Table 2: Comparison of Laboratory Data by CSF Pathogen Group

	Viral Median (range)	Bacterial Median (range)	p-value
Serum WBC (x1000/mm^3)	9.0 (2.0-29.4)	11.3 (0.3-54.3)	0.003
CRP (ng/dL)	0.5 (0.09-20.7)	7.3 (0.11-36.3)	<0.0001
Procalcitonin (ng/mL)	0.35 (0.08-29.4)	23.7 (0.19-68.8)	0.001
CSF WBC (per mm^3)	19.0 (0-3800)	422 (0-92870)	<0.0001
CSF neutrophil (%)	18 (0-97)	72 (0-99)	<0.0001
CSF glucose (mg/dL)	51 (25-130)	42 (0.9-155)	<0.0001
CSF protein (mg/dL)	63.8 (8.0-669.0)	180.0 (12.0-943.8)	<0.0001

Conclusion: Patients positive for bacterial meningitis were more likely to have higher markers of infection compared to patients with viral organisms. Patients with bacterial organisms were also more likely to have death within 30 days of admission and neurological symptoms and subsequent complications, although the small number of patients limits these conclusions. These findings may help clinicians utilize clinical and laboratory data in conjunction with a ME panel result.

Disclosures: **All Authors**: No reported disclosures

342. Clinical Utility of a Next Generation Sequencing Test for Pathogen Detection in Pediatric Central Nervous System Infections

Nanda Ramchandar, MD,MPH[1]; Jennifer Foley, RN[2]; Claudia Enriquez, n/a[3]; Stephanie Osborne, RN[3]; Antonio Arrieta, MD[3]; Prithvi Sendi, MD[4]; Balagangadhar Totapally, MD[4]; David Dimmock, MD[5]; Lauge Farnaes, MD, PhD[5]; Daria Salyakina, PhD[4]; Michelin J. Janvier, MS[4]; [1]University of California San Diego, Carlsbad, California; [2]Rady Children's Hopsital, San Diego, California; [3]Children's Hospital of Orange County, Orange, California; [4]Nicklaus Children's Hospital, Miami, Florida; [5]Rady Children's Institute for Genomic Medicine, San Diego, California

Session: P-11. CNS Infection

Background: Pediatric central nervous system (CNS) infections are potentially life-threatening and may incur significant morbidity. Identifying a pathogen is important, both in terms of guiding therapeutic management, but also in characterizing prognosis. However, standard care testing by culture, serology, and PCR is often unable to identify a pathogen. We examined use of next generation sequencing (NGS) of cerebrospinal fluid (CSF) in detecting an organism in children with CNS infections.

Methods: We prospectively enrolled children with CSF pleocytosis and suspected CNS infection admitted to 3 tertiary pediatric hospitals. After standard care testing had been performed, the remaining CSF was submitted for analysis by NGS.

Results: We enrolled 70 subjects over a 12-month recruitment period. A putative organism was isolated from CSF in 24 (34.3%) subjects by any diagnostic modality. NGS of the CSF samples identified a pathogen in 20 (28.6%) subjects. False positive results by NGS were identified in 2 patients. There were no cases in which NGS alone identified a pathogen. In 4 cases, a putative organism was recovered by standard care testing of the CSF, but not by CSF NGS. CSF culture recovered a putative organism in 12 cases (12.1%). A CSF PCR multiplex panel was utilized for 51 subjects. An organism was detected in 15 of these (29.4%). Using a reference composite of standard care testing, we determined the sensitivity and specificity of CSF NGS to be 83.3% (95% CI, 62.6–95.3%) and 91.3% (95% CI, 79.2–97.6%) respectively.

Conclusion: Sequencing of CSF has the potential to rapidly and comprehensively identify infection with a single test. Further studies are needed to determine the optimal use of NGS for diagnosis of CNS infections.

Disclosures: **All Authors**: No reported disclosures

343. CNS Mold Masquerading as Brain Metastases

Ivayla I. Geneva, MD,PhD[1]; Robert She, BS[1]; Rahul Mahapatra, DO[1]; [1]State University of New York Upstate, Syracuse, New York

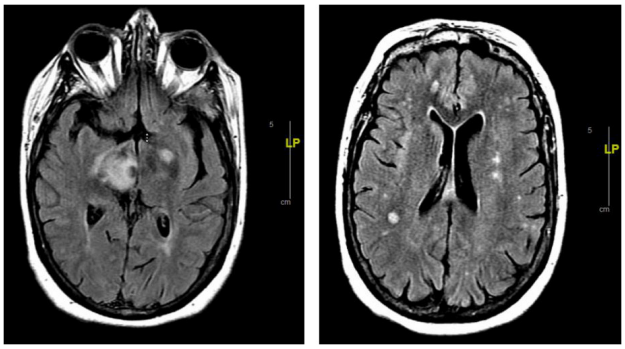
Session: P-11. CNS Infection

Background: Histoplasmosis is known to cause CNS infection with or without disseminated disease and immunosuppression is a risk factor. It can mimic brain tumor and present a diagnostic challenge.

Methods: Case report and literature review using PUBMED.

Results: A 64-year-old white female with myasthenia gravis on mycophenolate mofetil, history of Meniere's Disease, presented with worsening ataxia and left-sided facial weakness for 4 days. MRI revealed multiple enhancing lesions within the brainstem and supratentorial parenchyma (Figure 1), consistent with metastases but either too small or inaccessible for biopsy. Work up for primary cancer with CT thorax, abdomen-pelvis, transvaginal US, mammogram, bone scan, and CSF cytology were negative. The CSF BioFire PCR and culture were negative. Prednisone taper was started for brain vasogenic edema. Patient presented again two months later with worsening lethargy, vertigo, and recurrent falls. At that time the brain lesions showed continued enlargement on repeat imaging, and stereotactic biopsy was performed. Histopathology showed non-necrotizing granulomas, no evidence of malignancy, but after 12 days a mold was isolated on culture prompting Infectious Diseases consultation. Initial morphologic features were non-diagnostic and empiric voriconazole was initiated. Fungal culture evolved *Histoplasma* capsulatum and voriconazole was switched to liposomal amphotericin B at 5 mg/kg intravenously every 24 hours. Histoplasma serology was positive at low titer, urine histoplasma antigen was negative. An 8 weeks course of Amphotericin, followed by lifelong suppression with fluconazole, was planned.

Figure 1



Conclusion: The diagnosis of our patient's brain lesions was challenging as biopsy was not an option initially. An anchoring bias likely existed as the investigations had focused on malignancy, while a more robust evaluation for opportunistic endemic fungi, such as Histoplasma, took place at a later stage. Brain lesions in the immunosuppressed patient can masquerade as malignancy. To ensure timely diagnosis, a multimodal investigational approach should be applied early to include imaging and laboratory evaluation for endemic opportunistic pathogens, as well as biopsy when possible.

Disclosures: **All Authors**: No reported disclosures

344. Demographics of Patients with Brain Abscesses: A 10-year Mayo Clinic-Multicenter-Based Population Descriptive Study

Cristina G. Corsini Campioli, MD[1]; John Raymond U. Go, MD[2]; M. Rizwan Sohail, MD[3]; John C. O'Horo, Sr., MD, MPH[1]; John C. O'Horo, Sr., MD, MPH[1]; [1]Mayo Clinic, Rochester, Minnesota; [2]Mayo Clinic Rochester, Rochester, Minnesota; [3]Infectious diseases, Rochester, Minnesota

Session: P-11. CNS Infection

Background: Brain abscess and cerebritis are diseases associated with high-risk morbidity and mortality despite the advancement of imaging technologies and antimicrobial therapy for the past 30 years. We aimed to describe the demographics of patients with brain abscess and cerebritis at Mayo Clinic.

Methods: We retrospectively reviewed the demographics of all adult patients with the diagnosis of intracranial brain abscess, cerebritis, or both at our institution from January 1, 2009, through December 31, 2019. All analyses were performed using JMP software (Cary, NC).

Results: A total of 666 patients with brain abscess and cerebritis were identified during the study period. The median patient age was 59.7 years, and the majority were males (64.8%; P=0.0001). A total of 587 (88.1%) patients self-identified as Whites (P=< 0.0001) and 608 (91.2%) as Non-Hispanic or Latino (P=< 0.0001). A total of 453 (68.01%) patients were from the Midwest, with Minnesota and Wisconsin being the two most common States with 243 (36.4%; P=< 0.0001) and 101 (15.1%; P=0.01) patients respectively. The majority of patients (69.2%) had coronary artery disease and peripheral vascular disease with a median Charlson comorbidity index of 7 (P= < 0.0001) and an estimated 10-year survival of 0%.

Table 1: Demographic characteristics of patients with brain abscess and cerebritis at Mayo Clinic, 2009-2019.

Demographic	No of case	Percentage, %	Median (SD)	Relative Risk (95% CI)	P-value
Total of patients	666	100			
Gender					
Female	234	35.14		Reference	
Male	432	64.86		1.84 (1.57-2.15)	<0.0001[a]
Birth year					
1922-1937	61	9.16		Reference	
1938-1946	105	15.77		1.72 (1.27-2.3)	0.0003[a]
1947-1955	178	26.73		2.91 (2.22-3.82)	0.0003[a]
1956-1964	129	19.37		2.11 (1.59-2.81)	<0.0001[a]
1965-1973	85	12.76		1.39 (1.02-1.90)	0 .03[a]
1974-1982	47	7.06		0.77 (0.53-1.10)	0.16[a]
1983-1991	43	6.46		0.70 (0.48-1.02)	0.06[a]
1992-2001	18	2.70		0.29 (0.17-0.49)	<0.0001[a]
Age, y					
18-29	42	6.31		Reference	
30-39	44	6.61		1.04 (0.69-1.57)	0.82[a]
40-49	76	11.41		1.80 (1.26-2.59)	0.0013[a]
50-59	129	19.37	59.75 (15.77)	3.07 (2.20-4.27)	<0.0001[a]
60-69	193	28.98		4.59 (3.35-6.30)	<0.0001[a]
70-79	130	19.52		3.09 (2.22-4.30)	<0.0001[a]
80-95	52	7.81		1.23 (0.83-1.83)	0.28[a]
Race					
American Indian/Alaskan Native	3	0.45		Reference	
Asian	5	0.75		1.66 (0.39-6.94)	0.70[b]
Black or African American	29	4.35		9.66 (2.95-31.57)	0.0002[b]
White	587	88.14		195.66 (63.24-605.35)	<0.0001[b]
Unknown	39	5.85		13.00 (4.03-41.86)	<0.0001[b]
Not to disclose	3	0.45		1.00 (0.20-4.93)	1.00[b]
Ethnicity					
Not to disclose	8	1.20		Reference	
Hon-Hispanic or Latino	608	91.29		76 (38.15-151.39)	<0.0001[a]
Hispanic or Latino	30	4.50		3.75 (1.73-8.11)	0.0008[b]
Unknown	20	3.00		2.50 (1.10-5.63)	2.209[a]
State of origin					
Arizona	70	10.21		Reference	
Florida	72	10.51		1.02 (0.75-1.40)	0.85[a]
Iowa	44	7.33		0.62 (0.43-0.90)	0.011[a]
Minnesota	243	36.48		3.47 (2.72-4.42)	<0.0001[a]
Wisconsin	101	15.16		1.44 (1.03-1.91)	0.011[a]
Others	136	20.31		1.94 (1.48-2.53)	<0.0001[a]

Abbreviations: CI, confidence interval; No, number; SD, standard deviation; α, Chi-Square Test; μ, Anova.