

Feature Article: Neuro-Oncology AUMC - Leptomeningeal Disease

Cover Illustration : Anekay Kelly, MSMI

MESSAGE FROM THE CHAIR



Dear Friends and Colleagues,

I am excited to share with you the latest updates and news from the MCG Department of Neurology celebrating our outstanding faculty and residents.

This past March, we honored the department's fifty-year history with a get together in Augusta. It was great to reconnect with so many old friends and to connect with some new faces. Our plan is to hold these get togethers more frequently and to meet at the AAN annual meeting. Please let me know if you would like to become involved in our alumni events.

Two of our faculty were recently honored at the MCG Faculty Awards Ceremony. Askiel Bruno received the Clinical Science Research Award honoring his long history of grant funding and scientific advancement in stroke clinical trials, clarifying the role and impact of treatment of hyperglycemia in stroke and improving stroke outcome measures are among his many contributions. In addition, Michael Rivner, who has been at MCG close to 40 years, was honored with the Lifetime Achievement Award in attribution for his clinical dedication, research and mentorship of residents and fellows. In credit to my colleagues, Michael follows Fenwick Nichols, Kapil Sethi and Tom Swift as the fourth consecutive year a member of the Neurology Department has been the recipient of this honor.

In this issue, Dr Wallace, from the division of neuro-oncology, highlights the creation of the Georgia Cancer Center Leptomeningeal Disease clinic. With prompt recognition and multidisciplinary care, the LMD clinic can reduce morbidity and improve survival. Please contact Dr Wallace if you have patients that may benefit from neuro-oncologic expertise.

Our mission to train the best and brightest future neurologists and to make innovative advances to neurologic diagnosis and treatment. We couldn't succeed without your support. Please let me know if you are interested or head to <https://www.augusta.edu/giving/neurology.php>. We can target your support to have the greatest impact. Keep in touch and hope to see you soon.

Best Wishes,

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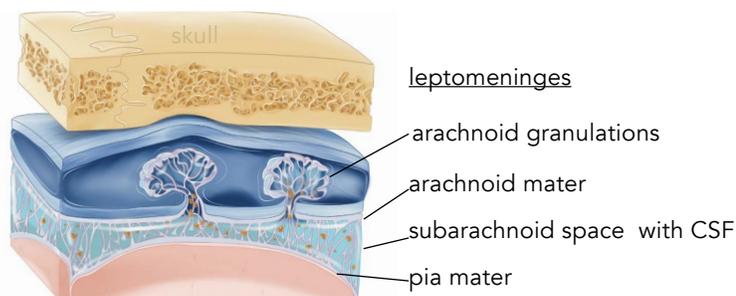
Neuro-Oncology AUMC : Leptomeningeal Disease

Gerald C. Wallace IV, MD, MS

When other doctors hear there is a Neuro-Oncologist in residence, they think first about primary brain tumors like glioblastoma or oligodendroglioma. Primary gliomas do in fact represent the main complaint in a Neuro-Oncology practice. However, 8-25% of patients with other primary cancers will develop brain metastases (not to mention spinal metastases) during their lifetime.

Unsurprisingly, an increasing percentage of the neuro-oncologist's practice involves management of metastatic brain tumors. This change is being driven by improved care and prolonged survival for patients with different types of systemic cancer. Lung cancer, melanoma, renal cell carcinoma, and breast cancer make up ~70% of all metastatic cancer referrals in the Georgia Cancer Center Neuro-Oncology clinic.

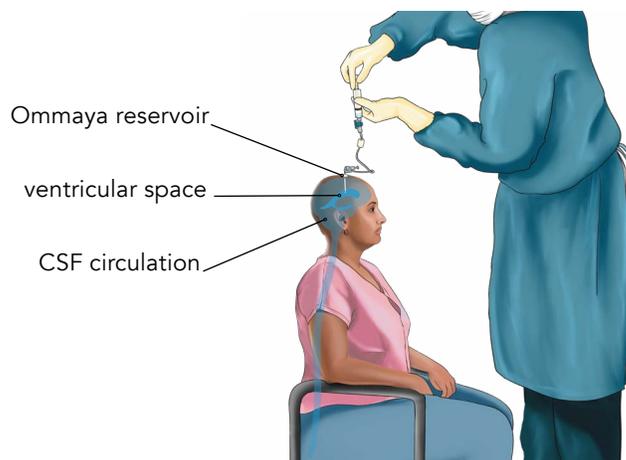
Recent advances in targeted therapy and immunotherapy continue to improve survival for patients with brain metastases. For example, tucatinib is a well-tolerated oral medication targeting HER2+ breast cancer which significantly improves survival and can even shrink brain metastases. Trastuzumab-deruxtecan, a modified monoclonal antibody targeting the HER2 receptor, similarly improves survival in HER2 positive breast cancer with brain mets AND was recently proven effective for patients who were previously considered HER2 negative! In lung and renal metastases as well as metastases from melanoma, immunotherapy continues to drive survival curves in a positive direction. However, at least one area of metastatic spread remains a significant challenge: the leptomeninges.



Leptomeningeal Disease

Leptomeningeal disease (LMD) is a dreaded complication for 5-8% of all cancer patients. Without aggressive intervention, median survival is typically 4-10 weeks.

The leptomeninges include the arachnoid mater, the subarachnoid space and cerebrospinal fluid (CSF), and the pia mater. Treatment of LMD is challenging and requires multimodal therapy with whole brain radiation (WBRT), CNS penetrant systemic chemotherapy, and intrathecal (IT) chemotherapy. Most patients will need placement of a special port, called an Ommaya reservoir, to facilitate CSF sampling and IT chemotherapy delivery.



All patients will require the help of a multidisciplinary team of physicians including a neuro-oncologist, medical-oncologist, radiation oncologist, and a neurosurgeon. As with any cancer treatment, a larger extended team including infusion room staff, precision medicine specialists, specialty pharmacists, social workers, case managers, and nurse navigators are needed to help coordinate the complex care required to successfully treat LMD.

With rapid identification of leptomeningeal disease, and with careful coordination and execution of care, patients with leptomeningeal disease live significantly longer. They also experience less morbidity and have an improved quality of life.

Leptomeningeal Disease Symptoms

Symptoms of LMD tend to be non-specific (table 1). However, any new focal neurological deficit or a syndrome consistent with increased intracranial pressure should prompt urgent or even emergent contrast MRI imaging based on disease localization. Patients should then undergo diagnostic lumbar puncture (LP) looking for malignant cells on cytology. Though the specificity of a LP is 100%, the sensitivity is only 50% which frequently necessitates a repeat LP within 1 week to comfortably rule out the diagnosis of LMD.

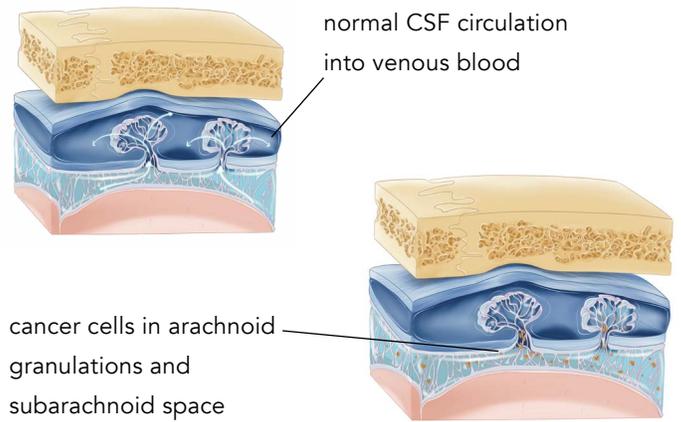


Table 1.

LMD Signs and Symptoms	
Headache	Nausea
Fatigue	Blurred vision or floaters
Cranial neuropathies (eg. diplopia, facial weakness, dysphagia, dysphonia)	Vertigo
Neck stiffness	Memory impairment
Bowel/ Bladder Incontinence	Motor and/or Sensory apraxia

The Georgia Cancer Center Leptomeningeal Disease Clinic

We are excited to announce the creation of the LMD Clinic at the Georgia Cancer Center. With treatment as described above, many patients with LMD will achieve a good quality of life and survive at least another 6-12 months. The first patient treated in the LMD Clinic recently celebrated their 5th month since diagnosis and has clearance of disease on MRI and by CSF testing. The goal of this clinic is to build awareness of LMD, improve treatment access and patient outcomes, and to establish the Georgia Cancer Center as a destination for life changing clinical trials for patients with CNS metastatic disease.

RECENT & UPCOMING EVENTS



Dr. Michael Rivner receives Lifetime Achievement Award

UPCOMING EVENT

Marshall B. Allen Symposium
 August 25, 2023
 SRP Park
 187 Railroad Ave.
 North Augusta, SC

Neurology's 50th Anniversary Reunion Recap

