

### Is Biopsy necessary? An unusual case of Toxoplasmosis

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*Toxoplasma gondii* is a parasite that infects many animals including mammals, marsupials, and birds. Humans are accidental hosts. Primary infection is usually subclinical or mild in healthy patients; however, in immunocompromised patients it can present as headache, confusion, motor weakness, and fever. Untreated toxoplasmosis can be fatal. Though the brain is the most typical site of involvement, many organs can be affected. Usually, multiple ring enhancing lesions are seen on brain imaging. Clinicians should also be aware of atypical presentations. A 48-year-old woman with history of HIV on Bictegravir/Emtricitabine/Tenofovir with a CD4 of 91 and a HIV viral load of 80 copies/mL, was transferred for neurosurgical evaluation due to 2 weeks right sided temporoparietal headache with dizziness and loss of visual acuity. Imaging showed a solitary <2cm ring enhancing lesion in the right parietal lobe with edema. Laboratory studies including CBC, BMP, Blood cultures, RPR, Quantiferon gold, Galactomannan assay, Beta D glucan, EBV PCR, CMV PCR Chest X-ray and CT abdomen/pelvis were unremarkable. Toxoplasma serology was negative for IgM and positive for IgG. Ophthalmology exam was obtained and was unrevealing. MRI of the brain showed findings supporting AIDS-associated lymphoma rather than toxoplasmosis. Given these findings, the decision to pursue biopsy was made with patient as she was concerned for malignancy. Biopsy was consistent with Toxoplasmosis, revealing tachyzoites and extensive necrosis. After biopsy, patient was started on a 6-week course of Trimethoprim/Sulfamethoxazole and a steroid taper and made a full recovery. Treatment of Toxoplasmosis is usually based on clinical diagnosis based on presentation, imaging as well as response to empiric therapy. However, when imaging is equivocal or concerning for other differential diagnosis, biopsy should be pursued earlier as it can give a definitive diagnosis that will help with treatment plan.