combined therapy (6.6% vs. 0.6%; P=0.005). The medical therapy group was more likely to have brain MRI and cranial CT than the patients with combined therapy (75.4% vs. 63.5%; P=0.041). Midline shift (11.5% vs. 31.2%; P=0.005), a single (21% vs. 83%; P=0.001) and greater size (1.4 cm vs. 2.5 cm; P=0.007) brain abscess was significant when comparing medical vs. surgically managed abscess. Stereotactic surgical technique was the preferred diagnostic approach for the medical group (65.6% vs. 46.5%; P=0.010), and excision/craniotomy for the combined group (31.1% vs. 53.5%; P=0.002). Streptococcus viridans group was the predominant organism (32.8% vs. 25.9%; P=0.30). Compared to those who received combined therapy, patients with medical therapy alone were most likely to receive cephalexin (72.1% vs. 41.2%; P=0.0001), vancomycin (23% vs. 12.4%; P=0.047) and metronidazole (27.9% vs. 14.7%; P=0.022). In both groups, median duration of antimicrobial therapy was 42 days (P=0.12). Patients with medical therapy alone had a higher mortality rate (18% vs. 7.1%; P=0.014) but less neurologic sequelae (21.3% vs. 30.6%; P=0.16) compared with combined therapy.

Medical Management. Organism isolated in the combined management group

Combined Management. Organism isolated in the combined management group

Demographic and Clinical Characteristics of Patients with Brain Abscess who Underwent Therapeutic Management

| Factor                      | Medical management (n=61) | Combined medical/surgical management (n=170) | P value |
|-----------------------------|---------------------------|---------------------------------------------|---------|
| Demographic characteristics  |                           |                                             |         |
| Age at diagnosis (mean±SD)  | 34 (16-50)                | 33 (16-50)                                  | 0.44    |
| Males (No. %)               | 42 (68.8)                 | 129 (76.4)                                  | 0.03    |
| Females (No. %)             | 19 (31.2)                 | 41 (23.6)                                   | 0.08    |
| Comorbidities, n (%)        |                           |                                             |         |
| None                        | 7 (11.5)                  | 15 (8.8)                                    | 0.49    |
| Diabetes mellitus           | 14 (22.9)                 | 42 (24.7)                                   | 0.78    |
| Insulin-dependent diabetes  | 14 (23.0)                 | 29 (17.0)                                   | 0.41    |
| Chronic kidney disease      | 5 (8.2)                   | 13 (7.6)                                    | 0.87    |
| Hemodialysis                | 1 (1.6)                   | 3 (1.8)                                     | 0.96    |
| Neurosurgery                |                           |                                             |         |
| None                        | 10 (16.4)                 | 31 (18.2)                                   | 0.86    |
| Essential surgery           | 15 (24.6)                 | 31 (18.2)                                   | 0.93    |
| Percutaneous vertebral      | 15 (24.6)                 | 31 (18.2)                                   | 0.42    |
| Internal dermal wall        | 14 (22.9)                 | 14 (8.2)                                    | 0.89    |
| CSF drain other than brain  |                           |                                             |         |
| Occular                      | 14 (22.9)                 | 21 (12.3)                                   | 0.59    |
| Nasal                       | 3 (4.9)                   | 13 (7.6)                                    | 0.86    |
| Arteriovenous malformations | 11 (17.9)                 | 31 (18.2)                                   | 0.40    |
| Hemiparesis                 | 14 (22.9)                 | 14 (8.2)                                    | 0.37    |
| Migraine                    |                           |                                             |         |
| Headache                    | 15 (24.6)                 | 31 (18.2)                                   | 0.42    |
| Fever                       | 12 (19.7)                 | 31 (18.2)                                   | 0.89    |
| Fetal origin                 |                           |                                             |         |
| Head origin                  | 10 (16.4)                 | 31 (18.2)                                   | 0.47    |
| Concomitant surgery          | 12 (19.7)                 | 31 (18.2)                                   | 0.85    |
| Concomitant surgery          | 11 (17.9)                 | 31 (18.2)                                   | 0.97    |

Conclusions. Most patients with pyogenic brain abscess had no identified risk factors, and brain MRI and cranial CT were the diagnostic imaging modalities of choice. Compared to those who received medical therapy alone, patients with combined treatment had a single and greater size fluid collection with the presence of midline shift. A prompt combined surgical and medical approach with prolonged antimicrobial therapy can cure the infection.

Outcomes of Patients with Bacterial Brain Abscesses

|                      | Medical management, n=61 | Combined medical/surgical management, n=170 | P value |
|----------------------|--------------------------|---------------------------------------------|---------|
| Cured without permanent neurologic deficits, n (%) | 28 (45.5)                | 76 (44.7)                                   | 0.67    |
| Single*, n (%)       | 22                       | 59                                          | 0.84    |
| Cured with permanent neurologic deficits, n (%)   | 15 (25.4)                | 52 (30.6)                                   | 0.16    |
| Hemiparesis          | 2                        | 7                                           | 0.77    |
| Hemiplegia           | 2                        | 13                                          | 0.23    |
| Seizure              | 6                        | 27                                          | 0.35    |
| Aphasia/b 순화     | 1                        | 2                                           | 0.78    |
| Others               | 1                        | 2                                           | 0.74    |
| Size*: cm, median (IQR) | 1.6 (1-2.8)            | 1.6 (1-2.9)                                 | 0.88    |
| Single*, n (%)       | 21                       | 53                                          | 0.29    |
| Failure              |                          |                                             |         |
| Death                | 11 (18.0)                | 12 (7.1%)                                   | 0.014   |
| Relapse              | 7                        | 24                                          | 0.80    |
| Re-operation         | 2                        | 6                                           | 0.92    |

Abbreviations: ESR, erythrocyte sedimentation rate; CRP, C-reactive protein; WBC, white blood cell count; RBC, red blood cell count; IQR, interquartile range; NG, negative growth; AFB ovoid, acid-fast bacillus ovoid; a, number.

*Hydrocephalus, persistent headache, dysphagia.

**Abscess.

Radiologic and Surgical Diagnosis of Patient with Brain Abscess who Underwent Therapeutic Management

### Imaging technique, n (%)  
- **Cranial CT**: 13 (36.8) vs. 13 (36.8), P=0.64  
- **Brain MRI**: 14 (34.1) vs. 14 (34.1), P=0.64  
- **MRI**: 20 (51.2) vs. 20 (51.2), P=0.82

### Antimicrobial treatment, n (%)  
- **Ceftriaxone**: 13 (36.8) vs. 13 (36.8), P=0.64
- **Cefotaxime**: 13 (36.8) vs. 13 (36.8), P=0.64
- **Linezolid**: 13 (36.8) vs. 13 (36.8), P=0.64

### Adverse effects, n (%)  
- **Methicillin-resistant Staphylococcus aureus (MRSA)**: 13 (36.8) vs. 13 (36.8), P=0.64

### Surgical diagnosis, n (%)  
- **Cranial CT**: 13 (36.8) vs. 13 (36.8), P=0.64
- **Brain MRI**: 14 (34.1) vs. 14 (34.1), P=0.64

### Session: P-13. CNS Infection

#### Background
Herein, we aimed to analyze the outcomes of the methicillin sensitive (MS) versus methicillin resistant (MR) culture-proven Staphylococcus spp. nosocomial meningitis (S-NM) in our setting.

#### Methods
We extracted data and outcomes for all adult patients (age ≥18 years) from the Infectious Diseases Consultants and diagnosed NM (developed at a compatible time according to CDC nosocomial meningitis definitions) between January 2006 and 2021 and fulfilled the following study inclusion criteria:  
(a) Age ≥18-year-old;  
(b) CSF culture is positive for *Staphylococcus* spp.

#### Conclusion
Most patients with pyogenic brain abscesses had no identified risk factors, and brain MRI and cranial CT were the diagnostic imaging modalities of choice. Compared to those who received medical therapy alone, patients with combined treatment had a single and greater size fluid collection with the presence of midline shift. A prompt combined surgical and medical approach with prolonged antimicrobial therapy can cure the infection.
(ii) CSF finding: >250 leucocytes/mm³, (iii) at least one of the following clinical findings, i.e. impairment of consciousness, neck stiffness, nausea/vomiting. Identification of the infecting bacteria and determination of antimicrobial susceptibility were performed using the VITEK 2 automated system (BioMérieux Inc, Mercy L’etoil, France) and conventional methods. Resistance to methicillin was tested by E-test (bioMérieux).

Antibacterial susceptibility tests were evaluated according to Clinical Laboratory Standards Institute (CLSI) criteria until 2014 and EUCAST between 2015 and 2021. Chi-square and Student T-tests were used for statistical comparison.

**Results.** A total of 9 patients in MSS-NM, 41 patients in MRS-NM group fulfilled the study inclusion criteria. Age, gender, and CSF findings (except CSF glucose was significantly lower in MSS-NM) were similar in both groups (Table 1). Besides, EOT clinical success and overall success (EOT success followed by one-month survival without relapse or reinfection) rates were similar (Table 1). Relapse and reinfection rates during post-treatment one month period were 0%-0% and 0%-6.6% in MSS/MRS-NM, respectively. In MRS-NM group reinfection pathogenes were Acinetobacter baumannii and Pseudomonas aeruginosa after 12 and 30 days end of treatment.

**Characteristics of NM**

| Characteristics | Methicillin sensitive | Methicillin resistant | p |
|-----------------|----------------------|-----------------------|---|
| Female          | 3 18                 | 0.716                 |
| Age             | 48.55 +/- 12.9       | 51.43 +/- 13.14       | 0.553 |
| Intracranial tumor | 3 14             | 1                     |
| Intracranial hemorrhage | 0 13         | 0.089                 |
| Hydrocephalus   | 3 18                 | 0.716                 |
| Shunt           | 5 23                 | 1                     |
| External ventricular drainage | 0 8         | 0.321                 |
| Mean CSF leukocyte count | 703.33 +/- 360 | 578 +/- 288.89       | 0.266 |
| Mean CSF protein | 180 +/- 114.55      | 445.71 +/- 100.03    | 0.472 |
| Mean CSF glucose | 16 +/- 19.79        | 47.93 +/- 36.98       | 0.015 |
| Day 3-5 microbiological success | 5/9 (55.5%) | 27/41 (65.8%) | 0.704 |
| EOT clinical success | 9/9 (100%) | 37/41 (90.2%) | 1 |
| Overall success | 9/9 (100%)          | 35/41 (84.5%)        | 0.575 |

**Conclusion.** Overall success in MSS-NM was acceptable while it was non-significantly lower in MRS-NM. The medical community should seek better infection control measures from NM.

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269. A Review of Gram Negative Endogenous Endophthalmitis at University Hospital in Newark

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**Session:** P-13. CNS Infection

**Background.** Endophthalmitis (EO) is an ocular emergency characterized by intraocular inflammation, usually in response to infection. While most cases are exogenous, gram negative (GN) EO account for 10-24% of all cases, and endogenous EO (EEO) account for 2-8% of all cases. Risk factors for EEO include diabetes mellitus (DM), IV drug use, and indwelling catheters. Major sources of infection are urinary tract infections (UTI), liver abscesses, pneumonia, and bacteremia. Common pathogenes include K. pneumoniae, P. aeruginosa, and H. influenzae. Outcomes are poor, with only 20% of patients achieving improved visual acuity, and 30-40% requiring enucleation.

**Methods.** Retrospective analysis was performed on patients diagnosed with EO (n=89) at University Hospital in Newark from January 2016 to December 2020 using ICD-10 codes H44.0-H44.09, H44.1, and H44.19. Patients included were 18 years of age or older with culture proven GN endogenous EO (GNEEO) (n=7). Outcomes included anatomical success, functional success, and mortality at 28 days and 3 months.

**Results.** 7 of 89 patients met criteria for GNEEO (median age 67, 4 males, 71.4% Hispanic/Latino). Comorbidities included hepatobiliary disease (57.1%) and DM (42.9%). All 7 patients presented with ocular symptoms and 3 had non-ocular symptoms. Primary sources of infection included UTI, prostate abscess, and pneumonia/empyema. Eye cultures identified Pseudomonas in 4 patients and Klebsiella in 3 patients. Mean antibiotic length was 17.7 days with 6 patients receiving intravitreal antibiotics. Enucleation was performed in 3 patients. 2 patients had functional success and 4 had anatomical success, with 0 mortality at 28 days and 3 months.

| Ocular Symptoms on Presentation | # of Patients |
|--------------------------------|--------------|
| Bilateral                      | 1            |
| Unilateral                     | 6            |
| Pain                           | 6            |
| Redness                        | 4            |
| Hypopyon                       | 4            |
| Decreased perception of light  | 4            |
| Decreased visual acuity        | 2*           |
| Uveitis                        | 2            |
| Retinitis                      | 1            |

**Table 1. Ocular symptoms on presentation of cases of gram negative endogenous endophthalmitis**

**Table 2. Positives cultures obtained from cases of gram negative endogenous endophthalmitis**

| Positive Cultures | # of Patients |
|-------------------|--------------|
| Eye cultures      | 7            |
| Urine cultures    | 2            |
| Blood cultures    | 1            |

**Conclusion.** Although rare, GNEEO causes significant morbidity, with only 2 recovering visual acuity and 3 requiring enucleation. Risk factors, sources of infection, and microbes were all consistent with those in previous reports. Hepatobiliary disease and DM were the most prominent risk factors while sources of infection included UTI and empyema. Eye cultures were positive for K. pneumoniae and P. aeruginosa, two common pathogens previously identified. This case series highlights the importance of prompt recognition and initial treatment of GNEEO with empiric coverage that includes vancomycin and ceftazidime.

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

270. New Onset Seizure Presented as Neurosyphilis

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**Session:** P-13. CNS Infection

**Background.** The term “neurosyphilis” refers to infection of the central nervous system (CNS) by Treponema pallidum. It can occur at any time after initial infection. Early in the course of syphilis, the most common forms of neurosyphilis involve the cerebrospinal fluid (CSF), meninges, and vasculature (asymptomatic meningitis, symptomatic meningitis, and meningocephalic vein disease). Late in disease, the most common forms involve the brain and spinal cord parenchyma (general paralysis of the insane and tabes dorsalis).

**Methods.** A 31-year-old man who suddenly developed a new onset generalized tonic clonic seizure, was admitted to the emergency department. He had no history of epilepsy and denied any vision or gait problems. The brain MRI showed no abnormalities. He had a history of rapid plasma reagent (RPR) titer 1:32 and a positive fluorescent treponemal antibody absorption (FTA-ABS) test in 2017. However, the RPR result was non-reactive when he retested a week later and therefore was not diagnosed with syphilis and did not get treated at that time. His most recent RPR titer was 1:16. HIV serology and other STD tests were all negative. His wife and his 3 kids were negative for syphilis. Due to serological evidence of syphilis and neurological symptoms, we arranged him to get a lumbar puncture to rule out neurosyphilis.

**Results.** His CSF study showed positive venereal disease research laboratory (VDRL), WBC cell count 44 cells/ul (lymphocytes 80%, Neutrophil 20%), Glucose 50 mg/dl, Protein 75 mg/dl. Based on the CSF study, he was diagnosed with neurosyphilis and was treated with intravenous Penicillin G 3-4 million units every 4 hours for 14 days, followed by Benzathine Penicillin 2.4 million units intramuscularly on day 21.

**Conclusion.** This is an unusual case because his false negative RPR result has hindered the prompt diagnosis and management of syphilis. RPR is a nontreponemal test of prompt recognition and initial treatment of GNEEO with empiric coverage that includes vancomycin and ceftazidime.