel therapies we want to be able to bring to our patients,” says Jaeckle. There are currently two trials open to brain tumor patients at Overlook.

- Patients who have surgery at Overlook Medical Center for the removal of glioblastoma multiforme, the most common and aggressive form of brain cancer, may also receive an experimental brain tumor vaccine called DCVax-Brain. The vaccine, created by combining tissue from the tumor itself with the patient’s own white blood cells, has shown promising results.

- TOCA 5 is a newer trial, for patients with recurrent glioblastoma and anaplastic astrocytoma. These types of tumors often regrow despite initial treatment. Tocagen is developing a cancer-selective virus for the treatment of cancer. “The virus acts as a Trojan horse,” says Jaeckle. It delivers the virus directly into the tumor, then an oral medication acts as a vector to convert the virus into an anti-cancer drug that activates the immune system and kills any additional cancer cells.

The active mechanism in each of these trials is trying to circumvent the powerful blood brain barrier, long a challenge in the treatment of brain tumors. From a biological perspective, this barrier is great because it keeps the brain very protected from potentially harmful substances. But from an oncology perspective, it means that many drugs are not able to get through to the brain. Trials like these offer reasons to feel hopeful about the future—even the present—of neuro-oncology. “We can be glass-half-full hopeful,” he says.

For more information on these trials, please contact Patrice Light, Clinical Research Nurse Coordinator, at (908) 522-5914.
A personal touch

At The Gerald J. Glasser Brain Tumor Center, every person involved in patient care takes pride in being not only compassionate but communicative. “We truly work together as a team—as your team—to provide the best care and a continuity of services,” says Beyerl. “Often there are times that are very tough. We work very hard to help our patients make these tough decisions. We may be smaller than some of the centers in the city, but we have the same technologies and advances. We just apply them in a way that treats patients’ medical issues and meets their emotional needs too.”

Like other cancer patients who turn to Overlook Medical Center for treatment, those with brain tumors have access to complementary therapies to make treatment more manageable. “Brain tumors aren’t always curable, but they are treatable,” says clinical social worker Maggie Brady, MSW, LCSW, OSW-C. “In addition to the medical treatment patients receive, treatment can also include a host of integrated therapies to help patients through this difficult time.” This includes massage, reiki, mindfulness-based stress reduction, and support groups. “Our patients can take advantage of individual supportive counseling,” says Brady. “Being diagnosed with a brain tumor is life-changing, very frightening, and often overwhelming. The team at Overlook is here to support our patients throughout the entire disease process.”

Care extends to family members too, says Brady. “We know cancer is a family disease,” she says. “It affects families across the board—emotionally, socially, financially. If we can help the family too, the patient feels more supported and less isolated.” On hand is a social worker who specializes in dealing with children when there is a diagnosis of cancer in the family. There is also the Thomas Glasser Caregivers Center, located just off the lobby. “It speaks to the healing culture of Atlantic Health System,” says Brady. “We are able to take care of the whole person, and the family too. People report that they really feel cared for here, and that’s exactly what we work together to achieve.”

Adds patient navigator Pat Eagan, “Our patients and physicians and colleagues are outstanding. At times this work can be very painful and very sad; nevertheless, extraordinary people walk through our doors every day. Sometimes it takes my breath away—both for the patient and for their loved ones, but that’s exactly why we keep doing what we do.”

The Gerald J. Glasser Brain Tumor Center at Overlook Medical Center, a collaborative effort of Atlantic Neuroscience Institute and Carol G. Simon Cancer Center, treats a variety of brain tumors and related conditions, including acoustic neuromas and schwannomas; anaplastic astrocytomas, oligodendrogliomas, and low-grade glioma; brain, epidural, and leptomeningeal metastases; ependymomas; glioblastomas; low-grade glioma and astrocytoma; oligodendroglioma; primary disorders of the central nervous system, lymphomas; meningiomas; medulloblastomas; peripheral nerve, pineal, and pituitary tumors; rare glial and neuronal tumors; sarcomas; and spinal cord tumors. For more information or to schedule an appointment, please call (908) 516-2941.
The Physicians of The Gerald J. Glasser Brain Tumor Center at Overlook Medical Center

From left to right: Neil Horner, MD, Chief of Neuroradiology; John Paul Bouffard, MD, neuro-pathologist; Brian Beyerl, MD, Co-Director, Atlantic Health System Stereotactic Radiosurgery Program; Joana Emmolo, MD, radiation oncologist; Louis Schwartz, MD, Director of Radiation Oncology; Kurt Jaeeckle, MD, Co-Director, The Gerald J. Glasser Brain Tumor Center; Yaron Moshel, MD, Co-Director, The Gerald J. Glasser Brain Tumor Center
Co–Medical Director

Kurt Jaeckle, MD, the new Co–Medical Director of The Gerald J. Glasser Brain Tumor Center, joined Overlook this fall after 16 years at the world-renowned Mayo Clinic in Jacksonville, Florida, and seven years at MD Anderson Cancer Center before that. He completed a residency in neurology at Vanderbilt University and a fellowship in neuro-oncology at Memorial Sloan Kettering Cancer Center. Jaeckle is also the Medical Director of Research for Atlantic Health System. He has served as a principle and co-investigator on several national and international Phase I–III clinical therapeutic trials, which have evaluated new chemotherapeutic and novel molecular targeted agents for the treatment of brain tumors.

Co–Medical Director

Yaron Moshel, MD, PhD, is Co-Director of The Gerald J. Glasser Brain Tumor Center at Overlook Medical Center. He is one of a select few surgeons who specialize in removing deep-seated brain tumors using technology that includes computer-guided navigation, awake intraoperative brain mapping, endoscopy, and microsurgery. He is also experienced in the surgical approaches for skull base and spine tumors and in endoscopic transnasal surgery for pituitary and skull base lesions. Moshel completed advanced fellowship training in Neuro-Oncology, Stereotactic and Skull Base Surgery at New York University Medical Center. He further completed a research fellowship in Minimally Invasive Endoscopic Skull Base Surgery at New York Presbyterian Hospital/Weill-Cornell Medical Center.

Neurology

Neil B. Horner, MD, FACR, is Chief of Neuroradiology for the Department of Radiology at Overlook Medical Center, and Chief of Neuroradiology for Atlantic Health System and Atlantic Neuroscience Institute. He has held faculty appointments at Mt. Sinai School of Medicine, NYU School of Medicine, and Columbia University’s College of Physicians and Surgeons. He is triple–Board certified by the American Board of Radiology. He is a past recipient of the “Brilliance in Our Committee Award” by the American Cancer Society. In 2015, Horner was elected a fellow of the American Board of Radiology for his history of service.

Pathology

John Paul Bouffard, MD, is a member of Morristown Pathology Associates and the chief neuropathologist for Atlantic Health System. He completed his residency in anatomic and clinical pathology at Wilford Hall USAF Medical Center, and his fellowship in Neuropathology at the Armed Forces Institute of Pathology (AFIP). Bouffard served as Chief of Neuromuscular Pathology at the AFIP and was a faculty member for the AFIP’s annual Neuropathology Review course. He is Board-certified in anatomic, clinical, and neuropathology by the American Board of Pathologists.

Radiation Oncology/Radiosurgery

Louis E. Schwartz, MD, Chairman of Radiation Oncology for Overlook Medical Center and Director of CyberKnife® Radiosurgery for Atlantic Health System, has been a mainstay on “Best Doctors” lists in New York Magazine, New Jersey Magazine, and by Castle Connolly since 1997. A pioneer in the fields of radiation oncology and radiosurgery, Schwartz was the first to perform conformal three-dimensional computerized radiation treatment in New Jersey, as well as the first in the state to perform stereotactic radiosurgery to the brain and the first in the state to perform extracranial body radiosurgery.

Radiation Oncology

Joana S. Emmolo, MD, is a radiation oncologist at Overlook Medical Center. She attended the University of Medicine and Dentistry of New Jersey and served as Chief Resident at New York Methodist Hospital. Dr. Emmolo’s main focus is on breast and brain tumors, with a special interest in accelerated and minimally invasive treatment options for both disease sites. Dr. Emmolo is a 2016 Overlook Medical Center Clinical Excellence Award recipient.