Aspergillus fumigatus. No recurrent tumor was present. Given the lack of perceived risk factors, further questioning of the patient and her mother disclosed that precisely 1 year prior to surgery she and her family had participated in “cleaning out an old very dirty and dusty barn” in southern Colorado without the use of face masks; only the proband experienced sequelae. Anti-fungal therapy (voriconazole) was recommended although patient use was intermittent and symptoms have progressed. CONCLUSION: Aspergillus fumigatus has been previously reported to cause meningoencephalitis in immunocompetent patients, often in association with other infections; however, this case represents the first reported case of Aspergillus meningitis in an immunocompetent adult with no history of immunosuppression. duced sensorimotor peripheral neuropathy consistent with Guillain-Barré Syndrome, leading to treatment with a five day course of IVIG. Her MRI findings gradually worsened, ultimately revealing leptomeningeal enhancement of the bilateral vestibulococulocerebral nerves, facial nerves and the trigeminal nerves. Patient 2. 66 year old male with a past medical history of primary cutaneous anaplastic T cell lymphoma stage 1 EA, status post radiation therapy with apaxia and ataxia. Brain MRI showed extensive, enhancing hyperdensities in the midbrain, suggestive of multiple sclerosis, prompting treatment with steroids. He continued to clinically worsen, prompting tissue diagnosis. Patient 3. 66 year old male presented with recurrent syncopal episodes and was found to have a 4 cm extra axial mass in the left temporoparietal region on MRI suggestive of a meningioma. CONCLUSION: All three patients eventually underwent brain biopsy with a final histologic diagnosis of PCNSL. Due to the highly variable initial presentation of this condition and the wide range of pathologies it mimics, CSNS lymphoma should be included in the differential diagnosis of patients presenting with atypical neuroimaging or clinical findings.

NCMP-15. CNS LYMPHOMA: THE GREAT MIMICKER
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INTRODUCTION: Primary central nervous system lymphoma (PCNSL) is a variant of non-Hodgkin lymphoma, affecting the brain, leptomeninges, eyes, and spinal cord. PCNSL is a progressive disease with symptom onset occurring over weeks that presents with varied signs and symptoms, including focal neurological deficits, mental status changes, behavioral changes and seizures. Tissue diagnosis is imperative, though MRI, involved in various stress response pathways in the CNS including oxidative stress. Narrow biopsy are important for assessing metastatic spread following diagnosis. CASE PRESENTATION: We present a case series, comprised of three patients with atypical presentations of CNS lymphoma. Patient 1. 64 year old female presented with facial muscle weakness, vertigo, and diplopia. Initial MRI showed an old thalamic and new internal capsule infarcts. EMG suggested sensorimotor peripheral neuropathy consistent with Guillain-Barré Syndrome, leading to treatment with a five day course of IVIG. Her MRI findings gradually worsened, ultimately revealing leptomeningeal enhancement of the bilateral vestibulococulocerebral nerves, facial nerves and the trigeminal nerves. Patient 2. 66 year old male with a past medical history of primary cutaneous anaplastic T cell lymphoma stage 1 EA, status post radiation therapy with aphasia and ataxia. Brain MRI showed extensive, enhancing hyperdensities in the midbrain, suggestive of multiple sclerosis, prompting treatment with steroids. He continued to clinically worsen, prompting tissue diagnosis. Patient 3. 66 year old male presented with recurrent syncopal episodes and was found to have a 4 cm extra axial mass in the left temporoparietal region on MRI suggestive of a meningioma. CONCLUSION: All three patients eventually underwent brain biopsy with a final histologic diagnosis of PCNSL. Due to the highly variable initial presentation of this condition and the wide range of pathologies it mimics, CSNS lymphoma should be included in the differential diagnosis of patients presenting with atypical neuroimaging or clinical findings.

NCMP-16. THE ROLE OF P38 AND JNK MAPK PATHWAYS IN CISPLATIN CHEMOTHERAPY-RELATED COGNITIVE IMPAIRMENT
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OBJECTIVES: Chemotherapy-related cognitive impairment (CRI) is an adverse sequela of cancer treatment commonly reported in cancer survivors. Cisplatin is used for the treatment of various malignancies including ovarian, testicular, head and neck cancers, and pediatric brain tumors. More than 30% of advanced ovarian cancer patients develop CRI during and after platinum-based chemotherapy. We examined the role of p38 and c-Jun N-terminal kinase (JNK) mitogen-activated protein kinase (MAPK) activation in cisplatin-induced CRI, and whether the small molecule p38 MAPK inhibitor Neflamapimod and JNK inhibitor SP600125 can prevent cisplatin-induced neuronal damage. The p38 and JNK MAPK signaling pathways are involved in various stress response pathways in the CNS including oxidative stress. METHODS: The effect of cisplatin on cognition in an ovarian cancer rat model is safe and if they can prevent cognitive impairment.

NCMP-17. MISMATCH REPAIR MUTATIONS AND THE CENTRAL NERVOUS SYSTEM: A CASE SERIES OF GERMINE MUTATIONS AND CNS MALIGNANCY
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Our understanding of genetic predispositions for malignancy is continually evolving. One family of germline mutations well described in the literature is mismatch repair deficiency (MMR) due to a loss of function mutation of one or more of the MMR genes: MSH2, MLH1, MSH6, and PMS2. Germline MMR mutations lead to microsatellite instability and loss of genomic integrity resulting in an increased risk for various cancers (colorectal, gynecologic, etc.). In the USA 1 in 400 people and some MMR mutations have been associated with glomerulonephritis. There is a paucity of information regarding frequency of glioma subtypes as well as tumor genetic and molecular characteristics which have important clinical implications. We describe a case series of 6 individuals with germline MMR mutations and brain tumors. Those with MSH2 and PMS2 mutations (n=3) developed glialblastosomas at a mean age at diagnosis of 48 years. These tumors expressed MGMT hyper-methylation and high tumor mutational burden. Those with MLH1 mutation (n=3), did not develop gliomas. This raises the question of differential glioma subtype development based on MMR gene. It also highlights the possibility of Lynch-associated gliomas having more favorable treatment response due to loss of an old very dirty and dusty barn” in southern Colorado without the use of face masks; only the proband experienced sequelae. Anti-fungal therapy (voriconazole) was recommended although patient use was intermittent and symptoms have progressed. One of the genes involved is the “cognitive deficit” gene (MTHFD2). This gene is responsible for the production of a protein that is necessary for brain development. Without this protein, the brain is not able to function properly. Anti-fungal therapy (voriconazole) was recommended although patient use was intermittent and symptoms have progressed. We are in the process of further investigating the genetic basis of this condition and how it may be used to improve patient outcomes.
Before admission, his routine COVID-19 test was negative. After receiving HD-MTX, he developed fatigue, nausea and vomiting. The symptoms resolved before discharge. Next day after discharge, he developed diarrhea, fatigue, subjective fever and feeling cold. His temperature within normal limits. The symptoms have been persistent for 4-5 days and have resolved gradually and spontaneously. Family members have had no symptoms. The patient denies COVID-19 contact history. The above symptoms were considered adverse effects of chemotherapy. The patient did not seek medical attention and was admitted to admission for next cycle of HD-MTX. COVID-19 test was found positive. Chemotherapy was on hold. The patient stayed home quarantine. The patient has been doing well and practiced COVID-19 infection precaution at home. DISCUSSION: The fatigue, nausea and vomiting during HD-MTX treatment are adverse effects from chemotherapy while the diarrhea, fatigue, subjective fever and chills developed after discharge are symptoms of COVID-19 infection. Our case highlights the importance of keeping in mind and differentiating between side effects from chemotherapy and symptoms of COVID-19 viral infection in cancer patients who receive chemotherapy.

NCMP.20. A RETROSPECTIVE SINGLE-CENTER EXPERIENCE WITH NONBACTERIAL THROMBOTIC ENDOCARDITIS AND STROKE - OUTCOMES, ANTICOAGULATION STRATEGIES, AND INCORPORATION OF NEXT-GENERATION SEQUENCING DAT
Ashley Aaroe, Kristin Alfaro-Munoz, Charles Bornstein, Trey Kell, Samuel Camp, Merry Chen, Karen Woodman, Sudhakar Tummala, Anne Kleinman, John de Groot, and Monica Loghin; University of Texas MD Anderson Cancer Center, Houston, TX, USA

BACKGROUND: Acute ischemic stroke is a common neurologic complication of cancer and contributes to worse prognosis. Hypercoagulable state is an important stroke mechanism in cancer. Nonbacterial thrombotic endocarditis (NBTE) represents an extreme manifestation of such hypercoagulable state. Evidence comparing LMWH to unfractionated heparin or direct oral anticoagulants (DOACs) for secondary stroke prevention is lacking in cancer patients. It is also unknown whether certain tumor mutations are associated with increased risk of NBTE. METHODS: We reviewed clinical documents at MD Anderson Cancer Center using a RichSearch Natural Language Processing application to search for terms related to marantic endocarditis. Each patient was assessed for documentation of both valvular thickening or vegetations on echocardiogram, and negative bacterial cultures. Tumor DNA and next generation sequencing (NGS) information was interrogated using the PROACTIVE database. RESULTS: 100 patient records were reviewed and of these 41 patients were determined to have likely NBTE based on the above criteria. 12 patients had recurrent strokes despite anticoagulation, two of whom had two recurrent strokes despite different anticoagulation strategies (4 strokes through therapeutic dose LMWH, 4 through rivaroxaban, 3 through apixaban, 1 through fondaparinux). The most common primary malignancies were non-small cell lung cancer (n=14) and pancreatic cancer (n=11). NGS data was available for 13 patients and common mutations were KRAS (n=7), TP53 (n=7), EGFR (n=4), and BRAF (n=2) CONCLUSIONS: NBTE is an important stroke mechanism in cancer, and the optimal secondary prevention strategy is unknown. These results confirm that NBTE is common in NSCLC and pancreatic cancer. Further studies should look at incorporation of NGS information into routine care and questions about how such mutations might contribute to hypercoagulability. Recurrent stroke is possible with all anticoagulation strategies. Further analysis of outcomes, serum biomarkers (ex. D-dimer), and comorbid medical diagnoses known to confer increased cardiovascular risk is underway.

NCMP.21. REVERSIBLE MOTOR NEURON SYNDROME IN THE SETTING OF CANCER
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60 year old female was admitted with difficulty swallowing, slurred speech and gait instability resulting in multiple falls worsening over 2-3 weeks. Her exam revealed subtle spastic dysarthric speech, spasticity in all four extremities (lower > upper) and right > left), hyperreflexia, and bilateral Babinski and Hoffman signs consistent with upper motor neuron syndrome. An MRI brain and total spine were without evidence of neurological pathology. A spinal tap revealed a subarachnoid block, and lumbar puncture showed a normal cell count and protein. An electrocardiogram showed sinus tachycardia. An HIV test was normal. No significant family history of neurologic disease. She was started on folinic acid and B-vitamin supplements. The symptoms continued to worsen over the next few weeks and she developed severe, nearly continuous, extensor spasms of BLE (right > left) with stimulus sensitivity causing inability to walk. She was started on baclofen, tiotizaine and diazepam for spasticity with only mild improvement. An MRI brain and total spine was repeated and revealed an hypertensive T2 signal in lateral corticospinal tract (right > left) without enhancement and no cord compression. Given strong clinical concern for paraneoplastic encephalomyelitis patient received 0.4 g/kg IVIG for 5 days and concurrent 1000 mg methylprednisolone for 3 days with dramatic improvement within days. Cervical lymph node biopsy lead to diagnosis of nodal marginal zone lymphoma. A CT abdomen revealed an ovarian mass concerning for teratoma vs dermoid cyst (pending resection and final pathology). She was treated with weekly boosters of IVIG and IV methylprednisolone and was started on Rituximab for her Lymphoma. When seen in clinic 1 month post discharge nearly all of her symptoms had resolved. Neurological exam showed subtle residual spasticity making this presentation most consistent with a reversible pure upper motor neuron syndrome.

NCMP.22. SECOND MALIGNANCIES FOLLOWING TREATMENT FOR PRIMARY CENTRAL NERVOUS SYSTEM TUMORS IN PEDIATRIC PATIENTS: A SINGLE-INSTITUTIONAL RETROSPECTIVE REVIEW
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Second malignant neoplasms following treatment for primary central nervous system (CNS) tumors in children are rare occurrences but may often have dire consequences, particularly, if thought to be induced by prior therapies. The authors retrospectively reviewed pediatric patients with primary CNS malignancies from the University of Wisconsin over the last 25 years (1994 - 2019) with a secondary malignant neoplasm and determined seven patients met criteria. Treatment modalities were reviewed with all patients receiving surgery, chemotherapy, and radiotherapy for treatment of their first malignancy. The second neoplasms found included 4 high-grade glioma, 1 meningo, 1 thyroid carcinoma, and 1 myelodysplastic syndrome. The median latency time between diagnoses was 9 years (range 4 -17 years). The outcomes varied according to histopathology of the second neoplasm with the high-grade glioma patients all deceased from progressive disease. The presence of a small well-delineated lesion may have been induced by prior radiation in most cases. The remaining patients are still alive, at the time of this writing, and in follow up after treatment for their second neoplasms. Thus, long-term follow up is essential for children treated for a primary CNS tumor. Second neoplasms that could arise with different consequences. In addition to our single institutional outcomes, we will also present an updated review of the literature of pediatric patients with primary CNS tumors and second malignancies.

NCMP.23. PEMBROLIZUMAB-ASSOCIATED CD8+ Vasculitic Mononeuritis Multiplex in a Patient with Mesothelioma: First Case Report
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INTRODUCTION: Immunotherapy, especially with immune checkpoint inhibitors (ICPI), has increasingly become an attractive treatment modality for various types of cancers. However, many patients develop ICPI-associated autoimmune adverse events such as pneumonitis, colitis or rarely neurological syndromes. Large and medium vessel vasculitis has only occasionally been reported. Here we report the first case of ICPI-associated mononeuritis multiplex in a patient with malignant mesothelioma, caused by a histologically proven small vessel vasculitis. CASE REPORT: A 61-year old female developed subacute progressive painful and asymmetric sensorimotor deficits on distal extremities. Electrophysiologically, signs of a severe axonal neuropathy of both legs and the right arm were found, and swellings of the corresponding nerves were seen upon nerve ultrasound exam. The clinical and electrophysiological findings were reminiscent of mononeuritis multiplex. Laboratory work up including CSF examination > lateral, normal. More than two years prior to developing peripheral nerve deficits, the patient had been diagnosed with malignant pleural mesothelioma and treated with the anti-PD1 monoclonal antibody pembrolizumab on progression after chemotherapy. Biopsy of the right upper arm showed a small vessel vasculitis with a marked proliferation of CD8+ T cells over CD4+ T as well as B lymphocytes. Despite discontinuation of pembrolizumab and immunosuppressive treatment (high dose methylprednisone, cyclophosphamide) complemented by opioid therapy, pain persisted. CONCLUSIONS: While ICPI-related autoimmune disorders also include small vessel vasculitis with rare phenotypes such as mononeuritis multiplex. Further studies are required to improve our understanding of the link between ICPIs, and the pathogenic process leading to vasculitis, as well as to optimize treatment options for these rare diseases.